

# Data Converter



## The Best Data Converter Total Solution Provider

### Overview

Global Unichip Corp. (GUC), the Advanced ASIC Leader, is the industry's best data converter IP solution provider. For different applications we have optimized solutions to meet or exceed customer's expectation. Huge number of customers have adopted our data converter from 0.18um to N7 with massive of production volume. Many successful stories give us confidence about customization quality and delivery time to meet your any special requirement.

### Meet Different Applications

- 3G/4G/5G AFE for wireless communication
- PVT monitor for SOC and sensor
- AD/DA for video & audio system

### Wide Technology Node & Robust

- 0.18um to N7
- Huge number of customers & massive production volume

### Optimized Solution

#### ADC

- SAR
- TI-SAR
- Pipeline
- Sigma-Delta-Modulator (SDM)

#### Temperature-to-Digital Converter

- Thermal Sensor ADCs
- Thermal Sensor Comparators

#### DAC

- Current Steering
- R2R
- Sigma-Delta-Modulator (SDM)

#### Audio

- Audio ADC / DAC / CODEC

## Key Features

### The WW first SOC embedded AFE solution of 5G mobile networking

- Ultra low power TI-SAR architecture
- 2.4GHz 10Bit multi-channel IQ-ADC, IQ-DAC, PLL
- 3.6G/7.2/16 GHz 12Bit multi-channel IQ-ADC, IQ-DAC, PLL

### Comprehensive portfolio for different application fields

- 6Bit/8Bit/10Bit/12Bit/16Bit solutions
- Audio bandwidth to Giga-Hz sampling solutions

### PPA optimization and customization supporting

- ADC, DAC, PLL, Filter

### Multi-channel data converter customization supporting

- 132 channel DACs all-in-one

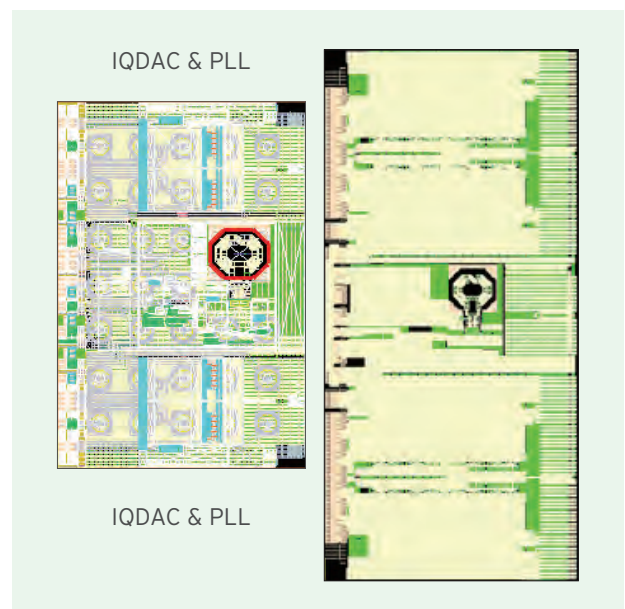
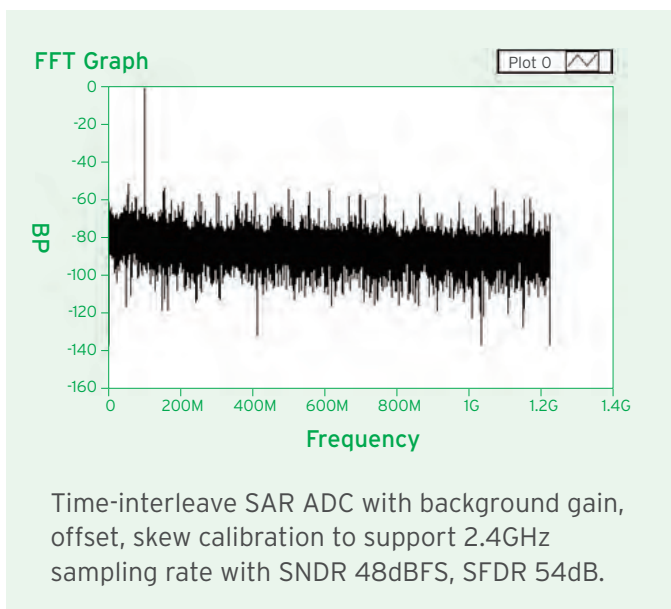
### Thermal/Voltage sensor system supporting

