



复旦微电子

FM15160

Security Chip

Datasheet

Jul. 2014



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Introduction

FM15160 is a 32-bit security chip with multiple interfaces including USB, ISO7816, UART, SPI and GPIO. Its built-in memory is implemented with a 160KB FLASH, a 64KB ROM and an 8KB RAM. Algorithms supported by the chip are symmetric algorithms SM1, SM7, SSF33, SMS4, DES/3DES AES, asymmetric algorithms SM2, ECC RSA, and hash algorithms SM3, SHA1, SHA256 and MD5. The security chip has a hardware true random number generator and safety protection circuits built in and is capable of isolating and protecting multiuser programs.

FM15160 chip offers low power consumption, high stability and high operating efficiency. The security chip can be used to implement PKI-based applications, such as USB keys, PSAM cards, dongles and other similar embedded systems, in the fields of e-commerce, e-government affairs, finance, securities, social security, etc.

General Description

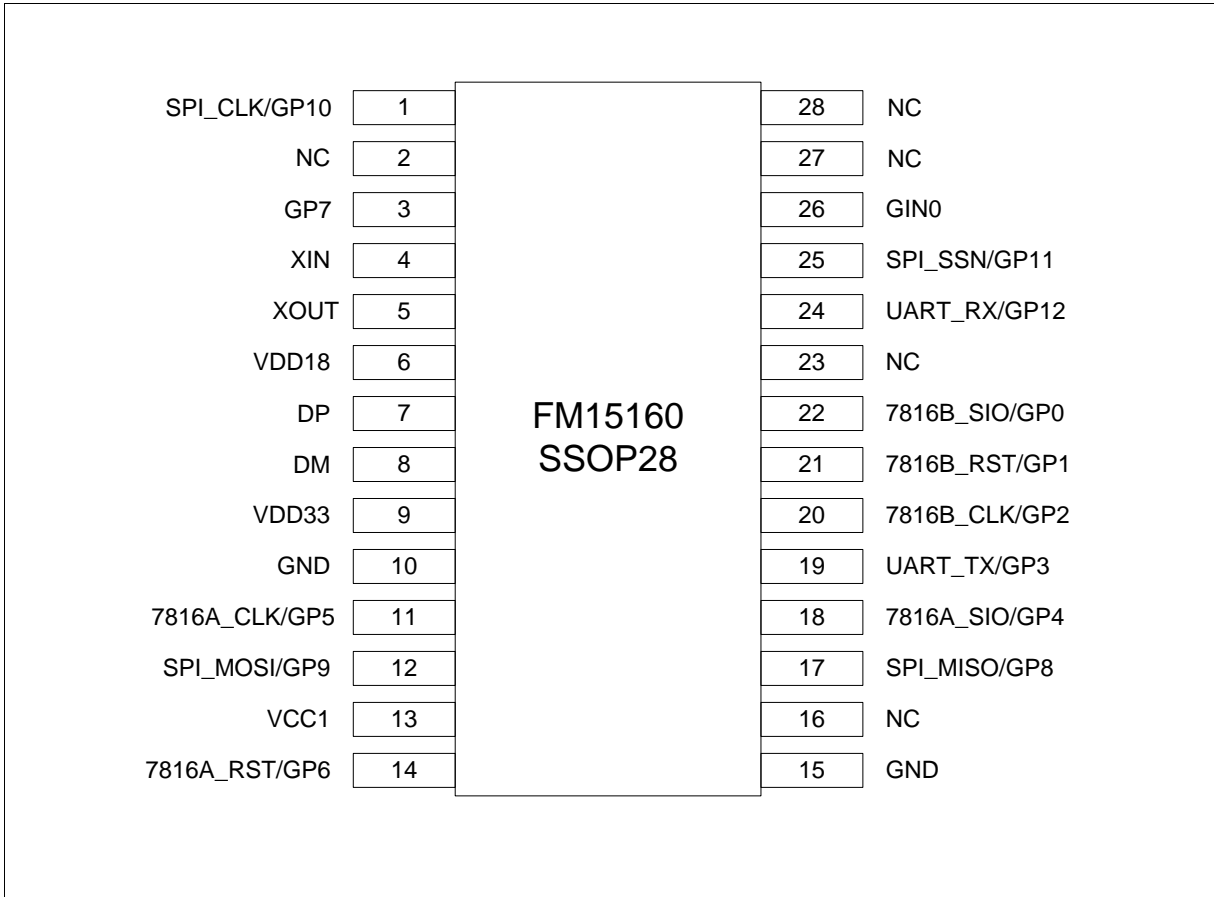
Main Contents	FM15160
Communication Interfaces	USB 2.0(Full Speed) ISO 7816 (interface A and B, supporting Master/Slave) UART SPI GPIO
CPU	C-core
Security Algorithms	Symmetric Algorithms: DES/TDES/AES/SMS4 Asymmetric Algorithms: RSA(128~2048 bit)/ECC(512 bit) Hash Algorithms: SHA1/SHA256/MD5
Memory Capacity	Program Memory 128KB FLASH Data Memory 32KB FLASH RAM 8KB ROM 64KB
Security Precaution	Hardware True Random Number Generator Anti-SPA/DPA/DFA Security Algorithms WDT watch dog timer module Light sensor Voltage sensor Frequency sensor Temperature sensor Shield sensor Memory Data bus Encryption
Multiuser Support	Isolation and protection of multiuser programs
FLASH Dependability	100,000 cycles of program/erase 100 years of data retention
External Crystal Oscillator	12MHz and 6MHz crystal oscillators applicable



