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National Applied Research Laboratories



User Profile

Outstanding Designs Awarded in 2011 CIC Multi-Project Chip Workshop

The Special Honor Award

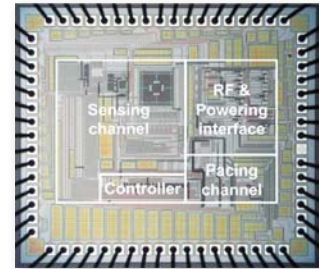
S1

[A Programmable Implantable Micro-Stimulator SoC with Wireless Telemetry: Application in Closed-Loop Endocardial Stimulation for Cardiac Pacemaker](#)

IC NO. D35-99B-08

Advisor: Shuenn-Yuh Lee

Designer: Yu-Cheng Su



Abstract

A programmable bidirectional sensing and pacing system with RF-coupling recharging for implantable pacemaker is presented. The system includes wireless power transferring and energy switching-and-storing interface, demodulator, system controller, pacing interface and real-time detection front end circuit.

Wireless power transferring and energy switching-and-storing interface transmits the energy from outside body to the inside system using coupling method, and also provides both the control signal for system and the charging energy for batteries. Demodulator is responsible for decoding the transmitted package into data and clock, at the same time, the modulating element at the output of detection front end transmits the bio-signal to outside for user achieving the target of bidirectional sensing and pacing. While system controller is in charge of the operation of the whole system. Pacing interface generates the stimulation pulse. Meanwhile, the real-time detection front end acquires the bio-electrical signal, producing the immediate detection signal along with the followed data conversion for recording and sends it to outside body. The whole system has the ability to provide error detection and protection which result from the fault of data transmission, and make the decision whether delivering the demanding stimulus to human tissues emergently.

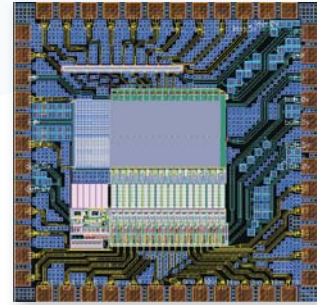
S2

A 10b Resistor-Resistor-String DAC with Current Compensation for Compact LCD Driver Ics

IC NO. D35-99C-38

Advisor: Chih-Wen Lu

Designer: Ping-Yeh Yin



Abstract

We propose a 10b RRDAC for compact LCD driver ICs with current compensation to offset the loading effect of parallel-connected resistor strings, eliminating the need for unity-gain buffers. The measured DNL and INL are 0.14 LSB and 0.61 LSB, respectively. The 10b RRDAC occupies 70% of the conventional 8b RDAC area.

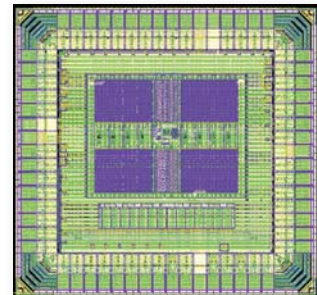
S3

An Offset-Tolerant Current-Sampling-Based Sense Amplifier for Sub-100nA-Cell-Current Nonvolatile Memory

IC NO. TN90RF-98B-16

Advisor: Meng-Fan Chang

Designer: Chia-Chi Liu



Abstract

In nanometer processes, the threshold voltage V_{th} of the transistor is not well control due to process and other effects. In this phenomenon, the sense amplifier will sense fail easily when read very small signal. In this project, we propose a new current type offset free sense amplifier which can sense correct in very small signal. And we put this sense amplifier in 512Kb OTP Flash successively.

The Best Design Award of Digital

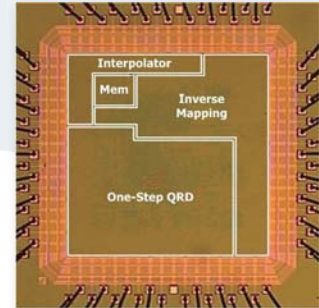
B1

Interpolation-based QR Decomposition Processor for MIMO-OFDM

IC NO. UN90-99A-04a

Advisor: Yuan-Hao Huang

Designer: Li-Wei Cha



Abstract

This project presents a reconfigurable interpolation-based QR decomposition and channel estimation processor. The proposed algorithm integrates the calculations of frequency-domain channel estimation and the QR decomposition for the MIMO-OFDM systems, and thus requires less computational complexity than traditional scheme. Besides, this algorithm possesses a scalable property that saves the power consumption for the variable-rank MIMO scheme. The processor is designed and implemented as a single chip. The well-verified chip using 90nm UMC CMOS technology supports 2x2, 4x2, 4x4 QR-based MIMO detection for the 3GPP-LTE MIMO OFDM system and achieves the throughput of 35.16MQRD/s at its maximum clock rate 140.65MHz. This chip outperforms other chips for QR decomposition in the literature.

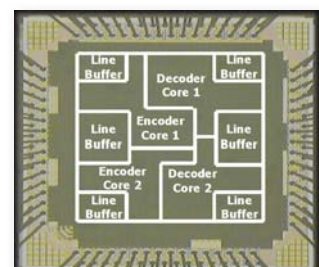
B2

An Embedded Compression Codec for Memory-Efficient Applications on Advanced-HD Specification

IC NO. T18-99A-08a

Advisor: Tsung-Han Tsai

Designer: Yu-Hsuan Lee



Abstract

The embedded compression (EC) technique is applied to reduce the memory bandwidth and capacity in display system. In this paper, the high-speed EC algorithm is proposed for advanced-HD specification. It mainly comprises three features: (1) The associated geometric-based probability model (AGPM) is developed to construct context-modeling mechanism without context-table. (2) Develop content-adaptive Golomb-Rice code and geometric-based binary code as the entropy coding with minor order of context. (3) Provide the rate control mechanism to guarantee the saving ratio of memory bandwidth and capacity. With competitive coding efficiency, the computation-efficiency of the proposed EC algorithm is about 44% and 40% of FELICS and JPEG-LS. The proposed VLSI architecture of entire codec is implemented in TSMC 0.18-um 1P6M CMOS technology. Based on pixel-based parallelism and segment-based parallelism techniques, the encoding/decoding capability reaches QFHD (3840x2160)@30Hz.

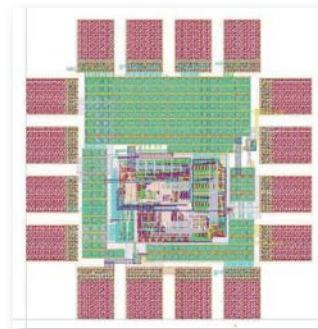
B3

Low Voltage All Digital PLL

IC NO. UN90-98C-01

Advisor: Guo-Shing Jeng

Designer: Jen-Chieh Liu



Abstract

This paper proposes a low supply voltage all-digital phase-locked loop (ADPLL) with a digital supply regulator. The proposed digital supply regulator limits the RMS jitter to less than 0.55% of the 280 MHz output frequency when the digital controlled oscillator (DCO) supply noise range is from 100 kHz to 100 MHz. The proposed DCO performs with a two-step timing resolution of digital controlled varactor for higher operational frequency. The proposed digital loop filter can reduce the area cost and critical path by using the double edge trigger technique. For a low supply voltage, the DCO and sense-amplifier based delay flip flop use the bulk-controlled techniques to improve higher operational frequency and timing resolution, respectively. When the ADPLL output is 800 MHz at 0.6 V, the RMS and peak-to-peak jitters are 12.1 ps and 68.5 ps, respectively. The power consumption is 656 μ W. The ADPLL can operate from 96 to 720 MHz at 0.5 V. The core area is 0.02 mm².

The Best Design Award of Analog

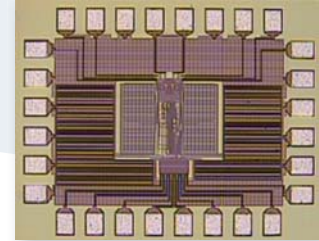
B4

A 100- μ W 10-MS/s 10-bit SAR ADC

IC NO. T18-98D-25

Advisor: Soon-Jyh Chang

Designer: Chun-Cheng Liu



Abstract

In this report, the design concept and measurement results of a low-power high-speed analog-to-digital converter (ADC) are presented. The ADC is design for the application of digital video processing and wireless communication. For such an application, in general, its accuracy requirement is about 8 to10 bits and its sampling rate at less than 10 MS/s.

Instead of pipeline architecture which is traditionally used for the application of video processing, this work adopts SAR (Successive Approximation Register) architecture to reduce the total power consumption and chip area. The major contribution of this work is to propose a new capacitor switch sequence for the DAC block, which can reduce the power and improve the ENOB of whole circuit.

At 10MS/s operating speed and 1V supply voltage, the measurement results show that the SNDR and SFDR are 60.97dB and 79.4dB with 1MHz input frequency. The ENOB is 9.83bit. The total power consumption is 98uW. The resultant FOM is 11fF/conversion-step.

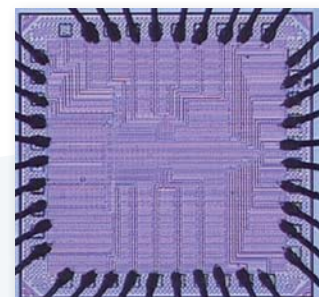
B5

A 12-bit Binary-Search SAR ADC with an Improved Capacitor Array

IC NO. TN90RF-99B-23

Advisor: Soon-Jyh Chang

Designer: Ying-Zu Lin



Abstract

This report presents an 11-bit subranged SAR ADC consisting of a 3-bit binary-search coarse ADC, a 10-bit SAR fine ADC where 2 bits are redundant to overcome capacitor incomplete settling. The binary-search ADC controls coarse capacitors of the DAC and SAR ADC controls the fine ones. The MSB of the FADC is a redundant bit to relax the accuracy requirement of the CADC. This ADC employs a hybrid RC DAC to reduce the capacitor area. To improve DAC linearity, this ADC uses a capacitor rotator to cycle the coarse capacitors. The total area of this ADC is 1.69 mm^2 , and the active area is only 0.06 mm^2 . At 25 MS/s, the power consumption is only 0.58 mW from a 0.9-V supply. The peak ENOB values are 10.2 and 9.9 bits at 10 and 25 MS/s, respectively. The FOM at 25 MS/s is only 29 fJ/conversion-step.

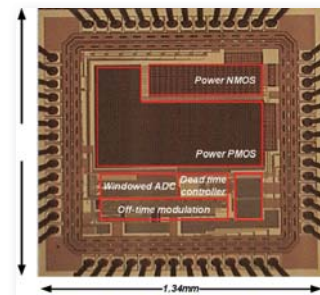
B6

A design of High Efficiency DC-DC Buck Converter with Asynchronous Power Saving Control

IC NO. T18-99C-94

Advisor: Po-Chiun Huang

Designer: Po-Hsiang Lan



Abstract

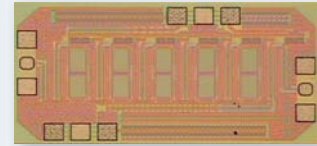
A wide-load range, high efficiency digitally-controlled single mode buck converter with asynchronous power saving technique is proposed in this work. It is beneficial to use the single mode to control the buck converter without any inductor current sensor and complicated control circuit, thereby reducing the complexity of design. The combination of dynamic frequency scaling technique and asynchronous power saving controller makes it efficient to enhance the conversion efficiency over the light load range. Based on the measurement results, the efficiency is more than 90% from 3mA to 400mA.

The Best Design Award of RF

B7

A Transformer-based Distributed Amplifier in 90 nm CMOS

IC NO. T18-98D-25



Advisor: Shuo-Hung Hsu

Designer: Chih-Yin Hsiao

Abstract

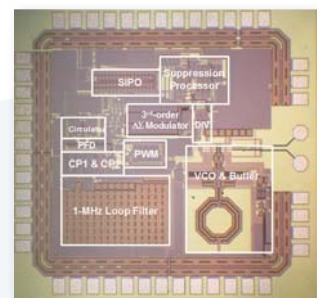
Wideband amplifiers are of great interest in various applications [1]-[2]. For wideband communication systems, amplifiers with a large bandwidth are required to achieve high data-rate signal transceiving [2]. Different approaches have been proposed for wideband amplifier design [1]-[7] such as feedback amplifier, travelling-wave amplifier, distributed amplifier, and tuned amplifier with different peaking techniques. The distributed amplifier (DA), using the concept of artificial transmission line, can easily achieve a large bandwidth. However, compared with other wideband amplifier configurations, the DA topology in general has relatively large power consumption and also requires a large chip area. The low efficiency of the DA topology is mainly due to the gain of each stage is added together instead of being multiplied in the multi-stage structure [7]. The large chip area is because of the distributed nature with the long transmission lines for signal traveling.

In this work, we propose a design technique using the transformer coupling between the gate line and drain line in distributed amplifier to achieve a high gain-bandwidth product while maintaining low power consumption. The feedback, realized by the transformer, allows reuse of the traveling signal in a DA and greatly enhances the circuit performance. The transmission lines are employed for the transformer design with the pattern ground shield [1] to minimize the chip size and reduce the insertion loss with a well-controlled coupling factor. Under a power consumption of 60 mW, the proposed design, in 90-nm CMOS, demonstrates a gain-bandwidth product up to 137 (7 dB of gain with a bandwidth of 61.3 GHz) based on the measured results. The measured noise figure is below 6.2 dB up to 40 GHz (frequency range limited by the equipment). The overall chip size is only $1.11 \times 0.56 \text{ mm}^2$ (core area: $0.97 \times 0.42 \text{ mm}^2$).

B8

A 3.6-GHz Band Fractional-N Frequency Synthesizer with Quantization Noise Shifting Technique

IC NO. T18-99C-196



Advisor: Tsung-Hsien Lin

Designer: Wei-Hao Chiu

Abstract

In this work, a 3.6-GHz fractional-N frequency synthesizer with quantization-noise shifting is presented. At 1MHz loop bandwidth, the PLL realizes 30dB reduction on quantization noise and achieves -120dBc/Hz at 3MHz offset. The in-band noise is -99dBc/Hz. Fabricated in a 0.18- μ m CMOS process, the PLL draws 23mA from a 1.8-V supply.

The Best Design Award of MEMS

B9

CMOS-MEMS Resonator Array Design with Low Motional Impedance

IC NO. D35-99C-06

Advisor: Sheng-Shian Li

Designer: Ming-Huang Li



Abstract

A high-Q, low motional impedance deep-submicron gap CMOS-MEMS free-free beam resonator array has been demonstrated in this work. Pull-in mechanism is used to achieve the deep-submicron gap spacing between the resonator and the electrode, hence lowering the motional impedance. The frequency of the resonator array is 10.5MHz, and the motional impedance is around 100k Ω . Because of the high-Q, small volume, low power characteristics, micromechanical resonator array would be a key component in the future multiband multimode wireless transceivers.

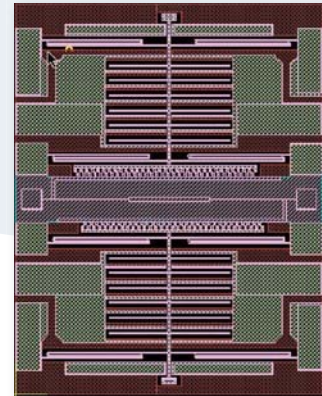
B10

Design of Band Reconfigurable Bandstop Filter with Large Displacement Actuator

IC NO. D35-99A-44m

Advisor: Chia-Chang Chang

Designer: Sheng-Chi Hsieh



Abstract

The design of band reconfigurable CMOS MEMS bandstop filter is proposed in this work. The stop band is reconfigured by changing the open stub capacitance by using comb fingers mechanical structure to achieve reconfigurable bandstop filter. The Measurement results show that the center frequency can be tuned from 60 GHz to 50 GHz and isolation is better than 35dB. This chip was fabricated using TSMC 0.35- μm CMOS MEMS process with chip size of 0.765 x 0.98 mm².

The Honorable Mention Design Award of Digital

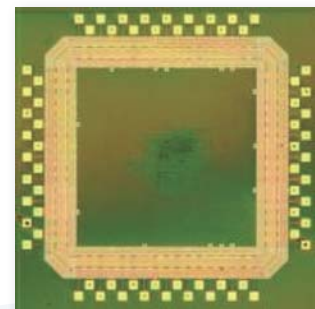
H1

Design and Implementation of lattice Reduction Algorithm for lattice-reduction-aided MIMO Detection

IC NO. UN90-99A-03a

Advisor: Yuan-Hao Huang

Designer: Chun-Fu Liao



Abstract

In this work, high performance lattice reduction algorithm circuit is proposed. Both the parallel processing and constant throughput goal is achieved by the variant CT-LLL lattice reduction algorithm. In the other hand, a power

saving technique is introduced to further close the unused part of the circuit. By correctly identifying the redundant operation embedded in the algorithm, the prediction circuit is shown to reduce the power consumption about 20%. The well-verified chip using 90nm UMC CMOS technology can achieve 28 Mb/s data rate with 200k gate counts@1 Volt. The maximum clock speed is 28 MHz, and the power consumption is 4.62mW.

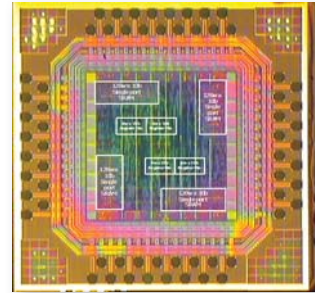
H2

An Energy-Saving Cooperative Spectrum Sensing Circuit for Cognitive Radio System

IC NO. T18-98D-04a

Advisor: Yuan-Hao Huang

Designer: Wen-Bin Chien



Abstract

The aim of our research is designing the implementation of spectrum sensing processor which meets the requirement of energy-saving for cooperative cognitive radio systems. Our spectrum sensing processor supports different spectrum sensing size. Moreover, it offers two low-complexity techniques to improve the detection performance. The proposed architecture not only reduces the energy consumption but also keeps the detection performance. The highest clock rate of our chip is 58.9MHz, and the power consumption is 1.19mW.

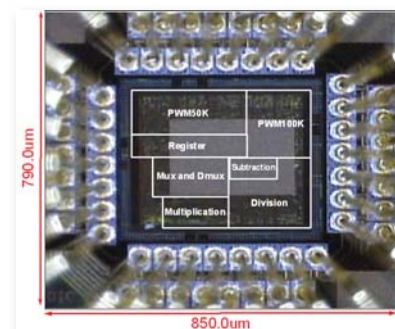
H3

All digital folded low area, low power maximum power point tracking chip for photovoltaic energy conversion system

IC NO. T18-99B-01a

Advisor: I-Chyn Wey

Designer: Shu-Hao Kuo



Abstract

In this chip, we proposed and implemented a 12-bit area-efficient folded all-digital maximum power point tracking (MPPT) chip based on gain-adaptive perturb-and-observe algorithm for photovoltaic energy conversion system. Alternative to DSP or micro controller, realizing the MPPT algorithm by using ASIC can achieve higher energy conversion efficiency, lower power consumption and smaller chip area. By using gain-adaptive perturb-and-observe MPPT algorithm [9], it can overcome the periodic perturbation issues in conventional perturb-and-observe MPPT algorithm, which can save overall system power consumption. By using the proportional integral controller, we can track the maximum power point fast and stable. As compared with the conventional perturb-and-observe MPPT algorithm under high intensity sun illumination, the gain-adaptive perturb-and-observe algorithm can track three times faster. As compared with the conventional perturb-and-observe MPPT algorithm under low intensity sun illumination, the gain-adaptive perturb-and-observe algorithm can perform the same power conversion efficiency. By using folding VLSI architecture, we can save a 77% chip area and 70% power consumption in realizing the MPPT algorithm. Finally, our proposed MPPT chip is implemented in TSMC 0.18 μ m process, while the chip area is 0.85mm*0.79mm and the power conversion efficiency is 97.9%.

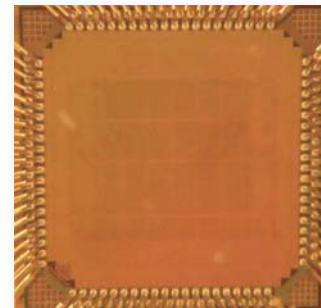
H4

[High-Efficiency and High-Throughput QR Decomposition for MIMO Detection](#)

IC NO. T18-99A-09a

Advisor: Pei-Yun Tsai

Designer: Zheng-Yu Huang



Abstract

In this work, we aim to design and implement a high-throughput QR decomposition architecture for 4x4 MIMO signal detection problems. A real-value decomposed MIMO system model is handled and thus the channel matrix to be processed is extended to the size 8x8. Instead of direct factorization, we propose a QR decomposition scheme by cascading one complex-value and one real-value Givens rotation blocks, which can save 44% hardware complexity. The systolic array is adopted for hardware implementation to facilitate pipeline design. Then, the requirement of skewed inputs to the conventional complex-value QR-decomposition systolic array is improved and 37% of delay elements are removed. The real-value Givens rotation stage is implemented by a stacked triangular systolic array to match with the throughput of the complex-value one, and improve the hardware

complexity using scheduling and time-sharing. We have implemented the proposed design in TSMC 0.18 μ m CMOS technology with 152K gates. From post-layout simulations, the maximum operating frequency can achieve 90.09MHz. The proposed scheme not only reduces the hardware complexity, but also supports high throughput for MIMO-OFDM signal detection up to 2.16Gbps under stationary channels.

The Honorable Mention Design Award of Analog

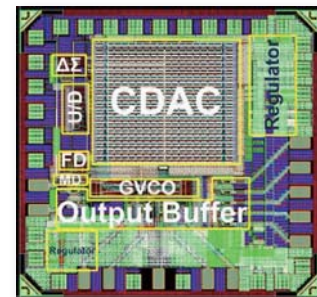
H5

A Multi-Band Burst-Mode Clock and Data Recovery Circuit

IC NO. TN90RF-99B-13

Advisor: Wei-Zen Chen

Designer: Yu-Hsiang Chen,



Abstract

The rapid progress in integrated circuit (IC) techniques has spurred the development of low-cost and convenient broadband access services.

Fiber-to-the-home (FTTH) system based on passive optical network (PON) is considered as a promising technology for deploying economically high-speed subscriber networks. In the passive optical network, clock and data recovery (CDR) circuit plays an important role in the transceiver. The application of the communication system such as passive optical network (PON) and FPD-Link suits this transceiver. Thus, how to realize a burst-mode CDR with rapid lock time is a critical issue in this application. Besides, implementing the high speed CDR in an inexpensive CMOS technology is the key to enable higher bandwidth communications at a relatively lower cost.

For communications, the data at the receiver is usually asynchronous, and it suffered distortion by noise and jitter. A clock and data recovery circuit at the receiver senses the data and produces a periodic clock, and retimes the input data by using the produced periodic clock to reduce the bit error rate. For higher efficiency of transmission, Gigabit PON specifications have only constraints on lock time, and this design exhibits instantaneous response.

A gated voltage-controlled oscillator based burst mode clock and data recovery circuit is presented. The frequency of gated voltage-controlled oscillator is locked by using the digital frequency calibration loop, and then the gated voltage-controlled oscillator takes over to achieve instantaneous phase re-align and the received data with clock synchronization. The $1/7$ -rate gated voltage-controlled oscillator is presented. There are seven transmitted data within a periodic clock in order to achieve high speed operation and low power consumption. It can cover multi-band by using the truly modulus programmable divider, and the type of the data transmission is serial in parallel out. Implemented in a 90nm CMOS technology, the area is 1.162x1.205 mm² including PAD, The chip consumes 1.5 mW, 3 mW, 6 mW, 12 mW and 17 mW when the data rate are 622.16Mbps, 1244Mbps, 2488Mbps, 4977Mbps and 7Gbps from 1.2V supply.

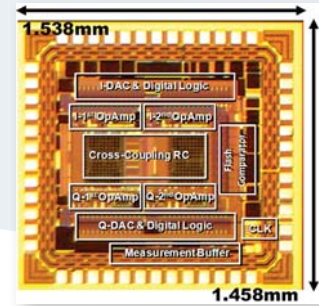
H6

Tri-mode GSM/WCDMA/DVB-T Continuous-Time Quadrature Bandpass Delta-Sigma Modulator for Programmable Digital Low-IF Receivers with Power Scalable Technique

IC NO. T18-98D-29

Advisor: Tsung-Hsien Lin

Designer: Chen-Yen Ho



Abstract

We proposed a GSM-EDGE/WCDMA/ DVB-T continuous-time quadrature bandpass $\Delta \Sigma$ modulator for programmable digital low-IF receivers. Unlike the previous work, the proposed modulator operates in different modes with a wide sampling range (51.2-200MHz) and achieves better FOM. Implemented with TSMC 0.18-mm process under 1.8-V supply voltage, new tunable Low-IF and power scalable techniques are adopted. This measurement result shows 81/61.2/60.9 dB SNDR at GSM-EDGE/ WCDMA/DVB-T tri-mode system and overall FOM are 0.99/0.95/0.84 (pJ/conv.).

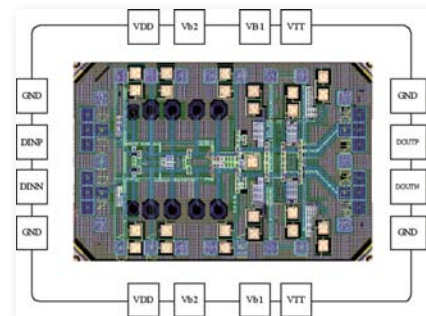
H7

20Gb/s external modulator laser driver

IC NO. TN90RF-99B-28

Advisor: Jen-Ming Wu

Designer: Min-Sheng Kao



Abstract

A variety of applications, including telecommunication and data communication are demanding more transmission links at 10Gb/s or above. In such applications, the laser driver ICs should employ high breakdown transistors in the output stage to ensure sufficient extinction ratio under high speed and large output voltage swing performance. To achieve the above requirements, the driver ICs are usually implemented with SiGe and Si bipolar. However, it would be desirable to realize the laser driver IC in CMOS-based technology. The typical low breakdown voltage of the CMOS transistor makes it hard to compete with its SiGe HBT. A different design methodology known as the series-connected voltage balancing (SCVB) network was showed improvement on output swing. Nonetheless, the power consumptions of the above drivers are usually in several watts and the chip areas are usually very large. Just a few 40-Gb/s CMOS driver ICs with output swing over 3VPP were reported. This paper presents a 20-Gb/s laser driver IC in 90nm CMOS technology. The novel intrinsic drain-gate capacitance feedback network (IDGCFN) is incorporated into the cascade circuit configuration at the output stage. This work has been implemented in a 90nm CMOS technology. The total power consumption of the interface is only 0.6W. The area is 0.8 x 0.8 mm². This circuit can operate at 20Gb/s with 3.5Vpp.

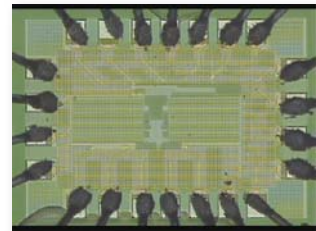
H8

A 10-Bit 80 MS/s successive approximation ADC

IC NO. UN90-98C-08

Advisor: Soon-Jyh Chang

Designer: Guan-Ying Huang



Abstract

This chip realizes a successive-approximation analog-to-digital converter (ADC) with low input capacitance. The 10-bit prototype is fabricated in a 90-nm CMOS process. Compared to conventional successive approximation ADCs, the proposed ADC reduces the input capacitance to 0.4 pF for 10-bit resolution. At 30 MS/s and 1.0-V supply, this ADC consumes 0.98 mW and achieves an SNDR of 56.89 dB, resulting in an FOM of 57 fJ/Conversion-step.

