EXHIBIT C

User Manual

EXHIBIT C

E56K External Data Fax Voice Modem Installation guide

Rev.1

Contents

1. Introduction

Congratulations on your purchase of this new Data / Fax / Voice Modem. What you have represents the very highest levels of technology in terms of Data transmission speed, with the added advantages of high fidelity voice and video conferencing.

As a Data Modem the device serves as a communication link between your computer and a remote computer, allowing you to transmit and receive data over ordinary telephone lines. As a fax Modem, it enables you to use your computer as a fax machine; transmitting and receiving data from other remote fax machines.

TI X2 technology enables a transmission speed of 56,000 bps with a throughput of 115,200 bps, and as a 14,400 bps fax modem. In addition to having full Data/Fax functions, this model also has a very useful voice feature enabling you to enjoy echo-free voice conferencing while transmitting data simultaneously.

(For more information on this voice feature, please read the communication software instructions.)

This booklet is intended to guide you through the installation procedure step by step, and also contains a full list of AT Commands and S-Registers to allow you to set up your modem to exactly your own requirements. Please read this thoroughly before starting installation of your modem, and try to familiarize yourself with the steps you will be taking. If you do encounter a problem, then please do not hesitate in calling your dealer for advice.

An enormous amount of research has been put into your Modem and we are sure that it will give you years of enjoyment and sterling service. Thank you for purchasing this product; we think that you have made the right decision.

Note: This Guide assumes that this is the first Modem installation on your PC. If you have previously installed a modem, then you will have to remove both the hardware **and** the software drivers from your PC. Please ask your dealer for advice.

2. Unpacking your Modem

This package should contain the following items, please unpack carefully and inspect for any damage that might have occurred during shipment. Rough handling during shipping is the cause of most early modem failures, so if something appears broken or damaged in any way then please do not try to install it; rather contact your dealer.

Contents:

- This users manual.
- Communication software package including manual.
- An RJ11C telephone cord.
- A 3.5" diskette or CDROM containing WIN95 INF file.
- An earphone for the voice feature.
- E56 External Voice Data Fax Modem.
- A 9V AC Power Adapter

Minimum system requirements:

This modem has a minimum PC level requirement which is listed below. If you are in doubt as to the specification of your system, then please contact your Dealer for advice before starting installation.

- A 486 or above PC.
- An Intel Pentium 100 Mhz or above CPU.
- A free RS232 COM Port.
- Microsoft Windows 95.
- A Mouse.

Connector Sockets:

- Power (9 volt from the power adapter)
- SPK (Speaker out)
- MIC (Microphone in)
- LINE (To your Telephone wall jack)
- PHONE (To your telephone set)

3. Installation: Quick reference guide

This Guide explains how to install your Data/Fax/Voice Modem, and then check to see that it is working correctly.

To install the modem, you need to follow these steps:

1. Unpack your modem and make sure that all of the items are included and undamaged.
2. Connect your modem to the phone line using the cord provided. If you wish you can also connect a phone to the modem.
3. Connect the speakers and microphone into their marked sockets. (If you have decided to use the voice feature.)
4. Using the RS232 cable connect your system and modem.

These are the basic steps to install your modem, but we will explain in more detail in the sections that follow.

3.1. Installing your modem in your computer.

Please switch off your computer and any peripherals that you may have connected. It is not necessary to unplug your system(s) from the electrical supply, just turn off the power switches or buttons, and make sure that all the power indication lights are off.

To install the external modem in your computer, begin by connecting RS232 cable between the modem and the COM port of your computer. Plug the AC adapter into modem power jack.

3.2. Connecting your modem to the telephone line.

Once you have finished installing the modem in your computer, please connect the telephone line. This is easy: just plug one end (both are the same) of the RJ-11C phone cord into the socket marked LINE on your modem, and then plug the other end into your telephone wall jack. Make sure that both ends are secure by pressing lightly on the plugs. When you are satisfied, then you can proceed to the next step.

3.3. Connecting your modem to a telephone set.

Now you have your modem connected to the wall jack; what to do with the telephone?. Simple, plug the telephone line into the socket marked PHONE, then you can use it just as you normally do. The modem has no effect on the telephones use. Check that the phone has a dial tone, then you can go to the next step.

