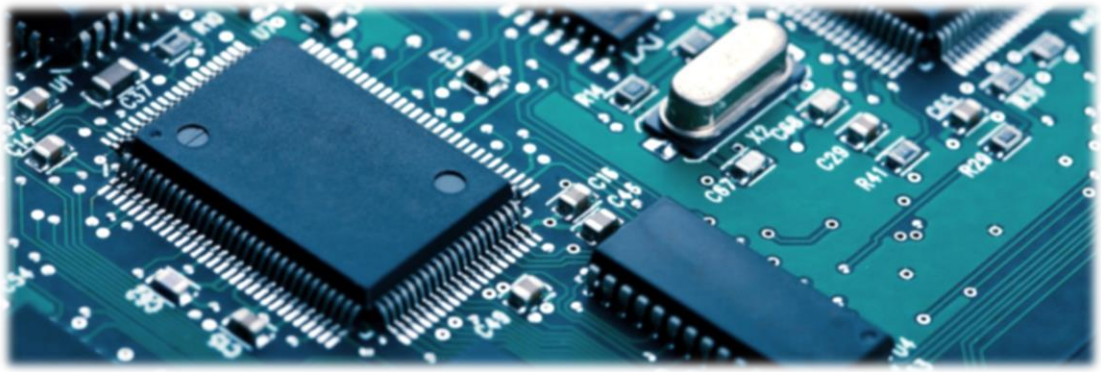
FUDAN MICRO

Shanghai Fudan Microelectronics Group Company Limited

Product Catalogue



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Catalogue

Company Profile

Founded in July 1998, Shanghai Fudan Microelectronics Group Co., Ltd (hereinafter：FMSH) was jointly initiated by Fudan University's State Key Laboratory of Application-Specific Integrated Circuits and Systems and Shanghai Commercial Investment Corporation. The company specializes in the design and development of VLSI circuits, and now it has formed four major products series and the complete solution including Security and Identification, Smart Meters, NVM and Specific Analog Circuits. The FMSH was listed on Hong Kong Growth Enterprise Market (GEM HK: 8102.HK) on August 4, 2000, becoming the first listed company in the domestic integrated circuit design industry. On January 8, 2014, the company was transferred from the GEM to the Main Board (stock code: 1385).

The FMSH is the earliest company that started the development, design and application of smart meter dedicated MCU chips in China. Since the beginning of the 90's, research on smart meter specific MCU chips has already begun; after years of technology accumulation, FMSH has developed Smart Meter MCU Chips, Low-power MCU Chips, High Accurate Real-time Clock Chips, PLC Power Line Chips, and 900M UHF RFID Read-write Device, which can be widely used in smart grids, smart meters, smart street lamps, smart homes, healthcare, and multiple areas.

IoT Terminal Platform Equipment

FM-IoT platform

Overview:

In order to facilitate the rapid and efficient development of various IoT terminal products for R&D personnel of IoT terminal equipment, Fudan Microelectronics has launched a one-stop platform solution for FM-IoT Platform equipment. FM-IoT Platform uses Fudan Microelectronics FM33G0xx and FM33A0xx series ARM chips as hardware platforms, and can be equipped with a variety of mainstream real-time systems including Huawei Huawei LiteOS, Ali AliOS, FreeRTOS and µC/OS II. Users can efficiently realize the secondary development of Internet of Things applications based on this platform.

Features:

Diverse access methods: NB-IoT, Wi-Fi, LoRa, 4G

Mainstream protocol support: CoAP, MQTT, LwIP, DTLS, LoRaWAN

Rich development kits: OLED display, temperature sensor, humidity sensor, light sensor, etc.

Comprehensive platform support: Android mobile APP, WEB terminal control management platform, WeChat applet, etc.

