

rfid enabled

## SkyeModule M1



13.56MHz OEM Reader/Writer

### FEATURES:

- Tagnostic™
- Serial UART, PC, SPI, RS232
- 8 GPIO Capable Sink/Source 15 mA
- Configurable Power Schema
- Intuitive Communication Protocol
- Efficient HW/ SW Design

### BENEFITS

- Variety of Tag Vendor Choices
- Easy to Embed
- Drive Peripherals (PLC, LED, Sensor)
- Low Power Consumption
- Fast Integration/Time to Market
- Low Cost and Small Size
- FCC Compliance

### Product Overview

The SkyeModule™ M1 provides a low power, high performance, and cost effective platform designed to enable any device with RFID reader technology. The M1 is a 13.56MHz OEM module capable of reading and writing to transponders based on ISO 15693 and ISO18000-3 air-interface protocols. The M1 features an on-board antenna as well as the ability to attach a standard 50 Ohm external antenna for improved read-range. Four interface options are available to provide communication to a variety of host systems: RS232 or TTL/serial, PC, and SPI. With its on-board power regulator circuit, the M1 can operate from 1.8-5.0V; while the power management intelligence allows current to be set as low as 60  $\mu$ A (Sleep Mode) making it ideal for use in battery operated devices. Further power efficiency is gained by use of the Start-Up command in which one stores a command to be executed once the M1 is awake from Sleep Mode. The M1 has 8 programmable GPIO pins for the addition of peripheral devices. Software-adjustable baud rates from 4800 to 57600 bits per second offer compatibility with most systems.

### Applications

The SkyeModule M1 has been created specifically to address a wide spectrum of applications offering the most flexibility in the industry. Some areas in which the M1 has been successfully integrated include:

- Medical equipment for the healthcare and pharmaceutical industries
- Industrial equipment requiring embedded RFID technology
- Kiosks and vending machines
- Mobile devices including printers, hand-helds, and sensor networks

With the variety of host interfaces, supply voltages, and configurable parameters, customers found the M1 easy to embed in these devices.



**About SkyeTek:**

SkyeTek, Inc continually strives to enable the pervasive adoption of RFID technology. SkyeTek's Tagnostic™ reader technology works with most industry standard tags and smart labels; its low power requirements and a small form factor make it the optimal choice for embedding into new or existing products. SkyeTek's RFID reader technology is available in several formats including reader modules, finished readers and hardware reference designs. SkyeTek markets to OEM customers in targeted vertical markets with several high-volume licensing options available.

**For more information:**

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**Transponders with Minimum Select/Read/Write Support<sup>1</sup>**

Product Name	Memory (bits)	Manufacturer	Protocol
ICODE SLI/SLIX	1K	NXP	ISO15693
ICODE SLH/SLIX-L	512	NXP	ISO15693
ICODE SLIS/SLIX-S	2K	NXP	ISO15693
Tag-it HF-I Standard	256	Texas Instruments	ISO15693
Tag-it HF-I Plus	2K	Texas Instruments	ISO15693
Tag-it HF-I Pro	256	Texas Instruments	ISO15693
LRI1K	1K	ST Microelectronics	ISO15693
LRI2K	2K	ST Microelectronics	ISO15693
LRIS2K	2K	ST Microelectronics	ISO15693
my-d light	576	Infineon	ISO15693
my-d plain	2.5K,10K	Infineon	ISO15693
FerVID MB89R119B <sup>2</sup>	16K	Fujitsu	ISO15693
EM4033	0	EM Microelectronics	ISO15693
EM4133	448	EM Microelectronics	ISO15693
EM4233	2K	EM Microelectronics	ISO15693

<sup>1</sup> See [M1 Tag Support Matrix](#) for full feature support list  
<sup>2</sup> No Anti-collision

**Frequency**  
 13.56 MHz +/- 7 kHz

**Physical**  
 Length: 40mm  
 Width: 38mm  
 Height: 4mm

**Current Consumption**  
 Sleep Mode- 60 µA  
 Idle Mode- 10mA  
 Scan Mode- 110mA

**Antenna**  
 Internal or external  
 50 ohm port

**Supply Voltage**  
 1.8-5.0V

**Host Communication Interfaces/ Data Rates**  
 UART(RS232 and TTL):  
 4800-57600 bps  
 I<sup>2</sup>C up to 400 kHz  
 SPI up to 3MHz

**Accessories**  
 EA1 external antenna  
 (94mmx94mm)

**Compliance**  
 FCC Part 15.225

**Transponder Communication Rate**  
 26 kbps ISO 15693

**Effective Range**  
 External Antenna,  
 48 mm x 76 mm ISO 15693  
 transponder: 8.5 cm  
 Internal Antenna,  
 38 mm x 22.5 mm ISO 15693  
 transponder: 5.8 cm  
*(Individual results may vary with environment)*

**Other Offerings from SkyeTek**

SkyeTek provides a variety of reader technology at both 13.56 MHz (HF) and ~900 MHz (UHF). The M1-Mini, also part of the SkyeModule HF line, offers an even smaller design with comparable features. The M2 is a fully featured, multi-protocol HF module that supports most tags and tag features on the market. ReaderDNA is a comprehensive reference design available for component level integration of RFID reader technology, including complete design files and BOM. ReaderWare, an open-architected software suite residing on all SkyeTek's modules and available with ReaderDNA, provides intelligence to the RFID reader hardware. The SkyeModule M9 is a low power, compact, UHF reader compatible with EPC and ISO transponders. All SkyeModules are controlled via the SkyeTek Protocol, a powerful but simple communication protocol that grants the user access to all features of an RFID transponder.