3.4. Connecting speakers and microphone to your modem.

If you have decided to use all of the special functions built into your modem, then you will need to connect the earphone (to give you hands-free listening) and the microphone. Again this is a simple step; just plug the microphone jack into the socket marked MIC, and the speaker jack into the SPK socket, both on the back of the modem. Make sure that both jacks are secure, then you can go on to the next step.

3.5. Switching on the power.

Once you have completed the cable installation, it is time to think about turning on the power to your PC, and your new modem. Simply turn on the power of your PC also switch the modem power on, and your computer will start up normally.

3.6. Installing the software package I.

Once you have your modem hardware installed, the next step is to install the software package. We have included WIN 95 as part of your package, and so we will deal with installation of this type.

In fact your modem is compatible with most popular communications packages so you can try another if you wish, or perhaps change at a later date. You need this communications software to operate your modem, so please try to follow the next steps carefully.

Steps:

1. When you restart your PC after installing your new modem, you should see the following message: "New Hardware found", and:" This wizard will now complete installation of E56KTVP". Use your mouse to click on "Next". If you do not see those messages then go to section 3.7.

2. The computer will now prompt you to insert the communications software, and will then start copying the new files to your PC hard drive.

3. You will see the following message on your screen: "Windows found the following updated driver for this device". Use your mouse to click on "Finish".

4. You will see: "computer will copy files to disk", so please wait until the percentage panel is all blue, and the next message comes up.

5. You will see: "This wizard will now complete the installation of wave device for modem", on your screen. Use your mouse to click on :Next", and wait again for the files to copy.

3.7. Installing the software package II.

Steps:

1. Use your mouse to click on "My Computer" on your screen, then click on "Control Panel", then click on "Modems".

2. You should see "Modems Properties" screen, then click on "Add..".

3. In the " Install New Modem" screen. Ignore the message "Don't detect my modem; I will select it from a list.", then click on "Next"

4. Wait until next screen that shows "Verify Modem" exists, then click on "Change"

5. Now, you should see "Install New Modem" screen, then click on "Have Disk".

6. The computer will prompt you to insert the manufacturer's installation disk into driver selected, then click on "OK"

7. Select E56KTVP in the screen showing "Install New Modem", then click on "OK"

8. Next, you will see "Verify Modem" screen with the messages "You have selected the following modem on communication Port (COM2 for example)", and the driver you have selected, then click on "Next".

9. Now, you should see "Updated Device Driver Wizard" screen with the message "This wizard will complete the installation of : Wave Device for Voice Modem", then click on "Next" and wait.

10. You should see a message on your screen : "Windows found the following updated driver for this device : E56KTVP", then click on "Finish".

11. Next, you will see " Install New Modem" screen with the message "Your modem has been set up successfully", then click on "Finish".

12. Next, you will see " Updated Device Driver wizard" screen with rhe message "This wizard complete the installation of : E56KTVP", then click on "Next"

13. Next, you will see the following message on your screen : "Windows found the following updated driver for this device : E56KTVP", then click on "Finish"

14. Now you should see the modem you have selected shown on the list.

That's it, you have finished installation of your new modem. Now all that remains to be done is to run a couple of quick checks just to make sure that all is OK:

3.8. Checking your installation:

Steps:

1. Use your mouse to click on: "My computer" on your screen, then click on: "Control panel", then click on: "Modems".

2. Check that: "E56KTVP" is displayed on your screen, then click on "Diagnostics" and make sure that the "Modem" section has:"E56KTVP" shown on the list

3. Click on "System", then "Device Manager", then "Modem", and make sure that it lists: "E56KTVP".

4. Click on "E56KTVP" then "modem" and set the speed to 115200 then click on "OK".

5. Now use your mouse to click on: "Sound and Video Game Controllers", and make sure that "Wave Device for Voice Modem" displays on your screen. If you do not see these messages then follow next steps to finish installation.

6. Copy "a5582.exe" from the Driver Diskette into C:\Cwin95\Temp\ and execute "a5582.exe".

7. You will see "unimodv.inf" in the same directory then select "unimodv.inf" and click on the right button of your mouse then click on "install".

8. You will be requested to reboot your PC, then go through step1-5 again. You should see those missing messages

Note: If you have experienced any problems in installation (We hope you did not) then please turn to the **troubleshooting guide.**

Well done; you have completed Hardware, and Software installation and checked your updated system. You are now free to experiment and find out the full range of capabilities of your new Data / Fax / Voice Modem. We hope you enjoy it.