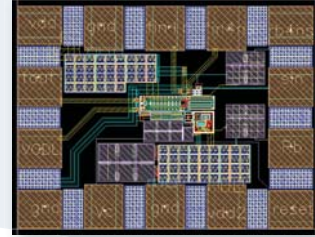
H9

An Low Jitter De-skew Clock Generator for Arbitrary Wide Range Delay

IC NO. T18-98D-154

Advisor: Tai-Cheng Lee

Designer: Yu-Cheng Hung



Abstract

An low jitter de-skew clock generator for arbitrary wide range delay is proposed to minimize the instability of the clock settling while achieving fast locking time. The clock skew problem is detrimental in high-speed applications, especially when the skew is longer than multi-cycles. The proposed generator was fabricated in a 0.18- μm CMOS process. The clock generator achieves a measured RMS jitter of 5.8 ps at 800 MHz with less than 100-ns settling time. The total area is $0.525 \times 0.396 \text{ mm}^2$ and the power consumption is 10.8mW from a 1.8V supply.

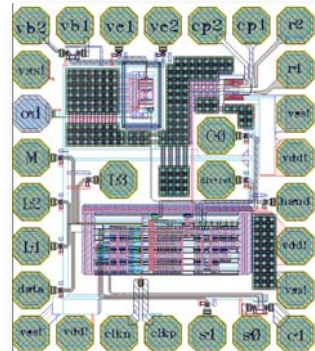
H10

An Spur-Reduction technique with Sigma-Delta Averaging for a 2.4-GHz Phase- Locked Loop.

IC NO. T18-99C-11

Advisor: Rong-Jyi Yang

Designer: Chia-Shu Chao



Abstract

In phase-locked, the resistance in the loop filter will produce IR drop when charge pump charge and discharge [10]. The control voltage V_{ctrl} of voltage control oscillator will cause periodic noise, it appears in every rising edge of reference frequency signal and its frequency is as the same as the input frequency. Therefore, two signal frequency are carrier frequency, ω_c doing addition and subtraction with reference frequency ω_{ref} on frequency spectrum, it called reference spur. Reference spur will make propagation delay in the loop of phase frequency detector and charge pump, create charge injection and current mismatch in charge pump and leakage current in voltage control oscillator. In the above opinions, are undesired in phase-locked loop. For these reasons, we bring up the architecture to improve the shortcoming.

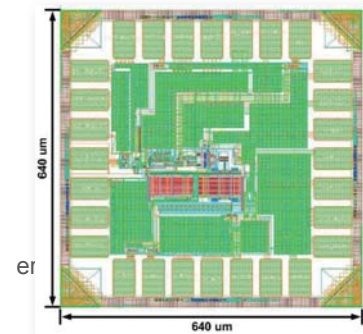
H11

Built-in Jitter Measurement Circuit for Clock Generator

IC NO. TN90RF-98B-07

Advisor: Guo-Shing Jeng

Designer: Jen-Chieh Liu



Abstract

This paper proposes a 6 GHz built-in jitter measurement (BIJM) to measure the clock jitter. The proposed BIJM circuit adopts the time amplifier (TA) and multi-phase sampler (MPS) are used to achieve a 1 ps timing resolution. To eliminate the process variation effects, the self-refereed circuit adopts the auto-calibration technique. By using the calibration techniques, the gain variation of TA and the timing resolution variation of MPS can align to arrive a 1 ps timing resolution. The BIJM is fabricated by TSMC 90 nm CMOS process. The core area of BIJM is 130 μm 200 μm , and the power consumption at 6 GHz is 20.4 mW with I/O buffer.

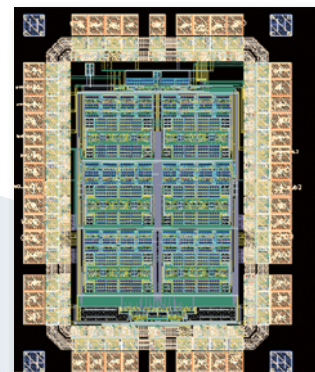
H12

A Neuromorphic Electronic Nose

IC NO. T18-99C-101

Advisor: Kea-Tiong Tang

Designer: Hung-Yi Hsieh



Abstract

This article presents a low power, neuromorphic spiking neural network used to do odor data classification. To reduce the power consumption, this research inputs different data during different oscillation phase trying to replace the power hungry teacher neuron. Measurement result shows that this network can complete the task of learning and classification of different data.

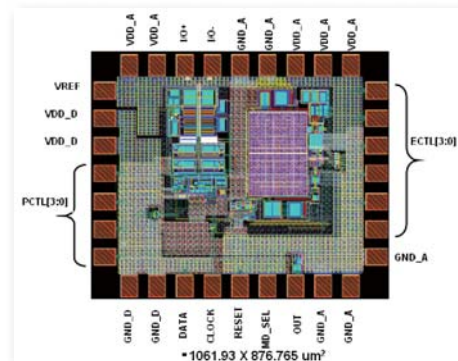
H13

Programmable Analog Zero Equalization and Pre-Emphasis Based LVDS Transceiver for MDDI PHY

IC NO. T18-99C-157

Advisor: Hong-Yi Huang, 國立台北大學電子工程學系教授

Designer: Gilbert A.E. Matig-a



Abstract

This work presents an LVDS transmitter and receiver system with the application of pre emphasis and analog zero equalization scheme for mobile digital display interface (MDDI) standard. The pre emphasis scheme applied in the LVDS transmitter improves the signal quality at the receiving end by boosting the high frequency components of the transmitted digital signal. The equalization scheme applied on the LVDS receiver enhances signal quality of the data received by reshaping the frequency response of the transmission path to a form wherein the attenuated high frequency components are being compensated. The CMFB scheme is a technique introduced in the LVDS transmitter system that eliminates the usage of area consuming passive resistor and capacitor used for close loop stability compensation. The LVDS transmitter consumes 5.4mA of current while driving an external 100 ohm resistor with an output voltage swing of $V_{OD} = 300\text{mV}$. The chip consumes an area of 0.044mm^2 . This works LVDS receiver has an input common mode range from 0.1V to 1.6V. It consumes 34mW of power with a maximum data rate of 2Gbps. It consumes an area of 0.147mm^2 a jitter of 11.74prms. The transmitter-receiver test chip is implemented using $0.18\mu\text{m}$ CMOS process.

The Honorable Mention Design Award of RF

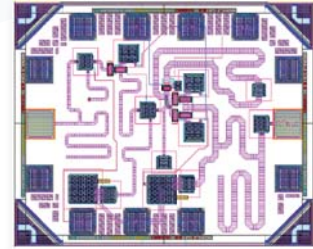
H14

60 GHz Power Amplifier with Modified Linearizer

IC NO. TN90RF-98B-21

Advisor: Kun-You Lin

Designer: Yu-Chung Hsu



Abstract

This work proposes the research and development of a 57-to-66-GHz power amplifiers with a modified linearizer using CMOS 90-nm LP CMOS monolithic millimeter-wave integrated circuit (MMIC) technologies. The pre-distortion linearizer that we developed does improve the power performance of the power amplifier. The measurement results of the power amplifier show a PAE at OP_{1dB} up to 14% while maintaining 15-dB small signal gain, 13.7-dBm OP_{1dB} and 15.4-dBm P_{sat} . It is the highest PAE at OP_{1dB} for millimeter-wave CMOS power amplifiers which ever been published.

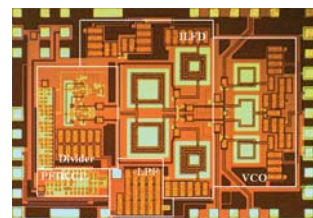
H15

K-band Injection Locked PLL

IC NO. T18-99C-158

Advisor: Hong-Yeh Chang

Designer: Yen-Liang Yeh



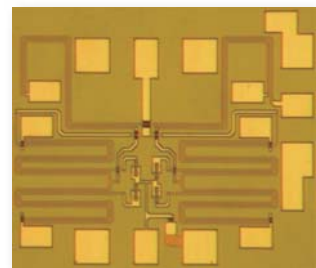
H16

A Ku-Ka band double balanced passive star mixer using novel miniature hybrid

IC NO. P15-99A-06

Advisor: Yeong-Her Wang

Designer: Chun-Nien Chen



Abstract

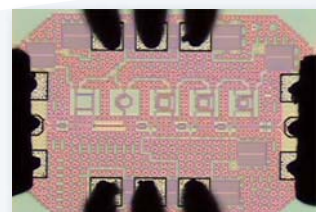
A novel miniature double balanced hybrid composed of a dual Marchand balun and a Marchand balun is presented. The advantages of the structure are good power separation, phase transformation of output ports, good isolation of input ports, and simplification of the IF extraction with compact chip size. A star mixer using the novel miniature hybrid is implemented through a 0.15 mm PHEMT process. The measured conversion loss is 6.2-15 dB, the LO-to-RF isolation is 22.2-35.8 dB, and the LO-to-IF isolation is 19-32.1 dB at 16-38 GHz. The size of the DBM is only 0.53 mm².

H17

An ultra-low-power 60 GHz Low-Noise Amplifier for Wireless HD applications

Advisor: Shuo-Hung Hsu

Designer: Wei-Han Cho, Po-Yu Chang



Abstract

A low-power 60 GHz low noise amplifier (LNA) with a 12.5-dB peak gain at 57.3 GHz, and a 5.4-dB minimum NF is realized in a 90-nm CMOS technology. This LNA is composed of cascaded common-source stages. The gate-source transformer-feedback technique is used in the input stage for simultaneous input impedance and noise matching, and the source-drain transformer-feedback technique is used in the following stages for inter-stage and output matching. This LNA consumes 4.4 mW from a 1 V supply and the chip area is 0.036 mm².

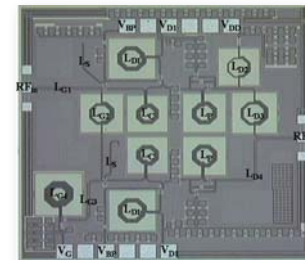
H18

Study of 3-10 GHz Low Power, 20 dB High Power Gain, and 2.7 dB Low Noise Distributed Amplifier using noise-suppression techniques.

IC NO. T18-99A-86

Advisor: Yo-Sheng Lin

Designer: Jin-Fa Chang



Abstract

We demonstrate a 1.2-8.6 GHz two-stage distributed amplifier (DA) with cascade gain cell, which constitutes two enhanced CMOS inverters, using standard 0.18 μm CMOS technology. Multiple noise suppression techniques, including three noise-suppression/gain-peaking inductors and an RL terminal network, were used to achieve flat and low noise figure (NF) and flat and high power gain (S₂₁) at the same time. At low-gain (LG) mode, the DA achieved S₂₁ of 11.41 ± 1.39 dB and an average NF of 3.74 dB for frequencies 1.2~8.6 GHz with a power dissipation (PDC) of 9.85 mW. At high-gain (HG) mode, the DA consumed 46.85 mW and achieved flat and high S₂₁ of 17.1 ± 1.5 dB with an average NF of 3.52 dB for frequencies 1.5~8.2 GHz.

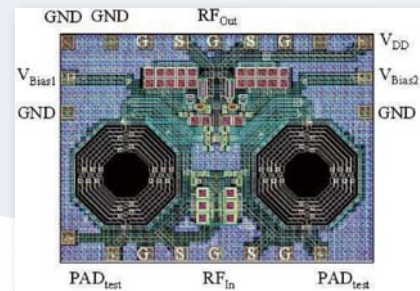
H19

The Capacitive Cross-Couple Common Gate wideband Low Noise Amplifier with Transformer Feedback for improving Noise Figure

IC NO. T18-99B-20

Advisor: Tzyy-Sheng Horng

Designer: Rong-Fu Ye



Abstract

This study proposes a wideband low noise amplifier (LNA) with noise-canceling and positive-negative dual loop feedback. To achieve low noise figure (NF) and wideband input matching, the capacitance cross-coupled common-gate (CCC-CG) can be adopted. However, the CCC-CG design methodology for LNA is tradeoff between NF and matching bandwidth. Therefore, this study proposes a positive feedback that is realized with transformer magnetic coupling to further improve NF \ matching bandwidth and power gain. The measured results exhibit a S11 below -10 dB, a wideband operation of 1-8 GHz, a power gain of 16.5–13.5 dB, a NF of 2.2–2.85dB, a IIP3 of -2–3.5 dBm over the entire RF band. The chip power consumes 11.7 mW

H20

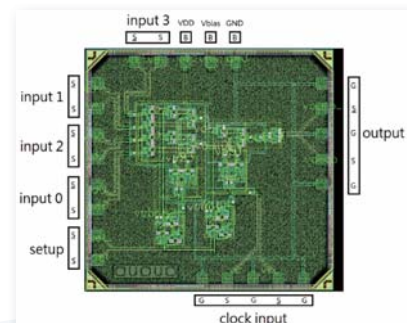
A Novel MUX-FF Circuit for Low Power and High Speed Serial Link Interfaces

IC NO. T90RF-99B-02

Advisor: Ching-Te Chiu

Designer: Wei-Yu Tsai

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Abstract

A novel multiplexer-flip-flop (MUX-FF) topology using the current mode logic (CML) is presented. A CML multiplexer-latch (MUX-latch) is proposed by combining a multiplexer and the loopback storage part of a latch into a single module so that the buffer part of a latch can be removed. A MUX-FF is implemented by cascading two stages of MUX-latches. The output of a MUX-FF is edge-triggered, so it is insensitive to input noise. Latches are placed between the MUX-Latches, so all the inputs of the MUX-Latch are symmetric. Power and area can be reduced due to the removal of DFFs. Measurement result shows that a 4 to 1 MUX-FF can achieve the frequency as 1.8Gbps with the power consumption as 123.5mW.

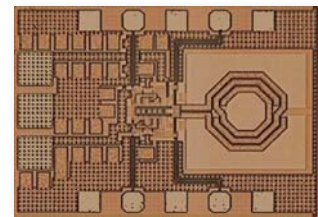
H21

X-band Low-Power VCO with Frequency Divider Chain for Phase-Locked-Loop

IC NO. T90RF-99B-02

Advisor: Shuo-Hung Hsu

Designer: Wei-Sung Chang



Abstract

A combined VCO and prescaler using current-reuse technique is realized in 0.18 μm CMOS technology. With the reused current paths, the proposed circuit topology includes two function blocks, an NMOS CML prescaler stacking directly on a PMOS VCO without the buffer stage. Under a VDD of 1.9 V, the circuit can operate at 10 GHz with a power dissipation of only 4.91 mW. The measured phase noise of the VCO output signal is -113.1 dBc/Hz at 1 MHz offset.

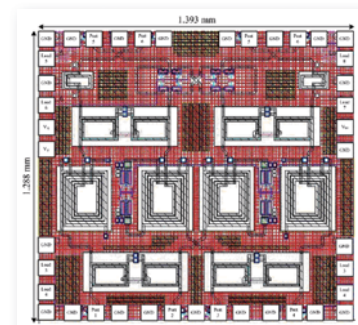
H22

A New 4-by-4 Butler Matrix with Six-Beams

IC NO. T18-99B-54

Advisor: Chia-Chang Chang

Designer: Ruey-Hsuan Lee



Abstract

The Butler matrix is targeting on the resolution issue. By switching the phase shifters and exchanging the order of output ports, six individual beams can be produced from a 4-way Butler matrix. This chip was designed at 5.8 GHz with circuit area of 1.29 x 1.39 mm².

H23

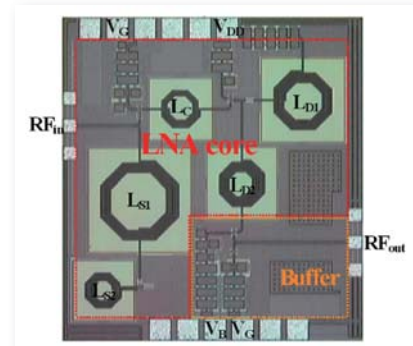
Study of 2.17mW Low Power, Low Noise Amplifier for Ultra-Wide-Band System Applications.

IC NO. T18-98D-107

Advisor: Yo-Sheng Lin

Designer: Jin-Fa Chang

:



Abstract

A low-power (2.76 mW) common-gate (CG) low-noise amplifier (LNA) for ultra-wideband (UWB) systems using standard 0.18 mm CMOS technology is demonstrated. Instead of the traditional single parallel inductor (LS1 only), we propose a new matching network consisting of a series LS1-RS1 in series with a parallel LS2-RS2 to enhance the input matching bandwidth. Flat and high S21 was achieved by using the connecting inductor LC and the peaking inductor LD2 to compensate the gain loss at medium-frequency and high-frequency, respectively. In addition, for suitable values of LC and LD2, flat and low NF (i.e. a nearly critically-damped Q-factor for the second-order NF frequency response) can also be achieved. Over the 3-10 GHz band of interest, the LNA achieved S21 of 10.1 ± 1.7 dB, minimum NF of 3.9 dB (at 4 GHz) and an average NF of 4.6 dB. The power dissipation was 2.76 mW, and the corresponding figure-of-merit (FOM) was 4.3. Both are of the best results ever reported for a CMOS UWB LNA.

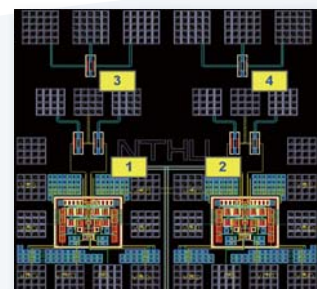
H24

A New Linearization Technique for Cascode Power Amplifier

IC NO. TN90RF-99A-08

Advisor: Kun-You Lin

Designer: Tzung-Chuen Tsai



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Abstract

This work proposes a 57-to-66-GHz power amplifier with a modified linearizer by using 90-nm LP CMOS monolithic millimeter-wave integrated circuit (MMIC) technologies. The pre-distortion linearizer that we developed does improve the power performance of the power amplifier. Under the desired mode, the measurement results of the power amplifier show a PAE at OP_{1dB} up to 10.7% while maintaining 14-dB small signal gain, 10.5-dBm OP_{1dB} and 13.3-dBm P_{sat} . It is the highest PAE at OP_{1dB} for millimeter-wave CMOS power amplifiers which ever been published. Under another mode, the power amplifier provides 14.5-dBm P_{sat} and has peak PAE of 18.8%, which is one of the highest peak PAE in the world.

The Honorable Mention Design Award of MEMS

H25

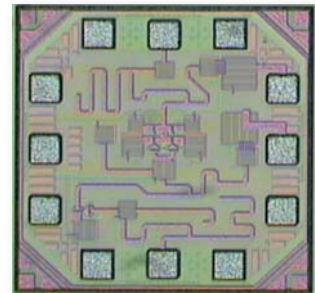
Design and Implementation of CMOS-MEMS In-plane Free-free Beam Resonators

IC NO. D35-99D-02

Advisor: Wei-Leun Fang

Designer: Ming-Han Tsai

:



Abstract

This study focused on a 3.2MHz in-plane free-free beam resonator design. The major characteristics are to use the metal wet-etching post process to obtain a capacitive sensing gap defined by CMOS minimum metal rules. Typical dry-etching post CMOS process can only fabricated the sensing gap with about 1.5 to 2.0 μ m which is too large for resonators design. The CMOS dielectric material, SiO_2 , is used as the main structure of the resonator to replace the ductile Al material for higher Q-factor. Furthermore, the free-free beam is only supported by an via structure to minimize the anchor loss.

Research-Oriented Chips in 2011 CIC MPC Service

	D35:	TSMC 0.35µm Mixed-Signal 2P4M Polycide 3.3/5V
	MEMS35:	0.35µm CMOS MEMS Post-Process
	BioMEMS35:	0.35µm CMOS BioMEMS Post-Process with gold
	SiG35:	TSMC 0.35µm BICMOS Mixed Signal SiGe General Purpose Standard Process USG AI 3P3M 3.3V
	T25HV:	TSMC 0.25µm CMOS HIGH VOLTAGE MIXED SIGNAL BASED BCD 1P5M SALICIDE 2.5/5/60V
	SiGe18:	TSMC 0.18µm BICMOS Mixed Signal SiGe General Purpose Standard Process FSG AI 3P6M 1.8&3.3V
	T18:	TSMC 0.18µm CMOS Mixed Signal RF General Purpose Standard Process FSG AI 1P6M 1.8&3.3V
	MEMS18:	0.18µm CMOS MEMS Post-Process
	TN90RF:	TSMC 90 nm CMOS Mixed Signal RF Low Power Standard Process LowK Cu 1P9M 1.2&2.5V
	UN90:	UMC 90nm Logic & Mixed-Mode 1P9M Process Low-K
	P15:	WIN 0.15µm PHEMT

D35-99A		
IC number	Institution	Project name
D35-99A-01	NTHU	Comparison with different type Square-Frame Resonator (SFR) CMOS -MEMS resonator and filter
D35-99A-02	NTHU	CMOS Thin Film Residual Stress Extraction Method
D35-99A-03	NTHU	Using polymer material to improve sensing range of capacitive tactile sensor
D35-99A-04	NTHU	A CMOS tactile sensor combine polymer and metal vapor deposition process
D35-99A-05	NTHU	Using CMOS platform to fabricate Fabry-Perot interferometer structure
D35-99A-06	NTHU	A CMOS Fully Differential Capacitive Accelerometer with Sacrificial SiO ₂ etching
D35-99A-07	NTHU	Implementation of novel sub micron out-of-plane accelerometer
D35-99A-08	NTUT	Sensitivity enhancement for motion detector sensor by adding nickel structure
D35-99A-09	NTUT	Electric-magnitude actuator applied on glucose sensor compatible with CMOS-MEMS fabrication
D35-99A-10	NCHU	Electronic Detection of Human Meridian Acupuncture Circuit and device
D35-99A-11	LHU	A Low-Dropout Voltage Regulator Using Current Compensation Technology
D35-99A-12	NCHU	A 8-bits successive approximation ADC with Binary switch array Capacitor Technique
D35-99A-13	NCTU	A Switching DC-DC Buck Converter With Floating Reference Voltage and Current Mode Control
D35-99A-14	NTUST	Coupled-signal enhanced quadrature VCO using transformer
D35-99A-15	NTUST	The research of VCO's reliability after it is exerted stress
D35-99A-16	NTUST	Using 0.35 μ m technology designs a 7.8GHz low power and low phase noise with feedback- transformers Colpitts VCO
D35-99A-17t	NCCU	Avalanche photodiode boundary effect and it's supporting circuits for a 3D image sensor
D35-99A-18	NTUST	High Accuracy Switched-Capacitor Cyclic Digital-to-Analog Converter
D35-99A-19	YUNTECH	Designed A Variable-Gain Transimpedance Amplifier of A CMOS Optical Receiver Front-end
D35-99A-20	NTUT	A New Current-Mode-Controlled Buck Converter with Load-Regulation Improvements using Feed-Forward and Loading-Current Controlled Techniques
D35-99A-21	NTUT	A New Fast-Transient-Response Buck Converter with Fast-Transient-Response Using Adaptive Pulse-Width Control Techniques
D35-99A-22	NTUT	A new LED driver using light-balanced control techniques with current sensing circuits
D35-99A-23	NTUT	Sequential PWM LED Driver Utilizing DLL Technique with Current Sensing Correction (CSC)
D35-99A-24	NTHU	Computational Sensor for Visual Tracking with Address Event Represent array
D35-99A-25	NTHU	The study of CMOS imaging system & microcoil manipulation on DNA-sequence
D35-99A-26	NTHU	A Continuous-Time Differential Capacitive Sensing Circuit for CMOS-MEMS z-axis Accelerometer
D35-99A-27	NTHU	Integration and Implementation of CMOS-MEMS two-axis Accelerometer and Capacitive Sensing Circuits
D35-99A-28	NTHU	Design of a Current-Mode Buck Converter with Phase Lock Loop
D35-99A-29	NTHU	Design of a wide Load Range, High Efficiency Digitally-Controlled Single Mode Converter with Dynamic Frequency Scaling Technique
D35-99A-30	TTU	A 12-bit LCD Source Driver With Segmented RCDAC Technique Reduce Layout Area
D35-99A-31	NCTU	3D Optical Proximity Sensing Circuit Design
D35-99A-32	NCTU	Novel front-end array sensing circuit design of all kinds of size capacitive touch panel
D35-99A-33	NTU	Ultrasonic Wireless Data Transmission and Stimulator

IC number	Institution	Project name
D35-99A-34	NTU	Wireless Power Receiver for Neural Stimulator
D35-99A-35	NTPU	Design of a Class-D Audio Amplifier with EMI Reduction
D35-99A-36	NTPU	Multi channel of constant current LED driver with Temperature and Voltage Compensation
D35-99A-37	NCKU	The High-Speed Rail-to-Rail Output Buffer with Current-Positive-Feedback Ultra Low Static Current
D35-99A-38	NTHU	A 8×8 CMOS Capacitive BioSensor Array
D35-99A-39	NTHU	CMOS-MEMS tactile Sensor array
D35-99A-40	NCNU	A Novel Area-Reduction 8-bit Column Driver for TFT-LCD Application
D35-99A-41	NCHU	Integrated polyaniline glucose sensors with readout circuitry
D35-99A-42+m	NTUT	Directional and smart microphone array by CMOS-MEMS fabrication process
D35-99A-43m	NTUT	Integrated into the CMOS process of the altimeter
D35-99A-44m	NCHU	Design of Band Reconfigurable Bandstop Filter with Large Displacement Actuator
D35-99A-45m	CGU	DC~60GHz High Isolation MEMS SPDT Switch
D35-99A-46m	NTU	Field emission device fabricate and test base on MEMS process
D35-99A-47m	NCHU	The novel high-efficiency thermoelectric generator
D35-99A-48m	CJCU	The Design and Research of a pH Metering Chip for Bio-sensing Applications
D35-99A-49u	NTUT	Dual Transmission High Efficiency Wireless Charging Receiver Chip
D35-99A-50u	NTUT	Wireless Power Stimulator
D35-99A-51e	OIT	Design a Three Stages Operational Amplifier for Notch-Filter Applications
D35-99A-52e	NKNU	Bandgap reference circuit with 1.8 v supply voltage
D35-99A-53e	NKNU	An Low-Voltage CMOS OpAmp With Bulk-Driven Input Differential Stage
D35-99A-54e	LHU	A Low Voltage Micro-Power Bandgap Reference Circuits
D35-99A-55e	CTU	3Bit 20MHz CMOS Flash ADC
D35-99A-56e	NTUST	Clock-Deskew Buffer Using a SAR-Controlled Delay-Locked Loop
D35-99A-57e	OIT	A Sub-1V Low Voltage Bandgap Reference
D35-99A-58e	KUAS	Voltage controlled multiple loop ring oscillator
D35-99A-59e	KUAS	Optical receiver analog front-end for optical fiber communications
D35-99A-60e	KUAS	Laser diode driver with adjustable current
D35-99A-61e	NKFUST	Design of bandgap reference voltage circuit
D35-99A-62e	NKFUST	Digital Type Pulse-Width Modulation by SPI Interface Control of 4-Channel LED Driver Chip.
D35-99A-63e	NKFUST	Digital Type Pulse-Width Modulation by D-Latch of LED Driver Circuit.
D35-99A-64e	NKFUST	A digital encode for sensor of water meter number
D35-99A-65e	NCHU	On-die-termination control using analog circuits
D35-99A-66e	NCHU	High Performance programmable energy modulation of buck converter and Improve load current detector
D35-99A-67e	NUU	High efficiency four-phase all PMOS charge pump circuit
D35-99A-68e	NKFUST	A SAR-Based Time-To-Digital Converter With Binary-Weighted Structure
D35-99A-69e	NKFUST	A Low Power CMOS Voltage Bandgap Reference Circuit Design
D35-99A-70e	NUTN	Photo-sensitive Diode with Nine Pixels
D35-99A-71e	NTHU	A Programmable Linear Regulator Suitable in Dynamic Voltage Scaling System
D35-99A-72e	SJU	DLL-based frequency multiplier
D35-99A-73e	NCNU	A ultra-low power buffer for TFT LCD
D35-99A-74e	NCNU	Rail-To-Rail High Speed Output Buffer for TFT-LCD Application
D35-99A-75e	YUNTECH	DUAL-DIRECTION AND MULTIPLE FREQUENCIES ELECTRICAL SIMULATOR SYSTEM

