

GENERAL

The ST-95x is an Over the Air Programming Modem for use with, ST-051, and ST-052 voice encryption devices. The ST-95x connects to a PC running Selectone Product Manager via a Female DB9 (RS-232) serial connection. The ST-95x also connects to the host radio or service monitor via a Male DB9 connector. All operation is under the control of Product Manager

Selectone "Product Manager" software, is a Windows based RS-232 or Over the Air Programming (OtAP) package. Selectone supports this product with application assistance Via phone at (800) 227-0376, (510) 781-0376, FAX at (510) 781-5454, E-Mail at techsupport@selectone.com, or on the World Wide Web at www.selectone.com

SPECIFICATIONS

Specification	Detail
Operating Voltage:	5.2 Vdc to 16.3 Vdc
Operating Current:	
Standby	<10 mAdc
Tx	<60 mAdc
Usable Audio Level Rx and Tx:	25 mV p-p to 2.5 V p-p
Temp: Range:	0° C to 70° C
RS-232 Interface:	Female DB9 with 6 foot PC connection cable & adapter
Host Tranceiver Interface:	Male DB9 with connecting Female DB9 + 24" application cable.
Size:	1.25" W X 3.50" L X 0.50" H (31.7mm X 88.9mm X 12.7mm)

OPERATION

Operation is completely under control of the Selectone Product Manager Software. Consult the on line help menu for operational details the probability of lost speech from an operator that speaks immediately after PTT activation. The encryption device begins to digitally record mic. audio immediately following user activation of the PTT. The recorded audio is then ciphered and played back for the transmission at the appropriate time to accommodate systems delays. The encryption device has voice storage capacity to accommodate up to 1.2 seconds of system delay. The actual time required for system delay is then made up at the end of the transmission by automatically holding the transmitter keyed until the complete voice message is sent.

CONNECTIONS

Selectone supports this product with application assistance on our TOLL FREE at (800) 227-0376 or request via E-Mail at techsupport@selectone.com. Completed application notes are also posted on our web page at www.selectone.com. The ST-95x is supplied with a 24" application cable for customizing connection to the Host Radio or Service Monitor.

[P1-1] POSITIVE (+) SUPPLY

This wire should be connected to a positive DC voltage source in the range of +5.2Vdc to +16.3Vdc.

[P1-5] NEGATIVE (-) SUPPLY

This wire should be connected to the negative lead of the powersupply GND.

[P2-3] RS-232A INPUT

TD output pin of the PC RS-232 port (DB9 pin #3)(DB25 pin #3).

[P2-2] RS-232A OUTPUT

RD pin of the PC RS-232 port (DB9 pin #2)(DB25 pin #2).

[P1-7] TRANSMIT AUDIO OUTPUT

Transmit microphone audio signal to the host radio or service monitor. The optimum location for connection is directly to the microphone input.

[P1-8] RECEIVE AUDIO INPUT

The optimum location for connection is directly off the receiver detector circuit BEFORE any audio processing circuits (de-emphasis). However operation of any Rx audio point will generally be usable.

If not previously done for the host radio or service monitor, measure the Tx and Rx level at the respective connection point. Inject the output of an audio signal generator at 1KHz into The Tx audio circuit. Measure and record the peak to peak level required to modulate the transmitter at ½ system deviation with a 1KHz tone. Also measure the level available for Rx while receiving a 1KHz tone at ½ system deviation. These measurements X 2 should be used to determine the proper setting required on the Audio TAB, of the Selectone Product Manager.

[P1-9] PTT OUTPUT

The PTT OUTPUT manages the transmit signal to the host radio as required OtAP Modem operation. Connect to the Radio PTT circuit

PTT operation is configured from the PTT operation block on the Operation Tab in the Selectone Product Manager.