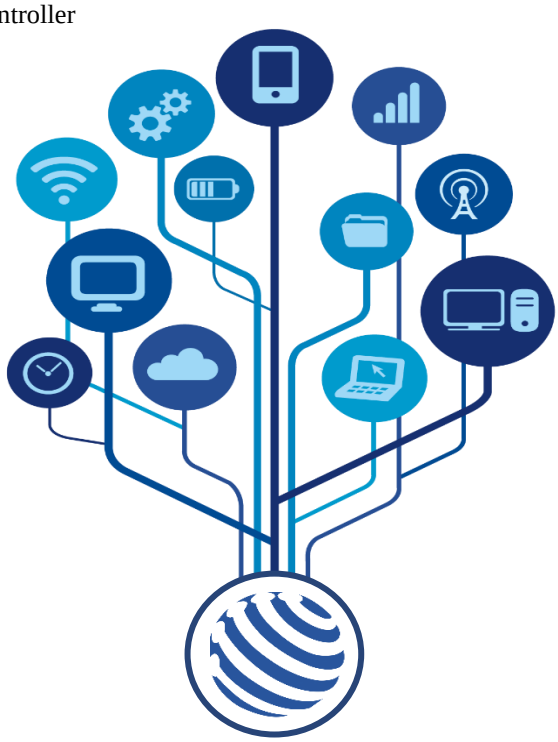
Reliable encryption: software encryption, hardware encryption

Portable secondary development: "cloudy at both ends" development support, device-side embedded firmware SDK, mobile SDK, cloud open API interface

Application areas:

Application Area:

- Smart metering equipment ： Power Meter / Water Meter / Heat Meter / Gas Meter
- Intelligent Fresh Air System, Water Purifier, Door Lock
- Intelligent Security
- Intelligent Temperature Controller
- Smart Home
- Intelligent Building
- Smart City
- Smart Lighting
- Smart Charging Pile, Parking Pile



LG0 series low-power 32-bit ARM Cortex-M0 MCU

FM33LG0xx Series

Overview:

FM33LG0xx series chips are ARM® Cortex®-M0 core 32-bit low-power MCU chip, up to 256 KB Flash memory and 32KB RAM, general peripherals including LCD, RTC, SAR ADC, OPA, AES, COMP, UART, CAN, VBAT, 7816, I²C, SPI, etc.

Features:

- Operating Voltage Range:1.65V ~5.5V
- Operating Temperature Range: -40°C ~+85°C
- Typical current consumption:
  •Active：120uA/MHz@48MHz, 95 uA/MHz @64Mhz
  • LPRUN: 15uA@32KHz
  • Sleep mode without LCD:6uA
  • DeepSleep with RTC, 32KB RAM data & CPU state retention: 1uA
  • DeepSleep without RTC, 32KB RAM data & CPU state retention: 0.8uA
- Support Flash lock and unlock by sector, support online erase and write, remote online upgrade
- Support VBAT backup power switch; built-in CAN2.0B transceiver; built-in low-power timer
- Built-in true random number generator; the whole series of built-in global unique identification code UID number
- Support PDR, BOR, SVD and other power management units, low-power analog comparator x3, rail-to-rail op amp x1
- LCD driver: 4COM×44SEG/ 6COM×42SEG/8COM×40SEG
- Built-in 12bit SAR-ADC, sampling rate up to 2Msps; built-in 12bit DAC, 1Msps
- Built-in advanced timer, support multi-channel complementary PWM output with dead zone; built-in high-precision temperature sensor, accuracy ± 1 ℃
- Low-Power Real-time clock (RTC) with digital calibration, calibration precision ±0.476ppm
- AES hardware operation unit, including 128/192/256-bit

Application Area:

IoT and communication and sensing module
Consumer electronics
Electrical tools
Battery management Smart energy metering