IC number	Institution	Project name
D35-99A-76e	CYCU	Incremental Delta-Sigma Analog to Digital Converter Applying in Ion Sensitive System
D35-99A-77e	CYCU	Fully differential incremental adc
D35-99A-78e	CYCU	Applied to Ion Sensor Systems in a Current-Steering DAC
D35-99A-79e	CYCU	Two Stage Fold Cascode Amplifier Applying in Ion Sensitive System
D35-99A-80e	CJCU	An Array Sensing Circuit for pH Detection

D35-99B		
IC number	Institution	Project name
D35-99B-01	NYHU	Monolithic capacitive type sensing chip
D35-99B-02	NYHU	A Monolithic CMOS-MEMS Tri-Axes Capacitive Type Accelerometer
D35-99B-03	NYHU	Tilt Sensor Integrated with Metal Wet-etching
D35-99B-04	NYHU	A CMOS-MEMS Accelerometer Design with wet etching silicon dioxide post process
D35-99B-05	NYHU	Implementation of Self-Integrating Capacitive Out-of-Plane Accelerometer with Fully Differential Sensing
D35-99B-06	NTUT	CMOS-MEMS electric-magnetic actuator applied in ENFET bio-medical applications
D35-99B-07	NTUT	An integrated planar micro-fluxgate magnetic sensor with double frequency circuits
D35-99B-08	NCCU	Programmable bidirectional sensing and pacing system for RF-coupling rechargeable implantable Pacemaker
D35-99B-09	NCCU	A Wireless Front-end for Implant Rechargeable Pacemaker Applications
D35-99B-10	FJU	A PWM Controller with Multiple-Access Table Look-up for DC-DC Buck Conversion
D35-99B-11	NCUE	Transceiver design for the Bus Driver of the FlexRay Communication System
D35-99B-12	CHU	CMOS Current-Mode Quadratic Circuit Synthesizer
D35-99B-13	NSYSU	Class-S Envelope Amplifier
D35-99B-14	NCTU	A High Efficiency Current-Mode Buck DC-DC Converter With Fast Transient Response
D35-99B-15	NCTU	A capacitor-free low-dropout linear regulator with fast self-reacting transient response and high-stability full-range load current
D35-99B-16	NCTU	A high-bandwidth continuous-time sigma-delta modulator in 0.35um CMOS
D35-99B-17	NCTU	Fast Frequency and Phase Acquisition PLL using Digital Calibration Circuit
D35-99B-18	NYMU	Design of using DAC in photo receiver retina stimulate test chip
D35-99B-19	NYU	A Wide Locking Range ILFD with the New Type Waffle MOSFET
D35-99B-20	NYU	Divide-by-Three Injection-Locked Frequency Divider with a Wide Operation Range
D35-99B-21	NYU	Low Power Colpitts Voltage-Controlled-Oscillator
D35-99B-22	NYU	Designing an Active Inductor of Wide-Band Divided-by-Two Injection Locked Divider
D35-99B-23	NYU	A Hartley VCO uses a novel MOSFET layout topology
D35-99B-24	NYU	A low Power Voltage Control Oscillator with Twin-tanks
D35-99B-25	NYU	A Wide Locking Range divide-by-3 ILFD use Low Parasitics Effect of MOSFET
D35-99B-26	NCKU	A Successive Algorithm Register Analog-to-Digital Converter Built-in Self Test Circuit Design
D35-99B-27	NCNU	Pseudo-differential capacitive sensor front-end circuit design
D35-99B-28	NCHU	Design of a Pipelined Analog-to-Digital Converter
D35-99B-29	NTUST	High Efficiency Controller for Soft-Switching DC/AC Inverter
D35-99B-30	NTUST	High Efficiency Intelligent Controller For Half-Bridge Series Resonant Converter
D35-99B-31	NYU	A Self-Calibration with Frequency Hopping DC-DC Converter
D35-99B-32	NKFUST	A Low-Cost Cyclic CMOS Time To Digital Converter With Over-Temperature-Compensation scheme

IC number	Institution	Project name
D35-99B-33	NTUT	Average-Current-Mode-Controlled Boost Converter Suitable for LED Driver
D35-99B-34	NYU	Current-Pulsed Laser-Diode Driver
D35-99B-35	NYHU	Multi-Channel Neural Recording/Stimulation System Design
D35-99B-36	NUU	A DNA sensor array with differential readout architecture
D35-99B-37	NYHU	An embedded,Bidirectional-Programmable Non-Volatile Analogue Memory array
D35-99B-38	NTUT	A new low-voltage high-efficiency hysteresis-current-controlled DC-DC flyback converter with active current-sensing and synchronous-rectification techniques.
D35-99B-39	NUTN	Design of Circuit for Piezoelectric Quartz Crystal Microbalance biosenso Application
D35-99B-40	NTUT	Using electroless nickel plating process to fabricate CMOS-MEMS probe chip
D35-99B-41	NTUT	High sensitivity and smart microphone array by CMOS-MEMS fabrication process
D35-99B-42	NTUT	Intelligent Microfluidics Bio-chip
D35-99B-43	NCHU	A rail to rail class-ab amplifier with an offset cancellation
D35-99B-44	NCTU	A Novel AMOLED Pixel Circuit to Alleviate Degradation
D35-99B-45	NCTU	Design of the Multi-Channel Gate Driver for AMOLED Pixel Circuit to Alleviate Degradation
D35-99B-46	NCTU	A Novel High Efficiency Energy Harvesting System with No Battery
D35-99B-47	NCTU	Novel front-end sensing circuit design of two sensing methods for large size capacitive touch panel
D35-99B-48	NTPU	A Synchronous Dual-Mode Boost Regulator using Spread-Spectrum Technique
D35-99B-49	NTPU	A High-Efficiency PWM/PFM-Mode Operation with Save Power function Control
D35-99B-50	NCKU	A Low Dropout Linear Regulator with High Power Supply Rejection over wideband frequency for SoC application
D35-99B-51	NCKU	A Low Voltage Low-Dropout Regulator with Transient Response Enhancement for SoC
D35-99B-52m	MUST	Silicon Photonics Device Application for Optical Communications Network
D35-99B-53	NCTU	HYBRID BIOMIMETIC MEMS MICROPHONE FOR SOUND SOURCE LOCALIZATION
D35-99B-54	STU	source driver and sampleling circuit
D35-99B-55	NCNU	A 10 bit DAC-embedded OP TFT-LCD Column Driver
D35-99B-56	NCNU	A 10 bit voltage-segment of Low Cost TFT-LCD Column Driver
D35-99B-57	NCNU	A 10-bit Source Driver with Current-Injection Two-stage DAC for LCDs
D35-99B-58	NCNU	A 8-bit Low Cost Source Driver
D35-99B-59	NCNU	A 10-bit Switched-Capacitor Source Driver for TFT-LCD Application
D35-99B-60	NCHU	Intergrated glucose sensor base on polyaniline/MWNTs hybrid material with readout circuit
D35-99B-61	NCHU	3-order Micromechanical Bandpass Resonator
D35-99B-62	NCKU	Single-Inductor Four-Switch Voltage-Mode Buck-Boost DC-DC Converter
D35-99B-63	NCKU	A Dual-Mode AC Signal Processing IC for Bio-Sample Detection
D35-99B-64	NCKU	Average-Current-Mode Non-inverting Buck-Boost DC-DC Converter
D35-99B-65	NCKU	A fast transient and low-cost current-mode buck DC-DC converter
D35-99B-66	NYU	A Transceiver for Intra-Body Communications
D35-99B-67u	NYU	A DLL-Based FSK Low Power Receiver For 300~915 MHz ISM Band Using Balun Type LNA
D35-99B-68u	NYU	A 10-bit, 1MHz, Low Power DAC for Biomedical Applications
D35-99B-69u	NTUT	Implement thermal coagulation CMOS IC
D35-99B-70u	NTUT	Dual Transmission Electronic Paper Display Chip
D35-99B-71e	NSYSU	R-2R DAC

IC number	Institution	Project name
D35-99B-72e	NSYSU	A Novel Clocked Comparator Architecture with intrinsic Sample-and-Hold capability for High Speed Flash Analog-to-Digital Converters
D35-99B-74e	NSYSU	1kHz 4th-order Bessel active low-pass filter with switched-capacitors
D35-99B-75e	NSYSU	Low Power consumption of Voltage Control Oscillator
D35-99B-76e	NKNU	Adjustable Temperature Sensor using Bandgap Reference Circuit With 1.8v Supply voltage
D35-99B-77e	NKNU	Low Power Signal processor circuit for ISFET sensor
D35-99B-78em	KUAS	Design of CMOS Thermoelectric Infrared Sensor
D35-99B-79em	KUAS	Design and Fabrication of An Humidity Sensor
D35-99B-80e	YZU	Boost Converter
D35-99B-81e	YZU	DC-DC single inductor duoble output converter control system
D35-99B-82e	CTU	3-Bit CMOS Flash Positive feedback ADC
D35-99B-83e	NTUT	Low Voltage dropout regulation For Sub-1V operation
D35-99B-84e	NTUT	Chip design of a new voltage-mode multi-function biquad filter
D35-99B-85e	FJU	An average current sensing circuit for dc to dc dconverter
D35-99B-86e	NCHU	Low-Offset Buffer Amplifier for Flat Panel Display
D35-99B-87e	NCHU	Switched-Capacitor Type Digital / Analog Converter for Flat-panel Display
D35-99B-88e	NCUE	A smart temperature sensor
D35-99B-89e	NCTU	Optical profile measurement chip fabricated by CMOS MEMS and dry etching technology
D35-99B-90e	NCTU	Voltage promotion function of PWM driver chip.
D35-99B-91e	NCTU	Design of Column and Row Control for Infrared Sensor Array Readout Integrated Circuit
D35-99B-92e	NCTU	5V CMOS Analog Driving Circuit Design for LED Power Control System
D35-99B-93e	NCNU	Temperature Characteristic Measurement for Unit-pixel Readout Circuit of Infrared Sensor
D35-99B-94e	NCKU	A photo sensor with dark current cancellation.
D35-99B-95e	NCKU	Design of Voltammetry Potentiostat for Electrochemical Sensors Application
D35-99B-96e	HFU	Spread Spectrum Clock Generator for LCD
D35-99B-97e	HFU	1.5GHz Frequency Synthesizer
D35-99B-98e	NUU	Low supply voltage CMOS bandgap reference circuit
D35-99B-99e	YUNTECH	A CMOS Optical Receiver Front-end With A Variable-gain Transimpedance Amplifier
D35-99B-100e	NSYSU	Frequency generator and Frequency shift detector
D35-99B-101e	NUTN	A compensated amplifier with inductance of RF filter
D35-99B-102e	NYHU	Implement a High Efficiency and Low Noise Power Management IC with Fast Transient Function of Dynamic Voltage Scaling System
D35-99B-103e	NCHU	Control of Switched Reluctance Motor
D35-99B-104e	NCHU	A Control Circuit Application in High Speed Communication
D35-99B-105e	NCHU	Low dropout regulator for High Speed Circuit
D35-99B-106e	NFU	Adaptive cascaded buffer
D35-99B-107e	NFU	Design of a Digital-Controlled Oscillator
D35-99B-108e	NCKU	A buck current mode DC-DC converter
D35-99B-109e	STU	Multi-Channel Chaos Oscillator with Digital Switch
D35-99B-110e	NCNU	A 10 bit Low Cost TFT-LCD Column Driver
D35-99B-111e	NCNU	A 10-bit DAC Circuit Design for LCD Source Driver
D35-99B-112e	NCNU	Design of a 10-bit Source Driver

IC number	Institution	Project name
D35-99B-113e	FCU	The second order operational transconductance amplifier
D35-99B-114e	CYCU	The TPC circuit
D35-99B-115e	CYCU	Low Temperature Drift Low Power ISFET Readout Circuit
D35-99B-116e	KSU	4 BIT Digital to Analog Converter

D35-99C		
IC number	Institution	Project name
D35-99C-01	NTHU	Smart Dynamic Balance system using CMOS MEMS technique
D35-99C-02	NTHU	A thermal in-sensitive CMOS-MEMS Capacitive Accelerometer
D35-99C-03	FCU	Design Of A Tunable Highly Linear MOS Transconductance Amplifier
D35-99C-04	NTUT	The application of Microhotplate on gas sensors integrated with MEMS technology.
D35-99C-05	NTUT	Design of the White LED Backlight Driver with 3-bit Dimming Controller
D35-99C-06	NTHU	CMOS-MEMS Resonator Array Design with Low Motional Impedance
D35-99C-07t	NSYSU	Applying four-port de-embedded and polysilicon shield plane technique of MOSFET
D35-99C-08	FJU	A High-Speed Frequency Acquisition PLL Using Phase Frequency Detector with Variable Gain
D35-99C-09	LHU	A Transient Enhanced Low Dropout Regulator with Buffer Impedance Attenuation
D35-99C-10	NCTU	Thin film MEMS coils as a wireless power module for bio-potential sensing application
D35-99C-11	NCUT	High Performance Binary Signed-Digit to Conventional Binary Converter
D35-99C-12	NCTU	Low Power Low Cost Hybrid Delta-Sigma ADC
D35-99C-13	CGU	Design Current-mismatch Adjust circuit of PLL with Static Phase Error Calibration
D35-99C-14	NTUST	A Low Power Differential Clapp-VCO
D35-99C-15	NTUST	A high performance Quadrature VCO
D35-99C-16	NTUST	A 7 GHz high performance Voltage controlled oscillator
D35-99C-17t	NCCU	Avalanche Photodiode Array Crosstalk Research and Modeling
D35-99C-18	NTUST	High Accuracy Successive-Approximation Analog-to-Digital Converter Based on Nonlinear Capacitors
D35-99C-19	NTUT	A low-voltage low-noise high-efficiency DC-DC flyback converter with delta-sigma modulator.
D35-99C-20	NTUT	Low-Voltage High-Efficiency Positive Buck-Boost DC-DC Converter Using Average-Current-Controlled Techniques With Digital Operational Amplifiers.
D35-99C-21	NTUT	A Low-Voltage Class-D Audio Amplifier Using Delta-Sigma Modulator
D35-99C-22t	NCUE	40-/77-GHz mm-Wave Multilayer Dual-band BPF
D35-99C-23t	NCUE	40 -/ 77 -GHz mm -Wave Soltline Dual-Band BPF
D35-99C-24	NTUT	A Low-Voltage High-Efficiency DC-DC Flyback Converter using Average-Current-Controlled Techniques without Slope Compensation Circuit.
D35-99C-25	NTUT	4 in 1 environment sensor chip
D35-99C-26	NTUT	Using electroless nickel plating process to fabricate CMOS-MEMS RF Probe Chip
D35-99C-27	NTUT	Chemical plating technology and CMOS-MEMS technology for motion detector sensor
D35-99C-28	NTUT	Combined with bone conduction and air microphone on a single chip speech recognition microphone
D35-99C-29	TKU	A Low Dropout Regulator for DVS Application.
D35-99C-30	FCU	Study on the Design and Implementation of a High Conversion Ratio 4-Phase Mixed-Structure Charge Pumps

IC number	Institution	Project name
D35-99C-31	NTPU	PWM Boost Regulator with High Accuracy Multichannel Constant Current LED Driver
D35-99C-32	NCKU	Design of Bidirectional Voltammetry Potentiostat with Wide-Range Electrochemical Sensing
D35-99C-33	NTU	Field emission device breakdown voltage test based on D35 process
D35-99C-34	NCCU	Integration and Implementation of CMOS-MEMS Ultrasonic Transducer and receive amplifier
D35-99C-35	NCKU	Low Noise at Switching Frequency Buck Converter Using Sigma-Delta Modulator Control
D35-99C-36	NCNU	10-bit DAC for TFT-LCD Column Driver
D35-99C-37	NCNU	A 10-bit TFT-LCD Column Drive using Switched-Capacitor circuit
D35-99C-38	NCNU	A 10-bit Source Driver with Current-Injection Two-stage DAC for LCDs
D35-99C-39	NCNU	Design of a Low Cost Column Driver for LCDs
D35-99C-40	NCHU	The Touch Micro Pressure Sensor
D35-99C-41	NCUE	A High Current Efficiency Rail-to-Rail Buffer for Low Dropout Regulator
D35-99C-42	NCKU	Design of a Wide-Input-Range DC-DC Converter with Switched-Capacitor Technique
D35-99C-43	NTUST	Control IC for a Boundary-Mode Boost Power Factor Corrector
D35-99C-44	NTHU	An Analog Front-End IC For Self-Adaptive Fluidic Probe
D35-99C-45	CJCU	4-bit Array Complex Multiplier
D35-99C-46u	NTU	A Transceiver for Bio-Sensor Applications
D35-99C-47u	NTU	A DLL-Based FSK Low Power Receiver For 300~915 MHz ISM Band Using Balun Type LNA
D35-99C-48u	NTUT	Dual Transmission High Efficiency Wireless Charging Receiver Chip
D35-99C-49u	NTUT	Implement Thermal Coagulation CMOS IC
D35-99C-50m	NTU	Implementation of MEMS Ultrasound Detector
D35-99C-51m	NCCU	Design and Implementation of A CMOS MEMS Sigma-Delta Capacitive Microaccelerometer
D35-99C-52tm	NCUE	Research on testing of Sol-gel Gas Sensing Material
D35-99C-53m	NCNU	Design of A Capacitive Tri-Axis Accelerometer
D35-99C-54-bio	NTHU	Design a capacitive accelerometer using electroplating technique
D35-99C-55e	FCU	Ultra Wideband CMOS Variable Gain Amplifier
D35-99C-56e	NKNU	2V LOW POWER TEMPERATURE-TO-FREQUENCY CONVERTER CONSISTING OF SUBTHRESHOLD MOSFET CIRCUITS FOR SMART TEMPERATURE SENSOR
D35-99C-57e	NTUT	Design for using Sub-1V temperature calibration to mobile device with power monitor and reset functions IC
D35-99C-58e	YUNTECH	Design of Integrated Readout Circuit for Biomedical Sensing System
D35-99C-59e	KUAS	Wideband Automatic Gain Control Amplifiers
D35-99C-60e	NTHU	TSMC 0.35 μ m Mixed-Signal 2P4M Polycide 3.3/5V
D35-99C-61e	NTHU	Buck Converter Using Variable Current Synthetic Ripple Control with Accuracy Current Sensing
D35-99C-62e	NCUE	8-bit multiplier
D35-99C-63e	NCHU	A FSK modulator based on PLL
D35-99C-64e	NCHU	A FSK demodulator based on PLL
D35-99C-65e	NCUT	High-Gain CMOS Amplifier with variable Gain capability
D35-99C-66e	NCNU	Preamp-Driving Circuit of LED Color Modulation and Controller
D35-99C-67e	NDHU	High precision current sensing circuit with synchronous tracking

IC number	Institution	Project name
D35-99C-68e	CYUT	Chip Design Of Phase Generator For Switched-Capacitor Boost DC-AC Inverter
D35-99C-69e	CYUT	Controller Chip Design of Reduced Frequency Switched-Capacitor DC-AC Converter
D35-99C-70e	CYUT	Chip Design of Two-Phase Multi-Stage High-Conversion-Ratio Switched-Capacitor Bidirectional Converter
D35-99C-71e	FCU	Design of detection circuits for high speed LVDS interface
D35-99C-72e	NDHU	16-bits Multiple Input Signature Register for Built-In Self-Test
D35-99C-73e	NQU	Circuit diagram of the low-voltage rail-to-rail input stage with class-AB push-pull output stage
D35-99C-74e	TKU	A low dropout regulator with programmable output voltage for DVS application.
D35-99C-75e	THU	Two-Stage Op Amps
D35-99C-76e	THU	D flip-flop
D35-99C-77e	THU	Two Stage Operation Amplifier
D35-99C-78e	THU	TWO-STAGE CMOS OP AMP
D35-99C-79e	NCKU	Non-inverting buck-boost converter with buck/boost mode transition technique for WCDMA RF power amplifier
D35-99C-80e	THU	The core of Intelligent Charging Management IC about applying in the advanced livelihood of the people energy conservation system
D35-99C-81e	THU	Phase/Frequency detector
D35-99C-82e	NCNU	A 10-bit TFT-LCD Column Driver with 4-bit Interpolation
D35-99C-83e	NCNU	A 10-bit TFT-LCD Column Driver with 4-bit DAC Embedded OP
D35-99C-84e	NCNU	A 10-bit Capacitor-type DAC for TFT-LCD Source Driver
D35-99C-85e	FCU	Operation Amplifier for class D power amplifier
D35-99C-86e	FCU	A Phase Frequency Detector with Prediction-Based Edge for Phase-Locked Loop System
D35-99C-87e	CYCU	Two-Point calibration processor chip design using a clock-gated method
D35-99C-88e	NCKU	12-bit Current-steering Digital-to-Analog Converter for electrochemistry.
D35-99C-89em	NCUE	Research on the Seeback Effect of Nano-Porous Structure
D35-99C-90em	CYUT	Hydrogen detectors with automatic modulated voltage gain

D35-99D		
IC number	Institution	Project name
D35-99D-01	NTHU	CMOS-MEMS system for physical sensors
D35-99D-02	NTHU	Design and implementation of CMOS-MEMS in plane free-free beam resonators
D35-99D-03	NTHU	A CMOS-MEMS Accelerometer Design which is ineffective in residual stress
D35-99D-04	NTHU	Implementation of Fully Differential Capacitive Out-of-Plane Accelerometer with Integration of Proofmass and Sensing Electrode
D35-99D-05	NTHU	Design a CMOS-MEMS Accelerometer with electroplating post process
D35-99D-06	NTHU	Dual-axis Smart Dynamic Balance system
D35-99D-07	FCU	Design of Voltage Controllable Highly Linear Transconductance Amplifier
D35-99D-08	NTUT	An novel 3D integrated micro-fluxgate magnetic sensor with double frequency circuits
D35-99D-09	NTHU	CMOS-MEMS Out-of-Plane Mode Resonator Array Monolithically Integrated with Mega-Ohm Transimpedance Amplifier
D35-99D-10	NTHU	Flexural -mode CMOS-MEMS micromechanical resonators with large transduction area and deep sub-micron gap spacing
D35-99D-11	NCCU	An analog front-end circuit with auto-tuning calibration 60-Hz notch filter for ECG detection system

IC number	Institution	Project name
D35-99D-12	FJU	Linearized All MOS Transconductance Amplifier
D35-99D-13	YUNTECH	Test Structure of PWM-Based Multilevel Class-D Amplifier with Integrated Over-current Protection System
D35-99D-14	YUNTECH	A Novel Design of A Robust Linear Triangle Wave Generator for ADC Testing
D35-99D-15	NTUT	Implement thermal coagulation CMOS IC
D35-99D-16	NCYU	A low power, low noise, multi-channel AFE amplifier for bio-potential sensing application
D35-99D-17	NCUT	Improved High-Speed Carry Select Adder
D35-99D-18	NCYU	A Three-axis Piezoresistive Micro Accelerometer with Integrated Circuit by CMOS-MEMS
D35-99D-19	CGU	Design of Fast Locking all-digital duty cycle corrector circuit with wide range input frequency
D35-99D-20	NTUT	QVCO Using PMOS-Ring Technique
D35-99D-21	MCKU	A 10-ps Resolution Sub-range Time-to-Digital Converter
D35-99D-22	NCKU	Dual-Path Transient Quiescent Current Enhancement Low-Dropout Regulator with Capacitor-Free and Ultra Fast Transient Response Characteristics
D35-99D-23	FCU	High Speed Laser Diode Driver
D35-99D-24	NTNU	Current mode Synchronism Buck Converter with A Novel Non-overlap Circuit
D35-99D-25	YUNTECH	Design of A CMOS Optical Receiver Front-end
D35-99D-26	NKFUST	A High Accuracy Smart Temperature Sensor with One-Point Calibration
D35-99D-27	NTHU	A Positive Feedback-Based Analog to Digital Converter for Neural Recording
D35-99D-28	NTUT	Human-Body implantable chip of blood vessel pressure
D35-99D-29	NTUT	Using wet etching (KOH) process and electroless nickel plating process to fabricate CMOS-MEMS probe chip for testing SoC
D35-99D-30	NTUT	Temperature compensation with high precision gas and humidity sensor
D35-99D-31+m	NTUT	Development of planar cell counter integrated with switched capacitance amplifier
D35-99D-32	NCHU	A rail to rail class-AB amplifier with an offset cancellation
D35-99D-33	NCHU	Low-Dropout Regulator with voltage-spike detection
D35-99D-34	NCHU	Frequency Automatic Setting of Pulse Width Modulation Controller
D35-99D-35	THU	A Pseudo Fractional-N with 50% Duty Cycle Output Using Low Power Phase Combination Controller
D35-99D-36	NCYU	A Novel Interface Circuit Design Used in Micro-generator
D35-99D-37	NCYU	A Novel Design of Gas Sensor Circuits Used in Biomedicine Special Focus on Organic Thin-Film Transistors
D35-99D-38	NFU	The Design of Low-Power Frequency Doubler and Tripler
D35-99D-39	NTU	Ultrasonic Wireless Neural Stimulator
D35-99D-40	NCU	Low quiescent current dc-dc converter
D35-99D-41	NTHU	A 5x5 CMOS Capacitive BioSensor Array
D35-99D-42	NCNU	A 10-bit Source Driver for Full HD
D35-99D-43	NCHU	Micro-Energy Harvester Based on Thermoelectric
D35-99D-44	NCHU	Micro-Mechanical Sound wave filter of Integrated circuit
D35-99D-45	MCKU	Design of a Inductor less Switching DC to DC Converter
D35-99D-46	NTUT	A Control IC for Full-Bridge Phase-Shifted Series-Resonant DC-DC Converters
D35-99D-47tm	NCUE	Research on testing of Sol-gel Gas Sensing by Nano-Porous Structure
D35-99D-48m	MUST	Micro Actuator Force Sensor Based on CMOS-MEMS Process
D35-99D-49m	MUST	Applied Chemical nickel plating on the post process of a large scale CMOS-MEMS 2D micro scanning mirror

IC number	Institution	Project name
D35-99D-50m	MUST	Investigation of a reflective grating as the device of image processor by CMOS-MEMS process
D35-99D-51m	NCHU	Piezoresistive-Type Micro Touch Pressure Sensor
D35-99D-52e	NSYSU	8-bit Manchester adder
D35-99D-53e	NSYSU	16*32 bits SRAM
D35-99D-54e	NSYSU	8bit booth-multiplier
D35-99D-55e	NSYSU	Carry-Save Adder
D35-99D-56e	NSYSU	8-bit up/down module-N loadable counter
D35-99D-57e	NSYSU	8bit/4bit unsigned integer divider
D35-99D-58e	NSYSU	A 8bit Carry Look-ahead Adder
D35-99D-59e	YZU	DC-DC single inductor double output converter control system
D35-99D-60e	OIT	Design of CMOS Charge Pump Boost Converter
D35-99D-61e	OIT	Implementation of charge-pump phase-locked loop
D35-99D-62e	FJU	A Study of Phase Noise in Coupled Oscillators
D35-99D-63e	KUAS	Optical receiver analog front-end amplifier module
D35-99D-64e	NTHU	A Fast Response With Dynamic Hysteresis Band Buck Converter Using Hysteresis Control
D35-99D-65e	NCUE	A Smart Temperature Sensor
D35-99D-66e	YUNTECH	Low Input Impedance Current Comparator Using in DAC Testing
D35-99D-67e	CYCU	Regulators bias source circuit
D35-99D-68e	HFU	Spread Spectrum Clock Generator(Closed Loop)for LCD
D35-99D-69e	HFU	Spread Spectrum Clock Generator For SATA-I
D35-99D-70e	FCU	High Speed Laser Diode Driver
D35-99D-71e	NKFUST	The Digital Pulse Width Modulation with Temperature Compensation Circuit
D35-99D-72e	NKFUST	A High-Performance Pulse-Width Modulator
D35-99D-73e	NKFUST	The Counter-Based Analog to Digital Converter with Temperature Compensation Circuit
D35-99D-74e	YUNTECH	Design of a Variable-gain Transimpedance Amplifier for Optical Communication Systems
D35-99D-75e	NQU	Integrated CMOS DC-DC Converter with On-Chip Pulse-Width-Modulation Circuit
D35-99D-76e	THU	Acceleration Sensor
D35-99D-77e	THU	Two-Stage Operation Amplifiers
D35-99D-78e	NUTN	Multiplex Frequency Divider With A 25KHz Oscillator
D35-99D-79e	VNU	High precision comparator
D35-99D-80e	THU	Design of a Phase-Locked Loop based on USB2.0 operating at 480Mhz
D35-99D-81e	THU	Design and Implementation of 480MHz Phase-Locked Loop
D35-99D-82e	THU	Design and Implementation of 480MHz Low-Power Phase-Locked Loop for USB 2.0
D35-99D-83e	OIT	Hexadecimal to 7-segment decoder for system in package
D35-99D-84e	NFU	djustable and low-complexity pulse generator design
D35-99D-85e	NTU	PLL with Time Difference Amplifier
D35-99D-86e	FCU	One bandgap voltage circuit of LDO
D35-99D-87e	CYCU	13-bit Fully-Differential Incremental Delta Sigma A/D Converter
D35-99D-88e	CYCU	Design of a Two-stage CMOS Amplifier
D35-99D-89e	CYCU	A 5-bit Successive Approximation Analog-to-Digital Converter
D35-99D-90em	NCYU	Design of 1-axis accelerometer by using CMOS MEMS process
D35-99D-91em	NCYU	Design of the sensing capacitor of a CMOS MEMS accelerometer and the sensing circuit.

