CNI-800D Installation Guide
For OEM Integrator

Ver. 1.1

CNI-800D

Radio Packet Modem

1999.3.26.

Communication Network Interface, Inc

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■ Modem Descriptions

1. Overview

CNI-800D enables digital data communication via DataTAC Network. This unit supports Motorola's RD-LAP 3.1& 3.2. And frequency band of 806-825 MHz for in-bounding, 851-870 MHz for out-bounding are available.

This unit is two way wireless communication module that enables various Data communications between Hosts and Terminals. Support for automatic Roaming makes it possible to communicate while moving around.

By using Interface connector, this unit permits integration to various applications without redesign and supports monitoring function.

2. Specifications and Features

2.1 Environmental properties

2.1.1. Operation Temperature : -20°C ~ +50°C

2.1.2. Storage Temperature : -35°C ~ +80°C

2.1.3. Humidity : working properly 8 hours after storing at 95% relative humidity, non-condensing circumstance

2.2 Electric Properties

2.2.1. General Specs
- a. Modulation : 4-level FSK
- b. Communication Mode : Half Duplex
- c. Transmission speed : 19,200bps

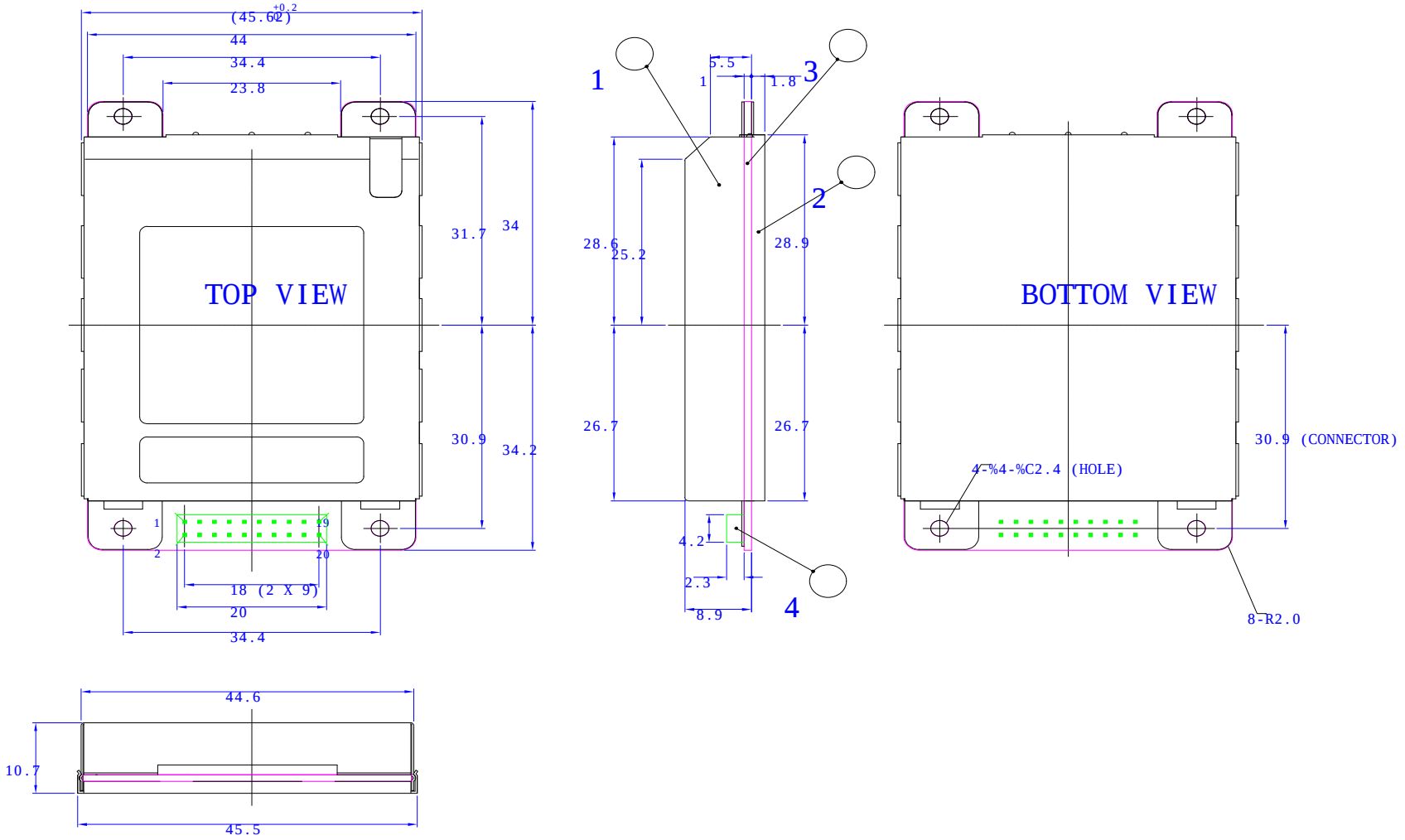
2.2.2 RF Interface
- a. Transmit Frequency : 806-825 MHz
- b. Receive Frequency : 851-870 MHz
- c. Channel Spacing : 25KHz

