



## Description

The Hidex II V.34bis Industrial Grade Modem is the most versatile model for Dial up or leased analog telephone line interconnect. The Hidex HX II 33T offers speeds up to 33.6K over the analog switched telephone network. They are temperature tested, rugged modems designed for Industrial applications. Directly connected to RTU's, traffic controllers, variable message signs or any number of other applications, they communicate at 300 bps to 33.6 kbps over analog telephone lines. All HX models have High voltage surge protection on the telephone lines. The power converter delivers 5VDC from 100 to 240 VAC, 50-60 Hz with World Wide safety approvals and a locking connector to prevent vibration disconnects. A wide voltage range of DC power models are optional.

## Features

### Category

*Client-to-Server Data Rates*

*AGC Dynamic Range*

*Data Rates*

*Command Buffer*

### Description

Supports V.34bis data rates

43 dB

33,600; 31,200; 28,800; 26,400; 24,000; 21,600; 19,200; 16,800;  
14,400; 12,000; 9600; 7200; 4800; 2400; 1200; 0-300 bps

60 characters

<i>DAA Isolation</i>	1500 Vac
<i>Data Compatibility</i>	V.34 enhanced, V.34, V.32bis, V.32, V.22bis, V.22; Bell 212A and 103/113, V.21 & V.23
<i>Data Compression</i>	ITU-T V.44 (6:1 throughput); V.42bis (4:1 throughput); MNP 5 (2:1 throughput) <i>Fax Compression</i> MH, MR, MMR
<i>Data Format</i>	Serial, binary, asynchronous (available with parallel interface)
<i>Dimensions</i>	5 x 3 x 1 inches plus mounting tabs
<i>Case Material</i>	Black zinc oxide plated steel
<i>Error Correction</i>	Data Mode: V.42 (LAP-M or MNP 3–4)
<i>Fax Compatibility</i>	ITU-T “Super” Group 3; Class 1.0 (2.0, 2.1 – V.92 build only) Group 3, Class 1 and 2, T.4, T.30 Annex A & C, V.21, V.27ter, V.29, V.34, V.17, and TIA/EIA TR29.2 V.34 Super G3 fax at speeds up to 33.6Kbps V.17 G3 fax at speeds up to 14.4Kbps T.30 Annex A & C
<i>Fax mode error correction</i>	T.30 Annex A & C
<i>Fax Data Rates</i>	33,600; 31,200; 28,800; 26,400; 24,000; 21,600; 19,200; 16,800; 14,400; 12,000; 9600; 7200; 4800; 2400; 1200; 0-300 bps
<i>Flow Control</i>	XON/XOFF (software), RTS/CTS (hardware)
<i>Operational Temperature</i>	–40 to +85° C ambient under closed conditions; humidity range 20–90% (non-condensing)
<i>Power Consumption</i>	Typical: 60 ma @ 5VDC Standby or Sleep: 15 ma @ 5VDC
<i>Receiver Sensitivity</i>	–43 dBm under worst-case conditions
<i>Serial Speeds</i>	Serial port data rates adjustable to 300, 1200, 2400, 4800, 9600, 19,200, 38,400, 57,600, 115,200, and 230,400 bps
<i>Storage Temperature</i>	–50 to +100° C
Model Number:	HX II 33T MT5600SMI
Registration No:	AU7USA-46014-MD-E
Ringer Equivalence:	0.1B
Modular Jack (USOC):	RJ11
<i>Intelligent Features</i>	Fully AT command compatible, Leased-line operation, Sleep mode Autodial, redial, Pulse or tone dial, Dial pauses, Auto answer Adaptive line probing, Automatic symbol and carrier frequency during start-up, retrain, and rate renegotiations. DTMF detection, Distinctive ring, Call status display, auto-parity and data rate selections Keyboard-controlled modem options, On-screen displays for modem option parameters, remote configuration, DTR dialing, phone number storage flash memory for firmware updates, NVRAM storage for user-defined options

## Compliance to Global Telephone Standards

Hidex II modems have passed the following homologation:

FCC Part 68

FCC Part 15

IC-CS03

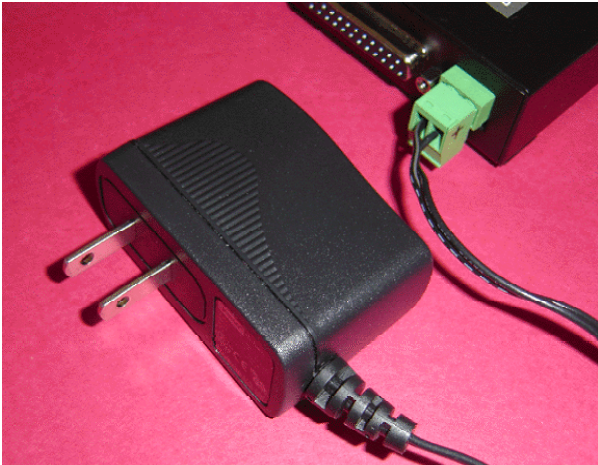
ETSI TS 103 021-1,2,3 v.1.1.2 2003-09 (originally CTR21)

ESD

## Power Supply

5 volt DC power to the modem is supplied through a 2-pin locking connector. Included with each modem is a switching power supply that will accept 90 to 240 VAC or DC. If you are going to power the modem from 5VDC remove the connector and attach to another pair of wires to connect to 5 VDC. CAUTION NOTE THE POLARITY ON THE CONNECTOR. The wire with the white dashes along the wire edge is the negative side.