D35-99E		
IC number	Institution	Project name
D35-99E-01	NTHU	A performance-improved accelerometer design
D35-99E-02	NTHU	Implement Electrolytic Hydrogenation technology in CMOS-MEMS platform
D35-99E-03	NTHU	Applications accelerometer and E-compass with Dynamic Balance system
D35-99E-04	NTHU	Design of Flat Accelerometer
D35-99E-05	NTHU	Integrate RF-MEMS oscillator to capacitive sensor system
D35-99E-06	NTHU	CMOS-MEMS Square frame oscillator design
D35-99E-07	NSYSU	A New Silicon-Based PIN Diode Inductors for Wideband Impedance Matching Application
D35-99E-08	NCTU	A low dropout regulator with Slew-Rate enhancement for SOC application
D35-99E-09	NCTU	A Switched-Capacitor Voltage Doubler with Continuous Output Regulation by Interleaving Control
D35-99E-10	CGU	All Digital 50% Duty Cycle Corrector
D35-99E-11	NTUST	Wide Locking Range Divided-by-two ILFD with A New TAI of Series PMOS Cross-coupled
D35-99E-12	NTUST	A CMOS VCO Using Tunable Active Inductor For Wide Tuning Range
D35-99E-13	NTUST	A novel three-phase voltage-controlled oscillator.
D35-99E-14	NTUST	Low Phase Noise Quadrature VCO
D35-99E-15	NTUST	A single-ended injection-locked-frequency-doubler with wide locking range
D35-99E-16	NTUST	A single-ended voltage control oscillator with low power consumption
D35-99E-17	NTNU	Current mode Synchronism Buck Converter with PWM/PFM mode increase efficiency at high-load
D35-99E-18	NCCU	3D image sensor arrays using fast parallel reading mechanism
D35-99E-19	YZU	New Compensator for DC/DC Buck Converter
D35-99E-20	NTHU	The VLSI implementation of diffusion network
D35-99E-21	NUTN	Design of 3 Channel Circuit for Multichannel Quartz Crystal Microbalance biosensor Application
D35-99E-22	NTUT	Using KOH wet etching process and electroless nickel plating process to fabricate CMOS-MEMS probe chip
D35-99E-23	NTUT	High sensitive humidity sensor with temperature compensation
D35-99E-24	NCHU	A Self-oscillating power amplifier line driver for ADSL in power line communication
D35-99E-25	NTOU	High Efficiency Dual Mode Switching Regulator for Portable Product Applications
D35-99E-26	NCTU	Real-time Readout Circuit for gas sensor in Biomedical application
D35-99E-27	NTU	Ultrasonic Wireless Neural Stimulator
D35-99E-28	NCKU	A wide load current range, fixed frequency operation, quasi-V2 adaptive on time buck converter
D35-99E-29	NTHU	CMOS-MEMS capacitor-array tactile Sensor with 8bit ADC
D35-99E-30	NTHU	32 X 32 Electrical Stimulation and growth-guiding array
D35-99E-31	NCNU	Design of a 10-bit Switched-Capacitor Source Driver
D35-99E-32	NCNU	A 10b Resistor-Resistor-String DAC with Current Compensation for Compact LCD Driver ICs
D35-99E-33	NCNU	A Non-linear R-string DAC for Compact LCD Column Driver ICs
D35-99E-34	NCNU	A Piecewise Linear 10b DAC with 4b Current DAC for LCD Column Driver
D35-99E-35	NCNU	A 10-bit Column Driver with 4-bit Interpolation
D35-99E-36	FCU	Improve the THD of Class D Amplifiers by the Dual-Feedback Scheme
D35-99E-37	NCHU	A CMOS Capacitive Micro Pressure Sensor Array
D35-99E-38u	NTUT	Rf Feedback High Efficiency Wireless Charging Receiver Chip

IC number	Institution	Project name
D35-99E-39m	NCU	Inverted Connected Meander shaped bimorph (ICMSB) actuators for 3-D scanning lens.
D35-99E-40m	NCKU	CMOS-MEMS of High-resolution Micro-gyroscope
D35-99E-41m	NTHU	MEMS 2-D Scanning Mirror
D35-99E-42m	NTU	Dual-axis accelerometer with capacitance sensing
D35-99E-43-bio	NTHU	Design and comparison a “Hollow” accelerometer with nickel structure
D35-99E-44-bio	NTU	A Capacitive Tactile Sensor of Blood Flow Measurement
D35-99E-45e	TKU	Design and Implementation of Low-Power and Fast Locking Phase-Lock Loop
D35-99E-46e	YZU	Pseudo-random PWM generator
D35-99E-47e	OIT	Design of Gain Boosting with CMFB Folded Cascode op.Amplifier
D35-99E-48e	STUT	3 bits Analog to Digital converter
D35-99E-49e	STUT	Digital Sin & Cos Waveform Generator
D35-99E-50e	STUT	4 Bits Digital to Analog Converter
D35-99E-51e	NCHU	Complete-Controlled Christmas Lights Using Source Synchronization
D35-99E-52e	NCHU	Lightneing controller identified by EPROM
D35-99E-53e	CYCU	Biomedical signal applied to capture the low-offset low-voltage front-end circuit design
D35-99E-54e	HFU	1.5GHz The design of frequency synthesizer
D35-99E-55e	HFU	1.5-GHZ clock generator
D35-99E-56e	NCNU	Low-Power successive approximation register analog-to-digital converter for ECG Sensor
D35-99E-57e	NDHU	Pipeline Based Timing Errors Tolerating Scheme for Digital Filter Applications
D35-99E-58e	NKFUST	Fast Frequency Voltage Control Pulse Width Modulator
D35-99E-59e	THU	Infrared sensor of heartbeat
D35-99E-60e	NUTN	Design of LED Array Driver Circuit
D35-99E-61e	NCHU	Power Amplifier Controller
D35-99E-62e	NCHU	Low-Dropout Regulator with voltage-spike detection
D35-99E-63e	NTUST	Time to digital converter with digital self-calibration
D35-99E-64e	KSU	To complete the six yuan weighted digital to analog converter
D35-99E-65e	FCU	Two Stage Operation Amplifier
D35-99E-66e	FCU	Two Stage OPA design
D35-99E-67e	NCUE	A Rail-to-Rail Buffer for Low Dropout Regulators With Enhanced Regulation
D35-99E-68e	NKNU	Multiphase Digital DLL Design
D35-99E-69em	NCUE	Design Simulation and Modification of a Fringe Field Capacitance Sensor
D35-99E-70em	CYUT	Gas sensors with differential amplifier circuit
D35-99E-71em	CYUT	Interdigital gas sensor with interface circuit

P15-99A		
IC number	Institution	Project name
P15-99A-01	NTU	100 GHz image rejection mixer for astronomical observation system
P15-99A-02	NCKU	A MMIC single balanced x4 subharmonically mixer with a compact IF extraction
P15-99A-03	FCU	A Wideband Low Noise Amplifier for V-Band Application
P15-99A-04	NCU	Multicoupled Line Power Divider
P15-99A-05	NCU	Single-to-Balanced Multicoupled Line Bandpass Filter
P15-99A-06	NCKU	A Ku-Ka band double balanced passive star mixer using novel miniature hybrid

IC number	Institution	Project name
P15-99A-07	NCKU	A Ku-Ka band double balanced passive star mixer using novel hybrid
P15-99A-08	NCKU	A8-18GHz broadband doubler
P15-99A-09	NCKU	A 21-41GHz isolation enhanced broadband sub-harmonic mixer
P15-99A-10	NCKU	Miniaturized Controllable Wideband Ring-Type Bandpass Filters
P15-99A-11	NTNU	A 2-Bit Phase Shifter MMIC using PHEMT Technology for Ku-Band Smart Antenna Application
P15-99A-12	NCU	A linearity improved power amplifier
P15-99A-13	NCU	A Power amplifier for Collision Avoidance Radar application
P15-99A-14	NTNU	Design of DC-20 GHz Compact Fully Integrated PHEMT T/R Switch
P15-99A-15	NCU	Design of W-band High Directivity Active Antenna Voltage Controlled Oscillator
P15-99A-16	NCKU	Design of the novel 3dB miniature 90° and 180° coupler with the harmonic rejection
P15-99A-17	NCTU	2.4GHz low-noise amplifier
P15-99A-18	NCKU	A 60-74 GHz MMIC 2x sub-harmonic passive mixer with a compact diplexer
P15-99A-19	NTU	A 50 ~ 70 GHz Cascode Balance Power Amplifier
P15-99A-20t	NSYSU	A Nonlinear Model of pHEMT Transistors with Memory Effect Analysis
P15-99A-21t	YZU	On-wafer device characterization using millimeter wave ELST calibration technique
P15-99A-22t	YZU	Study on S-parameter calibration with non-50Ω transmission lines using two calibration standards
P15-99A-23	NTNU	Design of 10-20 GHz Compact Fully Integrated PHEMT Broadband Amplifier
P15-99A-24	NCTU	57-64 GHz power amplifier
P15-99A-25	NTNU	A 3-Bit Phase Shifter MMIC using PHEMT Technology for Ku-Band Smart Antenna Application
P15-99A-26	NTUT	A two-stage Linearity Improved GaAs pHEMT Power Amplifier
P15-99A-27	NSYSU	Non contact Balun using 3D vertical coupled combined with low noise amplifier for 3-5GHz application
P15-99A-28t	NSYSU	Scalable de-embedding methodology for pHEMT process, applying two port and three port of modeling extraction

P15-99B		
IC number	Institution	Project name
P15-99B-01	YZU	Design of power amplifier for miniaturized RF front-end in phased-array antenna system
P15-99B-02	YZU	An ultra-wideband LNA design using cascode topology featuring high output power
P15-99B-03	NTU	32GHz pHEMT Power Amplifier
P15-99B-04	NTU	24GHz GaAs pHEMT Power Amplifier
P15-99B-05	NFU	The Design of Microwave Bandpass Filter with The Wideband Stopband
P15-99B-06	NFU	3-10 GHz Wideband Low Noise Amplifier
P15-99B-07	NSYSU	High Gain CPW-Fed Meander-Line Monopole Antenna for Ka-band 30GHz
P15-99B-08	NTU	72-114 GHz Multiplier Chain for Astronomical Observation System
P15-99B-09	NTNU	Design of low noise amplifier for miniaturized RF front-end in phased-array antenna system
P15-99B-10	NTNU	A 5-Bit Phase Shifter MMIC using PHEMT Technology for Ku-Band Smart Antenna Application
P15-99B-11	CGU	Design of Advanced 60 GHz High Gain Low Noise Amplifier
P15-99B-12	NCTU	Research on HEMT-based room temperature terahertz emitters
P15-99B-13	NTU	A Full Ka-band Cascode Power Amplifier in 0.15 μm pHEMT Process

IC number	Institution	Project name
P15-99B-14	NCU	A Wideband Class-E Power amplifier application for 802.11n
P15-99B-15	NSYSU	The Broadband Planer Coupled Balun for the 24GHz Application
P15-99B-16	NTUT	Design of high power and high efficiency class e power amplifier
P15-99B-17	NTUST	High Linearity Power Amplifier with a Built-In Linearizer at 5.8GHz
P15-99B-18	NTNU	12GHz Subharmonic Mixer
P15-99B-19	NCU	2.4 GHz ISM Band Class E Power Oscillator
P15-99B-20	NCU	24 GHz High Power and High Efficiency Power Oscillator
P15-99B-21	NTU	A 11-13 GHz full-360 ° Reflection Type Phase Shifter with low insertion loss
P15-99B-22	NCHU	60GHz PA
P15-99B-23	NCU	A Ku-Band Distributed Analog Phase Shifter
P15-99B-24	NCU	A 90-Degree Digital Phase Shifter Using All-Pass Networks
P15-99B-25	NCU	Single-pole-double-throw Multicoupled Line Bandpass Filter
P15-99B-26	NCU	A V-band double-balance Mixer with fT-doubler
P15-99B-27	NTU	V Band Power Amplifier with 29.5dBm Output Power
P15-99B-28	NTU	24 GHz Feedforward Power Amplifier with Linearization

SiG35_99A		
IC number	Institution	Project name
SiG35-99A-01	NTUT	Design of 1.9GHz High-Efficiency and High-Linearity Power Amplifier
SiG35-99A-02b	NCU	K-band Voltage-controlled oscillator with wide tuning range
SiG35-99A-03b	NCHU	A Low-Noise Amplifier for Wimax Applications
SiG35-99A-04	NCHU	A ROM-less Fast Direct Digital Frequency Synthesizer Realized
SiG35-99A-05b	NTUST	Low Power Frequency Doubler
SiG35-99A-06b	NTU	20 GSPS 3-bit Analog-to-Digital Converter
SiG35-99A-07b	NTUST	Triple Band ILFD Using Multi LC Resonator
SiG35-99A-08b	NTUST	Low Phase Noise QVCO
SiG35-99A-09b	NTUST	30GHz divide-by-3 Injection-locked Frequency Divider
SiG35-99A-10b	NTUST	A Novel Wide Locking Range Divider
SiG35-99A-11b	NCTU	High Linearity Gilbert Upconverter
SiG35-99A-12	NTHU	New Low-Illumination and Wide Dynamic Range Image Sensor Array
SiG35-99A-13b	NTHU	Fully-Integrated 12.5 Gb/s Optical Receiver with Broadband Design Technique
SiG35-99A-14b	NTUST	Ultra Low Voltage Controller Oscillator
SiG35-99A-15b	NTUST	Low-Power Voltage-Controlled Oscillator

SiG35_99B		
IC number	Institution	Project name
SiG35-99B-01	NQU	A Low-Power Low-Noise Down-Conversion Mixer for IEEE 802.11a WLAN Application
SiG35-99B-02	NTUT	Fully-Integrated Push-Pull Power Amplifier with High-Power and High-Efficiency Characteristics
SiG35-99B-03	NCHU	Ring Oscillators With Multiple-Input Injecton
SiG35-99B-04	NSYSU	A novel p-n junction inductor can be applied to wideband matching network
SiG35-99B-05	NSYSU	Applying a novel p-n junction inductor to an full-integrated ultra wideband power amplifier

IC number	Institution	Project name
SiG35-99B-06t	NSYSU	Applying scalable de-embedded and polysilicon shield plane technique of SiGe process to compare others
SiG35-99B-07	NCU	Broad band active mixer
SiG35-99B-08	NCHU	Design of Low Noise Amplifier for 6 to 10 GHz UWB Application
SiG35-99B-09	NCHU	A switchable low noise amplifier for 802.11b/g and WiMax applications
SiG35-99B-10	NCHU	Low Power Complementary Cross-Coupled Differential VCO
SiG35-99B-11	NTUST	A Low Power Consumption Dual-band Divided-by-three ILFD with Transformer-coupled Injection
SiG35-99B-12	NTUST	A Low Power divide-by-2 used transformer coupling
SiG35-99B-13	NTUST	A Pre-PA Stage Base On Injection Locked Power Oscillator
SiG35-99B-14	FJU	Combine Low Noise Amplifier and Active Balun for WLAN Application

SiG35_99C

IC number	Institution	Project name
SiG35-99C-01	NTUST	Design of SiGe-Based Tunable Single-Terminal Light Emitting and Receiving Devices
SiG35-99C-02	NTUST	A low power dual band voltage controlled oscillator
SiG35-99C-03	NTUST	The design of SiGe-Based Integrating Circuits for Front-End Optical Receiver
SiG35-99C-04	NTUST	30GHz divide-by-3 Injection-locked Frequency Divider
SiG35-99C-05	NTUST	High performance divide-by-3 ILFD with active inductor
SiG35-99C-06	NCU	An X-Band Phase-Shifting Artificial Transmission Line
SiG35-99C-07	NTUST	A Wide Locking Range ILFD Used Active Inductor
SiG35-99C-08	NQU	A High-Gain Low-Power Down-Conversion Mixer for IEEE 802.11b WLAN Application
SiG35-99C-09u	NTUT	800MHz Wireless Charging Receiver Chip

T18-99A

IC number	Institution	Project name
T18-99A-01a	NSYSU	IMAGE IMPROVEMENT METHOD FOR LCD FRAME RATE
T18-99A-02a	NTHU	Modified sorted-QR decomposition circuit for 2x2~8x8 MIMO systems
T18-99A-03a	NCTU	A 10-bit 10MB/s Current-Steering DAC With a Randomized
T18-99A-04a	NTHU	Wireless Receiver for Bluetooth Low Energy Standard
T18-99A-05a	NCHU	Design and implementation of power-aware H.264/AVC fast inter prediction engine for HDTV720p applications
T18-99A-06a	NSYSU	Circuit Design of LDPC Decoder for IEEE 802.16e systems
T18-99A-07a	NSYSU	Synchronous DAC with self-calibration
T18-99A-08a	NCU	An Embedded Compression Codec for Memory-Efficient Applications on Advanced-HD Specification
T18-99A-09a	NCU	High-Efficiency and High-Throughput QR Decomposition for MIMO Detection
T18-99A-10a	NTHU	Real-Time Cascade Face Detection System Design Based on Reduced Two-Field Extraction
T18-99A-11a	NSYSU	An implementation of low-power and low-cost RC5 encryption/decryption algorithm for biomedical system
T18-99A-12	NCCU	11-bit, 100MS/s high speed pipelined Analog-to-Digital Converter
T18-99A-13	NCCU	A Low Voltage and Low Power Sigma-Delta Modulator with CML Inverter
T18-99A-14	NCCU	A Low Power Direct Conversion Receiver for IEEE 802.15.4 Applications

IC number	Institution	Project name
T18-99A-15	NCCU	A 2.4GHz Low Power Direct-Conversion Transmitter for ZigBee Applications
T18-99A-16	NCTU	A wideband Neural Sensor Application in EEG
T18-99A-17	NCTU	A low phase and magnitude error phase shifter with wide dynamic input power range
T18-99A-18	NTPU	A Class D Amplifier Using Current Control Mode PWM
T18-99A-19	CGU	Delay-locked Loop with phase error calibration
T18-99A-20	NCU	Design of Low Phase Noise Phase-locked-loop
T18-99A-21	NTU	A 5.8/24 GHz Dual Band LNA In 0.18um CMOS
T18-99A-22	NTU	A low power 15-30 GHz wideband LNA
T18-99A-23	NCKU	A low power, high CMRR AFE amplifier for wireless electrochemical signal sensing application
T18-99A-24m	NTU	MEMS three-axis capacitive accelerometer with chopper-stabilized amplifier
T18-99A-25	NCCU	A Synthesizer with A Series Coupled Current Reuse Quadrature VCO for Zigbee System
T18-99A-26	NCTU	60 GHz sub-harmonic Dual Down-Converter
T18-99A-27	NTU	15 GHz Capacitor-Inductor Dual Loop Feedback Voltage Control Oscillator
T18-99A-28	NTU	A 24 GHz Compact High Gain LNA
T18-99A-29	NTU	24 GHz Transformer Combining Power Amplifier
T18-99A-30	NTU	High Performance Distributed Amplifier
T18-99A-31	NCTU	Tri-bands class-E power amplifier with Vdd/AM and Vdd/PM compensations in polar system.
T18-99A-32	NTU	18-26 GHz Tunable Doubler
T18-99A-33	CGU	Contention-Relaxed Isolated Noise-Tolerant
T18-99A-34	NTU	24GHz feedback power amplifier
T18-99A-35	NCU	24 GHz Injection Locked PLL
T18-99A-36	NSYSU	A Wide-Band CMOS Receivers Exploiting Thermal Noise Canceling
T18-99A-37	NSYSU	A 2~3GHz CMOS Class-E Power Amplifier Using Parallel Combining Transformers
T18-99A-38m	NTU	Implement of 24GHz 4- bit MEMS Phase Shifter
T18-99A-39	NTU	24 GHz Low-Noise Amplifier
T18-99A-40	NTU	A bias selection methodology to optimize the linearity of the CMOS cascode power amplifier
T18-99A-41	NTOU	Ultra-Low-Power-Consumption Wide-Tuning-Range Voltage Controlled Oscillator Using Body-Biasing Technique
T18-99A-42	YUNTECH	A CMOS 3-10GHz UWB Low Noise Amplifier with inductor-capacitor parallel configuration
T18-99A-43	NTUT	Design and Implementation of Switched-Capacitor Delta-Sigma Modulator
T18-99A-44	NTOU	Design of a low power Ka-band Voltage-Controlled Oscillator
T18-99A-45	NCKU	A 10-bit 100MS/s Pipeline A/D Converter
T18-99A-46	NCNU	A 1.5V low power and wide-Band divide-by-3 direct injection locked frequency divider is applied to Current-Reuse technique for 21-27GHz UWB Phase-Locked Loops application
T18-99A-47	NCNU	A 1.5V Ka-Band low power and wide-Band divide-by-4 direct injection locked frequency divider using current-reuse technique
T18-99A-48	NDHU	A High Efficiency Class-F Power Amplifier for 3.5GHz WiMAX Applications
T18-99A-49	NTUST	A 1.25Gb/s All Digital Phase Lock Loop Based Clock and Data Recovery Circuit With Different Proportional Path
T18-99A-50	NTUST	An All-Digital SAR Algorithm Delay-Lock Loop with Length Detection Ability
T18-99A-51	NCTU	A 125MHz-1.8GHz DLL-Based Clock Generator with Switching Glitch Function and Wide Locking Range

IC number	Institution	Project name
T18-99A-52	NTUT	Research on High Performance Push-Push VCO
T18-99A-53t	NTUT	Research on MMW Inductor and Transformer Using Substrate Shielding Structure
T18-99A-54	NTOU	Design of a Low-Voltage Dual-Band LNA for WiMAX
T18-99A-55	NTHU	A CMOS power amplifier with integrated diode linearizer for WiMAX system application
T18-99A-56	LHU	Current Bleeding CMOS Active Mixer with Common-Mode Feedback Technology
T18-99A-57	LHU	5.5GHz High Gain And Low Noise Figure RF CMOS Mixer Design
T18-99A-58	NTHU	60Gbps MUX core using parallel current reuse technique in 0.18 μ m CMOS technology
T18-99A-59	NTHU	Thirty-five GHz distributed amplifier using bandwidth-improving technology
T18-99A-60	CGU	High-CMRR Current-mode Instrumentation Amplifier for Biomedical Applications
T18-99A-61	NTU	A Design of Low Noise Gain Switching Transimpedance Amplifier for 10GBASE System
T18-99A-62	NCKU	A Low Power Consumption Active Balun for Ultra-Wideband Receivers
T18-99A-63	NTOU	A novel Ka band VCO design using source degeneration technology
T18-99A-64	NCHU	Zinc oxide of ISFET CO gas sensor by sol-gel
T18-99A-65	YZU	Design of 3.5GHz High-Efficiency Power Amplifier for WiMAX system
T18-99A-66	NTOU	Design of A High Performance Low Phase Noise K-Band VCO
T18-99A-67	NCNU	A 2.9dB NF UWB CMOS LNA Using Splitting-Load inductive peaking Technique
T18-99A-68	NCNU	A 0.5-to-10.6 GHz shunt-shunt feedback ultra-wideband LNA using 0.18 μ m COMS
T18-99A-69	NCNU	A Low power LNA for 24GHz ACC(Adaptive Cruise Control) Radar system Applications
T18-99A-70	NTOU	A Ka-Band Low-Voltage Voltage-Controlled Oscillator
T18-99A-71	YZU	Noise improvement of 3-5GHz CMOS UWB LNA With Low power consumption
T18-99A-72	NTUT	A 5.9 GHz Image Rejection CMOS Low Noise Amplifier Using Current-Reused
T18-99A-73	YUNTECH	Design of ultra-wideband CMOS LNA with current-reused and common-gate matching technique
T18-99A-74	YUNTECH	Design of Low Power UWB LNA with Inverter Configuration
T18-99A-75	NCTU	Low Power UWB LNA Design in Subthreshold Region using Forward Body Biases
T18-99A-76	NCTU	A Low Voltage, Low Power 4th Order Continuous-time Butterworth filter for Electroencephalogram EEG signal recognition.
T18-99A-77	NTHU	Readout circuit for Infrared Sensor Array
T18-99A-78	LHU	Design of Up Conversion Mixer with Enhanced Transconductance Stage and Low Power Oscillator
T18-99A-79	NCKU	A 24-GHz 0.18- μ m CMOS Low-phase-variation Variable Gain Amplifier
T18-99A-80	NCTU	Ultra-high performance 24 GHz LNA
T18-99A-81	NCTU	Low Flicker Noise Active Mixer For 2.4GHz Application
T18-99A-82	NCTU	Direct conversion mixer with divide-by-2s for flicker noise improvement
T18-99A-83	NCU	A Fully Integrated Differential Class-E Power Amplifier with Transformer
T18-99A-84	NCTU	Low-Power Amplitude-Balanced Current-Reuse VCOs with Added Tunable Coupled-Pair Structure
T18-99A-85	NDHU	A High Linearity Full-band Mixer for UWB Receiver
T18-99A-86	NCNU	Study of 3-10 GHz Low Power, 20 dB High Power Gain, and 2.7 dB Low Noise Distributed Amplifier using noise-suppression techniques.
T18-99A-87	NCNU	Study of A Novel Noise Suppression Method, Low Power and Flat Low Noise Amplifier for Ultra-Wide-Band System Applications.
T18-99A-88	NCU	Broadband Power Amplifier for IEEE 802.11a WLAN Application
T18-99A-89	NTHU	Using dual-gate MOSFET design wide band balanced amplifier
T18-99A-90	NCU	An Un-equal Swing Frequency Divider Applying in Ku-Band

