Tactical
Technologies
Inc.

INTELLIGENCE · ENFORCEMENT

TTI

CST-703/V   COVERT
VOICE TRANSMITTER

OPERATING INSTRUCTIONS

CST-703/V COVERT VOICE TRANSMITTER

DESCRIPTION

The Tactical Technologies Inc. Model CST-703/V is a miniature one channel synthesized VHF Voice Transmitter capable of standard operation between 150 MHz and 174 MHz. Output power is variable; dependent upon variable input voltage. The 703 comes standard with an external antenna, internal microphone, external microphone connection, a programming cable, and various configurations of power connectors. The 703 can be installed in a wide variety of disguises.

OPERATION

1.) Select desired input voltage vs. power output from the following chart:

INPUT VOLTAGE	OUTPUT POWER
6.0 VDC	approx. 1/4 watt
9.0 VDC	approx. 1/2 watt

WARNING: Do not apply 12 VDC directly to this unit. A special regulator cable must be used.

Any power supply (batteries, regulated supply, etc.) can be applied to the CST-703 with voltages that range from 6 volts DC to 9 volts DC.

2.) Connect the external antenna to the CST-703 by inserting the male end of the SMC type antenna connector on the transmitter to the female connector end on the bodywire antenna. Twist the connector clockwise to tighten (HAND TIGHT ONLY!).

3.) Determine which microphone configuration is best for your application: the internal microphone or the external microphone.

a.) If the external microphone is desired, insert the male end of the locking mini-plug type connector on the microphone cable into the female connector found on the transmitter. Twist the cable end connector clockwise to tighten and lock down to the transmitter (HAND TIGHT ONLY). Once the external microphone is connected to the 703, the internal microphone is electronically disconnected and will not operate - eliminating any chance of the internal microphone interfering with the desired external unit.

b.) If the internal microphone is desired, simply make sure the external microphone is disconnected from the 703. The internal microphone automatically becomes operational when the external microphone is disconnected.

4.) Connect the appropriate power lead to the transmitter. Insert the male end of the 4 pin mini type connector attached to the power cable into the female end found on the unit. Twist clockwise to tighten (HAND TIGHTEN ONLY!).

NOTE: THE CST-703 IS REVERSE POLARITY PROTECTED, HOWEVER PLEASE BY SURE TO CONNECT THE + AND - LEADS TO YOUR POWER SUPPLY CORRECTLY FOR PROPER OPERATION OF THE TRANSMITTER. PAY PARTICULAR ATTENTION TO THE MARKINGS ON SMALL BATTERIES. WHEN USING THE FLYING LEAD CONNECTORS. THE BLACK LEAD IS NEGATIVE AND THE RED OR WHITE LEAD IS THE POSITIVE.

5.) Once power is applied to the transmitter, the unit is on and operating. To turn the unit off, simply disconnect the power.

INSTALLING YOUR SOFTWARE

1.) The computer program supplied to install the frequencies into your CST-703 transmitter is a module written for Microsoft's Hyper-

Terminal. Hyper-Terminal is supplied with Windows 95 and 98.

If Hyper-Terminal is installed, you can proceed. If you have not installed this program onto your computer, please do so at this time.

Installing Hyper-Terminal:
a.) Select "START" from the Windows Task Bar
b.) Select "Settings" - "Control Panel" from the Start Menu
c.) Select "Add/Remove Programs" from the Control Panel
d.) Select the "Windows Setup" tab at the top of the window
e.) Double-click on "Communications" in the 'components' window.
f.) Click the box next to "Hyper-Terminal". This puts an X in the box.
g.) Click "OK" at the bottom of the window.
h.) Click "OK" at the bottom of the new window.
i.) Follow the on - screen instructions about inserting you Windows Installation disks or CD.

4.) Install the Hyper-Terminal TTI Transmitter Programming Module:
a.) Insert the supplied 3 1/2 inch floppy disk into you computer's disk drive.
b.) Select "START" from the Windows Task Bar.
c.) Select "RUN" from the Start Menu
d.) Type "a:\setup" in the white bar
e.) Select "OK"
f.) Follow the on screen instruction.
g.) Remove disk when finished.

