

Telex Unit (ATU)

OPERATION & INSTALLATION MANUAL

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ATL Telecom

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CONTENTS:

- CE COMPLIANCE STATEMENTS
- SAFETY INSTRUCTIONS
- EMC WARNING STATEMENTS

- 1. INTRODUCTION
- 2. INSTALLATION STEPS
- 3. HOST SIDE CONNECTION DETAILS
- 4. CONFIGURATION
- 5. LED DISPLAY
- 6. USER RESPONSIBILITIES

ATL Part No. 1/267/000/610

ISSUE 4

March 2003

ATL TELEX UNIT (UK) : CE COMPLIANCE STATEMENTS

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POWER AND TEMPERATURE SPECIFICATIONS

Input Requirements : 230 V~ ±10% 65mA, 50Hz ± 5%

Temperature Range : 0 ~ 40 degrees C.

SAFETY STATEMENTS

- 1) This apparatus must be installed and maintained by SERVICE PERSONNEL
- 2) The mains plug on the equipment serves as the disconnect device, therefore a socket outlet shall be installed near the equipment and shall be easily accessible.
- 3) For continued protection against risk of fire replace with same type and rating fuse.
- 4) The TELEX LINE connection has a safety status of TNV3; the Host and Printer (AUX) Interface port (D-Type) connections have a safety status of EARTHED SELV and the mains connection has an EARTHED HAZARDOUS VOLTAGE STATUS.

SYSTEM SPECIFICATION

The ATU is defined as a Front End Telex Terminal Apparatus (FE- TTA) with an intermediate Telex Terminal Apparatus (1- TTA) built in.

Not more than one Intermediate Telex Terminal Apparatus (1- TTA) may be connected between a telex terminal and the telex network.

As the ATU contains an (1-TTA) no further (1-TTA) may be connected between the ATU and the Telex Network.

The ATU supports both PTS and CSCS signalling provided on lines supplied by BT and Mercury.

EMC STATEMENTS

WARNING This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

DURING INSTALLATION DO NOT DISCARD ANY CONNECTOR COVERS

To ensure continued compliance with the ESD criteria ensure any port or connector that is not in use is protected by the cover or dummy plug supplied.

WARNING

The lithium battery incorporated inside the ATU unit will react violently with water and most gases. It is also important that batteries are not crushed, incinerated or disposed of with normal waste. Therefore the battery is classed as being NOT USER REPLACEABLE and the equipment should be returned to the manufacturer or agent if battery replacement is required.



MANUFACTURERS DECLARATION*

ATL Telecom Ltd declares that this product is in conformity with the essential requirements of the 'R&TTE directives 1999/5/EC'

***A copy of the Declaration of Conformity is available upon request from ATL Telecom Ltd.**

1. INTRODUCTION

The ATL Telex Unit (ATU) enables a computer, word processor, or other intelligent device to operate as a telex terminal, and thus send and receive messages over the national and international telex network. The computer or word processor to which the Telex Unit is connected is referred to as the Host equipment. The interface to the Host equipment is CCITT V24/V28 (equivalent to EIA RS 232-C).

The Telex Unit can operate with a variety of different Host software applications and across a range of Host equipment. Since there are variations in the pin connections on the interface of the Host equipment, it is the responsibility of the installer to provide the connection cable between the Telex Unit and the Host equipment. These instructions should also be read in conjunction with any installation instructions issued by the Host equipment manufacturer.

There is only one control on the Telex Unit, the RESET button that allows the user to execute a hardware reset of the Telex Unit. Commands from the Host carry out any other necessary changes in its operating mode. These include a reset command, which must be entered each time the Telex Unit is powered up, or the RESET button is pressed and each time a reset (fault) condition is indicated.

Five LEDs on the Telex Unit give indications of Run/Reset condition and of transfers in each direction on the telex line and on the host interface.

The physical characteristics of the ATL Telex Unit are as follows: -

Size: 250mm x 275mm x 60mm (W x D x H)

Weight: 2.8 Kg.

The unit can accept a mains voltage variation of $\pm 10\%$ from the nominal value stated on the unit. The power consumption is between 5W and 15W.

If any doubts arise concerning the operation of the Telex Unit, reference should be made to the host equipment supplier.

2. INSTALLATION STEPS

(i) Preliminary

Check the mains voltage shown on the rear panel.

