202T Modem

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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 N/A. 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).

1.   DESCRIPTION

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 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. The pushbutton loopback switch is located on the rear of the unit.

202T MODEM   DCB

POWER   TXD   RXD   RTS   CTS   DCD   TEST

LOOP   TERMINAL   TELCO   POWER 9VDC
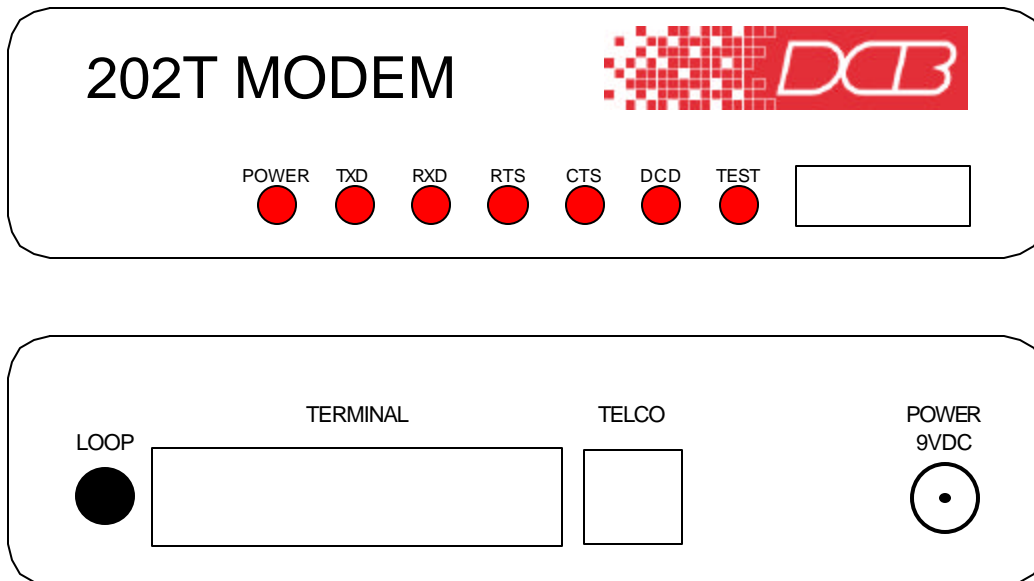
2.   SPECIFICATIONS

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 msec
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 is 12 or 20 ms in switched carrier mode
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)
Phase Equalizer
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

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2.6   Environmental

-35 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

3.   INSTALLATION

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.

4. CONTROLS AND INDICATORS

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:

Switch	DOWN	UP
1 Reset	OFF	ON
2 Anti-Streaming	OFF	ON
3 Phase Equalization	ON	OFF
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

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

Indicator	Condition	Meaning
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

5.1   Interface

RS-232 Port, DB-25S

Pin	Signal	In/Out
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

Pin	Signal	Color	In/Out
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

```
   Modem                        Demarc
   RJ-11                        RJ-11

              Black
    2 ─┐               ┌─ 2
    3 ─┘─── Red ───────  3
    4 ──── Green ──────  4
    5 ─┐   Yellow    ┌─ 5
       └────────────┘
```