IC number	Institution	Project name
T18-99A-91	NCU	An Low-Power VCO and Frequency Divider Design Applying in Ku-Band
T18-99A-92	NCTU	Wideband Low Noise Amplifier for WLAN and UWB Applications
T18-99A-93	NCTU	The RF Power Amplifier for Reliability researching
T18-99A-94	CGU	A 5GHz High Gain LNA with ESD protection circuit
T18-99A-95	FCU	A Low-Noise Amplifier for K-band applications
T18-99A-96	YUNTECH	Low Power 5GHz LC Voltage Controlled Oscillator Design
T18-99A-97	NCTU	17.4GHz frequency doubler
T18-99A-98	NCU	A wide band power amplifier with harmonic tuned and stacked structure.
T18-99A-99	NTHU	A low-power Inductorless 10Gb/s TIA
T18-99A-100	CGU	A high 2nd harmonics suppression 28-GHz Sub-harmonic Mixer with common-source capacitor-induced zero
T18-99A-101m	NCCU	Design of CMOS MEMS SPDT Switch with Optimized U-shape Contact Tip
T18-99A-102	CGU	Using CMRC 2nd-harmonic suppressor enhance linearity for Ka Band Power Amplifier
T18-99A-103	NTHU	Low phase noise VCO using series resonating technique
T18-99A-104	NTUT	Design of 3-order current-mode active filter using current controlled current conveyor transconductance amplifier
T18-99A-105	NCTU	Low power down-conversion mixer using cross signal indemnify isolation
T18-99A-106t	NCTU	The test-kit of RF high power device for reliability and power dissipation researching
T18-99A-107	NCNU	A UWB CMOS Low noise amplifier with LC Tank technology
T18-99A-108	NCNU	A K-Band CMOS Low noise amplifier with small Group
T18-99A-109t	NCNU	The testkey of Marchand balun on silicon substrate
T18-99A-110	NTHU	5-GHz Low-Power Low Noise Frequency Synthesizer in 0.18-um CMOS
T18-99A-111	NCKU	A 50-100-GHz Broadband CMOS Log-Periodic On-chip Antenna
T18-99A-112	NCKU	A K-Band CMOS Active Filter With Negative Resistance compensation
T18-99A-113	NTHU	0.5V Ultra Low Voltage GFSK demodulator for Bluetooth
T18-99A-114	NCNU	Design a low power QVCO for 24GHz SHM (Sub-Harmonic mixer) receiver system
T18-99A-115	NDHU	A 19GHz Current-reuse Low Phase Noise VCO
T18-99A-116	KUAS	5.2GHz Low Power High Gain Low Noise Amplifier
T18-99A-117m	NTUST	A Low Power Series LC Tank Voltage Controlled Oscillator
T18-99A-118	NTU	A 34-GHz Phase Lock Loop with a Divide-by-4 Injection Locked Frequency Divider
T18-99A-119	NTU	The Design of 2.4GHz / 5.2GHz Direct Conversion Receiver Front-End
T18-99A-120	NTU	A Broadband CDR for Multi-Media Applications
T18-99A-121	NTUST	16/24 GHz Dual Band Divide-by-4 ILFD
T18-99A-122	NTUST	A 6GHz Low Power Consumption Quadrature VCO (Voltage Controlled Oscillator)
T18-99A-123	LHU	Design of Down-Conversion Mixer with Gm-boosted stage combining Low Phase Noise Oscillator
T18-99A-124	LHU	Design of Low Power VCO using Gm-boosted technique
T18-99A-125	LHU	Design of Low-Noise Amplifier using Thermal Noise Canceling
T18-99A-126	NTHU	A low supply voltage folded Mixer using second-order harmonic injection to cancel third-order harmonic nonlinearity technique
T18-99A-127	NTU	Wide Range RF power detector
T18-99A-128	NSYSU	CMOS Design of a Transformer-Based Balanced Filter
T18-99A-129	NCKU	A 20-33GHz High image rejection ratio sub-harmonic image rejection mixer
T18-99A-130	NCKU	a broadband single-side band mixer with compact configuration
T18-99A-131	NCYU	Frequency Divider by the series NDR

IC number	Institution	Project name
T18-99A-132	NCYU	Design of New Type Multiple-Valued Memory Applications by MOS-HBT-NDR Circuits
T18-99A-133	NCCU	Dual Loop Injection -Lock Miller Divider-by-Four Circuit Design
T18-99A-134	NCKU	A 50GHz~70GHz passive single balanced mixer using a novel asymmetric
T18-99A-135	NCNU	A Low power CMOS Wide Band Low Noise Amplifier For K Band Applications
T18-99A-136	NCNU	The Low Noise Amplifier For UWB System Applications
T18-99A-137	NKNU	2.6 GHz Low-Voltage CMOS Down-Converting Mixer
T18-99A-138	CGU	Analog signal demodulation and variety of light-sensitive component decoding circuit
T18-99A-139	NTUST	A 2.2 MHz reconstruction filter for WCDMA applications
T18-99A-140	NTU	24GHz Low Power Low Noise Amplifier With Built-in Self Test
T18-99A-141	NTU	2.4GHz, High Efficiency Rectifier
T18-99A-142	NCKU	A low-dropout voltage regulator with 5-bit programmable output voltage for DPWM
T18-99A-143	YZU	Microstrip with electromagnetic band-gap structures based on CMOS technology with calibration and device characterization of active/passive devices
T18-99A-144m	NCCU	Design of Bandpass SPST Filter-integrated CMOS MEMS Switch
T18-99A-145	NCTU	Charge-pump based Low Power Audio DAC
T18-99A-146	NCKU	A 60-GHz CMOS Compact Low Insertion Loss Bandpass Filter With $\lambda/4$ Resonators
T18-99A-147	NTUST	A Novel Long Range UHF RFID Transceiver
T18-99A-148	NCTU	A Monolithically Integrated Optical Receiver in Standard CMOS Process
T18-99A-149	NCTU	A Low-Cost Dual-Slope Temperature Sensor
T18-99A-150+m	NTUT	A study of high speed DNA sequencing chip combine with nano-fluidic by low noise readout circuits
T18-99A-151	NTUST	The Wide Tuning Range VCO Uses the Feedback- Capacitors of Triple Tuning.
T18-99A-152	NTU	A video-rate high-speed ADC with time-division decision sampler
T18-99A-153	KSU	Implementation of a capacitive cross-coupled feedback Colpitts Oscillator for Short Range Radar System
T18-99A-154	NTUST	High Accuracy Smart Temperature Sensor With One-Point Calibration
T18-99A-155	NSYSU	Balanced-to-Unbalanced Power Combiner Design Using a Trifilar Transformer with Impedance Ratio 1:4
T18-99A-156+m	NTUT	Directional and smart microphone array by CMOS-MEMS fabrication process
T18-99A-157	NTUST	A Novel Wide Tuning Range Voltage-Controlled-Oscillator
T18-99A-158	NTPU	A Wideband Low-Noise Amplifier Design in 0.18- μ m CMOS Process for Ku-Band Applications
T18-99A-159	NTU	Design of 24GHz high-performance T/R Switch
T18-99A-160	NSYSU	A Low Phase Noise Fraction-N Frequency Synthesizer by using Self Injection-Locked Technique.
T18-99A-161	NCUT	Totally self checking carry-select adder core design
T18-99A-162	NTHU	Fast Adaptive Phase-Lock Loop using Digital Bandwidth Control Unit
T18-99A-163	NCNU	Using the CPW fed technology to design a 24/60GHz dual-band Meander-line antenna
T18-99A-164	NCTU	A 1.2-V CMOS Tunable OTA Using MOSFET In The Triode Region With Linearity Improving By Compensation Mobility Reduct ion
T18-99A-165	NCCU	A 3.5GHz single-balance cmos active mixer with zero power consumption
T18-99A-166	CYCU	Variable Gain Low Noise Amplifier for VHF band and UHF band
T18-99A-167	NDHU	Injection Locked Frequency Divider in Frequency Synthesizers for UWB Systems
T18-99A-168	CGU	31GHz Gilbert Mixer using active load
T18-99A-169	NTUST	5.8 GHz Low Voltage Receiver Front-End Chip Design
T18-99A-170	NTUST	A Gm Boosting Colpitts VCO for WiMAX Applications

IC number	Institution	Project name
T18-99A-171	NCKU	The design of a broadband mixer using a new-proposed high-speed dynamic logic circuit
T18-99A-172	KSU	Using Dynamic Logic for High Speed Frequency Divider
T18-99A-173u	NTU	A 10/5/2.4 GHz $\Delta \Sigma$ Fractional-N Frequency Synthesizer with AFC technique
T18-99A-174e	NKFUST	An Interpolated Flying-Adder Synthesizer
T18-99A-175e	NCU	A Dual-Slope Charge Pump to Achieve Fast Lock PLL
T18-99A-176e	NTHU	An ISFET Based pH Value Detecting/Recording System
T18-99A-177e	NTHU	A 8b Pulse-Width-Modulation Analog-to-Digital Converter
T18-99A-178e	NTHU	A 0.8V, 2MS/s Rail-to-Rail 8-bit Successive Approximation Register ADC
T18-99A-179e	MUST	A Study of CMOS Mixer for 2.4GHz
T18-99A-180e	MUST	CMOS Ultra-Wide Band Amplifier using Active Inductor
T18-99A-181e	YUNTECH	Design and implementation of CMOS Charge Pump circuits
T18-99A-182e	YUNTECH	Low Power Design of 5.6-GHz Voltage Controlled Oscillator
T18-99A-183e	NCTU	5.2GHz Current-Reused Quadrature VCO with Spontaneous Transconductance Match Technique
T18-99A-184e	KSU	Implementation of wide-tuning range, low phase noise voltage-controlled oscillator by Bi-CMOS active load differential amplifier
T18-99A-185e	KSU	Implementation of wide-tuning range, low phase noise voltage-controlled oscillator by Complementary BJT active load differential amplifier.
T18-99A-186e	KSU	Implementation of wide-tuning range voltage-controlled oscillator by Novel Bi-CMOS active load differential amplifier.
T18-99A-187e	NCHU	Auto gain controller
T18-99A-188e	NCHU	A direct down conversion low power double balance mixer with noise reduction for 802.11a/b/g system
T18-99A-189e	NCHU	3.6-3.9GHz Frequency Synthesizer
T18-99A-190e	NTHU	Ultra Low Power 0.8v Relay Race Analog to Digital Converter
T18-99A-191e	NTU	Digitally-controlled oscillator
T18-99A-192e	NCTU	CMOS wideband chip PIFA antenna
T18-99A-193e	NSYSU	Wake up detector for automobile network
T18-99A-194e	NCTU	Design of frequency doubler for wideband receiver application
T18-99A-195e	NCUT	Totally self checking carry-select adder core design
T18-99A-196e	NCUT	A pre-amplifier of high gain and high CMRR for bio-system
T18-99A-197e	NCHU	A reduced process-variation subthreshold voltage reference circuit without resistors
T18-99A-198e	LHU	Design of down conversion mixer using current bleeding technique
T18-99A-199e	YZU	A wake up detector with rectifier and limiter
T18-99A-200e	NCNU	4~6-GHz Switch capacitor multi-band VCO

T18-99B		
IC number	Institution	Project name
T18-99B-01a	CGU	All digital folded low area, low power maximum power point tracking chip for photovoltaic energy conversion system
T18-99B-02a	NSYSU	The Design of Personal Gateway in Medical monitoring application
T18-99B-03a	NCHU	High performance hardware accelerator for lossless compression of hyperspectral images
T18-99B-04a	NCKU	High-Efficiency and Low-Power Digital Controller IC for DC-DC Converter

IC number	Institution	Project name
T18-99B-05a	NTHU	The Design of a High-Efficiency FFT Processor for OFDM Based WPAN (IEEE 802.15.3c) Applications
T18-99B-06	YZU	The design of a wideband VCO for 3~5GHz.
T18-99B-07	YZU	Design of 3.5GHz High-Efficiency and High linearity transmitter for WiMAX system
T18-99B-08	YZU	3-5GHz noise improvement of compact receiver by single inductor matching network
T18-99B-09	YZU	Design of Low-Power, Low-Noise and High-Gain low noise amplifier using CMOS distributed amplifier for UWB 3-10GHz systems
T18-99B-10	YZU	A Multiband Low Power Low Noise Amplifier Using Current-Reused Technique
T18-99B-11	CGU	A Low Noise High CMRR Current-Mode Amplifier for Biomedical Applications
T18-99B-12	CGU	A K Band LNA with passive filter
T18-99B-13	CGU	A down-Conversion Mixer with Miniaturization Marchand Balun for K-Band Applications
T18-99B-14	CGU	A High performance voltage controlled oscillator on Ka-Band Operation
T18-99B-15	CGU	Low Power Consumption Voltage Control Oscillator with π -type switched capacitor array
T18-99B-16	NSYSU	Implementation of a 1.8V 12bits 100-MS/s Pipelined Analog-to-Digital Converter
T18-99B-17	NSYSU	Wide-band Wilkinson Power Combiner Using a Planar Transformer
T18-99B-18	NSYSU	A Novel Offset PLL for 50 MHz-6 GHz Wideband Frequency Synthesizer
T18-99B-19	NSYSU	A Low Power Wide-Band CMOS Receivers Exploiting Thermal Noise Cancellation
T18-99B-20	NSYSU	The Capacitive Cross-Couple Common Gate wideband Low Noise Amplifier with Transformer Feedback for improving Noise Figure
T18-99B-21	NSYSU	Non contact Balun using 3D vertical coupled combined with low noise amplifier for 3-5GHz application
T18-99B-22	NSYSU	An RF Sensing Circuit of High-Speed Spectrum Scanning
T18-99B-23	NSYSU	A Vital Sign Sensing Circuit Using Injection Locking
T18-99B-24	NCU	A protein detection voltage control oscillator using interdigital capacitor
T18-99B-25	NCU	Q-band Subharmonic Injection-Locked Oscillator
T18-99B-26	NCU	The Research of substrate noise Suppression on RFIC's
T18-99B-27	NCU	The Research of Substrate Noise on Voltage Controlled Oscillator
T18-99B-28	NCU	High power 37dBm CMOS switch
T18-99B-29	NCU	Broadband Differential Power Amplifier for IEEE 802.11a WLAN Application
T18-99B-30	NCU	A Fully Integrated Class-E Power Amplifier with Transformer
T18-99B-31	NCU	A Ku Band ILFD using Injection-Enhancement Technique
T18-99B-32	NCU	Use 3-Bit Switch Control Ku-Band Voltage Controlled Oscillator
T18-99B-33	NCU	A Ka-Band LNA using Transformer Feedback Technique
T18-99B-34	NCU	27.1 GHz Transformer Feedback VCO Applied in Ka-band
T18-99B-35	NCU	Ka-band LNA Using Parallel Resonant Inductor to cancel noise
T18-99B-36t	NCU	Testkey of Broadband Differential Transmission Line Transformer
T18-99B-37	NCU	Design of power amplifier using power combining transformer
T18-99B-38	NCU	Ka Band LNA Using current sharing technique
T18-99B-39	NCU	A CMOS power amplifiers with direct power combine and cascade for gain boosting structure.
T18-99B-40	NCU	Low-Power Low-Phase-Noise VCO for DVB-S Application
T18-99B-41	NCU	Low-Power Low-Phase-Noise Quadrature VCO for DVB-S Application
T18-99B-42	NCU	Design and Implementation of Frequency Multiplier
T18-99B-43	NCU	Implantable bio-impedance measurement and load-shift-keying modulation circuits
T18-99B-44	NCU	A Fractional-N Frequency Synthesizer for MICS Band
T18-99B-45	NCU	A Sigma-Delta Modulator for Biomedical Signals Applications

IC number	Institution	Project name
T18-99B-46	NCCU	Research on Low Voltage High Gain Gilbert Mixer
T18-99B-47	NCCU	Conversion Gain Enhanced CMOS Switch folded Mixer
T18-99B-48	NCCU	Wideband Applicable RF Power Detector
T18-99B-49	NCCU	A Low Local Power (-5dBm) Mixer Designed with Body-Effect and Folded Structure
T18-99B-50	NCCU	A 1V Low Power Gm-C Filter For Electroencephalogram Measurement System
T18-99B-51	NCCU	A cross-coupled gm-boosted fully-differential variable gain LNA
T18-99B-52	NCCU	A wideband fully-differential inductor-less LNA
T18-99B-53	NCCU	A Fractional Frequency Synthesizer with Phase Error Detector and high AM-to-PM Noise Suppression
T18-99B-54	NCCU	A New 4-by-4 Butler Matrix with Six-Beams
T18-99B-55	NCCU	A bandwidth-improved and high gain chip antenna design
T18-99B-56	NCCU	Design of 24 GHz Reconfigurable Coupler for Smart Antenna Array System
T18-99B-57	NCCU	Design of V-Band dual-phase tunable power divider/attenuator
T18-99B-58	NCCU	A Multi-mode Programmable-Bandwidth Filter for Mobile WiMAX Wireless Communication Systems
T18-99B-59	NCCU	A 11-bit 100-MS/s Pipelined ADC With Gain Error Correction
T18-99B-60	NCHU	A 15-17.5 GHz Divide-by-3 Mixed-Type Frequency Divider
T18-99B-61	NCHU	Asymmetric Feed Back Low Noise Amplifier For Ultra Wide Band Application
T18-99B-62	NCHU	A Design of Front-End for Ultra-Wideband Receiver Applications
T18-99B-63	NCHU	Low Voltage, Low Power, LNA for Ultra-Wideband Receiver
T18-99B-64	NCHU	A Design of Mixer for Ultra-Wideband Receiver Applications
T18-99B-65	NCHU	Wide bandwidth Voltage controlled Oscillator Using a Mutual-Negative Resistance Technique
T18-99B-66	NTHU	RF Front-End for MICS (Medical Implant Communication Service) Band
T18-99B-67	NTUT	Research on Novel Push-Push VCO
T18-99B-68	NTUT	A sub-1V high efficiency fast transient response DC-DC buck converter using V2 hysteresis-control without large ESR Capacitor
T18-99B-69	NTUT	Design of Switched-Capacitor Tunable Filter with New Automatic Tuning Method
T18-99B-70	NTUT	A switched-capacitor tunable low-pass filters for Biomedical systems
T18-99B-71	NTUT	Design and Implementation of Automatic Tuning Method of Switched-Capacitor Active Filter Using Delay-Locked-Loop Technique
T18-99B-72	NTUT	CMOS-MEMS RF Probe Card with Amplitude Detector Circuits
T18-99B-73	NTUST	A High Accuracy Time Doman Analog to Digital Converter
T18-99B-74	NTUST	The Low Voltage of Quadrature VCO
T18-99B-75	NTUST	Low Power VCO with Inductor Feedback
T18-99B-76	NTUST	A Low Power Dual Band Voltage-Controlled-Oscillator
T18-99B-77	NTUST	Novel Series-Resonated QVCO
T18-99B-78	NTUST	Triple-band VCO
T18-99B-79	NTUST	A dual bands divided-by-two injection-locked low power consumption divider
T18-99B-80	NTUST	A Wide Locking Range divide-by-3 ILFD with tunable inductor
T18-99B-81	NTUST	Harmonic-Mixed Injection-Locked Frequency Divider
T18-99B-82	NTUST	1V LO Self-Mixing RF Receiver Front-End
T18-99B-83	NTUST	Design of A Low-Power Pipelined A/D Converter Application of Wireless Receivers
T18-99B-84	NTUST	Design of 5.2GHz Frequency Synthesizer for WLAN Application
T18-99B-85	NTUST	Chip Design of a 5.8 GHz Low Power CMOS Colpitts VCO for WiMAX Receiver Front-End
T18-99B-86	NTUST	A 0.9V 10GHz Low Power Low Area VCO Chip Design

IC number	Institution	Project name
T18-99B-87	NTUST	Design of a continuous-time quadrature bandpass Delta-Sigma modulator with 5MHz signal bandwidth
T18-99B-88	NTUST	A new design of high fidelity UHF 8-bit passive CMOS RFID Tags
T18-99B-89	NTUST	All-Digital Phase-lock loop with high resolution and GHz
T18-99B-90	NTOU	Improving Phase Noise in Low-Voltage Ku-Band VCO Using Capacitor Feedback Technique
T18-99B-91	NTOU	Ultra-Wide Band Low-Noise Amplifier
T18-99B-92	NTOU	A novel wide-tuning-range Ka-Band VCO design
T18-99B-93	NTOU	Design of 27-31GHz Low-Power Low-Noise Amplifier for LMDS Applications
T18-99B-94	NTOU	A 28-GHz High-Gain Single-balanced Down-conversion Mixer
T18-99B-95	NTOU	A low noise amplifier for 24-GHz automobile anti collision radar
T18-99B-96	NTOU	A 12~15-GHz High-Gain and Low-Voltage Down-Conversion Mixer.
T18-99B-97	NCTU	A low-power, 10-bit, 200kS/s Successive Approximation Analog-to-Digital Converter
T18-99B-98	NCTU	Design of a Low Voltage Low Power 10bit 1kS/s Successive Approximation Analog-to-Digital Converter for Biomedical Signal Acquisition
T18-99B-99	NCTU	20GHz Ultra-low Voltage and Low Power LC-tank Voltage-Controlled Oscillator
T18-99B-100	NCTU	A 5Gb/s Inductorless Adaptive Cable Equalizer with Offset Cancellation in 0.18 μ m CMOS
T18-99B-101	NCTU	A Monolithically Integrated Optical Receiver in Standard CMOS Process
T18-99B-102	NCTU	Pixel array of two solar cells in series for implanted retinal prosthesis
T18-99B-103	NCTU	A High Stimulating Current CMOS Silicon Retina Chip Controlled By Four Different Phase Signals Supplied By Solar Cells For Sub-Retinal Implant
T18-99B-104	NCTU	A Low Power 10-bit 500-KS/s SAR ADC for Epilepsy Monitoring and Treatment
T18-99B-105	NCTU	Detection-efficiency enhanced Single-Photon-Detector using metal grating
T18-99B-106	NCTU	The High Efficiency RF Power Amplifier with adaptive body bias control circuit
T18-99B-107	NCTU	DC-20GHz dual output distributed amplifier
T18-99B-108	NCTU	A Wideband Mixer with Doubler and Self-Biased Reference
T18-99B-109	NCTU	5.2GHz Current-Reused Low Phase Noise Quadrature VCO with Self-Switching Bias
T18-99B-110	NCTU	3.1-10.6GHz Ultra-Wideband Low noise Amplifier
T18-99B-111	NCTU	Design of Mixer for wideband receiver application
T18-99B-112	NCTU	Low Power Direct-Conversion Receiver with Subthreshold Biasing Techniques
T18-99B-113	NCTU	Low Noise Low Power Direct Conversion Receiver For Application Of WLAN System
T18-99B-114	NCTU	5.6GHz differential low-noise amplifier
T18-99B-115	NCTU	Low-power Low-noise Tunable Receiver
T18-99B-116t	NCTU	180nm dual-gate MOSFET High-frequency S-parameter Testkey
T18-99B-117	NCTU	A 10Mhz CMOS Operational Transconductance Amplifier with Linearity Enhanced by Flipped Voltage Follower and Positive Feedback
T18-99B-118	NCTU	A 1.5V high speed OTA with -60dB THD at 150MHZ
T18-99B-119	NCTU	A highly linear Operational Transconductance Amplifier with lower than -70dB THD in large transconductance tuning range at 15MHz and It Application in Gm-C Filter
T18-99B-120	NCTU	A 10Mhz CMOS Tunable Pseudo-Differential Transconductor with -78dB THD
T18-99B-121	NCTU	A random charge and discharge frequency synthesizer for mobile WIMAX System
T18-99B-122	NCTU	An ultra low power Switch Capacitor DAC for LCD Column Driver
T18-99B-123	NCKU	A 6.1-21 GHz distributed broadband sub-harmonic mixer
T18-99B-124	NCKU	A 10-bit 27MS/s Low Power ADC