Check the paperwork accompanying the Telex Unit to ensure that,

- (a) the serial number corresponds
- (b) the answerback is correct
- (c) the host interface baud rate and mode are correct (see section 4).

No attempt should be made to install a Telex Unit if an error is suspected.

(ii) Host Cable

It is the responsibility of the installer to provide the connecting cable between the Telex Unit and the Host, including any monitor printer.

Two D-type connectors are required for connection to the Telex Unit.

If the printer connection is not being used, the D-Type Connector Cover provided must be left fitted.

(iii) Location

Select a position for the Telex Unit that is within cable reach of the mains supply, host equipment, telex line termination and standby teleprinter (if installed). The mains lead and telex connections provided with the Telex Unit are approximately 2 meters long. The chosen site should be secure, dry and avoid exposure to excessive heat from equipment, room heating devices or direct sunlight. The front panel should be visible so that the LED displays can be observed during system operation.

(iv) Connections

Connect the Telex Unit as follows: -

(a) Insert Host connecting cable (25 - pin male D-type connector) and (optional) monitor printer connecting cable (9 - pin female D-type connector) into the mating connectors at the rear of the Telex Unit. Connect the other ends of these cables to the Host and monitor printer.

(b) Make connections to the telex line and standby teleprinter (if installed) via the line plug and teleprinter socket (if installed). Refer to Appendix A for U.K. connection details.

(v) Reset of Telex Unit

Check that the all LED's on the Telex Unit light within 5 seconds of the mains power being connected or the RESET button being pressed. Check that the host equipment is powered up. Send the Reset Command (ASCII characters ESCAPE A) from the host equipment to the Telex Unit and check that the RUN LED is still lit, and the host LED's are extinguished.

Note that a Reset command is required on each occasion that the Telex Unit is powered up or reset via the RESET button. If the LED's do not light after 5 seconds on power up or pressing of the RESET button, check the mains connection. If the RESET command does not extinguish the Host LED's, check the host and its connection to the Telex Unit. Check the baud rate is set correctly in the Telex Unit and the method of security checking and flow control is correct (mode of operation). See section 3 for details.

(vi) Check Message

After the HOST LED's have been extinguished the Telex Unit is ready for use in accordance with the Telex operating instructions for the host equipment. If possible a test telex should be sent to another known location as a check that the system is operating correctly.

3. HOST SIDE CONNECTION DETAILS

RS232C Host connection

(a) 3-Wire

This uses only the connections Tx, Rx and Common as the interface between the Host and the Telex Unit. For this mode of operation the unit must be configured with XON/XOFF flow control and ENQ/ACK data security.

(b) 5-Wire (XON)

This uses Tx, Rx, Common, DSR and DTR as the interface between the Host and the Telex Unit. With this type of interface the DSR/DTR lines are used for data security. XON/XOFF are used for flow control

(c) 5-Wire DTR

As (b) but uses DSR/DTR for security and flow control.

Flow Control by XON/XOFF

The flow of data in each direction is controlled by the inclusion of control characters in the data. The characters used are Enable Input (XON, ASCII DC 1) and Disable Input (XOFF, ASCII DC3). The characters can be sent at any time and are not restricted to use only during data transfer.

When the Telex Unit sends (XOFF) the Host must stop sending characters to the Telex Unit. The Telex Unit will successfully receive a number of characters (at least 10) before data transfer ceases. If the Host continues to send data in excess of this Telex Unit assumes a Host fault.

Flow Control by DSR/DTR

Alternative method of flow control but uses DSR/DTR. The DTR signal is used to control the flow of data passed from the Host and DSR to control the flow of data to the host. The signal is set 'low' to disable input and high to enable; the same rules apply as for XON/XOFF.

Security Checking by use of ENQ/ACK

This method of security checking involves the regular exchange of control characters between the Telex Unit and the Host. The Telex Unit sends a Confidence Check enquiry character (ENQ) to the Host and expects to receive an OK character (ACK) in response. After sending an (ENQ) the Telex Unit checks to see if an (ACK) has been received. The Host must reply within 10 seconds (5 seconds in U.K.) otherwise a fault in the Host is assumed and the line is cleared.

If the Host is not ready to receive data it sends a Not OK character (NAK) response. In this case the Telex Unit clears any incoming call and closes the line to incoming calls. This condition is cleared by the Host sending an (ACK) in response to a later (ENQ).