PTT Input

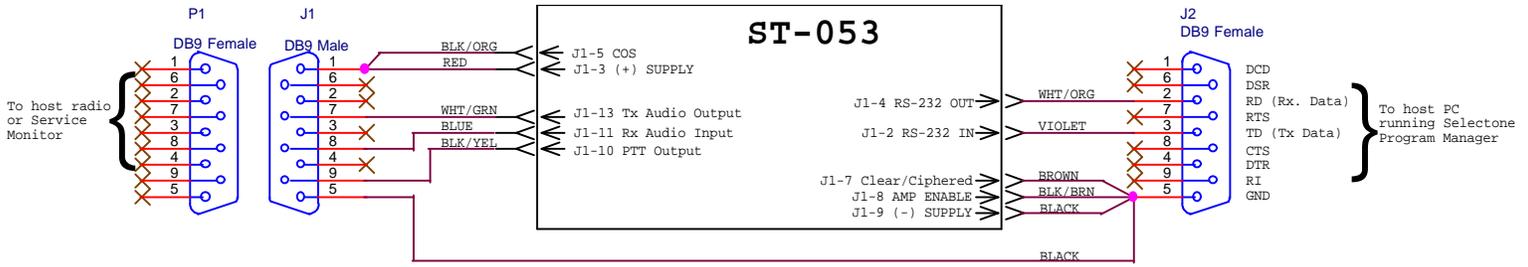
- **Active low:** Required programming state.

PTT Output

- **Active low:** Required programming state.

PROGRAMMING & ADJUSTMENTS

All adjustments, level setting and customization is accomplished with Selectone Product Manager a PC Windows® based program via the RS-232 port of a PC. During installation of Secure Speech Modules connected to the Selectone Program Manager via RS-232 MUST be made at least once to facilitate serial number logging to the database. After the original setup, any of the available models, connected to a host PC can be programmed or used as the RF modem to reprogram any number of additional units via Over the Air Programming (OtAP). The PC Windows based program is fully documented with an on line manual, accessed through the help menu. The online manual provides advantages in that corrections and upgrades can be immediately accessed via the Selectone Web page on the Internet.



Common connections are soldered directly at the connector indicated on the schematic.

All wire terminations at a DB connector are covered with shrink tube.

Program the ST-05x board as follows:

Device:	ST-053
All Code Keys:	000000000000
Tx Power up Mode:	Clear
Functional Rx:	No selection
COS:	Active Low
User Code Key Selection:	Toggle
PTT Input & Output:	Active Low
Special Function:	Amp Enable
Others:	Power Save
Initial Sync Delay:	775mS delay
Tx & Rx audio levels:	2000mV p-p
Internal Squelch:	Not selected

Wire Lengths:	-----
BLACK	4.0"
BLACK	1.7"
BROWN	1.7"
RED	2.9"
BLUE	2.9"
VIOLET	1.7"
BLK/ORG	2.9"
BLK/YEL	2.9"
BLK/BRN	1.7"
WHT/ORG	1.7"
WHT/GRN	2.9"

Note: An Export License from United States Department of Commerce is REQUIRED to remove the ST-050 or ST-051 beyond the boundaries of the United States of America. The ST-052 may be exported without license consideration. However upgrade software to convert a ST-052 to an ST-051 or ST-050 requires the same licensing consideration as the ST-050 and ST-051. Contact the Selectone Sales Department for assistance in obtaining the necessary export documents.

WARRANTY POLICY

All standard Selectone products are guaranteed to meet or exceed published performance specifications and are warranted against defects in material and workmanship for a period of five years from the date of purchase. Special configurations and non-standard systems are warranted for a period of one year.

If any standard Selectone product fails to operate within the first 90 days from the date of purchase, Selectone will immediately send out a replacement unit and will issue full credit, including freight, upon the return of the defective unit(s). All prepay/C.O.D. customers must return the defective equipment prior to exchange, otherwise the customer will be required to prepay for the new unit(s) with credit issued only on the return of the defective equipment.

After 90 days, this warranty is specifically limited to correction of the defects by factory or replacement of faulty equipment or parts.

All warranty repairs must be performed at the Selectone factory in Hayward, California. No credit will be given for unauthorized repair work attempted by the customer. Any unauthorized alterations or modification of the equipment, damage caused by external sources, or removal or alteration of the serial number label or date code, will void the warranty. Specifically excluded from this warranty are batteries, fuses, lamps, and damage caused by lightning, power surges, or mechanical abuse.

For equipment to be returned to the factory for repair, you must first call and get an RMA# from Customer Service. The RMA# must be written on the outside of the package, otherwise receiving will reject the shipment. In addition, a note must be sent with the packing list briefly describing the nature of the defect.

For special warranty replacement service, or if any other assistance is required, contact Selectone Customer Service Department at (800) 227-0376, FAX (510) 781-5454, E-Mail techsupport@selectone.com, or on the WEB at www.selectone.com.

All repairs and returns are to be sent to:
Selectone
 23210 Bernhardt St.
 Hayward, CA 94545
 Attn: Customer Service