IC number	Institution	Project name
T18-99B-125	NCKU	On-Chip References Oscillators with Process Temperature and Supply Voltage Compensation.
T18-99B-126	NCKU	A 24 GHz Active Filter With Negative Resistance compensation
T18-99B-127	NCKU	A 60-GHz low insertion loss 3rd order combline bandpass filter
T18-99B-128	NCKU	18 - 25 GHz Wideband CMOS Power Amplifier
T18-99B-129	NCKU	Design of 24-GHz Wide-locking-range Divide-by-5 Direct Injection-locked Frequency Divider
T18-99B-130	NCKU	Design of Improved Current-Reuse 24-GHz VCO
T18-99B-131	NCKU	A 60/77-GHz Dual-band CMOS On-chip Yagi Antenna
T18-99B-132	NCKU	A 24 GHz CMOS Reflection-Type Phase Shifter With Negative Resistance compensation
T18-99B-133	NCKU	A 77-GHz Millimeter-Wave Low Insertion-Loss Bandpass Filter Using Dual-Spiral Resonators
T18-99B-134	NCKU	An 8-bit 500MS/s Flash ADC Using Capacitor Averaging with a Single Phase Clock
T18-99B-135	NCKU	A Low Supply Voltage High Performance Quadrature Signal Generator for Multi-Standard/Multi-Band Co-existence System
T18-99B-136	NCKU	A Frequency Synthesizer For MICS Band Application
T18-99B-137	NCKU	A low power, high CMRR AFE amplifier for wireless bio-potential acquisition System
T18-99B-138	NCKU	Design of a Noise improvement Dual Mixer with Active Balun for Wimax Application
T18-99B-139	NCKU	A Multi-band Low Noise Amplifier Using Combined Inductors for Dual Communication System
T18-99B-140	NCKU	A Novel Design of linearity Implementing Dual-band Mixer with Active Balun
T18-99B-141	NKNU	A Novel Design of Low Power High Linearity Phase Shifter Mixer For LTE Application
T18-99B-142	NKNU	A High Gain Dualband Mixer with IF Active Balun for Wimax Application
T18-99B-143	NKFUST	An All-Digital Temperature Sensor with reduced Process and Voltage Sensitivity
T18-99B-144	NKFUST	Integrated design of RFID chip
T18-99B-145	KUAS	A 0.55V Low Voltage Injection Locked Frequency Divider For IEEE802.16a Application
T18-99B-146	KUAS	A 3~6GHz Low Power High Gain LNA
T18-99B-147	NTHU	Sigma-Delta Modulator for Small-variance Capacitive
T18-99B-148	NTHU	Using dual-gate MOSFET design distributed amplifier
T18-99B-149	NTHU	X-band Low-Power VCO with Frequency Divider Chain for Phase-Locked-Loop
T18-99B-150	YUNTECH	A CMOS 3-10GHz UWB Low Noise Amplifier with Current reuse configuration
T18-99B-151	YUNTECH	A high gain CMOS 2-10GHz UWB Low Noise Amplifier with inverter configuration
T18-99B-152	YUNTECH	Design of An Ultra-wideband CMOS Low-Noise Amplifier
T18-99B-153	YUNTECH	A 2 - 12 GHz Low Power LNA for Wireless Communication
T18-99B-154	YUNTECH	A Low Power LNA for UWB System
T18-99B-155	YUNTECH	A Low power VCO with negative resistance promotion for IEEE802.11a application
T18-99B-156	YUNTECH	Ultra-Wideband Low Noise Amplifier with Noise-Canceling technique
T18-99B-157	YUNTECH	A Ultra-Wideband Low Noise Amplifier With Resistive Feedback
T18-99B-158	YUNTECH	A Low power VCO using negative resistance promotion in current-reused configuration
T18-99B-159	YUNTECH	design of voltage doubler
T18-99B-160	NCYU	Implementation of PLL By Differential Amplifiers VCO
T18-99B-161	NCUE	A single signal control VCO for full band turning-range
T18-99B-162	NCNU	A Low voltage and wide band Divide-by-2 Direct Injection-Locked Frequency Divider by using distributed Inductor

IC number	Institution	Project name
T18-99B-163	NCNU	A 1.5V Q-Band low power and wide-band Divide-by-2 Direct Injection-Locked Frequency Divider using tunable LC Source-Degeneration technique
T18-99B-164	NCNU	A 1.5V Ka-Band low power and wide-Band divide-by-2 direct injection locked frequency divider using forward body bias technology
T18-99B-165	NCNU	Design and Implementation of Front-end for 24GHz ACC(Adaptive Cruise Control) Radar system Applications
T18-99B-166	NCNU	The testkey of Marchand Balun on a silicon substrate
T18-99B-167	NCNU	A 1.5V Ka-Band low power and wide-band Divide-by-4 Direct Injection-Locked Frequency Divider using LC Source-Degeneration technique
T18-99B-168	NCNU	Design a transformer base K-Band VCO.
T18-99B-169	NCNU	Using the CPW fed technology to design a V band slot antenna.
T18-99B-170	NCNU	Study of bandpass filters for Ultra Wide Band
T18-99B-171	NCNU	Study of A 60GHz Millimeter-Wave Yagi-antenna with Microstrip Tapered Balun
T18-99B-172	NCNU	Study of 1.45mW Low Power, Low Noise Amplifier with Low Power Network Techniques for Ultra-Wide-Band System Applications.
T18-99B-173	NCNU	A 1.5 V Q-Band low power and wide-Band divide-by-five direct injection locked frequency divider
T18-99B-174	NCNU	A OOK Transmitter for Wireless Bio-sensor System Application
T18-99B-175	NCNU	The Design Of Ultra-Wideband CMOS RF Receiver Front-End
T18-99B-176	NCNU	A Low Power Folded Mixer For K Band Applications
T18-99B-177	NCNU	The CMOS RF Front-end For K Band Applications
T18-99B-178	NCNU	A 2-GS/s Flash ADC
T18-99B-179	NTU	The Design of Dual Band Low Noise Amplifier
T18-99B-180	NTU	Wideband Low Power Received Signal Strength Indicator
T18-99B-181	NTU	A 30-GHz Frequency Synthesizer with On-Chip Crystal Reference
T18-99B-182	NTU	Kvco Equalization and High PSRR VCO
T18-99B-183	NTU	A CDR for Multi-Media Applications in wire-line communication
T18-99B-184	NTU	A Programmable-gain 5.2-GHz Low-Noise Amplifier
T18-99B-185	NTU	A low power and low flicker noise CMOS direct conversion RF front-end receiver
T18-99B-186	NTU	Ku band Continuous tuning constant phase shifter keep constant group delay using CRLH transmission line
T18-99B-187	NTU	A 14GHz And 6G Dual-band Voltage-Controlled Oscillator
T18-99B-188	NTU	22-29 GHz High Efficiency Power Amplifier
T18-99B-189	NTU	A 2.4/5.2 GHz Switchable Dual Band LNA In 0.18 μ m CMOS
T18-99B-190	NTU	A 10GHz LNA In 0.18 μ m CMOS
T18-99B-191	NTU	A 20 ~ 28 GHz broadband power amplifier using wideband impedance transformation technique
T18-99B-192	NTU	vco with a new varactor design
T18-99B-193t	NTU	varactor
T18-99B-194	NTU	24 GHz Adaptive Bias Power Amplifier
T18-99B-195	NTU	A 4-bit Wideband Vector-sum Phase-shifter
T18-99B-196	NTU	Implementation of pH sensor with ISFET
T18-99B-197	NTU	The design of RF power amplifier for WLAN applications
T18-99B-198	NTU	A Fast-locked Register-controlled Delay-Lock Loop with Duty-Cycle Correction Using Cyclic TDC and Dual-Loop Control Technique
T18-99B-199	NTU	Low power consumption 20 GHz PLL for serial transmitter
T18-99B-200	NTU	3GHz Multi Modulus Divider

IC number	Institution	Project name
T18-99B-201	NTU	24 GHz VCO and Dividers
T18-99B-202	NTU	24 GHz automatic switch mode power amplifier
T18-99B-203	NTU	5.8GHz automatic gain control power amplifier
T18-99B-204	NTU	24GHz LNA
T18-99B-205	FCU	The 24GHz Low-power consumption low-noise amplifier
T18-99B-206	FCU	A High Linearity Wideband Low Noise Amplifier for K-Band Application
T18-99B-207	FCU	Design and Implementation of A Variable Gain Control Low Noise Amplifier for 13 GHz
T18-99B-208	FCU	Design A Dual-band Low Noise Amplifier for Satellite News Gathering Systems
T18-99B-209	FCU	A ultra low power consumption CMOS low noise amplifier for UWB application
T18-99B-210	FCU	Design and Implementation of A Cascade Low Noise Amplifier for 13 GHz
T18-99B-211	FCU	A Flatness Wideband Low Noise Amplifier for Ku-Band Application
T18-99B-212	FCU	A Ultra Wideband Low Noise Amplifier for K-Band Application
T18-99B-213	FCU	Study on a Current-Matching Charge pump for PLLs
T18-99B-214	LHU	Design of The Low Power and Low Phase Noise Quadrature Colpitts VCO using Gm-boosted technique
T18-99B-215	LHU	Design of high-linearity LNA using a common mode casode configuration
T18-99B-216	LHU	A Low Power Front-end Circuit Design of Receiver for 802.11a Application
T18-99B-217	LHU	Design of Up and Down Conversion Mixer combining Oscillator
T18-99B-218	LHU	Down-conversion Mixer With Conversion-gain Enhancement Schematic Operated in 5.4GHz
T18-99B-219	LHU	A High Linearity Down-Conversion Mixer with Class AB Transconductor and Current Bleeding Technologies
T18-99B-220	LHU	A 6.2GHz Low Noise and High Gain RF CMOS Mixer Using Current-bleeding and Inductor-coupling Technologies
T18-99B-221	LHU	Low Power-consumption High Conversion-gain Down-conversion Mixer For WIMAX
T18-99B-222m	NCCU	Design of 77GHz Bandpass Filter-integrated CMOS MEMS Switch
T18-99B-223m	NCHU	The novel high-efficiency micro thermoelectric generator
T18-99B-224m	NTUST	Double Gain Stage Wide-Tuning VCO
T18-99B-225m	NTUST	A Quadrature Voltage Control Oscillator with Inductance Coupling
T18-99B-226m	NTU	Implementation of CMOS-MEMS Single-axis Magnetic Sensor
T18-99B-227m	NTU	Implementation of ISOD CMOS-MEMS Single-axis Gyroscope
T18-99B-228u	NTUT	A 10-GHz 0.18 μ m CMOS Differential Colpitts VCO
T18-99B-229e	CGU	Oscillator in intensity of illumination of RFID
T18-99B-230e	NSYSU	The Low Power Pseudo-differential CMOS OTA Design Based on linear core design
T18-99B-231e	NSYSU	A CMOS OTA with High Linearity Based on Quasi-Floating Resistor and Source Degeneration
T18-99B-232e	NSYSU	A Pseudo-Differential OTA With Common-Mode Feedforward in 1-V Low Power Supply Voltage
T18-99B-233e	NSYSU	A High Linearity Low Power Double Differential-Pair CMOS Transconductor
T18-99B-234e	NSYSU	A ZigBee Receiver with Successive Approximation Analog-to-Digital Converter
T18-99B-235e	NSYSU	TCAM with feedback sense amplifier
T18-99B-236e	NSYSU	Linear Frequency-to-Voltage Converter
T18-99B-237e	NCU	Wide Band Active Quasi-Circulator With Phase Compensation Technique
T18-99B-238e	NCHU	Dual-band sub-1V CMOS LNA for 802.11a/b/g WLAN applications
T18-99B-239e	NCHU	Gm -Boosted Differential Gate-to-Source Feedback Colpitts CMOS VCO
T18-99B-240e	NCHU	A high linearity of direct up conversion modulator for WLAN 802.11a application.

IC number	Institution	Project name
T18-99B-241e	NCHU	A 40 GHz Double-Balanced Gilbert-Cell Mixer
T18-99B-242e	NCHU	Design of 24GHz Low Noise Amplifier
T18-99B-243e	NCHU	A 5GHz Fully-Integrated CMOS Power Amplifier for IEEE 802.11a Wireless LAN
T18-99B-244e	NCHU	LOW POWER VCO for 42GHz
T18-99B-245e	NCHU	A Fully-on-chip Power Supply System for Solar Cells
T18-99B-246e	NCHU	LOW POWER QVCO for U band
T18-99B-247e	NCTU	5.8GHz Low Power Low Noise Amplifier
T18-99B-248e	NKFUST	Frequency Synthesizer For 5.6GHz WiMAX Application
T18-99B-249e	NKFUST	Multiphase All-Digital Delay Lock Loop with Reuse SAR Control
T18-99B-250e	KUAS	Design and Fabrication of An Ultra Miniature Pressure Sensor in Conventional CMOS
T18-99B-251e	KUAS	Sensor readout circuits
T18-99B-252e	YUNTECH	Design of a DLL Frequency Multiplier
T18-99B-253e	NCUE	An 8bit current steering DAC
T18-99B-254e	NTU	Tri-band Power Amplifier Design
T18-99B-255e	NTU	A 2.4GHz Class-AB power amplifier
T18-99B-256e	FCU	Build in Double Egde Clipping Technique for High Speed Circuit Testing
T18-99B-257e	FCU	3D Chip Voltage Measurement Mechanism Using Wireless Transmission
T18-99B-258e	LHU	A Low Voltage High Linearly Folded Mixer for WiMAX application

T18-99C

IC number	Institution	Project name
T18-99C-01a	NTUT	Disparity Modify System Based on Depth Map Generation of Multi-view Video
T18-99C-02a	NCHU	High performance lossless image compression system for wireless projector transmission
T18-99C-03a	NCTU	A Digitally Calibrated 12-bit Successive Approximation ADC
T18-99C-04a	NCTU	A mixed-signal calibrated fully-differential 12-bit SAR ADC
T18-99C-05a	NSYSU	A Implantable SCS Micro Stimulator SOC based on the Gate Control Theory
T18-99C-06a	NTHU	A 1GHz Standard Cell-Based ADPLL with Almost Continuous Frequency Tuning Range
T18-99C-07a	NCKU	Direct Digital Design for Digital controller IC of DC-DC Converter
T18-99C-08a	NTU	Wide bandwidth Phase Locked Loop
T18-99C-09t	CYU	0.18 μ m SCR Incorporated and Tunable-Holding Voltage BJT with NMOS Triggering circuits
T18-99C-10	NTHU	Log-Domain VLSI Implementation on Diffusion Neural Networks
T18-99C-11	NTUST	An Spur-Reduction technique with Sigma-Delta Averaging for a 2.4-GHz Phase-Locked Loop
T18-99C-12	NSYSU	2 \times VDD output buffer with process and temperature compensation
T18-99C-13	NCKU	A Low Power High Performance CMOS Complementary Quadrature Voltage-Controlled Oscillator with the Eight-Ports Symmetric Transformer Coupling for the Fully 802.11a Band Application
T18-99C-14	NCU	The Design of High-Gain Class-AB Power Amplifier for WiMAX Application
T18-99C-15	NCU	The Design of Low Noise Amplifier Exploiting Noise Cancelling Technique
T18-99C-16	NTUT	IC Design for a High Speed Analog Iterative Decoder
T18-99C-17	NTUT	Low-Quiescent-Current Pseudo-digital mode low dropout voltage regulator with Damping Detection
T18-99C-18	YZU	High performance RFID tag circuit design

IC number	Institution	Project name
T18-99C-19	NTUST	A 5.8-GHz RF Receiver Front-End with IF Gm-C Bandpass Filter Design for DSRC Applications
T18-99C-20t	NKFUST	A novel layout design for improving the quality factor of spiral inductors in RFICs
T18-99C-21	NKFUST	A high performance voltage-controlled oscillator using the spiral inductors with a novel layout design
T18-99C-22	FCU	A Wide-band Low Noise Amplifier for K-Band Application
T18-99C-23	NTOU	Design of Ultra-Wide Band Low Noise Amplifier Using Noise Cancellation
T18-99C-24	YZU	On-wafer calibration technique for differential scattering parameters with application of differential device characterization
T18-99C-25	CHU	The research of Voltage-Controlled Saw Oscillator with differential outputs
T18-99C-26	NTUST	Wireless Receiver for Range Finder system
T18-99C-27	NCU	A 5.12MHz, switched-capacitor and switched-opamp SDM for biomedical applications
T18-99C-28	NCU	Sigma-Delta Modulator using in Biomedical signals
T18-99C-29	NTUST	A Low Cost Wide Range and High Accuracy Digital Pulse Width Modulator with Digital Self-Calibration
T18-99C-30	NTU	A variable loop bandwidth phase-locked loop
T18-99C-31u	NTU	A G/FSK Modulator by Using a $\Delta \Sigma$ Fractional-N Frequency Synthesizer
T18-99C-32t	NCHU	Investigation of Differential Multiple Time Programming Non-volatile Memory Cells Using Standard CMOS Processes
T18-99C-33	NTU	High-gain and high-linearity time amplifier
T18-99C-34	NUK	Low Phase-Noise CMOS Tripler using an Internal
T18-99C-35	CGU	A novel Low-Power Colpitts Voltage Controlled Oscillator
T18-99C-36	CGU	0.2V low-power low-noise amplifier
T18-99C-37	NCHU	A 2.5-Gb/s Clock and Data Recovery Circuit Using Oversampling and Frequency-Calibrated Techniques
T18-99C-38	NTUST	A Low Supply Voltage Sensitivity High Accuracy Smart Temperature Sensor Capability of One-Point Calibration
T18-99C-39	NTHU	Adaptive-biased RF power amplifier for WLAN application
T18-99C-40	NTU	A 1-V 24 GHz Low-Power Fractional-N Frequency Synthesizer
T18-99C-41	NTHU	A linear CMOS power amplifier with adaptive-biased circuit for WiMAX system application
T18-99C-42	NTUT	Analysis and Design of the Phase-Locked Loop with Fast-Digital-Calibration Charge Pump
T18-99C-43	NTUT	Research on K-Band Wide-Tuning Range Low Power CMOS VCO
T18-99C-44	NTHU	A current-reused wideband LNA using transformer-feedback
T18-99C-45	NTHU	Dual-Gate MOSFET Distributed Amplifier Based on Transformer Feedback Technology
T18-99C-46	CGU	Low Power Consumption Voltage Control Oscillator with π -type switched capacitor array
T18-99C-47	CGU	A 10GHz-30GHz UWB Down-Conversion Mixer
T18-99C-48	CGU	A Fully Integrated 7~22GHz CMOS Distributed Amplifier
T18-99C-49t	NTU	Low parasitic capacitance ESD device
T18-99C-50	NTU	Design of Low Power Front-End With Linearization Technique
T18-99C-51	NTPU	3rd-order High-Resolution Oversampling Delta-Sigma Analog-to-Digital Converter
T18-99C-52	NTU	A 5.8/24 GHz Dual Band LNA In 0.18 μ m CMOS
T18-99C-53	NCHU	Low Power and Low Voltage Divide-By-2/3 Counter Design
T18-99C-54	NTU	60 GHz PLL front-end
T18-99C-55	NCNU	The 21~27 GHz Low Noise Amplifier Using Current-Reuse technique.

IC number	Institution	Project name
T18-99C-56	NCUT	Integration and design of CRC, Encoder, and Modulator for RFID Application
T18-99C-57	NTU	All Digital Spread Spectrum Clock Generator
T18-99C-58	NCTU	A Low flicker Noise Sub-harmonic Gilbert Mixer with Current Bleeding Technique
T18-99C-59	NCTU	Feedforward RF IQ Mismatch Compensating Circuit
T18-99C-60	NCCU	Design of a Low-Power, Low-Voltage and High CMRR Instrumentation Amplifier for ECG Signal Acquisition
T18-99C-61	NTUST	60GHz Bandpass filter with ACMRC resonator
T18-99C-62	NSYSU	Low-Power Variable Gain Amplifier in Triode Region with Exponential Control
T18-99C-63	NCCU	Digital Controlled Sigma-Delta PWM Boost DC-DC Converter for Energy Harvesting
T18-99C-64	NTUT	A New Low-Voltage Class-D Audio Amplifier Using CMOS Technology
T18-99C-65	NCU	An ultra high efficiency power amplifier with harmonic tuned and low loss layout approach.
T18-99C-66	NTUT	Research on low-power dual-resonator X-band CMOS VCO
T18-99C-67	NTOU	Design of Low Power RF Receiver Front-end Integrated Circuits for Ka-band Communication System
T18-99C-68	NCTU	24 GHz Low Noise Amplifier and Mixer Integration Design
T18-99C-69	FCU	The X-band broadband low-noise amplifier
T18-99C-70	NCCU	5.2 GHz Low Power Consumption Low LO Power Mixer
T18-99C-71	NTUST	A Single-Chip Long Read Range Transceiver for the next-generation UHF RFID Reader
T18-99C-72	NTUT	Research on Novel Stacked Low-Noise Amplifier
T18-99C-73	TKU	A High-Resolution Time-Interleaved Delta-Sigma Modulator with Low Oversampling Rate
T18-99C-74	NCNU	Study on the Boundary Issues of the Resistive Averaging Network in Flash ADC
T18-99C-75	NCTU	Programmable CMOS front-end circuits for Neural Amplifier
T18-99C-76	NTUT	Design of 4-order current-mode tunable bandwidth low-pass filter using current controlled current conveyor transconductance amplifier
T18-99C-77	CGU	A Quadrature VCO with Periodic Coupled-Line Couplers for K-Band Applications
T18-99C-78	NTHU	Reducing Supply Positive and Negative Sensitivity of Ring Oscillators Using Wide-Range Calibration
T18-99C-79	NTUT	High-Performance C-Band Low-Power VCO
T18-99C-80	NUTN	The Design and Implementation of a Miniaturized and High Selectivity 60-GHz Millimeter-Wave Bandpass Filter Using Composite Right/Left-Handed Metamaterial
T18-99C-81u	NTUT	905MHz passive RFID Tag Design
T18-99C-82	NSYSU	2–10-GHz Wideband Low- Noise Amplifier Utilizing Capacitive and Transformer Feedback Technique
T18-99C-83	NCUT	Implementation of Two-Rail Code Totally Self-Checking Checker for Current Mirror
T18-99C-84	NTU	A 22-29 GHz Gain Boosting Low Noise Amplifier
T18-99C-85	NTHU	Fast Adaptive Phase-Lock Loop using Dual-Edge Phase Frequency Detector
T18-99C-86	NTU	Design of a dual-band noise-matching Low-Noise Amplifier
T18-99C-87	NTU	Design of a dual-band T/R switch
T18-99C-88	NTHU	Fast-Lock Triple-State Phase-locked Loop Using Dual-Edge Triggered PFD and Bandwidth Controller
T18-99C-89	NTU	A 3.1 - 10.6 GHz Low Noise Amplifier
T18-99C-90	NCTU	Low Power Cyclic Analog to Digital Converter
T18-99C-91	NCKU	A K-Band CMOS Quasi-Circulator With Phase Cancellation Technique
T18-99C-92	NCKU	A 60 -GHz CMOS On-chip Folded Dipole Antenna

IC number	Institution	Project name
T18-99C-93	NCU	A Low-Power High-Gain Front-end Circuit Design of RF Receiver for WiMAX Application
T18-99C-94	NTHU	A design of High Efficiency DC-DC Buck Converter with Asynchronous Power Saving Control
T18-99C-95	CGU	A K Band LNA with combined with passive Balun
T18-99C-96	NTU	A Low-Voltage and Low-Power Variable-Gain Distributed Amplifier
T18-99C-97	NCTU	A Wideband Mixer with Doubler and Self-Biased Reference
T18-99C-98	YUNTECH	5GHz CMOS LC Voltage-Controlled Oscillator with Dual Tuning Frequency Circuit Design
T18-99C-99	NTPU	A Class D Amplifier Using Fully Differential Current Controlled PWM
T18-99C-100	NTPU	Wide Range Synchronous Mirror Delay
T18-99C-101	NTHU	A Neuromorphic Electronic Nose
T18-99C-102	YUNTECH	Design of A Low Power and High Gain CMOS Low-Noise Amplifier
T18-99C-103	CGU	High P1dB, low insertion loss SPST Ka Band Switch using transmission line input impedance transfer and common inductor resonator techniques.
T18-99C-104	NTHU	Sigma-Delta Modulator for Small-variance Capacitive
T18-99C-105	NTU	The Design of 2.4GHz/5.2GHz Dual Band Quadrature Phase Direct Conversion Receiver
T18-99C-106	TTU	A double-sampling three-bit fourth-order band-pass delta-sigma modulator based on SC tunable resonators
T18-99C-107	STUT	The design of a multi-mode Sigma-Delta Modulator for GSM/WCDMA applications
T18-99C-108	NTU	General Purpose Capacitance Variation Sensing Circuit
T18-99C-109	NCTU	V-band 50GHz Push-Push Oscillator Using Microstrip Line
T18-99C-110	NCCU	Front end circuit of ECG Acquisition Integrated Circuit for Intelligent Healthcare system
T18-99C-111	NCHU	A Wideband Voltage Controlled Oscillator for Ultra-Wideband Applications
T18-99C-112	NCHU	A Voltage Controlled Oscillator for Dual-Mode Ultra-Wideband Applications
T18-99C-113	TTU	Widlar Type Based Temperature Sensors and the Application of the Temperature Sensors.
T18-99C-114	FCU	A CMOS ACMRC Bandpass Filter for K-Band Application
T18-99C-115	FCU	A Gain Control Low Noise Amplifier for 24 GHz Application
T18-99C-116	NCUT	A New 32-Resolution Pulse-Width Modulation Design with Multiple Outputs for LED Dimming
T18-99C-117	NTU	An RF Pulse Generator for High-Efficiency Polar Transmitters
T18-99C-118	NTU	A 20-29GHz Low Power Low LO power Modified Bulk-Driven Mixer Using 0.18 μ m CMOS Technology
T18-99C-119	NTU	使用射頻數位類比轉換器之軟體無線發射機
T18-99C-120	NDHU	A 1.5-V Low Noise Mixer for 3.5 GHz WiMAX System
T18-99C-121	FCU	Design of the Ku-band Low-Power low-noise amplifier application
T18-99C-122	YUNTECH	Design of Low Power UWB LNA
T18-99C-123	NCHU	Xband Injection locked Divider
T18-99C-124	NCU	A 24GHz CMOS Single-to-Balanced Multicoupled Line Bandpass Filter
T18-99C-125	NTU	12GHz VCO & Divider
T18-99C-126	NCU	A Wide Range Delay-Locked Loop with Phase Error Calibration
T18-99C-127t	NTUT	A modeling of carbon nanotube field effect transistor sensor compatible with CMOS
T18-99C-128	NCHU	A RF CMOS mixer with Ultra Low noise for direct down conversion system.
T18-99C-129	NCKU	24GHz Wide Frequency Tuning Range Voltage-Controlled Oscillator Design
T18-99C-130	NCCU	Inductor-less 10Gbps differential transimpedance amplifier