4. Trouble shooting Guide

Communications is a highly complex subject, and involves many variables. So, we have designed this Data Fax Voice modem to eliminate as far as possible, complicated installation and setting procedures for you the user. If any problems have occurred during your installation, then they are most likely due to either unsecured cables, so this is always the first thing to check, or incorrect settings. Please use this troubleshooting guide to try and identify any problems that may have arisen, but also please remember that your Dealer is an expert on this product, and will be more than happy to help you. Give him a call; sometimes a quick call can save you hours of frustration and head scratching.

4.1. Are the modem and the computer communicating?

First check the cable installation, then if no problems are found use your mouse to click on "My Computer" then "Control panel" then "Diagnostics" then "More info". This will display the AT commands that change some of the operations of your modem. If not , go to next section (4.2), otherwise go to HyperTerminal and type : "at" then enter the command. The modem should display an "OK".

4.2. The modem does not respond.

If the modem does not respond from last section (4.1), then check the following items :

- **Is the modem properly installed?**

Make sure that the modem is connected to a properly addressed COM port. Normally a modem is either assigned to COM port1 (IRQ4) or COM port2 (IRQ3), and make sure you have enabled the COM ports with proper IRQ number. (Please refer to PC user's manual). If this is OK, then go to HyperTerminal then type: " AT&F&WZ " to reset the modem.

- **Are the settings in your computer correct?**

Redo section 3.8.4 and check if the speed is 115200.

- **Does the COM port setting conflict with another device?**

Check that the COM port to which your modem is connected has not been assigned to another device such as a printer etc. If you find that another device has been assigned, please refer to PC user's manual to reassign the COM port.

4.3. The modem responds but.....

Note: In this section, you may need to use the AT commands.
To execute these commands, just type the command then press ENTER. Example: AT (command) ENTER.

If your modem responds, but does not seem to be working properly, you may have one of the following problems:

- **Characters you type are not displayed.**

When you issue commands to your modem during interactive mode, it normally displays what you type. If no characters are displayed you have to enable the "Local echo", by typing: "ATE1"then enter the command in the AT command set. (Installation guide:3.7, 2 click on "More info")

- **Characters you type are displayed double.**

If the characters you type are displayed double, then both your modem and your computer are echoing. You need to disable the local echo by typing: " ATE0 ",then entering the command. This will eliminate the problem.
(Installation guide: 3.7, 2 click on: "More info")
Note: Some software may label the local echo as: " Half duplex / Full duplex." In this case you need to change the setting to:" Full Duplex".

- **The modem does not answer incoming calls automatically.**

If "RING" is displayed on your terminal screen, type "ATA, then enter the command. this will force the modem to answer. Another way is to type "ATS0= 1", this asks the modem to answer calls after one ring. You need to type "AT&W", to save this setting to the non volatile-memory.

- **The modem will not dial a number.**

If your modem displays the message: "NO DIAL TONE" then the modem cannot detect a dial tone. First check your cable is installed and secure in both the rear of your modem, and the telephone wall jack. If this is OK, then connect your telephone directly to your telephone wall jack and check. If you do not hear a dial tone, then your line has a problem and you need to contact your telephone company.

In some areas your telephone company PBX system does not generate a standard dial tone. In this case you can configure your modem to ignore the dial tone altogether by typing ATX1 then entering the command.

- **You can dial out, but cannot communicate properly.**

The modem you are communicating with may have a problem, or the internal settings of the two may not be compatible. In this case the best thing to do is to confirm the settings of the modem you are trying to communicate with, then try calling again.

- **Delays occur when communicating with error control.**

If you are using a noisy line to communicate, then you may experience delays as the error control that causes blocks of data with errors to be retransmitted. This is only a very slight delay, and is normal.

- **The data received is partially lost.**

This sort of loss generally happens when you are receiving an extremely large file. The reason is that the transmitting modem is not responding to your modems flow control, and causes its own buffer to overflow. If this kind of problem is seen then, you need to make sure that both modems flow controls are the same.

- **You lose connection with the telephone line.**

This can be due to one of three common reasons:
1. Your modem fails to connect with the remote modem.
2. If the carrier from the remote modem is lost.
3. If the remote modem hangs up for some reason.