2.2.3 Transmitter
- a. RF output power : 1.0W
- b. Frequency Stability : +- 1.0ppm
- c. Modulation Stability : +- 5% (-20°C ~ +50°C, 806 ~ 825 MHz)
- d. FM Deviation : 5.0 KHz +- 10%
- e. Spurious : less than 60dB
- f. Adjacent Channel leak : less than 60dB

2.2.4 Receiver
- a. Sensitivity : -113 +- 3dBm (1% BER over all kind of data)
- b. Channel Selectivity : more than 55dB

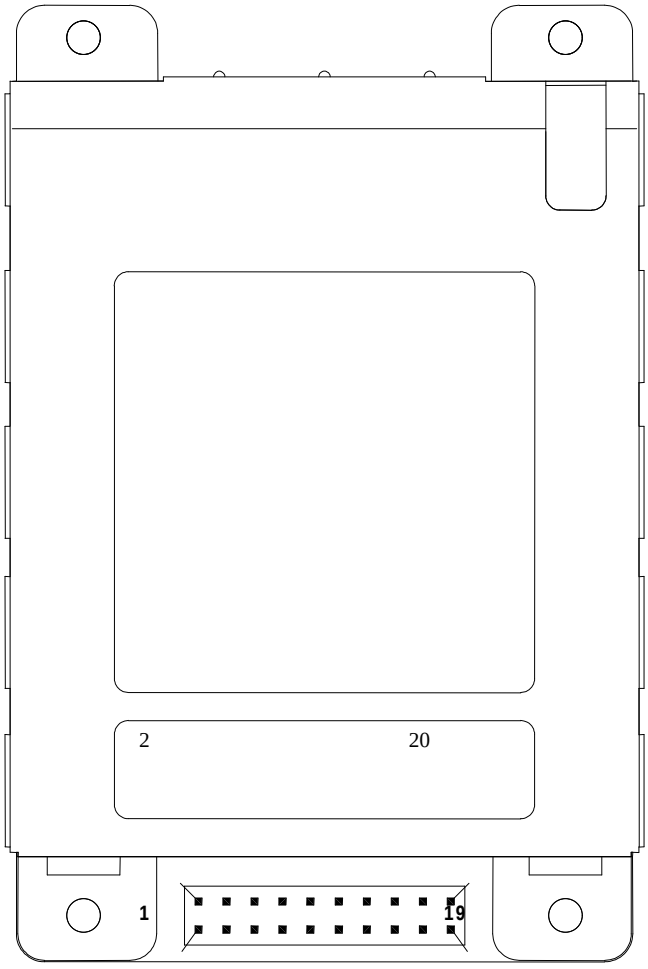
c. Intermodulation : more than 50dB
d. Spurious Rejection : more than 60dB
e. Image Rejection : more than 50dB
f. Hum & Noise Ratio : less than 30dB

3. Physical Dimensions



4. Serial Interface Between Application DTE

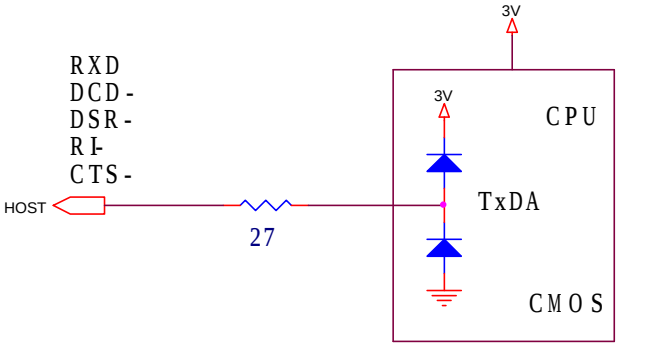
This unit can be easily integrated into anywhere of the wireless modem adopted device.