Name	FLASH (KB)	RAM (KB)	Package	IO	GPTIM	BSTIM	ATIM	LPTIM	ADC	UART	LP-UART	SPI	I²C	LCD	RTC	AES	VBAT	CAN	COMP	OPA
FM33LG022	128	32	TSSOP20	14	3	2	1	2	3	3	2	1	1	-	√	√	-	√	3	1
FM33LG023	128	32	QFN32	26	3	2	1	2	5	3	2	1	1	-	√	√	-	√	3	1
FM33LG025	128	32	LQFP48	42	3	2	1	2	6	5	2	3	1	√	√	√	-	√	3	1
FM33LG026	128	32	LQFP64	58	3	2	1	2	12	6	2	3	1	√	√	√	√	√	3	1
FM33LG028	128	32	LQFP80	74	3	2	1	2	16	6	2	3	1	√	√	√	√	√	3	1
FM33LG042	256	32	TSSOP20	14	3	2	1	2	3	3	2	1	1	-	√	√	-	√	3	1
FM33LG043	256	32	QFN32	26	3	2	1	2	5	3	2	1	1	-	√	√	-	√	3	1
FM33LG045	256	32	LQFP48	42	3	2	1	2	6	5	2	3	1	√	√	√	-	√	3	1
FM33LG046	256	32	LQFP64	58	3	2	1	2	12	6	2	3	1	√	√	√	√	√	3	1
FM33LG048	256	32	LQFP80	74	3	2	1	2	16	6	2	3	1	√	√	√	√	√	3	1

LC0 series low-power 32-bit ARM Cortex-M0 MCU

FM33LC0xx Series

Overview:

FM33LC0xx series chips are ARM® Cortex®-M0 core 32-bit low-power MCU chip, up to 256 KB Flash memory and 24KB RAM, general peripherals including LCD, RTC, SAR ADC, OPA, AES, UART, 7816, I²C, SPI, etc.

Features:

- Operating Voltage Range: 1.8V~3.6V (USB)/1.8V~5.5V (No USB)
- Operating Temperature Range: -40°C ~+85°C
- Typical current consumption:
  •Active： 120uA/MHz@48MHz, 95 uA/MHz @64Mhz
  • LPRUN: 30uA@32KHz
  • Sleep mode without LCD:6uA
  • DeepSleep with RTC, 24KB RAM data & CPU state retention: 1uA
  • DeepSleep without RTC, 24KB RAM data & CPU state retention: 0.8uA
- Support Flash lock and unlock by sector, support online erase and write, remote online upgrade
- With 2 low-power serial ports, support falling edge wake up, wake up after receiving a byte, wake up after receiving a specified byte
- Built-in 16bit advanced timer, support multi-channel complementary PWM output with dead zone, the highest PWM resolution is 120MHz
- Built-in hardware USB2.0 FS device, no external crystal required; built-in high-precision temperature sensor, accuracy ± 1 ℃
- LCD driver: 4COM×44SEG/ 6COM×30SEG/8COM×28SEG
- Supports PDR, BOR, SVD and other power management units
- Built-in 12bit SAR-ADC, 1Msps sampling rate
- Built-in 2-channel rail-to-rail OPA op amp; built-in 2-channel low-power analog comparator
- Low-Power Real-time clock (RTC) with digital calibration, calibration precision ±0.476ppm
- AES hardware operation unit, including 128/192/256-bit

Application Area:

Instrumentation	Consumer electronics	Health care
Electrical tools	Smart home	Sensor module

Name	FLASH (KB)	RAM (KB)	Package	IO	GPTIM	ATIM	BSTIM	LPTIM	ADC	UART	LP-UART	SPI	I²C	LCD	RTC	AES	OPA	COMP	USB
FM33LC043U	256	24	QFN32	26	2	1	1	1	8	3	2	1	1	-	√	√	2	2	1
FM33LC046U	256	24	LQFP64	54	2	1	1	1	12	4	2	2	1	√	√	√	2	2	1
FM33LC023N	128	24	QFN32	28	2	1	1	1	9	3	2	2	0	-	√	√	1	1	0
FM33LC025N	128	24	LQFP48	44	2	1	1	1	11	4	2	2	1	√	√	√	2	2	0
FM33LC026N	128	24	LQFP64	56	2	1	1	1	12	4	2	2	1	√	√	√	2	2	0
FM33LC043N	256	24	QFN32	28	2	1	1	1	9	3	2	2	0	-	√	√	1	1	0
FM33LC045N	256	24	LQFP48	44	2	1	1	1	11	4	2	2	1	√	√	√	2	2	0
FM33LC046N	256	24	LQFP64	56	2	1	1	1	12	4	2	2	1	√	√	√	2	2	0

L0 series low-power 32-bit ARM Cortex-M0 MCU

FM33L0xx Series

Overview:

FM33L0xx series chips are ARM® Cortex®-M0 core 32-bit low-power MCU chip, up to 128 KB Flash memory and 16KB RAM, general peripherals including LCD, RTC, SAR ADC, OPA, AES, UART, 7816, I²C, SPI, etc.