Security Checking by DSR/DTR

An alternative method of security checking is by use of the DSR/DTR RS232C interface signals. The Telex Unit will continue to operate provided the DTR signal is 'high'. If the DTR is low for longer than 10 seconds (5 seconds in U.K.) the Telex Unit will assume there is a Host fault.

Host Connection

The following are the connections available on the Host Port; the unit is configured as a DCE. The cable from the Host computer should terminate in a 25-pin Male D-type connector.

Pin Host

- 1 Earth
- 2 Tx (to the unit)
- 3 Rx (from the unit)
- 4 RTS (to the unit)
- 5 CTS (from the unit)
- 6 DSR (from the unit)
- 7 0V (common)
- 20 DTR (to the unit)

AUX Connection

The following are the connections available on the AUX Port. The cable from the printer should terminate in a 9-pin Female D-type connector.

Pin AUX

- 1 Earth
- 2 Rx (from unit to printer)
- 3 TX (not used in printer mode)
- 4 DTR (to the unit)
- 5 0V (common)
- 6 DSR (from the unit)
- 7 RTS (to the unit)

4. CONFIGURATION

Configuring the ATL Telex Unit

The ATL Telex Unit is configured by changing the various options in the unit's software configuration menu accessed from a terminal session through the Host port. This section contains a complete list of all current options for both Host and Printer configuration.

If an RS232 terminal or computer, using asynchronous communication, is connected to the Host connector, only Tx, Rx, Ground and DTR connections are required by the Telex Unit for

configuration. However, the terminal or computer that you may be using to configure the Telex Unit may itself require other interface signals to be present.

The user or Host program must key in (ESC) Z1 to invoke the configuration facility. On successful entry the user may key in parameters indicating the required selections.

It is advisable to first key (ESC) A (reset command) in order to ensure that the previously stored configuration is currently in operation and that communication has been correctly established. This can be seen as the Telex Unit will output the message;
"I: RESET" to a reset command.

Note: The use of upper/lower case letters is of great importance when making changes in unprompted mode otherwise the wrong configuration change will be made.

Change Default Configuration (ESC) Z[n]

This feature is used to configure the unit into a mode suitable for a particular installation. Once configured the parameters will remain stored in non-volatile memory for immediate use after power-on. The menu may be accessed from a dumb terminal connected to the Host port or direct from the Host system if this option is possible.

After sending "(ESC) Z" the Host must send either "0" which means "no prompts" or "1" which means "prompts".

The following power-up / software reset defaults may be changed:

- A) HOST SPEED: 1)9600 2)4800 3)2400 4)1200 5)600 6)300 7)150 8)110 9)50 <4>
- B) HOST DATA BITS: 7)7bits 8)8 bits <8>
- C) HOST STOP BITS: 1)1 bit 2)2 bits <1>
- D) HOST PARITY: 0)None 1)Odd 2)Even 3)Space 4)Mark <0>
- E) HOST SECURITY: 0)ENQ/ACK 1)DSR/DTR <1>
- F) HOST FLOW CONTROL: 0)XON/XOFF 1)DSR/DTR <0>
- G) PRINTER SELECTED: 0)1010/1040 1)1020/1030 2)GENERIC <1>
- H) PRINTER SPEED: 1)9600 2)4800 3)2400 4)1200 5)600 6)300 7)150 8)110 9)50 <4>
- I) PRINTER DATA BITS: 5)5 Bits 7)7 Bits 8)8 Bits <8>
- J) PRINTER STOP BITS: 1)1 Bit 2)2 Bits 3)1.5 Bits <1>
- K) PRINTER PARITY: 0)None 1)Odd 2)Even <0>
- L) PRINTER FLOW CONTROL: 0)Xon/Xoff 1)DSR/DTR 2)None <1>
- M) GO AHEAD ON BUFFER EMPTY: 0)Disabled 1)Enabled <0>

| | | |
|-----------------------------------|------------|-----|
| R) PRINTER COMPULSORY: | 0)No 1)Yes | <0> |
| S) DROP CARRIER ON LINE CLOSED: | 0)No 1)Yes | <0> |
| T) AUTOMATIC RESET: | 0)No 1)Yes | <0> |
| X) PREVIOUS LINE | | |
| Y) DISPLAY COMPLETE CONFIGURATION | | |
| Z) EXIT CONFIGURATION | | |
| (CR) NEXT LINE | | |

Parameter values as shown in the table above represent the Factory Default values.