Other power options are factory ordered and consist of 9-18VDC (-A), 18-36VDC (-B) and 39-72VDC (-C). Models with these power options will be labeled with voltage options.



## Data Interface

Data is interfaced via a DB25 female connector.

Pin 1 GRD	Signal Ground
Pin 2 TXD	Transmit Data
Pin 3 RXD	Receive Data
Pin 4 RTS	Request to Send
Pin 5 CTS	Clear to Send
Pin 6 DSR	Data Set Ready
Pin 7 SG	Signal Ground
Pin 8 DCD	Carrier Detect
Pin 10	(Alternate power input +5VDC)
Pin 20 DTR	Data Terminal Ready

## Hardware Setup:

Setup Procedure:

1. Use the RS-232 cable to connect the DB25 connector (J1) on the modem to a PC serial port (Typically COM1).
2. Connect the RJ11 connector to a phone line.
3. Connect external power to the power jack via wall adapter or +5VDC.

## Hyper Terminal setup:

### Command Description

**AT** Attention Code  
**A** Answer  
**A/** Repeat Last Command  
**Bn** Communication Standard Setting  
**Ds** Dial  
**DS=y** Dial Stored Telephone Number  
**En** Echo Command Mode Characters  
**Fn** Echo Online Data Characters

Pin 22 RI      Ring Indicate

## LED Indicators

DCD	Data Carrier Detect
RTS	Request To Send
CTS	Clear To Send
TXD	Transmit Data
RXD	Receive Data
RI/DSR	Ring Indicate/Data Set Ready
DTR	Data Terminal Ready

The modem can be tested as a standard serial data modem by connecting it to a personal computer or other data terminal equipment (DTE). Any standard terminal program such as HyperTerminal or ProComm running on a PC will communicate with the modem.

## AT Command Summary

Organization of AT Commands on the following pages: 1st, by the initial command character (&, +, %) 2nd, alphabetized by the second command character (Except for listing of **AT**).

**Hn** Hook Control  
**In** Information Request  
**Mn** Monitor Speaker Mode  
**Nn** Modulation Handshake  
**On** Return Online to Data Mode  
**P** Pulse Dialing  
**Qn** Result Codes Enable/Disable  
**Sr=n** Set Register Value  
**Sr?** Read Register Value

**T** Tone Dialing  
**Vn** Result Code Format  
**Wn** Result Code Options  
**Xn** Result Code Selection  
**Zn** Modem Reset  
**&Cn** Data Carrier Detect (DCD) Control  
**&Dn** Data Terminal Ready (DTR) Control  
**&En** XON/XOFF Pass-Through  
**&Fn** Load Factory Settings  
**&Gn** V.22bis Guard Tone Control  
**&Kn** Flow Control Selection  
**&Ln** Leased Line Operation  
**&Pn** Pulse Dial Make-to-Break Ratio Selection  
**&Qn** Asynchronous Communications Mode  
**&Sn** Data Set Ready (DSR) Control  
**&Tn** Loopback Test (V.54 Test) Commands  
**&V** Display Current Settings  
**&Wn** Store Current Configuration  
**&Zy=x** Store Dialing Command  
**\An** Select Maximum MNP Block Size  
**\Bn** Transmit Break  
**\Kn** Break Control  
**\Nn** Error Correction Mode Selection  
**\Qn** Flow Control Selection  
**\Tn** Inactivity Timer  
**\Vn** Protocol Result Code  
**-Cn** Data Calling Tone

**%A** Adaptive Answer Result Code Enable  
**%B** View Numbers in Blacklist  
**%Cn** Data Compression Control  
**%DCn** AT Command Control  
**%En** Fallback and Fall Forward Control  
**%Hn** Direct Connect Enable  
**%Rn** Cisco Configuration  
**%Sn** Command Speed Response  
**\$EBn** Asynchronous Word Length  
**\$Dn** DTR Dialing  
**\$MBn** Online BPS Speed  
**\$SBn** Serial Port Baud Rate  
**#CBAn** Callback Attempts  
**#CBDn** Callback Delay  
**#CBF?** Callback Failed Attempts Display  
**#CBFR** Callback Failed Attempts Reset  
**#CBIn** Local Callback Inactivity Timer  
**#CBNy=n** Store Callback Password  
**#CBPn** Callback Parity  
**#CBRy** Callback Security Reset  
**#CBSn** Callback Enable/Disable  
**#Pn** Set 11-bit Parity  
**#Sx** Enter Setup Password  
**#S=x** Store Setup Password  
**+VDR=x, y** Distinctive Ring Report  
**+++AT<CR>** Escape Sequence  
**%%ATMTSMODEM<CR>** Remote Configuration Escape Sequence

## Command Description

## Complete AT commands and programming

The complete AT commands can be downloaded from the web address

[http://www.industrial-grade-modem.com/down\\_loads.htm](http://www.industrial-grade-modem.com/down_loads.htm) and select HX II 33T user manual or AT commands manual.

## Table 10 –17 index

Table 10	The basic AT Commands
Table 11	Extended AT& Commands
Table 12	Extended AT% Commands
Table 13	Extended AT\ Commands
Table 14	Result Codes
Table 15	S Register Descriptions
Table 16	User Access Registers (U-Registers)
Table 17	Bit Mapped U-Registers Summary

## Industrial Grade Modems

41 Wightman Ct.  
Dana Point, CA 92629

Phone: 949-481-6516

Fax: 949-270-1500

Email: [sales@industrial-grade-modem.com](mailto:sales@industrial-grade-modem.com)

Web: [www.industrial-grade-modem.com](http://www.industrial-grade-modem.com)