

# 202T Modem

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## TABLE OF CONTENTS

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<b>SECTION 1 - DESCRIPTION.....</b>	<b>2</b>
<b>SECTION 2 - SPECIFICATIONS.....</b>	<b>4</b>
<b>SECTION 3 - INSTALLATION.....</b>	<b>6</b>
<b>SECTION 4 - CONTROLS AND INDICATORS.....</b>	<b>7</b>
<b>SECTION 5 - INTERFACE SIGNALS AND CABLES.....</b>	<b>8</b>
<b>SECTION 6 - TROUBLESHOOTING .....</b>	<b>9</b>
<b>SECTION 7 - WARRANTY.....</b>	<b>10</b>

### NOTICE

The PC card modem meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

The RINGER EQUIVALENCE NUMBER (REN) for this terminal equipment is Not Applicable. The REN assigned to each terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five (5.0).

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Firmware Version: 1.7

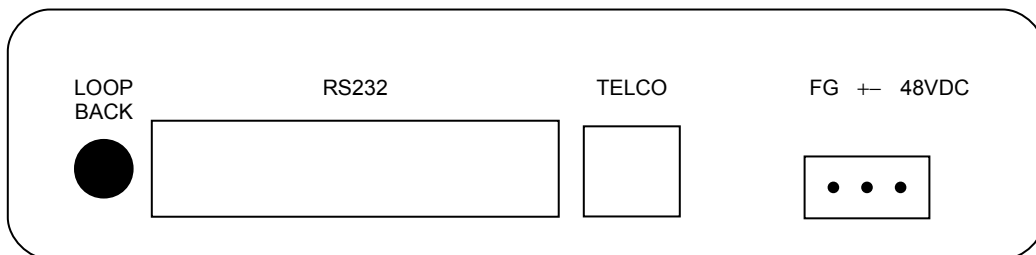
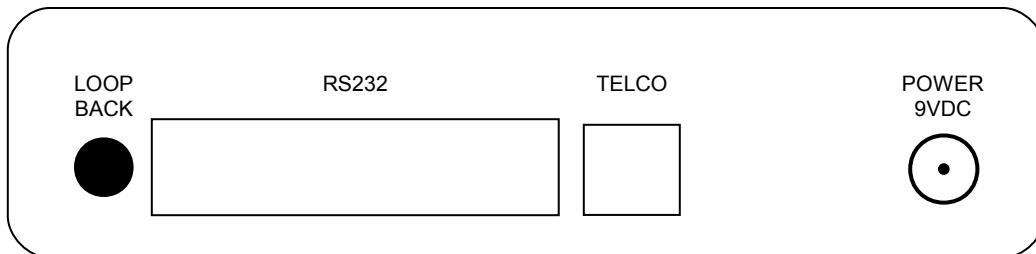
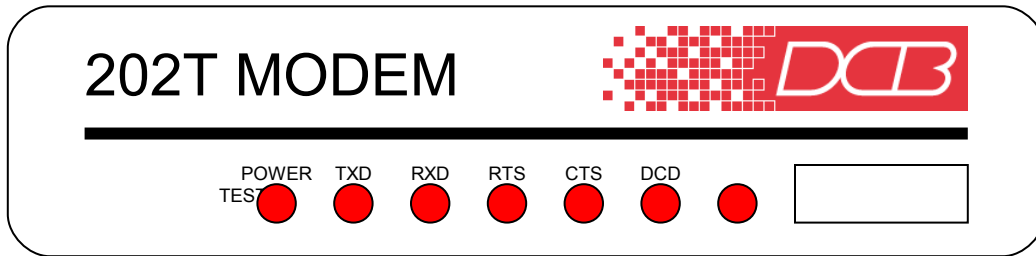
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## 1. DESCRIPTION