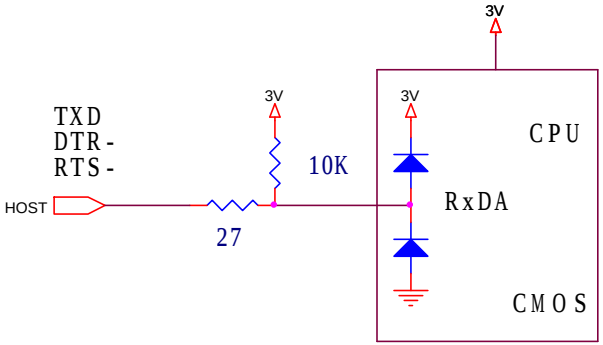


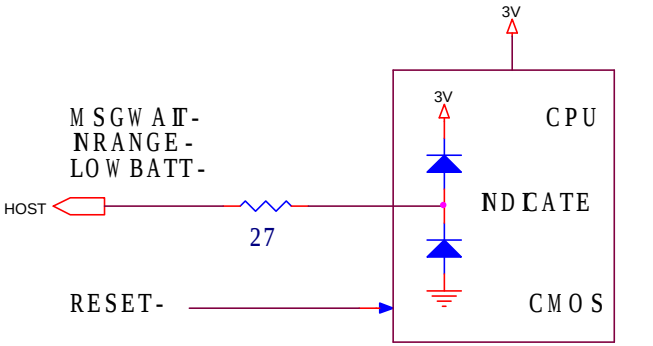
PIN ASSIGNMENTS

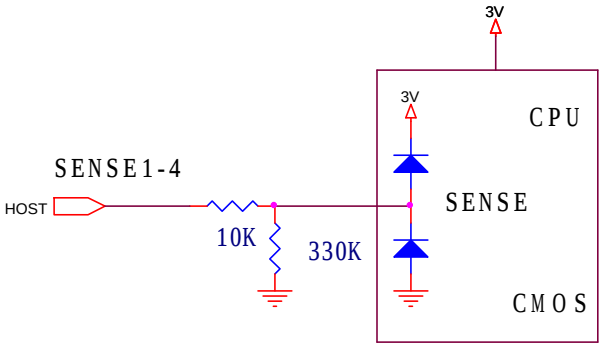
1. RESET	: External Reset
2. TXD	: Transmit Data
3. PWRON	: RPM Power On/Off
4. RXD	: Receive Data
5. SENSE1	: Status Input 1
6. RTS	: Request to Send
7. SENSE2	: Status Input 2
8. CTS	: Clear to Send
9. SENSE3	: Status Input 3
10. DTR	: Data Transmit Ready
11. SENSE4	: Status Input 4
12. DSR	: Data Set Ready
13. MAGWAIT	: Message Wait
14. DCD	: Data Carrier Datect
15. INRANE	: In Range Indicator
16. RI	: Ring Indicator
17. LOWBATT	: Low Battery
18. 4.0V PWR	: 4.0V Power Supply
19. GND	: Ground to Host
20. 4.0V PWR	: 4.0V Power Supply