IC number	Institution	Project name
T18-99C-131	NCKU	A 14-bit 200MHz Current-steering DAC with minimum switch dynamic element matching algorithm
T18-99C-132	NCHU	A Injection Lock Divided by Three for Ku-BAND
T18-99C-133	NCNU	K-band Low Noise Amplifier used in short-range radar system
T18-99C-134	NTUST	All-Digital Pulsewidth Control Loop based on Variable SAR Algorithm Delay-Locked Loop
T18-99C-135	NDHU	A Ku-band Low Power Mixer
T18-99C-136	NCTU	Design of Mixer for wideband receiver application
T18-99C-137	LHU	Design of Low Power Up-Conversion Self-Oscillating Mixer
T18-99C-138	LHU	Design of down conversion mixer using noise canceling technique
T18-99C-139	NCU	A CMOS fully integrated power amplifier
T18-99C-140	NCTU	A Freewheel Charge-Pump Controlled Single-Inductor Multiple-Output Step-Up DC-DC Converter
T18-99C-141	NCUT	Delay-Line Sharing Based: A New 200-MHz 16-bit Resolution
T18-99C-142	NTUST	Wide-Locking-Range Divide-by-Three Injection-Locked Frequency Divider Using Sub-Harmonic Enhancing Technique
T18-99C-143	LHU	A Low Power RF Front-end Circuit Design of Receiver for 802.11a Application
T18-99C-144	NTU	An Auto gain controlled 5.2-GHz Low-Noise Amplifier
T18-99C-145	NTU	A high-resolution and wide dynamic range capacitance sensing circuit
T18-99C-146	NTHU	A Low-power Inductorless 10Gb/s TIA
T18-99C-147	NTHU	A Low-power Inductorless 10Gb/s TIA
T18-99C-148	NTU	A new sensing interface for small capacitance change detection by a switch-capacitor oscillator
T18-99C-149	NCCU	A Compact Millimeter-wave Bandpass Filter with the Periodic Ground Structure
T18-99C-150	NCKU	Study on ka band MMIC 2x sub-harmonic down converter mixer by using a novel quasi-circulator
T18-99C-151	NTU	A multi-bit continuous-time delta-sigma modulator with reduced DAC elements and excess loop delay compensation by technique of digital differentiator
T18-99C-152	NTU	Frequency Synthesizer with Auto Calibration Technique
T18-99C-153	NTU	Continuous-Time Delta-Sigma Modulator with Reduced Sensitivity to Clock Jitter by Multi-Step Feedback of Delay Clock Operation
T18-99C-154	NTUST	A Tunable All-Digital Phase-lock loop with high resolution and GHz output frequency
T18-99C-155	NTUST	A 5.2 GHz Low Power and Fast Locking Frequency Synthesizer
T18-99C-156	NTPU	Low Jitter Interpolating Multiphase Phase Locked Loop
T18-99C-157	NTPU	Programmable Analog Zero Equalization and Pre-Emphasis Based LVDS Transceiver for MDDI PHY
T18-99C-158	NCU	K-band Injection Locked PLL
T18-99C-159	NCCU	K-band CMOS Differential Reflection-Type Phase Shifter
T18-99C-160u	NTU	implantable biomedical ultra-low-power wireless receiver
T18-99C-161	NDHU	Design of a T/R Switch in RF Front-end for 3.1~10.6GHz UWB Systems
T18-99C-162	NCU	A Low Phase Noise Gm-Bossted Differential Colpitts VCO applied in K-band
T18-99C-163	NTU	A Wide-Range and Fast-Lock All-Digital Delay-Locked-Loop using a Enhanced SAR Controller and a Hierarchical Delay of Time-to-Digital Converter
T18-99C-164	NCU	A power amplifier with harmonic tuned and stacked structure.
T18-99C-165	CGU	Low phase noise injection locked 77GHz push-push complementary-colpitts oscillator
T18-99C-166	NDHU	Design of a Low Power Noise cancelling LNA for UWB Systems

IC number	Institution	Project name
T18-99C-167	NTUST	High accuracy digital to time converter with dual DLLs
T18-99C-168	NDHU	A High Linearity Power Amplifier for 3.5GHz WiMAX Application
T18-99C-169	NCU	24GHz Low Noise Amplifier for K-band application
T18-99C-170	NTUST	A 5.8-GHz Phase-Locked Loop Chip Design for WiMAX Application
T18-99C-171	NTUST	Design of a Low-Power Pipelined A/D Converter Using Op Amp Sharing and SHA-less
T18-99C-172	NCKU	A Switchable Single/Dual-band Low Noise Amplifier for WiFi/ WiMAX/LTE communication system
T18-99C-173	NCU	A Sub-1V Phase Locked Loop With Constant KVCO Technique
T18-99C-174	NTU	Programmable Discrete-Time Receiver For L1- And L5-Band in GNSS
T18-99C-175	NCNU	The application of RF receiver front-end for 24GHz short-range radar system
T18-99C-176	NCNU	A Low voltage & High Sensitivity OOK Receiver for WSN
T18-99C-177	CGU	Application of 24GHz Low Power Voltage Control Oscillator
T18-99C-178	NCTU	A Current-Reused VCO for X-Band Applications
T18-99C-179	NTUST	A Low Power Push-Push VCO
T18-99C-180	NTUST	A Current Reuse Δ Three-Phase VCO
T18-99C-181	NTUST	Dual-band Injection Locked Frequency Divider with Wider Locking Range
T18-99C-182	NTNU	A Fully Integrated CMOS Power Amplifier for Ku-Band Smart Antenna Application
T18-99C-183	NTNU	A 3.5GHz 0.6-V Micro-Power Low Noise Amplifier for WiMAX Application
T18-99C-184	CGU	10~30GHz Impulse Response Voltage Control Oscillator Circuit Design and Implementation
T18-99C-185	NCCU	Design of Quadrature Divider-by-2 using Mixer-Loop Loading
T18-99C-186	NTU	Dual Mode Differential Class E Power Amplifier with On Chip Power Combiner
T18-99C-187	NCTU	Novel ultra-low power SAR ADC with counter-based digital control circuit
T18-99C-188	NTUST	A Continuous-Time Delta-Sigma Modulator Chip Design with the Hybrid Active/Passive Loop Filter
T18-99C-189	NCCU	A wideband fully-differential inductor-less variable gain LNA
T18-99C-190u	NTUT	Voltage Control Oscillator of RF Gyroscope
T18-99C-191	NTNU	Design of 0.1GHz to 4GHz Divide-by-128~135 Frequency Divider
T18-99C-192	NKNU	A Switchable Multi-band Low Noise Amplifier for WiFi / WiMAX communication system
T18-99C-193	NSYSU	A 5.2 GHz CMOS Power Combining Amplifier with an Integrated Wilkinson Combiner
T18-99C-194	NTU	Sensitivity Tunable Differential Capacitance Change Direction Detect Circuit
T18-99C-195	NTU	A Noise-inhibited 5-GHz Fractional-N Frequency Synthesizer for Wireless LAN Receivers
T18-99C-196	NTU	A 3.6-GHz Band Fractional-N Frequency Synthesizer with Quantization Noise Shifting Technique
T18-99C-197	NSYSU	An RF Sensing Circuit of High-Speed Spectrum Scanning
T18-99C-198	NCCU	Design and Implementation of a 6GHz Spread Spectrum Clock Generator for Serial-ATA 3
T18-99C-199	NCTU	2.4GHz Low-noise Low-power tunable gain receiver
T18-99C-200	NDHU	A 8.8GHz low power VCO by back-to-back technology for MB-OFDM UWB systems
T18-99C-201	NCTU	Design of Miniaturized Ka-band Branch-line Coupler Using New Type CMOS Low-impedance Line Structure
T18-99C-202	NTUST	A 2.4-to-2.5-GHz and 5.15-to-5.85-GHz multiband fractional-N frequency synthesizer
T18-99C-203	NDHU	A 25.3~29.3GHz Low Power Sub-harmonic Mixer
T18-99C-204	NTU	A Low Power OOK Receiver for Medical Applications

IC number	Institution	Project name
T18-99C-205	CGU	Multi-section inductor resonator in UWB CMOS LC-tuned VCO
T18-99C-206	NSYSU	A Vital Sign Sensing Circuit Using Injection Locking
T18-99C-207	KSU	Implementation of a Low-Power CMOS Voltage-Controlled Oscillator for Short Range Radar System Applications
T18-99C-208	NCKU	A 24/77-GHz Millimeter-Wave Low Insertion-Loss Dual-Band Bandpass Filter
T18-99C-209	NCHU	A Frequency-Hopping low Voltage PLL using transformer feedback technology
T18-99C-210	NTU	A energy saving voltage-control oscillator with temperature and process variation detector
T18-99C-211	NDHU	A low noise and low power LNA with noise canceling technology for high band of UWB systems.
T18-99C-212	NDHU	A low phase noise and low power voltage control oscillator by using current-reused technology for IEEE 802.16b
T18-99C-213	NSYSU	Balun using 3D vertical magnetic field coupled combined with low noise amplifier for 10-12GHz application
T18-99C-214	NTUST	A Novel Voltage Controlled Oscillator
T18-99C-215t	NCUE	60-/77-GHz Millimeter-Wave Dual Band Bandpass Filter
T18-99C-216t	NCUE	Millimeter-wave CPW dual-band bandpass filter
T18-99C-217	NCNU	Use in RFID Tag of 915MHz OOK demodulator
T18-99C-218	NCNU	AC to DC converte
T18-99C-219	NCNU	A 24 GHz K Band Down Conversion Mixer
T18-99C-220	NCKU	Implementation of the Integrated Circuit of a 12-GHz Colpitts VCO and a divide-by-3 regenerative frequency divider
T18-99C-221	NCNU	A OOK Receiver for Wireless Bio-sensor System Application
T18-99C-222	NTNU	A 0.9V Low-Power Successive Approximation Register Analog-to-Digital Converter for Biometrics
T18-99C-223+m	NTUT	Design and Fabrication of varactor by CMOS-MEMS process and high dielectric materials
T18-99C-224m	NCTU	Low Actuation Voltage Lateral CMOS MEMS Switch Application for Large Dynamic Range Power Amplifier
T18-99C-225m	THU	A dual-band VCO using tunable MEMS inductors
T18-99C-226e	NTUT	A PLL of 1MHz~512MHz for Frequency Synthesizer
T18-99C-227e	NTUT	1MHz ~ 2GHz for Universal Frequency Synthesizer
T18-99C-228e	NTUT	A High Speed GHz Flash Analog-to-Digital Converter Using Voltage Reference-Selection Method
T18-99C-229e	NCHU	Low cost 10 bit SAR ADC
T18-99C-230e	KSU	Implementation of voltage-controlled oscillator by MOS active load differential amplifier.
T18-99C-231e	CYCU	Low Power 4-bit Flash ADC
T18-99C-232e	NCHU	A Novel Low Power Divide-by-8/9 Counter Design
T18-99C-233e	NCTU	A 5Mhz CMOS Gm-C Filter with -64dB THD
T18-99C-234e	NCTU	A CMOS OTA Using MOSFET In The Triode Region With Linearity Improving By Compensation Mobility Reduction
T18-99C-235e	NTUST	4.9~5.4GHz LC-tank VCO design and analyze
T18-99C-236e	NCTU	A 1.2V high speed OTA with -70dB THD at 40MHZ
T18-99C-237e	NCTU	An 11-bit ultra low power Switch Capacitor DAC for LCD Column Driver
T18-99C-238e	NCHU	High-symmetrical comparator improved 10 bit successive-approximation analog-to-digital converter
T18-99C-239e	NCHU	Preampifier improved 10-bit SAR DAC

IC number	Institution	Project name
T18-99C-240e	NCTU	An Output-Capacitorless Low-Dropout Regulator With Transient Through
T18-99C-241e	FCU	The Research of Low Voltage Second Order Delta Sigma Modulator With Error Reduction
T18-99C-242e	NCCU	An Audio Sigma-delta Analog-to-Digital Converter
T18-99C-243e	NCTU	DC-20GHz active power divider
T18-99C-244e	NTU	A Basic 6T SRAM Design
T18-99C-245e	YZU	0.9V 20uW 227Ks/S 10-Bit SAR ADC
T18-99C-246e	NTHU	Analog VLSI of Multilayer Perceptron Neural Network with Back Propagation Learning.
T18-99C-247e	NTU	Digitally-controlled oscillator
T18-99C-248e	YUNTECH	8-bit Digital to Analog Converter for Bi-phase Muscle Electrical Stimulator

T18-99D		
IC number	Institution	Project name
T18-99D-01a	NTUST	Low Cost Design of Optional Key AES Chip
T18-99D-02a	NTU	A FIR-embedded Phase-MUX-based Transmitter for Bio-medical Implantable Application
T18-99D-03a	NTU	A Low-jitter, Fast-locking Digital LC-PLL using Dynamic Phase Error Compensation Technique for 2.4 GHz ISM Band Application
T18-99D-04a	NTU	An ASK/OOK Super-segenerative Receiver with Delta-sigma Pulse-width Digitizer and Fast Frequency Calibration for MICS Band Applications
T18-99D-05	NTUT	S-Band Active Bandpass Filter
T18-99D-06	NUTN	The Design and Fabrication of a 60-GHz millimeter-wave CMOS Bandpass Filter Using Fractal Miniaturized Technology
T18-99D-07	NCCU	A 2.4GHz BFSK super regenerative receiver
T18-99D-08	NTUST	Transmitter for Distance Detecting Systems
T18-99D-09	LHU	A Low Power Multiple-Gate Mixer for WiMAX System
T18-99D-10	NTU	A Fast-Locked Single Delay Line Digital Delay-Lock Loop
T18-99D-11	NCCU	ECG Acquisition Integrated Circuit for Intelligent Healthcare system
T18-99D-12	NTUT	Second-Order Delta-Sigma Modulator using Successive Approximation ADC for Audio Application
T18-99D-13	NCTU	Low Power Injection Locking Frequency Divider with Novel Input Locking Range Improvement Method
T18-99D-14	NTUST	Low power ASK receiver for biomedical applications
T18-99D-15	YUNTECH	A 4mW LNA used forward body bias technique for UWB
T18-99D-16	NTUT	Analog Sum-Product Decoder for (8,4) Regular Low Density Parity Check Codes
T18-99D-17	NTHU	An Electronic Nose Based on Spiking Neural Network
T18-99D-18	NTUST	A High Accuracy Low Power Time-to-Digital Converter Based on Cyclic Pulse-Shrinking Delay lines with Self-Calibration
T18-99D-19	FCU	Design of Low Loss, Miniature Wideband 180° Hybrid Coupler Using a Novel Phase-Inverter
T18-99D-20	NUTN	The Design and Implementation of a Miniaturized and High Performance 26/60-GHz CMOS Millimeter-Wave Dual-Band Bandpass Filter Using Composite Right/Left-Handed Metamaterial
T18-99D-21	NCNU	Using the CPW fed technology to design a V band antenna
T18-99D-22	YUNTECH	A Low Phase Noise 5GHz COMS LC Voltage Controlled Oscillator With Body-Biasing Technique

IC number	Institution	Project name
T18-99D-23	NCNU	RF to DC CMOS Rectifier
T18-99D-24	NCNU	Design a K-Band CMOS LNA
T18-99D-25	NCNU	A LOW POWER UWB CMOS LNA Using Splitting-Load inductive peaking Technique
T18-99D-26	NCNU	The Design Of 21GHz~27GHz CMOS RF Receiver Front-End
T18-99D-27	YUNTECH	Low Power 5GHz VCO Using Negative Resistance Enhancement Technique
T18-99D-28	NCNU	A New 10-bit DAC Circuit Design for LCD Source Driver
T18-99D-29	NCU	The Design of Fully Integrated Pseudo-Differential High-Gain WiMAX Power Amplifier
T18-99D-30	NCCU	An 11-bit 100-MS/s Pipelined ADC With Gain Error Correction
T18-99D-31	NSYSU	3x VDD Wide-range Mixed-Voltage-Tolerant I/O Cell
T18-99D-32	CGU	Design of a Single-Chip Wireless Communication Module Using CMOS Technology for DVB-S Applications
T18-99D-33	NCNU	The Design Of CMOS RF Low Noise Amplifier Of 21~29GHz
T18-99D-34	NTHU	Dual-Gate Low Noise Amplifier using Trifilar Transformer Feedback for K-Band Application
T18-99D-35	NTHU	A 24GHz Low Noise Amplifier using Input Series Transformer Feedback
T18-99D-36	NSYSU	A protein E detector based on a flecture plate wave technique
T18-99D-37	NCTU	The Design of Chip-to-chip Multi-signaling Communication Mechanism with Common Conduction Layer
T18-99D-38m	NCTU	A monolithic 0.18-um CMOS-MEMS accelerometer with micro-power chopper-stabilized front-end circuit co-design
T18-99D-39	YUNTECH	A Parallel Connection Embedded All Digital Temperature Sensing System Design
T18-99D-40	NTU	Bandwidth enhancement technique for regenerative frequency divider
T18-99D-41	NTHU	A Single-Ended 10-Bit Low power SAR ADC Using Common Mode Voltage based Capacitor Switching Method
T18-99D-42	NCUE	A 1V Wide-Tuning Range Quadrature VCO
T18-99D-43	YUNTECH	A Voltage Fluctuation Immunity Temperature Sensor Cell Design
T18-99D-44	NTUST	Wide Range High Accuracy Low Power Smart Temperature Sensor supporting one-point calibration
T18-99D-45	YUNTECH	A Ultra-Wideband Low Noise Amplifier With Resistive Feedback
T18-99D-46	NCTU	A 5Gb/s Inductorless Open-loop Adaptive Cable Equalizer with Overshoot Detection and Power Management in 0.18 μ m CMOS
T18-99D-47	NTU	Direct Digital Frequency Synthesizer
T18-99D-48	NSYSU	A low Jitter Wide-range Delay-Locked Loop with the Rail to Rail Differential Multi Control Delay Line Implementation
T18-99D-49	NCHU	wide-band Divide-by-two injection-locked Frequency Divider
T18-99D-50	NCHU	Intergrated Carbon Dioxide Micro Sensors
T18-99D-51	NSYSU	An instrumentation amplifier with CMRR (Common-Mode Rejection Ratio) self-calibration for biomedical systems.
T18-99D-52	NTUST	A High Frequency Wide Locking Range Divided- by- Two ILFD with Waffle-shaped NMOS
T18-99D-53	NCKU	Ka-Band Divide-by-3 Frequency Divider with 7.3 GHz input locking range
T18-99D-54	NTHU	Sensing Interface Circuits Apply for Pulse Oximeter
T18-99D-55	KSU	Broadband and low voltage mixer with active balun for 2GHz~13GHz
T18-99D-56	YZU	A Switchable Single/Dual-band Low Noise Amplifier
T18-99D-57	YZU	A 3-8GHz mixer with single inductor using Current Bleeding technique
T18-99D-58	NTUT	IC Design of Analog Min-Sum Decoder for (8,4) Regular Low Density Parity Check Codes with Stopping Iteration

IC number	Institution	Project name
T18-99D-59	NCHU	Injection-Locked Divider by three
T18-99D-60	FCU	A Gain Control Low Noise Amplifier for Satellite News Gathering Systems
T18-99D-61	NCKU	High Isolation and low Insertion loss CMOS Transmit/Receiver Switch for 24GHz Using LC -Tuned
T18-99D-62	NCKU	The Novel True Single-Phase clocked Quadrature Divide-by-Three for MB-OFDM UWB Synthesizer Applications
T18-99D-63	YZU	Design of 3.5GHz transformer based Low Voltage supply mixer for WiMAX system
T18-99D-64	YZU	Full Digital DC-DC Buck Converter
T18-99D-65	NCTU	Design of Wide-IF-Band CMOS Mixers for Millimeter Wave Receiver Application
T18-99D-66	NTU	A sensing interface with offset and flicker noise cancellation, which is with detection range that can be self-calibrated and applies to small capacitance change detection
T18-99D-67	LHU	The Design of High Linearity Power Amplifier for WiMAX
T18-99D-68	NUTN	The Design and Implementation of A Wide-band High Isolation 60-GHz CMOS Transmit/Receive Switch Using Metamaterials
T18-99D-69	NCTU	A 5Gb/s Inductorless Adaptive Cable Equalizer Using a Novel Overshoot Detection Method in 0.18 μ m CMOS
T18-99D-70	NTHU	20Gbps current sourceless 2:1 MUX using double inductor peaking technique
T18-99D-71	NCKU	Microwave injection-locked divide-by-3 and divide-by-5 dual-mode frequency divider
T18-99D-72	NCU	A transconductance improve VCO applied in Ka-band
T18-99D-73	NCHU	Low power Colpitts VCO
T18-99D-74	NSYSU	Design of Inter-Chip Capacitance Coupling Circuit
T18-99D-75	NDHU	Design of a High Linearity Mixer for Ku Band Application
T18-99D-76	YUNTECH	Design of Low Power 2-13GHz Low noise amplifier
T18-99D-77	NTUT	Design and Implementation of Switched-Current Delta-Sigma Modulator
T18-99D-78	NKNU	A low power wide-band RF frondend exploiting noise cancellation
T18-99D-79	CHU	Balances SAW Oscillator with improved phase noise by cross couple pair
T18-99D-80	CYCU	A Variable Gain Low-Noise Amplifier for Mobile Digital TV Applications
T18-99D-81	NCTU	A 0.5V, 10-bit, 10kS/s Successive Approximation Analog-to-Digital Converter for Biomedical Applications
T18-99D-82	YUNTECH	Design of the Low Power Voltage Controlled Oscillator Using Negative Resistance Enhancement Technique
T18-99D-83	NCTU	Design of a mixer for K-Band applications
T18-99D-84	NCTU	Design of frequency doubler for wideband receiver application
T18-99D-85m	NTUST	A Novel 6GHz Low Power Consumption NMOS Couple Quadrature VCO (Voltage Controlled Oscillator)
T18-99D-86	CGU	high CMRR IA with common-mode feedback design
T18-99D-87	NTHU	An inductor-less low-cost low-power 10-Gb/s differential TIA for optical interconnect
T18-99D-88	NTUST	A Differential PMOS Amplitude-Boosting Clapp VCO
T18-99D-89	CYCU	A 4MHz Programmable Gain Amplifier
T18-99D-90	NCU	A CMOS Power amplifier with parallel combining transformer
T18-99D-91	NCHU	Ring Oscillators With Multiple-Input Injecton
T18-99D-92	NTUT	The Design of IEEE802.11a CMOS 5.8GHz Receiver Front-End
T18-99D-93	NCKU	A low power, high CMRR AFE amplifier for long-term ECG acquisition System
T18-99D-94	NTUST	A Dual-band Direct Injection Wide Locking Range Divided- by- three ILFD
T18-99D-95	NCHU	With wide tuning range CMOS VCO
T18-99D-96	NTU	A 2.4GHz & 5.2GHz Low-Voltage Low-Power Current Reused Dual-Band CMOS VCO

IC number	Institution	Project name
T18-99D-97	NCHU	High-Performance Longest Prefix Matching TCAM without Priority Encoder
T18-99D-98	NCU	A 28GHz double-balance Mixer with π -doubler
T18-99D-99	NCU	A CMOS fully integrated power amplifier with transformer
T18-99D-100	NCCU	A Super Regenerative Transceiver for Short Distance Body Sensor Network Applications
T18-99D-101	YUNTECH	Design of High Gain UWB LNA with Self-Forward-Body-Bias technique
T18-99D-102	NTHU	A Packet-based Emulating Platform with Serializer Interface for Heterogeneous IP Verification
T18-99D-103	NCNU	3~11-GHz CMOS UWB LNA Using Inductive Feedback Technique
T18-99D-104	NTHU	Ultra Low-Power 8 Channel Pre-Amplifiers For Neural Signal Acquisition
T18-99D-105	NTU	A low power frequency tripler in K band
T18-99D-106	NTU	IR-UWB transmitter with leakage cancelling
T18-99D-107	NCKU	RF Power Amplifier Using CMOS Power Cells for LTE frequency band
T18-99D-108m	NCCU	Tunable slot antenna using CMOS MEMS Switchable coupling Mechanism
T18-99D-109	NCTU	A delay circuit for ultra-wideband applications
T18-99D-110	NCTU	An Interference-rejecting LNA for WLAN application
T18-99D-111	NCTU	A Wideband Balun Low Noise Amplifier
T18-99D-112	NCTU	A 1~5 GHz Inductorless Frequency to Voltage Converter
T18-99D-113	NCKU	A 50-85 -GHz Wide-band CMOS On-chip Planar Inverted-F Antenna
T18-99D-114	NCU	High power 34dBm CMOS switch
T18-99D-115	NCHU	VCO for Q-BAND
T18-99D-116	NSYSU	A 1-V Rail-to-Rail Automatic Gain Controller with Feed-forward Output Swing Prediction and a Programmable Refresh-rate Peak Detector
T18-99D-117	NTU	An Active-Inductor-Based Frequency Synthesizer with Digital Frequency Calibration
T18-99D-118	YZU	24GHz功率放大器
T18-99D-119	NTPU	A 240-930MHz Synchronous Mirror Delay
T18-99D-120	NTU	Design of synthetic Quasi-TEM Transmission Line for 30GHz PLL
T18-99D-121	NCTU	A mixed-signal calibrated 11MS/s fully-differential 12-bit SAR ADC
T18-99D-122	NCHU	Injection Lock Divided by Two with low power and wide locking range
T18-99D-123u	NTUT	Switching capacitor load of reflective type phase shifter
T18-99D-124t	YZU	PSP Modeling and Gummel symmetry test for two kinds of T18 NMOS components test keys with applications of RFID tag IC designs
T18-99D-125	NCHU	A 24GHz CMOS Low Noise Amplifier
T18-99D-126	FCU	A Low-Noise Amplifier for K-band applications
T18-99D-127	NCKU	Study on high efficient CMOS RF power amplifier by using adaptive bias
T18-99D-128	NCKU	Study on V-band MMIC doubly balanced star diode mixer by using a compact 180° hybrid
T18-99D-129	NTU	A Full K-band 27 dBm Power Amplifier in 0.18 μ m CMOS Process
T18-99D-130	NCTU	Low Power Active Down-Conversion Mixer for 5.8GHz Applications
T18-99D-131	NCTU	Broadband CMOS transistor power divider
T18-99D-132	NSYSU	Bandwidth improvement with CPW-fed meander-line monopole antenna for automotive radar and LMDS
T18-99D-133	NCHU	A VCO with transformer
T18-99D-134	NTUST	High performance divide-by-3 ILFD with Push-Push injection
T18-99D-135	NTUT	Design and Fabrication of Low-actuation Voltage RF Switch by CMOS-MEMS
T18-99D-136	NTHU	A low-power low-cost 10-Gb/s TIA for optical interconnect application