Host Speed (A)

Shows the speed of the Host interface and is normally set up at installation or automatically by the Host software. In some countries the range may be restricted to the faster speeds.

Host Data Bits (B)

Shows the number of bits in a byte

Host Stop Bits (C)

Shows the number of stop bits in each byte.

Host Parity (D)

Shows the Parity of each data byte.

Host Security (E)

Shows the security being used by Host computer. (See section 3 for more information).

Host Flow Control Security (F)

Shows the flow control being used by Host computer. (See section 3 for more information).

Printer Selected (G)

Shows which printer has been selected for connection on the Auxiliary Port.

Note: ATL will only provide support for its own brand of Baudot or ASCII Monitor Printers. The current Ascom Baudot Printer is known as a model 1040 and the current Ascom ASCII Printer is known as a model 1030. The Ascom ASCII Printer model offers the additional benefit of printing with two font styles; thereby making it easier to differentiate incoming calls from outgoing calls when looking at a printout.

The Generic option is an unsupported choice. It is provided to allow users the option of attaching a printer of their own choice.

Printer Speed (H)

Shows the speed of the printer interface.

Printer Data Bits (I)

Shows the number of bits in a byte over the printer interface.

Printer Stop Bits (J)

Shows the number of stop bits in a byte over the printer interface.

Printer Parity (K)

Shows the parity of each data byte over the printer interface.

Printer Flow Control (L)

Shows the flow control being used by the printer.

Go ahead on Buffer Empty (M)

Computers that send data in blocks use this option. After a Block has been used up (i.e. the buffer is empty) the Telex Unit sends a Go Ahead (SO) to the Host.

Printer Compulsory (R)

This option indicates whether the presence of the printer overrides Host security such that continued acceptance of incoming calls is permitted when the host computer is in fault condition.

Drop Carrier on Line Closed (S)

This option controls the state of the carrier presented to the telex line under a Closed Line condition. The default value leaves the carrier enabled in a Closed Line condition.

Automatic Reset (T)

The default value for this option means that a soft reset command, (ESC) A, is required to put the unit into idle state from a power up state. This is the normal operation of the telex unit when driven by most applications. By enabling this option, the telex unit goes directly on line without requiring a reset command.

Previous Line (X)

Used when in prompted mode for displaying the previous configuration parameter.

Display Complete Configuration (Y)

Used when in prompted mode for displaying the complete configuration table from the beginning.

Exit Configuration (Z)

To exit configuration in both permanent change and temporary change mode.

Activating the changes

After making changes to the configuration and exit from the configuration menu, it is necessary to action the new parameters in the non-volatile memory. This can be done in one of three ways:

1. Press the RESET button,
2. Turn the mains power off, then back on,
3. Send the command <ESC><ESC>! to the unit.

In all cases (except if Automatic Reset option is enabled) the unit will initialise and send the R: ENTER RESET message to the Host. The unit is then brought back on line by sending ESC A. If speed changes are made, these are functional from the start of the output of the R: ENTER RESET message.

5. LED DISPLAY

The 5 LED's on the Telex Unit front panel provide a visual indication of the operational state of the unit. Typical examples are,

| | |
|--|--|
| all LED's off for longer than 5 seconds; | no power |
| all LED's on; | Reset command required. |
| Tx or Rx flashing (Host or Telex); | indication of data transfer in progress on Host or Telex side. |

Any queries regarding the correct operation of the Telex Unit should be referred to the Host equipment supplier.

USER RESPONSIBILITIES

TELEX LINE AND STANDBY TELEPRINTER CONNECTION

The UK Telex line is connected to pins 1 and 6 and the standby teleprinter should be connected to pins 2 and 5. Any cabling used to connect a standby teleprinter to the ATU should not cause the dc resistance from the standby teleprinter socket through the ATU to the ATU BS6312 Line plug to be greater than 5Ω .

For other country variants please contact your host equipment supplier for advice on connection.

LINE NUMBER AND ANSWERBACK

1. The user is responsible for ensuring that the ATU is equipped with the line number and answerback agreed with the PTO for the circuit to which it is connected.
2. The user shall not insert or change the line number and answerback, but shall approach the supplier for this work to be undertaken.
3. The user is responsible for ensuring that on any one line only the line number and answerback allocated for that line by the PTO are transmitted.

The user is responsible for ensuring that the ATU is used in an installation that complies with the overall requirements for Receive Only, Transmit Only or Receive-Transmit telex terminal apparatus.

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