Features:

- Operating Voltage Range: 1.8V~5.5V
- Operating Temperature Range: -40°C ~+85°C
- Typical current consumption:
  •Active：105uA/MHz@48MHz
  • LPRUN: 10uA@32KHz
  • Sleep mode without LCD:3uA
  • DeepSleep with RTC, 16KB RAM data & CPU state retention: 1uA
  • DeepSleep without RTC, 16KB RAM data & CPU state retention: 0.5uA
- Support Flash lock and unlock by sector, support online erase and write, remote online upgrade
- Full range of built-in true random number generators
- I2C supports master-slave and low-power wake-up; supports full / half-duplex SPI and can drive TFT color screen.
- LCD driver: 4COM×44SEG/ 6COM×30SEG/8COM×28SEG
- The whole series supports PDR, BOR, SVD and other power management units
- Built-in 12bit SAR-ADC, sampling rate up to 2Msps, built-in rail-to-rail OPA op amp
- Low-Power Real-time clock (RTC) with digital calibration, calibration precision ±0.476ppm
- AES hardware operation unit, including 128/192/256-bit, supports
- ECB/CBC/CTR/GCM/GMAC mode
- Watchdog timer with window (WWDT) × 1, system watchdog timer (IWDT) × 1
- Built-in programmable high frequency RC oscillator, configurable frequency output 8~24MHz

Application Area:

Instrumentation	Consumer electronics	Health care
electrical tools	Smart home	Sensor module

Name	FLASH (KB)	RAM (KB)	Package	IO	16-BIT GPTIM	16-BIT ATIM	32-BIT BSTIM	32-BIT LPTIM	ADC	UART	LP-UART	SPI	I²C	7816	LCD	RTC	AES	OPA
FM33L012	64	8	TSSOP20	14	2	1	1	1	3	3	2	1	1	-	-	√	√	2
FM33L013	64	8	QFN32	28	2	1	1	1	8	3	2	2	1	-	-	√	√	2
FM33L015	64	8	LQFP48	44	2	1	1	1	11	4	2	2	1	-	√	√	√	2
FM33L016	64	8	LQFP64	58	2	1	1	1	12	4	2	2	1	1	√	√	√	2
FM33L022	128	16	TSSOP20	14	2	1	1	1	3	3	2	1	1	-	-	√	√	2
FM33L023	128	16	QFN32	28	2	1	1	1	8	3	2	2	1	-	-	√	√	2
FM33L025	128	16	LQFP48	44	2	1	1	1	11	4	2	2	1	-	√	√	√	2
FM33L026	128	16	LQFP64	58	2	1	1	1	12	4	2	2	1	1	√	√	√	2

G0 series low-power 32-bit ARM Cortex-M0 MCU

FM33G0xx Series

Overview:

FM33G0xx series chips are ARM® Cortex®-M0 core 32-bit low-power MCU chip, up to 256 KB Flash memory and 24 KB RAM, general peripherals including LCD, RTC, ADC, AES, UART, 7816, I²C, SPI, etc.

Features:

- Voltage Range: 1.8V~5.5V
- Temperature Range: -40°C ~+85°C
- Typical current consumption:
  - •Active： 180uA/MHz @8MHz
  - • Standby: 9uA@32KHz
  - • Sleep mode with LCD on: 6uA
  - • Sleep mode without LCD:3.5uA
  - • DeepSleep with RTC and 24KB RAM&CPU state retention:1.2uA
  - • RTC Backup mode: 0.9uA
- 1 Low-Power serial port
- Up to 73 general IO port, up to 24 external pin interrupts & 8 asynchronous wake-up pins
- PDR, BOR, SVD & Low Power Analog Comparator*2
- LCD driver: 4COM×44SEG/ 6COM×42SEG/8COM×40SEG
- Low-power Real-time Clock (RTC) with digital calibration, calibration precision ±0.06ppm
- AES hardware operation unit, including 128/192/256-bit, supports ECB/CBC/CTR/GCM/GMAC mode
- UART×6, 7816×2, SPI×3, I²C×1, all of them support DMA.
- Programmable CRC module
- 11-bit low-power Sigma-Delta ADC*8, high-precision temperature sensor (accuracy better than 1.5°C)
- Watchdog Timer with window CPU×1, System Watchdog Timer×1
- On-chip programmable high-speed RC oscillator with configurable frequency output of 8/16/24/36MHz, factory calibration error of ±1%, 8MHz full temperature change of less than ±2%

Application Area:

- Domestic/Overseas single & three-phase smart meters
- Smart Water Meter/Heat Meter/Gas Meter
- Smart Temperature Controller, Sensor Module
- Smoke alarm and sensor module
- Smart home
- Display panel control

Name	FLASH (KB)	RAM (KB)	Package	IO	8-BIT GPTIM	16-BIT GPTIM	16-BIT LPTIM	ADC	UART	LP-UART	SPI	I²C	LCD	RTC	AES	COMP
FM33G022	128	16	TSSOP16	12	4	4	1	3	3	-	-	1	-	√	√	2
FM33G023	128	16	QFN32	26	4	4	1	5	3	1	1	1	-	√	√	2
FM33G025	128	16	LQFP48	41	4	4	1	4	5	1	3	1	-	√	√	2
FM33G026	128	16	LQFP64	57	4	4	1	7	6	1	3	1	√	√	√	2
FM33G028	128	16	LQFP80	73	4	4	1	8	6	1	3	1	√	√	√	2
FM33G042	256	24	TSSOP16	12	4	4	1	3	3	-	-	1	-	√	√	2
FM33G043	256	24	QFN32	26	4	4	1	5	3	1	1	1	-	√	√	2
FM33G045	256	24	LQFP48	41	4	4	1	4	5	1	3	1	-	√	√	2
FM33G046	256	24	LQFP64	57	4	4	1	7	6	1	3	1	√	√	√	2
FM33G048	256	24	LQFP80	73	4	4	1	8	6	1	3	1	√	√	√	2

A0 series low-power 32-bit ARM Cortex-M0 MCU

FM33A0xx Series

Overview:

FM33A0xx series chips are ARM® Cortex®-M0 core 32-bit low-power MCU chip, up to 512 KB Flash memory and 64 KB RAM, general peripherals including LCD, RTC, ADC, AES, UART, 7816, I²C, SPI, etc.

Features:

- Operating Voltage Range: 1.8V~5.5V
- Operating Temperature Range: -40°C ~+85°C
- Typical current consumption:
  - •Active： 150uA/MHz
  - • Standby: 15uA@32KHz
  - • Sleep mode with LCD on: 6uA
  - • Sleep mode without LCD:3uA
  - • DeepSleep with RTC, 16KB RAM data & CPU state retention: 1uA
- Up to 512K bytes Flash memory, up to 64KB RAM
- Up to 90 general IO port, up to 24 external pin interrupts & 8 asynchronous wake-up pins
- PDR, BOR, SVD & Low Power Analog Comparator*2
- LCD driver: 4COM×44SEG/ 6COM×42SEG/8COM×40SEG
- The internal VLCD voltage booster
- Low-Power Real-time clock (RTC) with digital calibration, calibration precision ±0.119ppm
- AES hardware operation unit, including 128/192/256-bit, supports ECB/CBC/CTR/GCM/GMAC mode
- UART×6, 7816×2, SPI×3, I²C×1, all of them support DMA.
- Programmable CRC module
- 11-bit low-power Sigma-Delta ADC*8, high-precision temperature sensor (accuracy better than 1.5°C)
- Watchdog Timer with window CPU×1, system watchdog timer×1
- On-chip programmable high-speed RC oscillator with configurable frequency output of 8/16/24MHz, factory calibration error of ±0.5%, 8MHz full temperature change of less than ±2