PROGRAMING YOUR FREQUENCIES

1.) Connect the CST-703 programming cable to the top of the transmitter via the round four pin connector. This connector is keyed for proper installation. Be sure to lock down the connector by twisting the screw ring clockwise until it snugs up to the panel connector. DO NOT OVERTIGHTEN.

2.) Connect the D style 9 pin female connector to an open serial port on your IBM compatible computer. If your computer's serial port is a 25 pin connector, you will need to use a DB25 to DB9 serial adaptor (not included).

3.) Start the "TTI Transmitter Programming" software by clicking it's icon located on the Windows Desktop.

4.) You must know the number of the Serial (Com) Port you have attached the transmitter to. The software comes ready to work with Com 1. If you are using Com 2, 3, or 4, you must perform the following:
   a.) Select "File" - "Properties" from the Hyper-Terminal Task Bar
   b.) From the "Phone Number" tab, select your Com Port in the "Connect Using" pull down menu. Select the "Direct to Com ___" line that correlates to your Com Port.
   c.) Select "OK" from the bottom of the window
   d.) Your Com Port selection is automatically saved.

5.) Turn ON your Transmitter by applying a 9 VDC battery to the connector found on the programming cable

6.) Type the letter "v" (for "verify").   At this time, the transmitter will report its serial number and the frequency programmed into it onto the Hyper-Terminal screen.

CST-703/VS SNxxxxx .50W
C 1546000

Line 1: Unit is a CST-703 voice transmitter (/V) equipped with audio scrambling (S) and is serial number xxxxx. If this 703 was not equipped with the scrambling option, the transmitter ID would be CST703/V.
Line 2: Unit is programmed in CLEAR, unscrambled transmission

mode (C) and will operate at 154.6000 MHz. If this 703 was programmed in SCRAMBLED AUDIO mode, the line would read :
S 1546000

7.) Entering your frequency is very easy. Just remember to use all lower case letters, and follow the same letter/punctuation/and space sequence that the transmitter reported to you on the screen.

Start by entering   **"f"**. (You will NOT have to hit the ENTER key)

The transmitter will report the following to you on the computer screen:

f=1

Unit is now awaiting your input for a new frequency. The number "1" is already programmed in for you. Simply type in your new frequency, beginning with the 'tens' digit. For example, if you wanted to program your unit to operate at 162.4750 MHz, you would now type the following:
624750
You must enter all 6 digits to finish the programming sequence. Upon entering the 6th digit:

If the frequency you entered is valid, the cursor will return to the next blank line.

If the frequency you entered is invalid, the transmitter will report "X" following the data you entered. At this time, the original frequency is still programmed in the unit. Type "f" again to restart the programming sequence.

If at any time you make a mistake, you must finish the six digits, then start the reprogramming sequence again. You can not back-space over the incorrect entry.
You do not have to type 'MHz'. If you type anything other than instructed, the program will report an invalid status, and you can start again.

8.) Once your frequency is programmed, you can set your CST-703

to operate in CLEAR mode or SCRAMBLED mode (if your trans-mitter is equipped with the optional scrambling feature.

After your frequency has been validated, type "cv" for CLEAR mode, or type "sv" for SCRAMBLED mode.
At this point, the unit will validate your entry.

9.) After you have finished validating your entry, turn off your transmitter, disconnect the cables, and close the computer program.

IMPORTANT:
1.) If computer interface is not COM 1, you must select the correct Com port as described in the instruction.
2.) The separation between the two transmit channels must be:
Greater than or equal to 12.5 kHz
3.) Frequencies must be in 12.5 kHz steps.
Your frequency must end in any of the following configurations:
xxx.0000
xxx.0125
xxx.0250
xxx.0375
xxx.0500
xxx.0625
xxx.0750
xxx.0875
xxx.1000

4.) The transmitter must be ON in order to program it.
5.) Turn OFF the transmitter when finished programming.

Tactical Technologies Inc
1701 Second Ave
PO Box 91
Folsom, Pennsylvania   19033
USA
TEL: 610-522-0106
FAX: 610-522-9430