

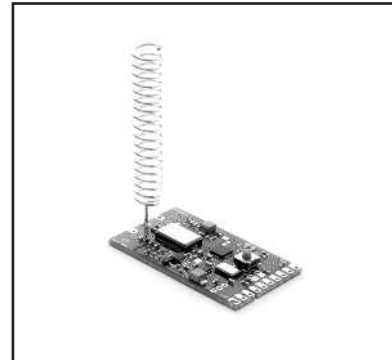


- **Base Station with Host Serial Interface**
- **Compatible with RFM miniMESH™ Network Protocol**
- **3 V, Very Low Current Operation**
- **Ready-to-Use OEM Module**

The DM1810-434MB is the 433.92 MHz base station module in the DM1810 family of RF transceivers. The DM1810 family is designed for adding wireless mesh network connectivity to a wide range of monitoring and control systems. The DM1810-434MB is equipped with a serial I/O port to interface a host microcontroller. Radio communications range in an “open field” environment is typically 600 meters/hop. The DM1810-434MB combines RFM’s very low current ASH radio technology with low power microcontroller technology to achieve long battery life. This module is compatible with RFM miniMESH™ network protocol, which provides “plug- and-play” multicast mesh network routing. The DM1810-434MB is certified for operation under ETSI I-ETS 300 220 regulations.

DM1810-434MB

433.92 MHz Transceiver Module



Absolute Maximum Ratings

Rating	Value	Units
All Input/Output Pins Except VIN	-0.3 to +3.3	V
Non-Operating Ambient Temperature Range	-40 to 85	°C

Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Operating Frequency	f _O		433.72		434.12	MHz
Modulation Type				OOK		
RF Encoded Data Transmission Rate				4.8		kb/s
Average Receive Input Current, No External Power Supply Load	I _R			5.5		mA
Receiver Input Signal for 10 ⁻³ BER, 25 °C				-101.5		dBm
Average Transmit Input Current, No External Power Supply Load	I _{TA}			15.75		mA
Peak Transmit Input Current, No External Power Supply Load	I _{TP}				28.5	mA
Peak Transmitter Output Power	P _O			10		mW
Bind Input and Serial RX Logic High			2.4			V
Bind Input and Serial RX Logic Low					0.45	V
Serial TX Logic High, No Load			2.4			V
Serial TX Logic Low, No Load					0.3	V
Serial Port Data Rate				9.6		kb/s
Average Sleep Input Current, No External Power Supply Load	I _{SA}			60		µA
Power Supply Input Voltage Range, -40 to +85 °C	VIN		3.1		10	V
Power Supply Input Voltage Range, 0 to +85 °C	VIN		2.6		10	V
Regulated Power Supply Output Voltage, VIN 3.1 to 10 V	VOU _T			3.0		V _{dc}
Regulated Power Supply Voltage Ripple					10	mV _{P-P}
Relative Humidity Range, Non-Condensing	RH		10		90	%

DM1810-434MB I/O Pad Descriptions

Pin	Name	Description
J1-1	GND	This pad is a signal and power supply ground.
J1-2	VIN	This is the power supply input pad. The allowed input voltage range is 2.6 to 10 V.
J1-3	VOUT	VOUT tracks 50 to 100 mV below VIN when VIN is in the range of 2.6 to 3.1 V. When VIN is in the range of 3.1 to 10 V, VOUT is regulated at 3.0 Vdc. Up to 10 mA can be supplied from this pad for powering external circuits such as thermistor-resistor networks. External circuitry must not impress more than 10 mV _{p-p} ripple on the regulated output voltage.
J1-4	BIND	This pad is connected to a logic input on the microcontroller, and is configured with a weak pull-up. When this pin is momentarily grounded to J1-1 or J1-10, the module is placed into the bind mode, allowing this module to be associated with other modules to form a network.
J1-5	-	This pad is unused in base station operation. Leave this pad electrically unconnected.
J1-6	-	This pad is unused in base station operation. Leave this pad electrically unconnected.
J1-7	-	This pad is unused in base station operation. Leave this pad electrically unconnected.
J1-8	SERIAL RX	This pad is connected to the module's serial data input (USART). Data to this pin is received at 9.6 kb/s, using 8 data bits, no parity, and one stop bit. The input voltage range on this pad is 0 to VOUT. Applying a voltage outside of this range may damage the module.
J1-9	SERIAL TX	This pad is connected to the module's serial data output (USART) through a 1 kilohm resistor, which provides short-circuit protection. Data from this pad is sent at 9.6 kb/s, using 8 data bits, no parity, and one stop bit.
J1-10	GND	This pad is a signal and power supply ground.
J3-1	GND	This pad is a ground for the antenna port.
J3-2	ANT	This pad is the antenna port.
J3-3	GND	This pad is a ground for the antenna port.
J4-1	D1	This pad is the LED 1 signal.
J4-2	D2	This pad is the LED 2 signal.