Application Area:

- Domestic/Overseas single & three-phase smart meters
- Smart Water Meter/Heat Meter/Gas Meter
- Smart Temperature Controller and Sensor Module
- Intelligent Lamp
- Electronic Toll Collection (ETC)
- Internet of Things (IoT) Devices

Name	FLASH (KB)	RAM (KB)	Package	IO	8-BIT GPTIM	16-BIT GPTIM	16-BIT LPTIM	ADC	UART	SPI	I²C	7816	LCD	RTC	AES	COMP
FM33A042	256	32	TSSOP16	12	4	4	1	3	3	-	1	-	-	√	√	1
FM33A045	256	32	LQFP48	41	4	4	1	4	5	3	1	1	√	√	√	2
FM33A048	256	32	LQFP80	72	4	4	1	8	6	3	1	2	√	√	√	2
FM33A068	512	64	LQFP80	72	4	4	1	8	6	3	1	2	√	√	√	2
FM33A0410	256	32	LQFP100	90	4	4	1	8	6	3	1	2	√	√	√	2
FM33A0610	512	64	LQFP100	90	4	4	1	8	6	3	1	2	√	√	√	2

C251 series low power 16-bit MCU

FM3316/3313/3312 Series

Overview:

The FM3316/3313/3312 is a low-power MCU chip with a 16-bit enhanced 8xC251 processor core, 64KB of FLASH program memory, 4KB RAM, integrated LCD, RTC, ADC, UART, I²C, SPI, 7816, temperature sensor, etc. Peripheral interface, suitable for all types of battery-powered low-power products.

Features:

- Operating Voltage Range: 1.8V~5.5V
- Operating Temperature Range: -40°C ~+85°C
- Enhanced 8xC251 instruction set compatible with CPU core, saving core state in sleep mode
- Bird JTAG debugging interface
- 64K bytes Flash memory, 4K bytes RAM
- Typical current consumption
  - •Active：150uA/MHz
  - •Sleep mode with LCD display: <5uA@3V
  - •Stop mode with RTC, RAM data & CPU state retention: 1uA@3V
  - •Stop mode with RAM data & CPU state retention: <0.6uA@3V
- LCD driver circuit: maximum support 4COM×26SEG/6COM×24SEG
- General IO port, up to 57
- Low-power Real-time clock Calendar (RTCC) with digital calibration, calibration precision ±0.119ppm
- On-chip programmable high-speed RC oscillator, programmable frequency output 8/16/24MHz, factory calibration error ±0.5%, full temperature range ±2%
- 11-bit ADC for voltage and temperature detection, temperature sensor accuracy better than ±2%
- Power-on Reset (POR), Power-down Reset (BOR) and supply voltage detection circuit (LVD)
- UART×4, 7816×1, SPI×1, I²C×1, all support DMA,
- Programmable CRC check module
- Hardware Watchdog Timer (WDT)
- 16 configurable external pin interrupts
- 8-bit general timer × 2, 16-bit general timer × 2, 16-bit low-power timer × 1

Application Area

- Smart Power Meter/Water Meter/Heat Meter/Gas Meter
- Smart home: new fan, water purifier, door lock, etc.
- Electronic Toll Collection (ETC)
- Electronic price tags and labels
- Internet of Things communication module

Name	FLASH (KB)	RAM (KB)	Package	Voltage (V)	IO	8-BIT GPTIM	16-BIT GPTIM	16-BIT LPTIM	ADC	UART	SPI	I²C	7816	LCD	RTC
FM3312T	64	4	TSSOP16	1.8~5.5	12	2	2	1	6	2	-	-	-	-	√
FM3312	64	4	SOP16	1.8~5.5	12	2	2	1	6	2	-	-	-	-	√
FM3313	64	4	QFN32	1.8~5.5	25	2	2	1	5	3	1	1	1	-	√
FM3316	64	4	LQFP64	1.8~5.5	57	2	2	1	6	4	1	1	1	√	√

Low-Voltage Power Line PLC Chip

FM320x Series

Features:

- Operating voltage range: 4.5~5.5V
- Operating current: 15mA
- Temperature range: -40°C ~+85°C
- Static power: 0.2W, dynamic power: 1W
- UART communication rate: 1200/2400/4800/9600 bps adaptive
- SSOP24/QFN48 Package
- 32bit RISC MCU Core
- 320Kbytes FLASH ROM, 16Kbytes RAM
- Three independent hardware UARTs, supports infrared modulation output
- Six input capture function, six outputs compare function
- One 12-bits ADC with max 3.2Msps, one 12-bits DAC with max 3.2Msps
- Individual signal processing coprocessor DSP
- On-chip DC-DC Switching Power Supply, on-chip low-power LDO,
- On-chip low-frequency RC oscillator and low-voltage alarm Function

PLC advantage:

- OFDM modulation with 12 sub-carriers;
- Strong Interference ability by direct sequence spread spectrum with maximum spread code length up to 63;
- Special encoding to gain minimum communication speed of 800bps;
- Zero-crossing communication to avoid big noise and heavy load periods, and no interphase interference

Application Area:

- Smart Meter Reading
- Intelligent Lighting Control
- STS Meter Communication
- Intelligent building

Chip Model	Operating Voltage	Operating Temperature	ROM	RAM	UARTs	SPI	I^2C
FM320x	4.5V-5.5V	-40°C -85°C	320K	16K	3	1	1

UHF RFID Multi-Protocol Reader Solution

Overview:

Fudan Microelectronics originally designs this kind of UHF RFID reader. This type of equipment is compatible with ISO/IEC 18000-6C, GB/T29768-2013 protocol. In the safety aspect, Fudan Microelectronics introduced the SM7 symmetry algorithm from the National Password Bureau. It extremely optimized safety performance.

The product can be widely used in large-scale warehousing, material inventory, anti-counterfeiting, material tracking and other fields.

Features:

- High sensitivity: It can work steadily and provide the speedy response in the various environments.
- Security encryption: SM7 algorithm can be provided to improve the communication& data storage safety
- Communication protocol: It works and compatible with ISO/IEC 18000-6C (EPC C1 G2), GB/T 29768-2013
- Identification distance: ≤ 10m (depends on the antenna, label & the using environmental)
- Flexible configuration: According to the specific needs of users to set the appropriate parameters
- Operating frequency: 840-845MHz, 920MHz - 925MHz (software configurable)
- Output power: ≤ 30dBm (software configurable)
- Customization: Base on each customer's specific needs to provide the solution

Application Area:

- Large-Scale Warehousing
- Material Inventory
- Anti-Counterfeiting
- Material Tracking

Product Type	Working Voltage(V)	Protocol	Step Setting	Interface
1ch Reader	5	ISO18000-6C (EPC C1 G2)、GB/T 29768-2013、	125KHz (+/-5PPM/Step)	USB\UART\ Ethernet
4ch Reader	9~18			USB\UART\ Ethernet
Reader Module	3.7~5			UART

Real-Time Clock Chip

FM38025T

Overview:

Real-time clock chip FM38025T built-in high stability 32.768 kHz crystal unit, with high-precision digital temperature compensation, high-precision digital temperature sensor output, low standby current and wide voltage range. Furthermore, this product also equipped with time, calendar, leap year automatic adjustment, timing, interrupts and other functions.

Application area:

- Electric/water/gas/heat smart meter
- Printers, Copiers
- TVs, Blu-ray players, projectors
- White goods
- Digital Camera
- Portable/wearable devices
- Industrial Control
- Access Control, Security Department

Chip Model	Operating Voltage	Operating Temperature	Package	Full-temperature Clock Accuracy	Temperature Sensor Output
FM38025T	1.6v~5.5V	-40°C~85°C	SOP8/SOP14	±5ppm	±2°C

Secure Encryption Chip

FM15xx Series

Overview:

Shanghai Fudan Microelectronics has formed three product lines of identification & storage, intelligence & security, and identification equipment. The products cover more than 20 kinds of products such as RFID, contact/contactless/dual interface smart cards, contactless reader/writer devices and SMAP mobile payment. All of that achievement makes the Shanghai Fudan Microelectronics becoming one of the complete suppliers of domestic IC card chip products. The cumulative chip shipments so far have exceeded 1 billion until now; those chips are widely used in transportation, medical insurance, identification, micropayments and other related fields. The future development of the security and identification product line will focus on providing customers with more safe and convenient products and strive to become the world's leading supplier of professional security chips and RFID products.