In any case the only thing to do is to try again.

- **Your modem does not accept AT commands.**
- **Your modem does not respond with "OK".**

This may have two possible causes:
1. Your modem is in quiet mode. (Type " ATQ0 " to restore the response, and enter.)
2. Modem failure. (Contact your Dealer for instructions.)

- **Dial up failure, your modem displays: "No Dialtone", or "no Carrier Message".**

This may have five possible causes:
1. You interrupted the call by accident.
2. Incorrect phone number was dialed. (Try again)
3. The modem you dialed is not responding.
4. Modem failure. (Contact your Dealer)
5. Local PBX has a non- recognized dialtone.(See: "The modem will not dial a number".)

Note: we hope that you did not have any problems using or installing your modem, if however you did find a problem, then please call your dealer first. The chances are that he will be able to help you clear up any problems quickly, and will have been happy to have been of service.

5. Setting your IRQ and COM ports:

Note: Your new modem is equipped with Plug and Play. (PnP) This makes installation of the software much easier and is strongly recommended. If you use the PnP function then you do not need to set the IRQ. Please make sure that you know which COM port is connected (1 or 2) and please make sure that you enter the correct port when prompted by the installation software.

6. AT Command Set

6.1Executing Commands

Commands are accepted by the modem while it is in Command Mode. Your modem is automatically in Command Mode until you dial a number and establish a connection. Commands may be sent to your modem from a PC running communication software or any other terminal devices.

Your modem is capable of data communication at rates of: **300**, **1200**, **2400**, **4800**, **9600**, **14400**, **19200**, **28800**, **38400**, **57600** and **115200** bps. Make sure your COM port baud rate settings in your communications software is set to one of the above speeds.

6.2Command Structure

All commands sent to the modem must begin with **AT** and end with **ENTER**. All commands may be typed in either upper or lower case, but not mixed. To make the command line more readable, spaces may be inserted between commands. If you omit a parameter from a command that requires one, it is just like specifying a parameter of 0.

Example:

ATH[ENTER]

This command causes your modem to hang up.

6.3Commands Set

In the following listings, all default settings are printed in **bold text**.

Command	Function
A	Manual answer
A/	Repeat last comman
A>	Continuously repeat last command

AT		Attention characters
Bn	B0	Select ITU V.25 answer sequence
	B1	Select Bell answer tone
Dn		Dial command (0-9,A-D,# and*)
	P	Pulse dialing
	T	Tone dialing
	W	Wait for second dial tone
	@	Wait for one or more rings, followed by 5 seconds of silence
	,	Pause during dialing (pause time defined by register S8)
	!	Hook flash
	;	Return to command mode after dialing
DSn		Dials one of up to four telephone numbers (n = 0 to 3) stored in the modem's nonvolatile memory.
En	E0	Commands are not echoed on screen
	E1	Commands are echoed on screen
+++		Escape command
Fn		Enable the modem to echo transmitted data to the DTE
	F0	Transmitted data is echoed to DTE
	F1	Transmitted data is not echoed to the DTE
Hn	H0	Modem goes on-hook (modem hangs up)
	H1	Modem goes off-hook and enters command mode
In		Dummy command
Ln	L0	Lowest speaker volume
	L1	Lower speaker volume
	L2	Medium speaker volume
	L3	High speaker volume
Mn	M0	Turns the speaker off
	M1	Turns the speaker on during dial string execution until a carrier is detected or modem goes on-hook
	M2	Turn the speaker on
	M3	Turns the speaker on after last digit in dial string is dialed; turns the speaker off when a carrier is detected or until the time has elapsed
On		Returns the modem to a previously established connection