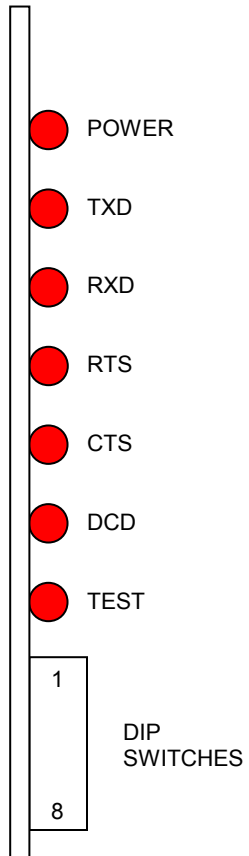
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The 202T modem operates at 0 to 1200 bps asynchronous, with FSK modulation. It uses the latest DSP modem circuitry to insure excellent performance and future availability. It has 900 hz soft carrier turn off for multidrop applications and an anti-streaming option. PC half card, standalone and custom OEM board configurations are available. The PC card uses the internal ISA bus for power and ground. The PC card fits into a 20 slot rack mount chassis that is only 7" high. The phone line connector is an RJ-11 for 2 wire or 4-wire leased line operation. Transmit is on positions 3 and 4, receive 2 and 5 of the 6 position jack. For 2-wire operation, a special cable configuration is required (see Section 5).

The modem has DIP switch controls for reset, anti-streaming, RTS/CTS delay, constant or controlled carrier, soft carrier turn-off, 2-wire or 4-wire line, transmit level and loopback. The modem also has a pushbutton switch for local digital loopback. The DIP switches are accessible from the front of the modem. A pushbutton loopback switch is located on the rear of the unit.



12, 24 or 48 VDC Power Option



Rack Mount

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## 2. SPECIFICATIONS

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### 2.1 Modem

Analog full duplex, 4-wire, 600 ohm balanced, Frequency Shift Keying  
Mark-1200 hertz, Space-2200 hertz  
Speed: 0 to 1200 bps ASYNC  
Transmit level: 0 or -16 dBm  
Receive range: 0 to -42 dBm  
Carrier turn-on time: less than 12 ms  
900 Hertz Soft Carrier Turn-Off for multidrop operation  
Switched carrier or constant carrier operation (RTS forced on or terminal controlled)  
Will drive up to 30 Km of cable depending upon wire gauge

### 2.2 Digital Interface

RS-232, DB-25S  
Signals are Tx, Rx, RTS, CTS, DSR, DCD  
RTS/CTS delay: 12ms or 20ms switch selectable  
Rx data is clamped to mark when no receive carrier detect is present.

### 2.3 Loopback

Digital loop via rear panel switch or DIP switch #8. Test LED lights during test.

### 2.4 Switches

Reset  
Anti-streaming (8 seconds)  
RTS/CTS Delay  
Constant or Controlled Carrier  
Soft Carrier Turn-off  
2-Wire or 4-Wire Line  
Transmit Level 0 or -16 dBm  
Loopback

### 2.5 Indicators

Power, Tx Data, Rx Data, RTS, CTS, DCD, Test

2.6 Environmental

- 40 to 70° C, 0 to 95% relative humidity, non-condensing

2.7 Physical / Electrical

Stand Alone

5.5W x 7.375D x 1.5H

110VAC wall mount power supply, 9VDC, 500ma output

Optional 240VAC, +12VDC, +24VDC, -48VDC or +125VDC power supplies available

PC Card

half card, 7.25D x 4.25H

ISA bus format

PC bus is used for power and ground only

20 slot rack chassis available, 19W x 16D x 7H, 110VAC, 250W

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## **3. INSTALLATION**

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### 3.1 Unpacking

The following is included with each unit:

- Unit and external power supply
- Cable for connection to phone line
- Manual
- Information regarding warranty, maintenance contracts and repair

### 3.2 Location

Place the unit in a clear area where you can see the front panel indicators and reach the rear panel to connect the cables.

### 3.3 Setup

See Section 4 for option switch settings.

### 3.4 Connections

See Section 5 for interface and cabling information.