Chip Model	Capacity	Standard	Interface	Package	Application
FM151M	1M Byte	ISO7816, SWP	Contact, SWP, UART, SPI, GPIO	SSOP28, DIP8, SOP8, Contact Card, SWP SIM Card	SWP SIM, PSAM Card
FM15160	160K Byte	ISO7816, USB2.0	USB2.0 (Full Speed), Contact, SPI, UART, GPIO	SSOP28, SOP8, VSOP8, Contact Card	USB Key, PSAM Card

High-Frequency Reader Chip

FM17xx Series

Application:

- Contactless card reader
- Taximeter
- Canteen sale machine
- Access Control and Attendance Equipment
- POS consumption machine
- Water/Electricity/Gas/Heat Pre-Paid Table

Chip Model	Standard	Interface	Package	Application
FM17550	ISO14443TypeA, ISO18092	SPI、UART、I^2C	QFN32	QFN32 Financial POS Machine, Electronic Door Lock, Contactless Card Reader
FM17522	ISO14443TypeA	SPI、UART、I^2C	QFN32	Low-Power Contactless Card Readers, POS Machines, Electronic Door Locks
FM17520	ISO14443TypeA	SPI	QFN32	Low-Power Contactless Readers, POS Machines

Serial EEPROM Memory

FM24Cxx Series

Overview:

Features:

- Capacity: from 1kbit to 1Mbit
- Interface: IIC, SPI, Microwire
- Vcc Range：1.7V-5.5V
- High Reliability: 40 years data retention and 1,000k write cycles per device
- Small Packages: SOP8, TSSOP8, MSOP8, SOT23, WLCSP
- Security: D series products support 128bit UID and 128byte secure sectors

SPI NOR Flash

FM25Fxx/FM25Qxx Series

Overview:

Shanghai Fudan Microelectronics provides the SPI NOR Flash products: FM25LG series (powered by 1.8V) and FM25F/FM25Q series (powered by 3.3V). This series of products has high reliability and high security; application range covers mobile phone, data card, set-top box, Netcom products, communications equipment, toys etc.

Feature:

- Capacity: from 0.5kbit to 256Mbit
- Interface: SPI, Dual SPI, Quad SPI, QPI
- Vcc Range：1.65V – 1.95V (FM25LQ), 2.7V – 3.6V (FM25F/FM25Q)
- High Reliability: 20 years data retention and 100k write cycles per device
- Small Packages: SOP8(208mil), SOP8(150mil), TSSOP8, DFN8, WLCSP
- Security: Hardware write protection, 32Byte secure sector, 128bit UID

Core Competitiveness

Complete Quality Assurance System

1999：ISO9001

2003：ISO9001 2000

2006：GJB9001

2008：HSPM IECQ QC080000

2009：ISO9001 2008

2010：GJB9001B

Our products have passed the strict assessment and testing procedures in each project stage: marketing and project management, research & development, implementation, pilot run and mass production.

Mature Wafer Production Line

Fudan Microelectronics adopted the "Fabless" concept and therefore focuses on design. We chose Global Foundries (former Singapore Chartered Semiconductor）、 Shanghai SMIC and Grace Semiconductor（GSMC）to manufacture our products. These companies are famous for mature and reliable processing technology which meets the highest quality demands.

Advanced Testing Technology and Methods

According to specific requirements on various products, we conduct a thorough strict test on our products with multiple testing programs and modern testing instruments.

Strict Quality-Control System

All our products have been tested before delivery with 100% guarantee on quality. The total return rate is less than 80ppm.

Reliable Customer Service

Our experienced and professional customer service team focuses on providing fast and efficient response. We established a quick response system in order to answer within 24 hours after receiving any customer call or complaint.