

IDM 50B

Multi-Standard Modem

Highlights

- A programmable modem for SCADA or power utility communication network
- Multi-standard support: ITU R.35, R.37, R.38A, R.38B, V.21, V.23, V.29, Bell 103 and 202
- Fully programmable via Hayes AT command set
- Specialized Line, Power Line Carrier or radio communication
- Half or full-duplex operating mode



Description

IDM 50B is a frequency shift keyed (FSK) and quadrature amplitude modulation (QAM) modem for asynchronous and synchronous data transmission in 300-3400 Hz voice band. It is highly immune to interference and noise and permit extensive voice-band communication link utilization.

The modem supports several international standards ITU V.21, V.23, R.35, R.37, R.38A, R.38B, V.29, Bell 103, Bell 202 and proprietary Cegelec 1200/600Bd and Indactic 33 communication standards.

The modem can operate in half or full-duplex, point-to-point or point-to-multipoint mode. When using FSK modulation receive and transmit channels may be independently set.

The modem employs advanced DSP technology, thus offering high service flexibility through programmable features. Software configuration is performed via Hayes AT command set. AT commands can be initiated from any terminal application using ITU CCITT V.24 & V.28 (EIA RS-232C) communication interface. Additionally, for easy firmware upgrade a bootstrap loader is provided.

Application

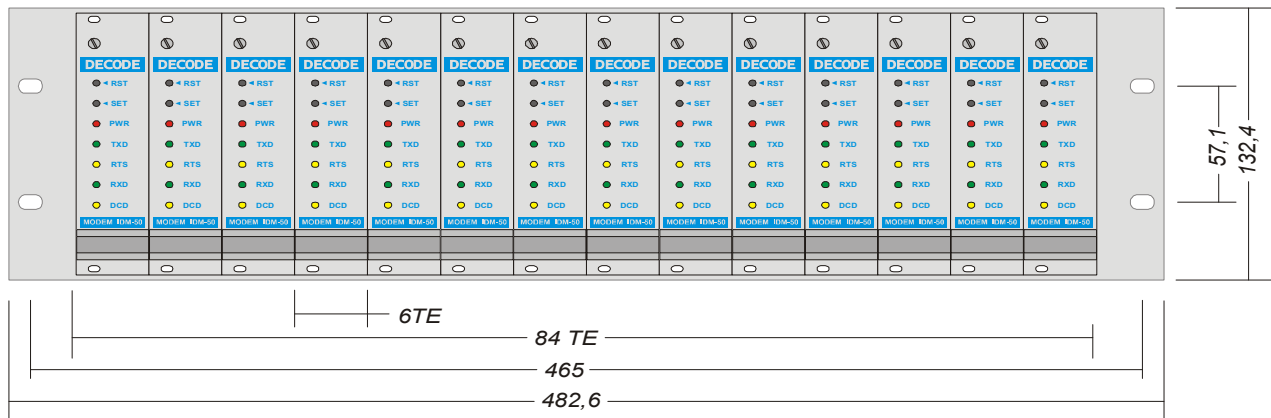
IDM 50B is designed for use in SCADA systems mainly based upon power utility communication networks. Depending of modulation standard it can communicate through specialized, private or leased lines, radio links and power lines (PLC).

Mounting Types

IDM 50B is available as a desktop modem or in two different types of standard 19" rack:

- 1U rack with 1, 2 or 3 modems per rack;
- 3U rack with 10,12 or 14 modems per rack, and additional blank front plates covering unused slots.

All connectors at the rear side are accessible at the back openings.



3U rack version with 14 modems per rack

Technical specification

Operation	
Type	Data transmission on audio frequency analog medium.
Media	Leased line, Radio, PLC
Modes	- Asynchronous or synchronous, Point-to-point, multipoint, 2-wire or 4-wire - Support for synchronous Indactive 33 protocol

Standards					
FSK	Transmission rate	Frequency deviation	Channel spacing (bandwidth)	Channel mean frequency adjustable in steps of 120Hz	
	Bd	Hz	Hz	Lowest Hz	Highest Hz
ITU R.35	50	± 30	120	420	3300
ITU R.37	100	± 60	240	480	3120
ITU R.38B	200	± 90	360	540	3060
ITU R.38A	200/300	± 120	480	600	3480
ITU V.21	300	± 100	400	1080 / 1750	
ITU V.23 / 0 / 1 / 2 / 3 / 4 / 5	600/1200	± 200 / 400	800 / 1600	2850/1500/1700/1140/2850/1800	
Bell 103	300	± 100	400	1170 / 2125	
Bell 202	1200	± 500	2000	1700	
QAM	Transmission rate	Symbol rate	Constellation points	Carrier frequency	Mode
	Bps			Hz	
ITU V.29	4800	2400	4	1700	Half duplex
	7200	2400	8	1700	Half duplex
	9600	2400	16	1700	Half duplex

Interfaces	
DTE interface	<ul style="list-style-type: none"> - ITU CCITT V.24 & V.28 (EIA RS-232C), DB9 (female) connector - Signals: DCD, RD, TD, DTR, SG, DSR, RTS, CTS, RI - Character length: 5-9 data bits, 1 start, 1 stop - RTS/CTS delay: adjustable by 1ms step within range of 40-6825ms - Option to switch on fail relay if DCD off - Option to transmit on RTS - Configuration: AT command set
Analog line	<ul style="list-style-type: none"> - DB15 (female) connector; - 600Ω or high impedance with return loss < 0.2; - Transmission level: 0 to -32dBm, programmable by 1dB step - Receive level: 0 to -40dBm, programmable by 1dB step, sensitivity min. - 48dBm - Radio control: half-duplex control and squelch detection
Power supply	2-position screw plug type (for 2-2.5mm ² wire)

General	
LED indication	PWR, TXD, RXD, RTS, DCD
Power supply	9-18VDC, 9-12VAC, model -12 18-36VDC, 14-23VAC, model -24 36-60VDC, 25-50VAC, model -48
Isolation	Transformer up to 1500V
Immunity to noise	<ul style="list-style-type: none"> - Peak pulse noise: 100V Peak - Effective interference at 50 Hz: 80V rms
Temperature	Operation and storage: -10° to +50 °C
Dimensions	<ul style="list-style-type: none"> - desktop: aluminium enclosure 112x30x170mm - 19" rack: EUROCARD PCB, 160x100mm 3HE, 6T in 1U and 3U rack

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