	O0	Issued when modem is off-hook and when S13.7 = 0 for detection of escape code(online command mode). The modem remains on line and returns to a connected data transfer mode
	O1	Issued when modem is in online command mode. Causes the modem to return to data mode and at the same time initiates a retrain
P		Pulse dialing
Qn	Q0	Modem sends result codes to DTE
	Q1	Modem does not send result codes to DTE
	Q2	Modem does not send result codes to DTE when in the answer mode
Sr?		Read value of S register r
Sr = n		Set value of S register r to value n
T		Touch-tone dialing
Vn	V0	Result codes are transmitted as digits
	V1	Result codes are transmitted as words
Xn	X0	Hayes Smartmodem 300 compatible responses/blind dialing
	X1	Same as XO. Plus all responses/blind dialing
	X2	Same as X1. Plus diali tone detection
	X3	Same as X1. Plus busy tone detection/blind dialing
	X4	All responses with dial tone, busy tone and ring detection
	X5	All responses with busy tone and ring detection
	X6	Same as X0. Plus all responses , dial tone, busy tone and ring detecton, except 2400 connection speed
Yn		Selects system profile
	Y0	NVRAM configuration 0
	Y1	NVRAM configuration 1
	Y2	Factory configuration 0
	Y3	Factory configuration 1
	Y4	Factory configuration 2
Zn		Reset to either of the NVRAM settings or to the factory defult
	Z0	Load the configuration indicated by ATY command
	Z1	Reset and load NVRAM configuration 0
	Z2	Reset and load NVRAM configuration 1
	Z3	Reset and load factory configuration 0
	Z4	Reset and load factory configuration 1
	Z5	Reset and load factory configuration 2

&An Enables and disables a display of ARQ result codes

- &A0 Disables /ARQ connection result codes
- &A1 Enables /ARQ connection result codes
- &A2 Indicates an additional V.32 in result codes for calls of 4800 bps or greater
- &A3 Identifies protocol of call : LAPM, MNP, or NONE

&Bn Selects a DTE literface rate

- &B0 The modem DTE interface rate follows the DCE connection rate
- &B1 The modem DTE interface rate follows the DTE rate, regardless of the DCE connection rate
- &B2 The DTE rate is fixed for ARQ calls and variable for non-ARQ calls

&Cn

- &C0 Data carrier detect (CD) signal always on
- &C1 CD signal follows the state of the carrier

&Dn

- &D0 DTR is always ON
- &D1 The modem enters the command mode on DTR transitionto a loe state. It returns online when DTR returns returns to a high state
- &D2 DTR drop causes the modem to hang up. Auto-answer is inhibited.
- &D3 Dropping DTR terminates any active call and causes modem to do a soft reset

&Fn

- &F0 Load standard factory configuration
- &F1 Load factory configuration 1 hardware flow control
- &F2 Load factory configuration 2 software flow control

&Gn Set guard tone (V.22 and V.22bis mode only)

- &G0 Guard tone disabled
- &G1 550 Hz Guard tone
- &G2 1800 Hz guard tone

&Hn

- &H0 Disables data flow control
- &H1 Enables hardware flow control (CTS)
- &H2 Enables software flow control using characters stored in the S22 register for XON and the S23 register for XOFF
- &H3 Enables hardware and software flow control

&In Enables software flow control options

- &I0 Disables flow control(XON/XOFF) of received data
- &I1 The modem responds to XON/XOFF characters defined in the S22 and S23 registers, respectively, and passes characters to the remote DCE
- &I2 Same as &I1, but does not pass the characters to the remote DCE
- &I3 Enables Hewlett Packard host mode
- &I4 Enables Hewlett Packard terminal mode
- &I5 Enables special flow control

&Kn Enables MNP-5 or V.42bis data compression

- &K0 Disables data compression
- &K1 Data compression is enabled if the DTE data rate is greater than the link rate and the remote DCE supports either MNP5 in the MNP link request or V.42bis in the LAPM link request
- &K2 Enables data compression
- &K3 Disables MNP5 data compression

&Mn Enables MNP error control option

- &M0 No error control. The MNP or V.42link request is ignored
- &M2 Reserved
- &M3 Reserved
- &M4 Automatic selection between V.42, MNP error control, and non-error controlled data link
- &M5 Error-Controled link. If the remote DCE does not respond to V.42 or MNP link request, the modem disconnects the call

&Nn Selects variable or fixed DCE data rates

- &N0 Variable rate
- &N1 300 bps
- &N2 1200 bps
- &N3 2400 bps
- &N4 4800 bps
- &N5 7200 bps
- &N6 9600 bps
- &N8 14400 bps
- &N10 19200 bps
- &N14 28800 bps

&N16 33600 bps
&N27 56000 bps
&N31 61333 bps

&Pn

&P0 Selects US/Canada make/break ratio of 39%/61%
&P1 Selects U.K. make/break ratio of 33%/67%