CAUTION: Electrostatic Sensitive Device. Observe precautions when handling.

DM1810-434MB I/O Pad Labels

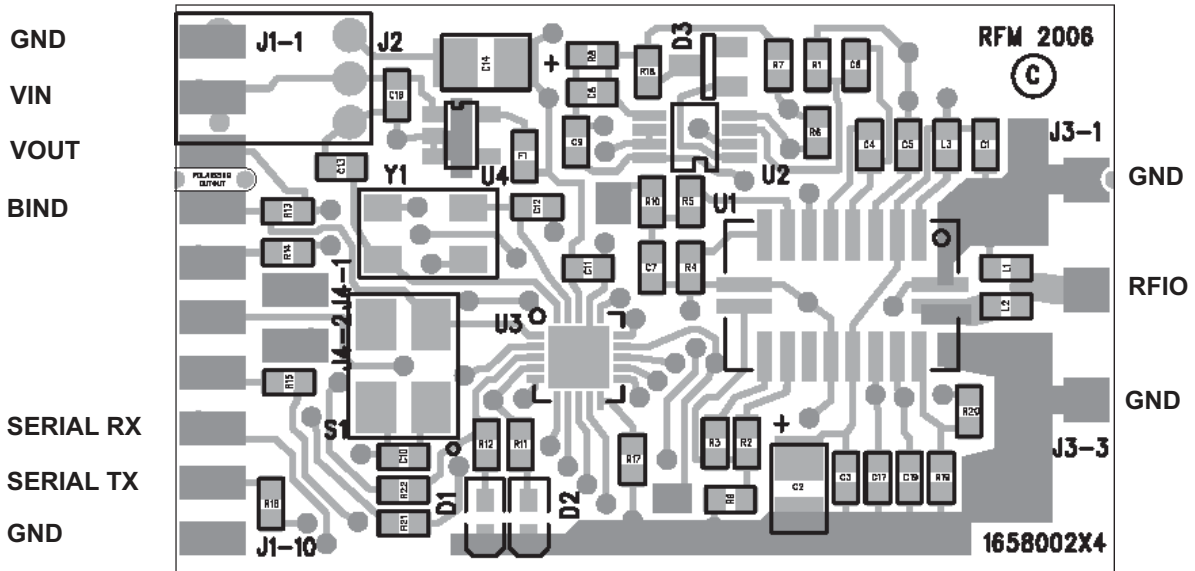


Figure 2

DM1810-434MB SMT Mounting Pattern

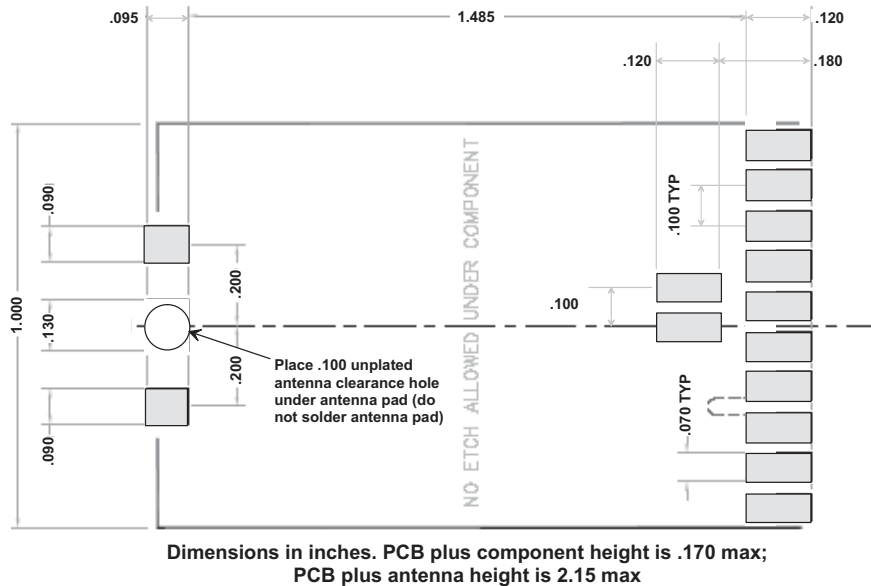


Figure 3

Note: Specifications subject to change without notice.