IC number	Institution	Project name
T18-99D-137	NTHU	A PLL-based Frequency Synthesizer for Bluetooth Low Energy Standard
T18-99D-138	FCU	Design and Implementation of Low Noise Amplifier by Using a Cascode Current-Reused Structure at Ku Band
T18-99D-139u	NTU	A 1V, 10-bit, Low Power SAR ADC
T18-99D-140	NCCU	Dual injection wide locking range divider by-2
T18-99D-141	NCCU	2.4 GHz New Low Voltage CMOS Switch Mixer
T18-99D-142	NCNU	A 10 bit Low Cost TFT-LCD Column Driver
T18-99D-143	NTHU	A 12V 500 μ A Neuron Stimulator for Biomedical application implemented in Standard 0.18 μ m CMOS Process
T18-99D-144	LHU	Design of A High-Linearity Up-Conversion Mixer Using the LO Source-Pumped Switches
T18-99D-145	NTUST	A novel push-push frequency doubler
T18-99D-146	FCU	An Ultra Wideband Low-Power Low Noise Amplifier for K-Band Application
T18-99D-147	NCTU	A low power low noise CMOS front-end current mode amplifier for neural recording
T18-99D-148	NTUST	A 2.4 GHz Low Phase Noise and Fast Locking Synthesizer with Combining Fractional-N and Integer-N Modes
T18-99D-149	NTU	A Low Noise Phase-Locked Loop with the Jitter Suppression Technique
T18-99D-150	MCUT	Versatile voltage-mode universal filter
T18-99D-151	NTU	24 GHz Linearized Power Amplifier with Distributed Active Transformer
T18-99D-152	NTUT	Research on Novel Power Amplifier
T18-99D-153	NTUT	High Power and High Efficiency 1.9 GHz Power Amplifier
T18-99D-154	NCTU	500MHz-20GHz active power divider
T18-99D-155	CGU	a low power disipation ka band cross coupled pair VCO
T18-99D-156	NCTU	AN IMPROVED CMOS SILICON RETINA CONTROL CIRCUIT WITH PULSE GENERATOR, LOW-POWER FREQUENCY DIVIDER, AND SOLAR CELLS FOR SUB-RETINAL IMPLANT
T18-99D-157	NTHU	An on-Chip Multi-Class Support Vector Machine Applied to Electronic Nose Data Classification
T18-99D-158	NSYSU	Using 3D stacked chip package technology to realize a low power wide-band CMOS receivers exploiting thermal noise cancellation
T18-99D-159	NTHU	A Multilayer Perceptron Neural Network Integrated Circuit Applied in Odor Classification for a Portable Electronic Nose
T18-99D-160	LHU	Design of a low lo-power and high-linearity mixer for 802.11a application
T18-99D-161	NTHU	The Design of Low Voltage,Low Power Sigma-Delta Modulator for Bio-potential signals
T18-99D-162	NTU	Wireless power transmission between stacked dies
T18-99D-163	NTU	A Anti-harmonic Locking DLL Based Frequency Multiplier
T18-99D-164	NSYSU	Direct Conversion FSK Demodulator using Injection Locked Technique
T18-99D-165	NTUST	A Low Voltage Transceiver Amplifier Integrated with Asymmetric Switch
T18-99D-166	NCTU	Low Power 22-29-GHz Receiver Front End for the Application of Ultra-Wideband Radar
T18-99D-167	NCTU	Low Power 2.4-GHz Receiver Front-End Circuit Design
T18-99D-168	NTUST	A Divider-By 2 and 3 ILFD with Current-Reuse
T18-99D-169	NCNU	Study of 3.3 mW Low Power, Low Noise Amplifier with High Rejection, Active-Passive Band-pass Filter for Ultra-Wide-Band System Applications.
T18-99D-170	NTUST	A dual band divide-by-3 ILFD with low power consumption
T18-99D-171	NTUST	A low power consumption and wide locking ILFD
T18-99D-172	NCCU	A K-band CMOS Low Noise Amplifier with a full 360o Phase Shifting
T18-99D-173	NTU	A Low-Power Current-Reused VCO

IC number	Institution	Project name
T18-99D-174+m	NTUT	CMOS Compatible Contact Mode RF MEMS Tunable Inductor
T18-99D-175	NTUST	Chip Design of a 5.8-GHz Fractional-N Synthesizer for WiMAX Application
T18-99D-176	NTUST	12 MHz Switched-Capacitor Low-Pass Ladder Filter Chip Design for WiMAX Application
T18-99D-177	NTU	An Auto controlled Programmable Gain Amplifier
T18-99D-178	NCKU	A 20 MHz, 10-ps Resolution Sub-range Time-to-Digital Converter
T18-99D-179	NTUST	A New Ultra-Low-Power UHF Tag Design for The Next Generation RFID Applications
T18-99D-180	NSYSU	100 Mbps transceiver design with error detector for FlexRay
T18-99D-181	FCU	Ku-band Low Noise Amplifier Base on Transformer
T18-99D-182u	NTUT	A voltage controlled LNA for Linearity and NF optimization
T18-99D-183	NCNU	A 10-bit TFT-LCD Column Drive using Switched-Capacitor circuit
T18-99D-184t	NCU	Testkey of Transmission Line Transformer in Balun Configuration
T18-99D-185	NCCU	Wideband Applicable RF Power Detector
T18-99D-186	NCCU	0.1~8 GHz application of RF Power Detector
T18-99D-187	NTU	A Broadband Radio-Frequency Envelope Detector for 802.11b/g Standard Power Amplifier
T18-99D-188	NTU	A bias selection methodology to optimize the linearity of the CMOS cascode power amplifier
T18-99D-189	NTU	24 GHz Transformer Combining Power Amplifier
T18-99D-190m	NTUST	Low Power Balanced VCO
T18-99D-191	NTUST	Low Power Balanced QVCO
T18-99D-192	NTUST	Dual Band Wide Locking Range Frequency Doubler
T18-99D-193	NCKU	A 40-65GHz sub-harmonically pumped resistive mixer
T18-99D-194	NTU	The Design of 2.4GHz / 5.2GHz Low Noise Amplifier with Input Mismatch Technique
T18-99D-195	NTU	A design of receiver front-end for CMUT
T18-99D-196	NTUST	A 10-bit 40MHz Pipelined ADC Using Subsampling Technique
T18-99D-197	NTU	An Analog Automatic Gain Control(AGC) Circuitry
T18-99D-198	NTUST	Chip Design of a Continuous-Time Complex Bandpass Delta-Sigma Modulator for WiMAX
T18-99D-199	NTUST	High performance Colpitts VCO with low power consumption
T18-99D-200	KSU	Implementation of the transmitter front-end with pseudo-random-noise code generator for TDOA wireless location system
T18-99D-201	NTUST	Low power voltage control oscillator
T18-99D-202	NTUST	Wide locking range divide-by-3 ILFD using ring oscillator
T18-99D-203	NTU	A Fast Start up OOK Modulated Transmitter for MICs
T18-99D-204	NTU	A tunable Low Noise Amplifier center at 5.2-GHz
T18-99D-205	NSYSU	Using 3D vertical coupled and fully differential transformer combined with front-end receiver
T18-99D-206	NUK	A Low Power Consumption QVCO for WIMAX Application
T18-99D-207	NCHU	Wide bandwidth Voltage controlled Oscillator Of Varactorless
T18-99D-208	NTUST	Chip design of lowpass switched-capacitor ladder filter
T18-99D-209	NTUST	Dual injection structure divide-by-3 ILFD
T18-99D-210	NTPU	A Clock Generator for 1X~16X DVD Recorder Write Pulse
T18-99D-211	NTPU	CMOS Bulk Input Current Switch Logic Circuit Design
T18-99D-212e	NKFUST	A Multiphase All-Digital Delay-Locked Loop with Reuse SAR
T18-99D-213e	YUNTECH	The design of low-voltage fully differential MOSFET-only switched-capacitor amplifier
T18-99D-214e	FJU	Low voltage first order switched current delta sigma modulator

IC number	Institution	Project name
T18-99D-215e	YUNTECH	The research on MOSFET-only low-voltage fully differential CMOS switched-capacitor amplifier
T18-99D-216e	NSYSU	A Low-Power CMOS VCO for 2.4GHz
T18-99D-217e	NTHU	A 200MHz vernier delay line TDC with capacitance compensation in Delay Lock Loop
T18-99D-218e	NCTU	Design of a broadband high CMRR amplifier with Current reuse configuration
T18-99D-219e	NCTU	A K Band LNA with complementary output
T18-99D-220e	NCUE	Novel 4-bit Binary-Coded Decimal Adder
T18-99D-221e	NCHU	Regulation Circuits Design for Solar Cell Systems
T18-99D-222e	KUAS	High speed optical receiver analog front-end
T18-99D-223e	NTUT	Research on Q-band fully integrated power amplifier
T18-99D-224e	NKFUST	Frequency Synthesizer For 5.6GHz WiMAX Application
T18-99D-225e	NCTU	A Energy Efficient Successive Approximation Analog-to-Digital Converter
T18-99D-226e	NKFUST	A Low Phase Noise 5-GHz CMOS Quadrature VCO
T18-99D-227e	NSYSU	A Self-Switched Biasing CMOS LC VCO with Current Splitting Architecture
T18-99D-228e	NCHU	A 0.18 μ m CMOS low-dropout regulator
T18-99D-229e	CYCU	An 8x8 SRAM array
T18-99D-230e	NCU	Delay-Locked Loop with high accuracy on Wide Range
T18-99D-231e	NCHU	A Buck converter with nano-level passives
T18-99D-232e	NCHU	A DC-DC PWM Buck Converter
T18-99D-233e	NCTU	A 12-bit 8MS/s Successive Approximation Analog-to-Digital Converter
T18-99D-234e	CYCU	1.8V CMOS rail-to-rail input and output operational amplifier
T18-99D-235e	NCHU	10 bit SAR ADC based on Flip-Flop low frequency improvement
T18-99D-236e	YZU	UHF RFID Tag Integration
T18-99D-237e	YZU	A RF-DC rectifier and a voltage regulator system for ultra-low-power RFID tags
T18-99D-238e	NCHU	24GHz CMOS PA
T18-99D-239e	YZU	A New CMOS Temperature Sensor with 10-bit SAR ADC for RFID Applications
T18-99D-240e	YZU	A New CMOS Smart Temperature Sensor
T18-99D-241e	MCUT	Versatile tunable current/voltage-mode universal filter
T18-99D-242e	NSYSU	500MHz Coupling-Capacitance Circuit
T18-99D-243e	NCHU	10 bit ADC base on tunable discharge DAC node
T18-99D-244e	NCHU	Low noise and high-symmetrical comparator improved 10bit successive approximation analog to digital converter
T18-99D-245e	LHU	Design of A 1.8 GHz RC VCO for GSM application
T18-99D-246e	LHU	A 0.8V Bangap Circuit Design
T18-99D-247e	NCTU	5.2 GHz Low power, Low Phase Noise Fully Integrated and Current
T18-99D-248e	NTUT	125 MHz 6 Bit Digital To Analog Converter
T18-99D-249e	NCHU	A 24GHz CMOS mixer for direct down conversion system.
T18-99D-250e	NCU	Implementation of A 2.4-GHz PLL Application and Design

TN90RF-99A

IC number	Institution	Project name
TN90RF-99A-01	NTU	PLL front-end for 57-66 GHz millimeter-wave application
TN90RF-99A-02	NCNU	The low voltage and wide-band Divide-by-2 Direct Injection-Locked Frequency Divider
TN90RF-99A-03	NCNU	he wide-band and high-performance Divide-by-2 Direct Injection-Locked Frequency Divider using Tunable LC Source-Degeneration technique .

IC number	Institution	Project name
TN90RF-99A-04	NCU	24 GHz Current-Reused VCO with Transformer-Feedback
TN90RF-99A-05	CGU	A 10GHz-30GHz UWB Up-Conversion Mixer
TN90RF-99A-06	NCHU	The 24GHz Frequency Synthesizer
TN90RF-99A-07	NTU	An Energy-Efficient SAR ADC with Rail-to-rail Input Capability for Single-ended Micro-Sensor Applications
TN90RF-99A-08	NTU	A New Linearization Technique for Cascode Power Amplifier
TN90RF-99A-09	CGU	A 10~30-GHz UWB Low Power CMOS Distributed Amplifier and Double-Balanced Mixer
TN90RF-99A-10	NTU	60GHz Low Power Low Noise Amplifier with Linearizer
TN90RF-99A-11	NTHU	A 50MS/s 8bit Asynchronous SAR ADC
TN90RF-99A-12	NTU	A 24/77 GHz Dual Band LNA In 90nmLP CMOS
TN90RF-99A-13	NCHU	A Wideband LNA for V-Band Applications
TN90RF-99A-14	NCU	A Darlington-pair VCO Applied in V-band
TN90RF-99A-15	NTU	A 20Gb/s Duobinary Transceiver with Adaptive Technique for Pre-emphasis
TN90RF-99A-16	NTHU	60Gb/s 2:1 Multiplexer
TN90RF-99A-17	NTU	60GHz Low Noise Variable Gain Amplifier with Low Phase Variation
TN90RF-99A-18	NTU	20Gb/s AC Coupled Interconnect Chip-to-Chip Receiver
TN90RF-99A-19	NTU	A Multi-Phase-Generator using Distributed Locking
TN90RF-99A-20	NTU	A 70nW 100KS/s 10b low gate count ADC
TN90RF-99A-21	NCKU	A wide IF band Mixer applied to V-band application
TN90RF-99A-22	NCKU	A V-band Up-conversion Mixer with Transmitting Amplifier
TN90RF-99A-23	NTU	V-band Vector Sum Modulator Using Low Phase Variation Variable-gain Amplifier
TN90RF-99A-24	NTU	A 60 GHz Vector Sum Phase Shifter using modified Vector Modulator
TN90RF-99A-25	NCKU	V-band wideband voltage controlled oscillator using tapered transmission line
TN90RF-99A-26	NCKU	A 60-GHz CMOS Transmit/Receive Switch Using Body-floating and Leakage Cancellation techniques
TN90RF-99A-27	NTHU	A 77 GHz voltage controlled oscillator using self oscillated Tripler technique
TN90RF-99A-28	NTU	A Wide Range Multi-Phase DLL
TN90RF-99A-29	NCKU	V-band CMOS Divide-by-5 Direct Injection-locked Frequency Divider
TN90RF-99A-30	NTU	6Gbs Clock and Data Recovery Circuit with Jitter-Tolerance Transfer Curve BIST
TN90RF-99A-31	NTU	V-Band Up-converted Passive Drain Mixer
TN90RF-99A-32	NCU	A DC - 80 GHz Cascade Single Stage Distributed Amplifiers
TN90RF-99A-33	NTUST	QILFD Divide by 2 Using Double Cross Coupled Active Inductor
TN90RF-99A-34	NCKU	A 60-GHz CMOS Receiver RF Front-End
TN90RF-99A-35	NCKU	A 12-bit 100-MS/s 3-mW Hybrid Binary-Search SAR ADC
TN90RF-99A-36	NTU	57-66 GHz Automatic Gain Control Power Amplifier
TN90RF-99A-37	NTU	A V-band vector sum phase shifter
TN90RF-99A-38	NCKU	The implementation of a triple-mode programmable 24-GHz frequency divider
TN90RF-99A-39	NCKU	A programmable 24-GHz frequency divider based on dynamic logic circuit

TN90RF-99B

IC number	Institution	Project name
TN90RF-99B-01	NCU	24 GHz Current-Reused Quadrature VCO with Transformer Feedback
TN90RF-99B-02	NTHU	A Novel MUX-FF Circuit for Low Power and High Speed Serial Link Interfaces
TN90RF-99B-03	NTUST	The Low Voltage and Low Power Voltage Control Oscillator

IC number	Institution	Project name
TN90RF-99B-04	NTU	A 10bit Energy-Efficient SAR ADC for Single-ended Micro-Sensor Applications
TN90RF-99B-05	NTU	A 20Gb/s Duobinary Receiver
TN90RF-99B-06	NTHU	A K-band LNA using Junction varactor for noise optimization and ESD protection
TN90RF-99B-07	NCKU	10-bit 100-MSPS Pipelined Analog-to-Digital Converter using Pseudo-differential Amplifiers
TN90RF-99B-08	NCHU	The 42GHz Frequency Synthesizer
TN90RF-99B-09	CGU	Cost-Effective and High Noise-Immunity Markov-Random-Field Noise-Tolerant VLSI Circuits by Using Transmission Gates
TN90RF-99B-10	NCU	A New All-Digital High-Resolution Wide-Range Synchronous Mirror Delay with Variable Duty Cycle
TN90RF-99B-11	NCU	A low supply voltage ADPLL using multi-phase DCO
TN90RF-99B-12	NTUST	A Novel Dual-Band Quadrature Divide By 2 ILFD (Injection Locked Frequency Divider)
TN90RF-99B-13	NCTU	A Multi-Band Burst-Mode Clock and Data Recovery Circuit
TN90RF-99B-14	CGU	A V-band CMOS Adjustable linearity LNA Using Dual Noise-Matching
TN90RF-99B-15	NCKU	60-GHz CMOS Variable Gain Amplifier
TN90RF-99B-16	NCTU	A 10Gb/s fully CMOS Optical Receiver with Adaptive Equalizer
TN90RF-99B-17	NTU	Sigma-Delta Modulator with digital ELD compensation technique and binary-searching quantizer
TN90RF-99B-18	NTNU	Design of 60 GHz low noise amplifier for WPAN application
TN90RF-99B-19	NCKU	Design of 60-GHz CMOS On-Chip Polarization-Diversity Yagi Antenna with Polarization-Switching Circuit
TN90RF-99B-20	NCKU	Design of 60-GHz CMOS Receiver RF Front-End with Integrated On-Chip Yagi Antenna
TN90RF-99B-21	NCU	W-band Divided-by-3 Injection Locked Frequency Divider
TN90RF-99B-22	NCKU	60-GHz Direct Conversion Sub-Harmonic Mixer with Integrated VCO
TN90RF-99B-23	NCKU	A 12-bit Binary-Search SAR ADC with an Improved Capacitor Array
TN90RF-99B-24	NTU	A 60-GHz Power Amplifier with a New Power Combination Technique
TN90RF-99B-25	NTU	Transformer Rat-race Passive Drain Mixer
TN90RF-99B-26	NCKU	A V-Band CMOS Quasi-Circulator With Phase Cancellation Technique
TN90RF-99B-27	NTHU	A Novel Self-Reconfigure Sampling Rotation Frequency Detector for Full Rate Wide Range Clock Recovery Circuit
TN90RF-99B-28	NTHU	20Gb/s external modulator laser driver
TN90RF-99B-29	CGU	A CMOS stacked differential oscillator
TN90RF-99B-30	NTU	A Broad-Band Low Noise Amplifier With Multi-Port Inductor and Transformer for Q Band Applications
TN90RF-99B-31	CGU	10-30GHz Low-Power Impulse-Based UWB Transmitter
TN90RF-99B-32	NCKU	W-band wideband voltage controlled oscillator

TN90RF-99C		
IC number	Institution	Project name
TN90RF-99C-01	NTNU	Third-Order Sturdy MASH with Digital Feed-forward Delta-Sigma Modulator for Audio Application
TN90RF-99C-02	NTHU	A 24Gbps 4-port STDM Switch IC Switching Directly on High-speed Domain
TN90RF-99C-03	NTHU	A CMOS Dual band Millimeter Wave Frequency Synthesizer for Automotive Radars
TN90RF-99C-04	NTHU	A 77 GHz Low Noise Amplifier with Ground Shield Technique

IC number	Institution	Project name
TN90RF-99C-05	NTHU	A Novel 8:1 MUX-FF Circuit for Low Power and High Speed Serial Link Interfaces
TN90RF-99C-06	NCHU	Vband Divide-by-Three injection-locked Frequency Divider
TN90RF-99C-07	NTU	28~32 GHz PLL front-end
TN90RF-99C-08	NTU	Low Noise Amplifier for Q Band Applications
TN90RF-99C-09	NTU	A Low Noise Amplifier for V Band Applications
TN90RF-99C-10	NTHU	Current Reusing VCO and Divide-by-Four Frequency Divider
TN90RF-99C-11	NTU	A 0.25V 15KS/s 10b ADC
TN90RF-99C-12	NCTU	A Frequency Quadrupler with Spur Harmonic Suppression
TN90RF-99C-13	NTU	A Low Power 250MS/s , 10bit Pipelined ADC
TN90RF-99C-14	CGU	Low-Cost, High-Noise-Immunity H-Tree Based MRF Noise-Tolerant Circuit
TN90RF-99C-15	NTU	The design of a programable phase lock loop circuits
TN90RF-99C-16	NCHU	A 6-bit 1-GHz Sample Rate Pipelined Analog-to-Digital Converter With Open-Loop Residue Amplifiers
TN90RF-99C-17	NTU	High Efficiency Transmitter Front-end Module for FMCW Radar Application
TN90RF-99C-18	NTU	A 9-bit Low Power Asynchronous SAR ADC for Bio-Sensor Application
TN90RF-99C-19	NCU	Low-Power Quadrature VCO
TN90RF-99C-20	NCKU	Design of 60-GHz MM-wave CMOS T/R Switch Using Improved Adjustable Leakage Cancellation and Body-Biasing techniques
TN90RF-99C-21	NTNU	60GHz Low Noise Amplifier
TN90RF-99C-22	NCHU	A High Speed ROM-less direct digital frequency synthesizer circuit
TN90RF-99C-23	NTNU	60GHz Transceiver for WPAN Application
TN90RF-99C-24	NTNU	40-110GHz Wideband Mixer
TN90RF-99C-25	NTU	A 24/77 GHz Dual Band LNA In 90nmLP CMOS
TN90RF-99C-26	NTUST	Dual-band 11GHz/6GHz Series-coupled QVCO
TN90RF-99C-27	NTUST	A 12GHz High Performance Quadrature Clapp-VCO
TN90RF-99C-28	NCTU	A W-band Broad Band Amplifier
TN90RF-99C-29	NCHU	relaxes start-up condition of the high frequency oscillator
TN90RF-99C-30	NTUST	A Three-Phase PMOS Clapp VCO
TN90RF-99C-31	NCTU	A 12-bit 40MS/s Asynchronous Successive Approximation Analog-to-Digital Converter
TN90RF-99C-32	NCNU	A Low Noise Amplifier for V-Band applications
TN90RF-99C-33	NCNU	The low power and wide-band Divide-by-2 Direct Injection-Locked Frequency Divider applied for W-band
TN90RF-99C-34	NCU	W-band Dual-Mode Injection Locked Frequency Divider
TN90RF-99C-35	NCU	Design of a Full-Rate Data Recovery Circuit for Serial Link Data Transmission with Spread-Spectrum Clocking
TN90RF-99C-36	NCKU	High isolation power divider for millimeter-wave application
TN90RF-99C-37	NTU	A fully Intergraded 60 GHz Receiver
TN90RF-99C-38	KSU	Implementation of a BPSK transmitter front-end for Short Range Radar system application
TN90RF-99C-39	NTU	1Gb/S GFSK Demodulatr and Clock data Recovery Circuit Integrated Chip Design
TN90RF-99C-40	NTU	Bandwidth 700MHz 60dB VGA
TN90RF-99C-41	NTU	0.045-3 GHz Low-Phase Error Voltage Controlled Variable Attenuator
TN90RF-99C-42	NCKU	The implementation of a triple-mode programmable 24-GHz frequency divider with an adaptive bandpass filter via switching capacitors

TN90RF-99D

IC number	Institution	Project name
TN90RF-99D-19	CGU	A 10~30-GHz UWB Low Power CMOS Receiver
TN90RF-99D-26	CGU	A 60 GHz Low-Noise Amplifier Using EC-CPW Slow-wave Transmission Lines in 90-nm CMOS Technique
TN90RF-99D-27	CGU	A V-band CMOS Injection-Locked Frequency Multiplier Using EC-CPW Slow Wave Technique.
TN90RF-99D-40	CGU	A 60GHz High isolation, low insertion loss SPST Switch using body-floating and shunt inductor resonator techniques.

UN90-99A

IC number	Institution	Project name
UN90-99A-01a	NTHU	Clock Synchronization Method and Circuit for 3D IC's
UN90-99A-02a	NCNU	Chip design of Inference type instruction set DSP processor
UN90-99A-03a	NTHU	Design and Implementation of lattice Reduction Algorithm for lattice-reduction-aided MIMO Detection
UN90-99A-04a	NTHU	Interpolation-based QR Decomposition Processor for MIMO-OFDM
UN90-99A-05a	NTHU	High Throughput FFT Processor for Optical OFDM System
UN90-99A-06a	NCCU	Run-time Calibrated Non-Strobe Sense Amplifier For LV SRAM
UN90-99A-07	NTHU	Low-Supply Voltage charge-pump circuit for embedded non-volatile memory of ultra low-voltage SoCs.
UN90-99A-08	NCTU	High speed A/D converter and D/A converter for Pulse Amplitude Modulation Signal
UN90-99A-09	NCTU	ultra-low-power on-chip bus design
UN90-99A-10	NTUST	Novel Ultra Low Power ILFM by 3
UN90-99A-11	NTUST	Harmonic-Mixed Divide-by-5 Injection-Locked Frequency Divider

UN90-99B

IC number	Institution	Project name
UN90-99B-01a	NTHU	A 2.8 ps-Resolution All-Digital Duty-Cycle Corrector With a Pulse Width Detector
UN90-99B-02a	NCU	A High Throughput and High Power-efficiency 4×4 64-QAM K-Best MIMO Detector
UN90-99B-03a	NCTU	A Power-Efficient Programmable Vertex Processor Design for Biomedical Applications
UN90-99B-04a	NCCU	Low-Cost, Low-Power, One-Point-Calibrated All-Digital Temperature Sensor for SOC Applications
UN90-99B-05a	NCHU	Iterative QR Decomposition Architecture Using the Modified Gram-Schmidt Algorithm for MIMO Systems
UN90-99B-06a	NTHU	A Low-Complexity Full-mode Codec for WiMAX LDPC codes
UN90-99B-07t	NCTU	Dual-Gate Cascade MOSFET design with merged S/D diffusion region and dynamic body biases for RF performance enhancement
UN90-99B-08	NCKU	A minimized directional coupler for V band application
UN90-99B-09t	NCTU	The Impact of Layout Dependent STI Stress on Low Frequency Noise and High Frequency Performance in Nanoscale CMOS
UN90-99B-10	NTUST	Complex BPF for Low-IF Receivers with an Automatic Frequency Tuning Circuit
UN90-99B-11	NTUST	A 5-GHz 90nm CMOS Transformer-Feedback Miller VCO
UN90-99B-12	NTUST	High performance divide-by-3 ILFD with transformer-coupled injection
UN90-99B-13	NTUST	Low Power Dual Band VCO Using Twin Resonator

UN90-99C		
IC number	Institution	Project name
UN90-99C-01a	NCHU	VLSI Implementation of high throughput combined RS and LDPC decoders for optical communications
UN90-99C-02a	NCU	Design of Configurable K-Best MIMO Detector for 2×2 , 4×4 , and 8×8 Data Streams
UN90-99C-03a	YUNTECH	Low Cost Half-Parallel LDPC Decoder in High Throughput Application
UN90-99C-04a	NCHU	Algorithm and Architecture Design of HDTV1080p Power-Aware Inter Prediction Processor in H.264/AVC High Profile
UN90-99C-05a	NTHU	A decoder for Reed-Solomon based LDPC codes
UN90-99C-06a	NTNU	A Mid-speed, Multi-bit, Second-order Delta-Sigma Modulator with high accurate truncator for RF Transmitter
UN90-99C-07a	NCCU	An Ultra-Low Voltage (ULV) Processor with Latency-Adaptive Computing Engines
UN90-99C-08	NCCU	High Power Efficiency DC-DC Converter for Wide Load Range Application
UN90-99C-09a	NCCU	Low-Voltage and High-Speed Read Only Memory Design
UN90-99C-10	NTUST	A low phase noise VCO using active inductor
UN90-99C-11	NTUST	A divide-by-3 injection-locked frequency divider with dual band locking range
UN90-99C-12a	NCHU	Implementation of a 4G samples/per second FFT design for OFDM based passive optical network applications
UN90-99C-13	NTU	Fully Integrated Frequency Synthesizer with Modified Time-Domain Binary Search Algorithm Based Leakage Calibration Technique for DVB-T Applications
UN90-99C-14a	NTHU	A 700Mbps 4x4 Scalable Multiple-Candidate-Selection QRSIC MIMO Detector with Interpolated QR preprocessor
UN90-99C-15	NTUST	A 60GHz High Performance Divide-by-2 Injection-Locked Frequency Divider
UN90-99C-16	NTU	Design of Software Define Radio Receiver
UN90-99C-17	NTUST	Low Power Wide-Locking-Range Divide-by-Two Injection-Locked Frequency Divider

T25HV_99B		
IC number	Institution	Project name
T25HV-99B-01	NSYSU	A High Voltage Battery Charger with Smooth Charge Mode Transition in BCD Process
T25HV-99B-02	NSYSU	A 5 V to 20 V DC/DC Boost Converter