&Rn

&R0 Reserved
&R1 The RTS signal is ignored
&R2 The modem transmits data to DTE only if the RTS is asserted

&Sn

&S0 DSR forced on
&S1 DSR will become active after answer tone has been detected and inactive after the carrier has been lost

&Tn Begins test mode

&T0 Ends testing
&T1 Analog loopback
&T2 Reserved
&T3 Local Digital Loopback
&T4 Enables Remote Digital Loopback
&T5 Prohibits Remote Digital Loopback
&T6 Initiate Remote Digital Loopback
&T7 Remote Digital with self-test and error detedtor
&T8 Analog Loopback with self-test and error detection

&Un Selects minimum DCE connection data rates

&U0 Variable link rate
&U1 300 bps
&U2 1200 bps
&U3 2400 bps
&U4 4800 bps
&U5 7200 bps
&U6 9600 bps
&U8 15500 bps
&U10 19200 bps
&U14 28800 bps

&U16 33600 bps
&U27 56000 bps
&U31 61333 bps

&Wn Writes current configuration to NVRAM templates
&W0 Stores to NVRAM pattern 0
&W1 Stores to NVRAM pattern 1

&Yn Sets break handling
&Y0 Destructive option
&Y1 Destructive, expedited
&Y2 Nondestructive, expedited
&Y3 Reserved

&Zn=s Store telephone numbers to NVRAM at position n (n=0-3)
&Zn=L Stores last executed dial string to NVRQM at position n (n=0-3)
&Zn? Displays the phone number stored at position n (n=0-3)
&ZL? Display the last executed dial string
#BDR Select Baudrate
#CID Caller ID Detection & Reporting
#CLS Service Class
#MDL Identify Model
#MFR Identify Manufacture
#REV Identify Reversion Level
#VBQ Query Buffer Size
#VBS Bits Per Sample (ADPCM)
#VBT Beep Tone Timer
#VCI Identify Compression Method
#VGR Speaker Phone Receive Gain
#VGT Speaker Phone Transmit Gain
#VLS Voice Line Select
#VRA Ringback Goes Away Timer
#VRN Ringback Never Came Gain
#VRX Voice Receive
#VSD Silence Deletion
#VSK Buffer Skid Setting
#VSP Silence Detection Period
#VSR Sampling Rate Selection

#VSS	Silence Detection Tuner
#VTD	DTMF Tone Reporting
#VTS	Generate Tone Signal
#VTX	Voice Transmit

7. S Registers

Your modem has S registers. Table 4-1 shows the registers, their functions, and their default values. Some registers can have their values changed by commands. If you use a command to change a register value, the command remains in effect until you turn off or reset your modem. Your modem then reverts to the operating characteristics specified in its non-volatile memory. To change a setting, use ATSr=n command, where r is the register and n is a decimal value from 0 – 255 (unless otherwise indicated).

Table 7-1 S-Registers

Register	Function	Range/Units
S0	Auto answer ring	0-255 /rings
S1	Ring counter	0-255 /rings
S2	Escape character	0-127 /ASCII
S3	Carriage return character	0-127 /ASCII
S4	Line feed character	0-127 /ASCII
S5	Backspace character	0-127 /ASCII
S6	Dial tone wait time	0-255 /seconds
S7	Remote carrier signal wait time	0-255 /seconds
S8	Pause time for dial delay	0-255 /seconds
S9	Carrier detect response time	0-255 /.1 second
S10	Carrier loss to hang-up time	0-255 /.1 second
S11	Tone dialing duration and spacing	0-255 /.001 second
S12	Escape guard time	0-255 /.02 seconds
S13	Bit-mapped register setup	0-255
S14	Reserved	
S15	ARQ Bit-mapped option setup	0-255
S16	Test mode Bit-mapped setup	0-255