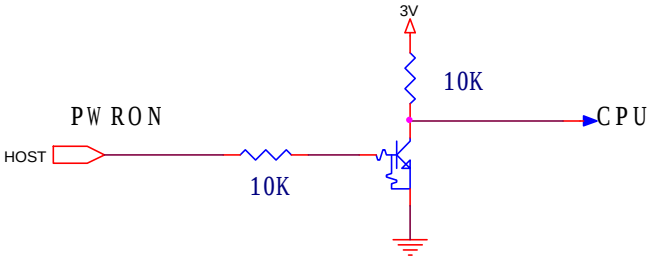
INTERFACE CIRCUIT OF CNI-800D





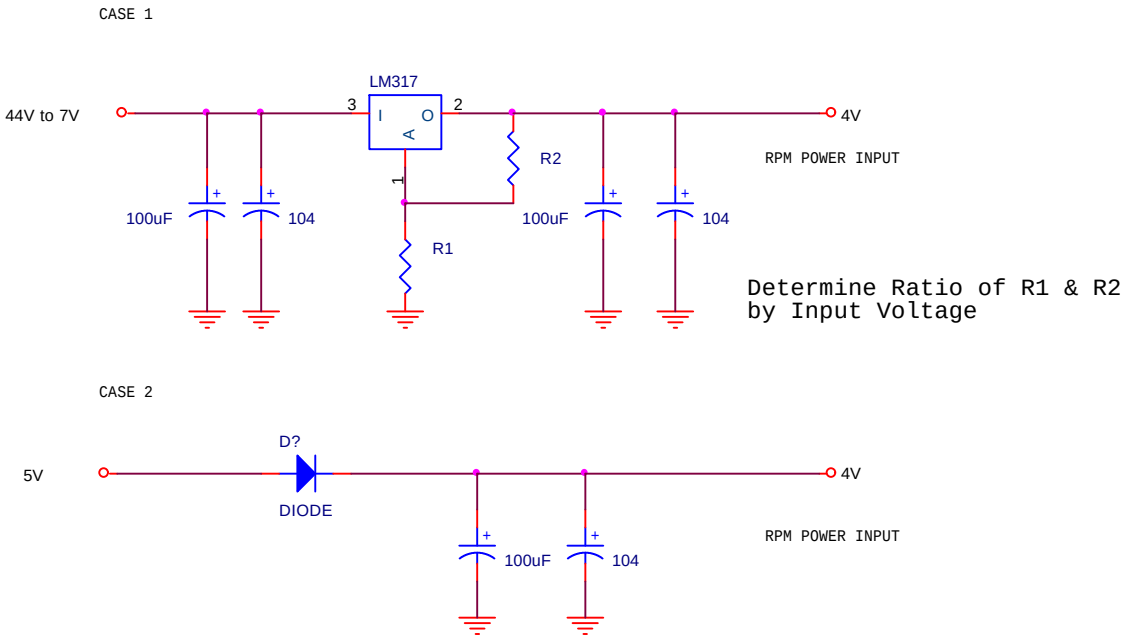






5. Power Supply and Current Usage

5.1 Example of Power Supply from out-source : input Voltage 4V±10%, more than 1.1 A



5.2 Current Usage

TX : 1.1A
RX : 70mA
St-By : 30mA
Average Current Usage in Standby Mode is about 30.6mA

■ Design Considerations

To integrate a wireless modem, there are several issues that need to be addressed and considered. Internal connections and placement are critical to a successful implementation. A successful design requires attention to several support mechanisms as following:

- DC Power
- Serial interface and control
- Mechanical mounting
- Software
- Antenna
- RF control

1. Production Applications

The OEM wireless modem is well suited for mobile and fixed applications. The wireless modem enables user to send/receive data anytime anywhere, and can provide communications for a wide variety of products.

1.1 Portable Terminal Use

Portable designs produce good environment for an integrated modem. The portable terminal is typically battery powered, subject to temperature extremes, and designed to be physically strong. When designing portable device, user needs to pay attention to the following issue:

- DC power noise levels on the host interface
- Minimum operating voltage levels
- Device internal ambient temperature
- Antenna gain and proximity to user
- Mechanical design for drop, vibration, dust, salt and liquid spill.

Note : Regarding this last point, CNI-800D modem is designed on the assumption that the host device will control these conditions.

1.2 Fixed Mount Usage

Fixed-mount usage eliminates most of the mechanical constraints of handheld designs. The core requirement applies, but fixed usage does not present any special conditions to address.

■ Installation

Installing CNI-800D modem is very simple as follows:

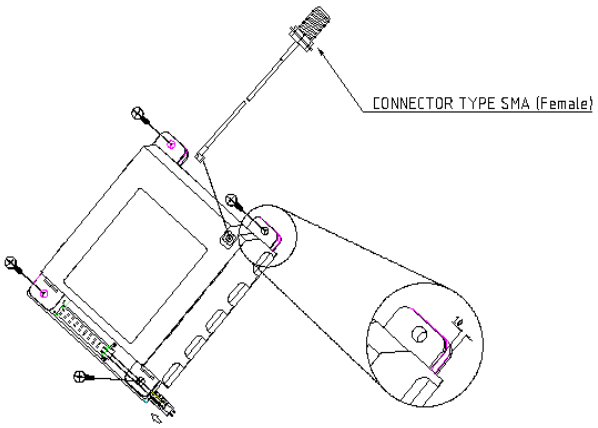
1. Place the modem to connector on product housing, and apply a little force to push it down to be connected.
   Caution : Care not to bend or damage the connector pins.
2. Use four #2-56 UNC 2A machine screws to tie up the modem as the figure shown below.
3. Connect modem connection cable to a small hole provided at the rear of the modem.
4. Connect the modem connection cable to Antenna

1. Mounting

Proper mounting of the modem requires a combination of securely fastening it within the product housing as well as adequately grounding the modem case to the housing.

1.1 Fastening

Mount the modem to the rigid OEM product housing by using four #2-56 UNC 2A machine screws as the figure shown below:



1.2 Grounding

For CNI-800D modem, the pin number 19 of connector on the modem is ground pin. So if user properly place the modem, ground is automatically done.

■ Warning Label

Following warning label shall be attached on the devices using CNI-800D modem.

> While this device is in operation, a separation distance of at least 20 centimeters (7.87 inches) is maintained between radiating antenna and the body of the user or nearby persons in order to meet the FCC RF exposure guidelines.