- +/-1C (w/i calibration), +/-5C (w/o calibration)

### TSMC CMOS logic standard process without mixed mode process mask

## 5G AFE Solution Proven

IGAAFETO5A is one AFE in 5G communication system which includes two macros, one is 2xIQ ADC with PLL, another is 2xIQ DAC with PLL, both are built in baseband demodulation chip. The IP was proven in TSMC 28nm HPC+ process. IQ-ADC support DC to 400MHz analog input with 0.5Vpp-differential input and IQ-DAC provide DC to 400MHz 0.5Vpp-differential output.



## IP Portfolio

● Production ● Pilot

IP NAME	FEATURE	PROCESS	STATUS	IP CODE
Communication AFE				
5G AFE	10Bit 2.4GHz Analog Front End	N28HPC+	●	IGAAFET05A
WiFi AFE	12Bit 125MHz/250MHz Analog Front End	N28HPC+	●	IGAAFET06A
WiFi AFE	12Bit 250MHz/500MHz Analog Front End	N12	●	IGAAFEV04A
5G AFE	12Bit 16GHz Analog Front End	N12	●	IGAAFEV03A
THMs				
THM ADC	Thermal Sensor ADC	N7	●	IGATHMX01A
THM ADC	Thermal Sensor ADC	N16 N12	●	IGATHMV06A
THM ADC	Thermal Sensor ADC	N28HPC N28HPC+	●	IGATHMT06A

## ADCs

● Production ● Pilot

IP NAME	FEATURE	PROCESS	STATUS	IP CODE
Pipelined				
Pipeline ADC	12Bit 120MHz Pipelined ADC [1ch]	N55LP	●	IGAADCR10A
Pipeline ADC	10Bit 80MHz Pipelined ADC [2ch]	N65LP	●	IGAADCR06C
Pipeline ADC	12Bit 40MHz Pipelined ADC [1ch]	N65LP	●	IGAADCR11A
SAR				
SAR ADC	12Bit 125MHz SAR ADC [2ch]	N28HPM	●	IGAADCT10A
SAR ADC	10Bit 2MHz SAR ADC [8ch]	N28HPM	●	IGAADCT05A
Wide BW SDM				
Sigma Delta ADC	Programmable Sigma Delta ADC [2ch]	N40LP	●	IGAADCS02A

## DACs

● Production ● Pilot

IP NAME	FEATURE	PROCESS	STATUS	IP CODE
Current steering				
Current Steering DAC	10Bit 300MHz Current Steering DAC [3ch]	N28HPM	●	IGADACT01C
Current Steering DAC	12Bit 80MHz Current Steering DAC [2ch]	N40LP	●	IGADACS02A
Current Steering DAC	10Bit 300MHz Current Steering DAC [3ch]	N40LP	●	IGADACS03C
Current Steering DAC	10Bit 250MHz Current Steering DAC [3ch]	013G	●	IGADACM02C
R2R				
R2R DAC	11Bit 5MHz R2R DAC [1ch]	N28HPM	●	IGADACT02A
R2R DAC	11Bit 5MHz R2R DAC [1ch]	N40LP	●	IGADACS01A

## AUDs

● Production ● Pilot

IP NAME	FEATURE	PROCESS	STATUS	IP CODE
Audio CODEC	Programmable Audio CODEC [stereo]	N28HPM	●	IGAAUDT01A
Audio CODEC	Programmable Audio CODEC [Stereo]	N40LP	●	IGAAUDS01A

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