S17	Reserved	
S18	Duration of modem tests	0-255/seconds
S19	Duration of inactivity timer	0-255/minutes
S20	Reserved	
S21	Breaks sent from modem to computer	0-255/.01seconds
S22	XON character	0-255/ASCII
S23	XOFF character	0-255/ASCII
S24	Reserved	
S25	Delay To DTR	0-255 /.01 second
S26	Reserved	
S27	Bit-mapped register setup	0-255
S28	V.32 handshaking time	0-255/.1 seconds
S29	V.21 answer mode fallback timer	0-255 /.1 second
S30	Reserved	
S31	Reserved	
S32	Bit-mapped register setup	0-255
S33	Bit-mapped register setup	0-255
S34	Bit-mapped register setup	0-255
S35	Reserved	
S36-S37	Reserved	
S38	Delay before forced hang-up	0-255/seconds
S39-S40	Reserved	
S42	Reserved	

8. Result Codes

0/OK	1/CONNECT
2/RING	3/NO CARRIER
4/ERROR	5/CONNECT 1200
6/NO DIAL TONE	7/BUSY
8/NO ANSWER	9/RESERVED
10/CONNECT 2400	11/RINGING
13/CONNECT 9600	18/CONNECT 4800
20/CONNECT 7200	21/CONNECT 12 000
25/CONNECT 14 400	43/CONNECT 16 800
85/CONNECT 19 200	91/CONNECT 21 600
99/CONNECT 24 000	103/CONNECT 26 400
107/CONNECT 28 800	151/CONNECT 31 200
155/CONNECT 33 600	180/CONNECT 32 000
184/CONNECT 36 000	188/CONNECT 40 000
192/CONNECT 44 000	196/CONNECT 48 000
200/CONNECT 49 333	204/CONNECT 50 666
208/CONNECT 52 000	212/CONNECT 53 333
216/CONNECT 54 666	220/CONNECT 56 000
224/CONNECT 57 333	228/CONNECT 58 666
232/CONNECT 60 000	236/CONNECT 61 333

Appendix A - Technical Specifications

- Data throughput: Up to 115,200 bps
- Line operating speed (bps):
  56000, 33600, 31200, 28800, 26400, 24000, 21600, 19200, 16800,4400,
  12000, 9600, 7200, 4800,2400, 1200, 300
- Dynamic fall-back and fall-forward
- Adaptive echo cancellation:
- Both near-end and far-end echo canceller
- Modulation techniques:
- V.90 PCM
  X2: PCM
  V.34 mode: Trellis code modulation (TCM)
  V.32bis mode: TCM
  V.32 mode: TCM and QAM
  V.22bis mode: QAM
  V.22 Bell 212A: DPSK
  V.21, Bell 103: FSK
- Frequency offset: ±7 Hz (ITU Spec.)
- Carrier Frequency:
  V.32bis mode: 1800 ±1 Hz
  V.32 mode: 1800 ±1 Hz
  V.22bis mode: 1200 ±0.5 Hz for low channel
  V.22bis mode: 2400 ±0.5 Hz for high channel
- Error correction protocol:
  MNP class 2, 3, 4
  V.42 (LAPM)
  Data compression scheme:
  MNP class 5
  V.42bis (BTLZ)
- Character length: 10 bits
- Terminal interface:
  RS232 (COM1, COM2)
  Command format: Standard and extended AT commands
- Operating modes:

Auto-dial/auto-answer
Flow control:
XON/XOFF
XON/XOFF pass-through/non-pass-through
CTS/RTS

- Telephone line interface: RJ-11C
- Transmit level: -10 dBm to -15 dBm
- Group 3 send/receive facsimile
  V.17, V.29, V.27ter, V.21 ch2
  Class 1, 2 commands
- Voice function:
  Voice View
  Full duplex speakerphone

- FCC Compliance

This equipment complies with Part 68 of the FCC Rules. On this equipment is a label that contains, among other information, the FCC registration number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to you telephone company.

If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify in advance. But, if advance notice isn't practical, you will be notified as soon possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect proper operation of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

The FCC prohibits connecting this equipment to party lines or coin-telephone service.

In the event that this equipment should fail to operate properly, disconnect the equipment from the phone line to determine if it is causing the problem. If the problem is with the equipment, discontinue use and contact your dealer or vendor.

The FCC also requires the transmitter of a FAX transmission be properly identified (per FCC Rules Part 68, Sec. 68.381 (c) (3)).

- FCC Class B Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and radiates radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment dose cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reprint or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio / TV technician for help
- Notice: 1) Shielded cables, if any, must be used in order to comply with the emission limits. 2) Any change or modification not expressly approved by the Grantee of the equipment authorization could void the s authority to operate the equipment.

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