Packaging

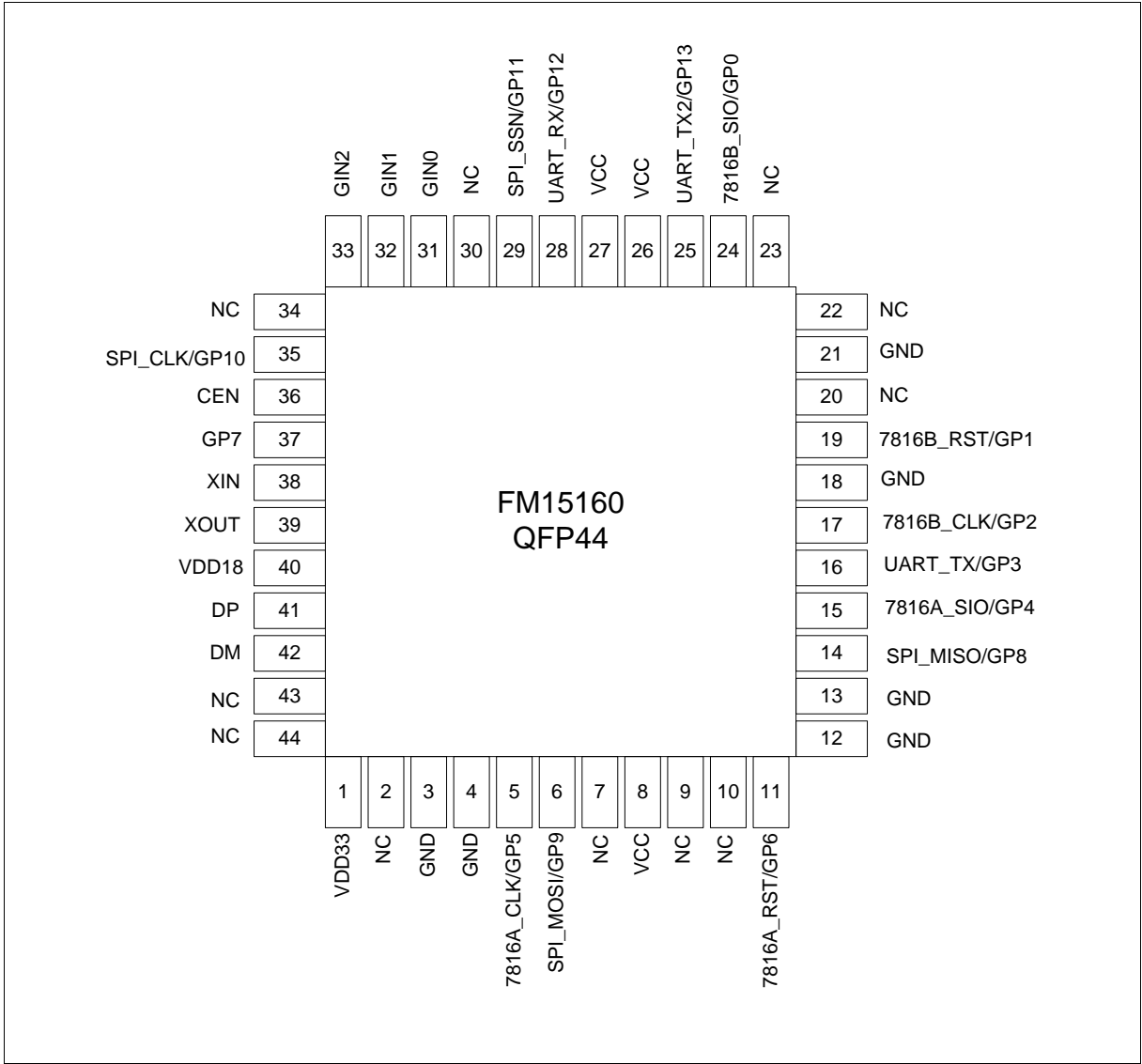
Types of Packaging: SSOP28, QFP44, 8 pin contact module, DIP8, SOP8 packaging