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## 4. CONTROLS AND INDICATORS

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### 4.1 Controls

#### 4.1.1 DIP Switches

The option DIP switches are located on the front of the unit. The switch functions are as follows:

<u>Switch</u>	<u>DOWN</u>	<u>UP</u>
1 Reset	OFF	ON
2 Anti-Streaming	OFF	ON
3 RTS/CTS delay	12 ms	20 ms
4 Carrier	Constant	RTS controlled
5 Soft Carrier Turn-off	disabled	enabled
6 Line Type	4-wire	2-wire
7 Tx Level	-16 dBm	0 dBm
8 Digital Loop	ON	OFF

#### NOTE

For operation on 2-wire lines, switches 4 and 6 must both be UP.

#### 4.1.2 Loopback Switch

The loopback switch is located on the rear of the modem. DIP switch position 8 also performs loopback.

### 4.2 Indicators

<u>Indicator</u>	<u>Condition</u>	<u>Meaning</u>
POWER	ON	Unit has power
TXD	ON	Transmitting data
RXD	ON	Receiving data
RTS	ON	RTS high or forced on (switch 4)
CTS	ON	CTS high to terminal
DCD	ON	Receiving carrier
TEST	ON	Unit is in loopback

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## 5. INTERFACE SIGNALS AND CABLES

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### 5.1 Interface

RS-232 Port, DB-25S

<u>Pin</u>	<u>Signal</u>	<u>In/Out</u>
1	Frame Ground	-----
2	Transmit Data	IN
3	Receive Data	OUT
4	Request to Send	IN
5	Clear to Send	OUT
6	Data Set Ready	OUT
7	Signal Ground	-----
8	Data Carrier Detect	OUT

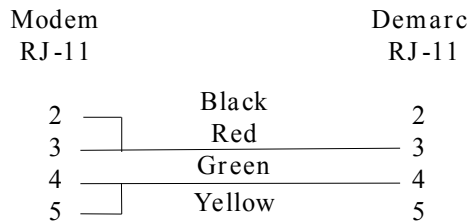
TELCO, RJ-11

<u>Pin</u>	<u>Signal</u>	<u>Color</u>	<u>In/Out</u>
2	Receive Tip	Black	IN
3	Transmit Ring	Red	OUT
4	Transmit Tip	Green	OUT
5	Receive Ring	Yellow	IN

### 5.2 Cables

Cables are included for connection to 4-wire circuits. For connection to 2-wire circuits, special wiring is required.

Modem to 2-wire TELCO Circuit





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## 6. TROUBLESHOOTING

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### 6.1 General Approach

When troubleshooting problems, a rational plan can save you many hours of frustration. The following is a brief outline of standard troubleshooting procedures.

1. Gather the facts to determine the exact nature of the problem.
2. Draw a picture of the system showing the equipment at both the host and remote ends and the phone lines or in-house wiring. Use this as a reference to note your observations, test steps and test results. A picture keeps you focused and often saves duplicate effort.
3. Record the front panel indications before changing anything. This is an important part of fact gathering
4. If you change anything, change only one thing at a time.
5. Use the built-in test functions, especially the loopback tests. Record your results.

### 6.2 Assistance

If you need assistance troubleshooting your system, contact DCB customer support at (217) 897-6600 between 8:00 am and 5:00 pm central time Monday through Friday.

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**7. WARRANTY**

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DCB modems are warranted to be free of defects in materials and workmanship for two years. Data Comm for Business, Inc. will repair or replace any equipment proven to be defective within the warranty period. All warranty work is F.O.B. Dewey, IL. This warranty is exclusive of abuse, misuse, accidental damage, acts of God or consequential damages, etc. DCB liability shall not exceed the original purchase price.

All equipment returned for repair must be accompanied by a Returned Material Authorization (RMA) number. To receive an RMA number, call (217) 897-6600 between the hours of 8 AM and 5 PM central time. Equipment must be shipped prepaid to DCB and will be returned at DCB's expense.

Ship returned items to:

Data Comm for Business  
2949 County Road 1000E  
Dewey, IL 61840  
ATTN: RMA#

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