TD-2400MD

7. Specifications

Interfaces

Serial Interface Connector	DE9 Male Connector
RF Connector	Dipole RPSMA Jack
Power Connector	D-Sub PIN (5-Ground, 9-DC+5V)
Microcontroller Core	Enhanced 8051
Flash Memory	96 KB
Data Memory	8 KB
Serial Interface	115,200bps

RF Characteristics

Frequency Range	2400~2483.5MHz
Frequency Tolerance	±5ppm
Occupied B.W	2MHz
RF Data Rate	250 Kbps for ZigBee
Modulation	O-QPSK
Spread Spectrum	Direct Sequence Spread Spectrum
Number of Channels	16
Output Power	27 dBm @DC+5V
Power Consumption	460 mA
RX Sensitivity	<-96 dBm at 250Kbps RF Rate
Power Consumption	40 mA

Electrical / Environmental

Input voltage	DC+5.0V
RF Max Power	500 mW
Operating temperature range	-30°C ~ +60°C
Storage temperature range	-50°C ~ +85°C

Physical (without antenna)

Dimensions (L x W X H)	3.25″x 2″x .75″/ 82.55 mm x 50.8 mm x 19.05 mm
Weight	2.5 oz. / 71 g

Certifications

FCC	VSOXR-2400
Industry Canada	9680A-XR2400

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TECNET

TD-2400MD 2.4GHz Data Modem

11535 W. 83rd Terrace Lenexa, KS 66214 Website: www.tecnetusa.com

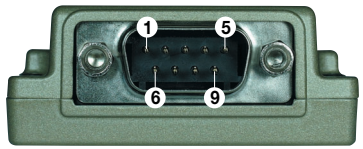
TecNet TD-2400MD 2.4GHz Data Modem Reference Guide

Thank you for your purchase of the TD-2400MD Data Modem, the world's first System-on-Chip (SoC) radio designed for low power and low cost to meet industry standards protocol IEEE802.15.4 and ZigBee. The TD-2400MD combines phenomenal performance through an enhanced 8-bit 8051 MCU with internal 96KB of FLASH and 8KB of RAM; for user application program and data, hardwired MAC and AES-128.

1. Features

- Key-Scanning Function for Multi-Key Remote Controller
- LED Status Indicators
- Integrated FLASH (96KB) and RAM (8KB) to accommodate User Applications
- Hardwired AES-128 Encryption Engine
- Industry Standard 8051 8-bit MCU (x12 standard)
- Supports High Data Rate up to 1Mbps through Air
- Requires a Minimum of External Components to implement Wireless Applications
- Ultra Low, Industry Leading Current Consumption Based on 5V Operation
- RF Data Speed: 250Kbps
- Serial Data Interface: 115,200bps

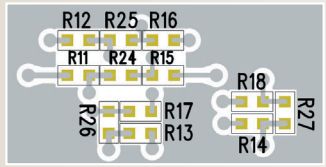
2. RS-232C 9 Pin Specification

PIN NO	Description	Specification	Male D-Sub Connector
1	GPIO 1	TTL (DC+3.3V)	
2	RX Data	RS-232C	
3	TX Data	RS-232C	
4	GPIO 2	TTL (DC+3.3V)	
5	Ground	Ground	
6	GPIO 3	TTL (DC+3.3V)	
7	RTS	RS-232C (Not Use)	
8	CTS	RS-232C (Not Use)	
9	DC+5.0V	Input Voltage	

3. Selecting RS-232C and TTL Serial Communication

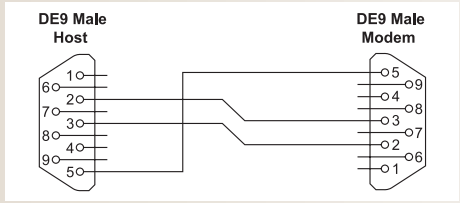
Serial communication can be used through RS-232C and TTL Level. The first default value is set to RS-232C communication. If the user needs to change from RS-232C to TTL Levels, it can be done by R24, R25, R26, R27, R11, R12, R13, R14, R15, R16, R17 and R18 resistance. This equipment can be used only by 3Wire communication using TX Data, RX Data, and Ground. The selection of using RS-232C and TTL serial communication is shown in the table below. TTL Serial Level is DC+3.0V.

Signal Name	RS-232C	TTL Serial	Description
TX Data	R24	R11, R15	When RS-232C, R24 = N.C. R11, R15 = 0Ω When TTL Level, R24 = 0Ω. R11, R15 = N.C
RX Data	R25	R12, R16	When RS-232C, R25 = N.C. R12, R16 = 0Ω When TTL Level, R25 = 0Ω. R12, R16 = N.C
CTS	R26	R13, R17	When RS-232C, R26 = N.C. R13, R17 = 0Ω When TTL Level, R26 = 0Ω. R13, R17 = N.C
RTS	R27	R14, R18	When RS-232C, R27 = N.C. R14, R18 = 0Ω When TTL Level, R27 = 0Ω. R14, R18 = N.C



4. Setting Host

Every feature in the TD-2400MD can be controlled in the HOST
1) Select Port.
2) Baud Rate Setting of RS-232C Serial: 11,5200 bps

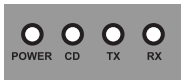


Connector 1	Connector 2	Function
2	3	RX ← TX
3	2	TX → RX
5	5	Signal ground

5. Physical Interfaces

The TD-2400MD supports standard RS-232 protocols with limited flow control.

6. LED Display Status Indicators

LED	Color	Description	
POWER	Red	When power is supplied, red POWER LED will be displayed.	
CD	White	When carrier is detected, white CD LED will be displayed.	
TX	Red	When transmitting serial data, red TX LED will be flashing.	
RX	Green	When receiving serial data, green RX LED will be flashing.	