SSOP28 Packaging Diagram

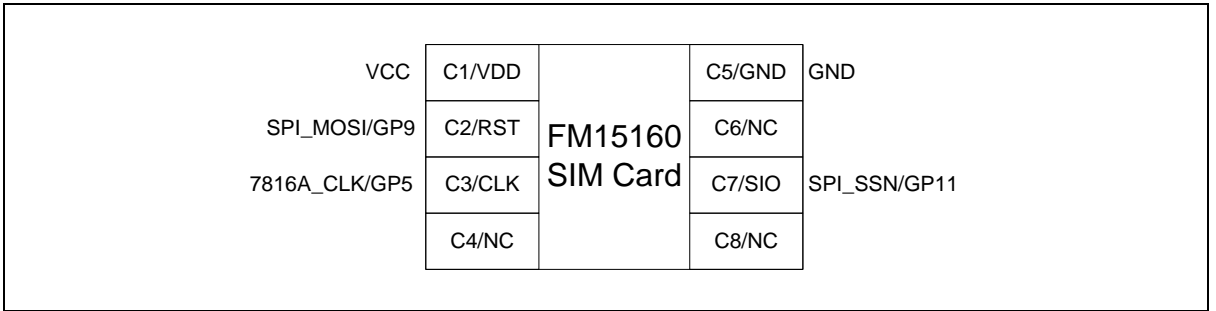




QFP44 Packaging Diagram

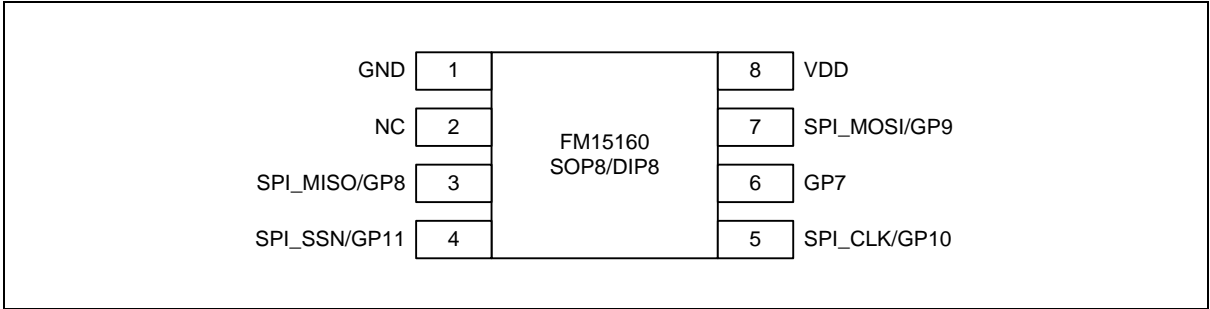


SIM Card Module Packaging Diagram





DIP8/SOP8 Packaging Diagram





Revision History

Version	Publication Date	Pages	Paragraph or Illustration	Revise Description
1.0	Nov 2013	8		Initial Release.
1.1	Jul 2014	8		Updated packaging of DIP8/SOP8



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