

**DEALER'S GUIDE TO THE
INSTALLATION AND OPERATION
OF THE**

**MODEL VTP-50
Trunking Logic Board**

For use in Vertex VX-210 Transceivers

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Introduction

The VTP-50 is a microprocessor-based radio trunking logic board designed for use with Vertex VX-210 Transceivers. The VTP-50 implements VX-Trunk II, an efficient radio channel allocation protocol. The VTP-50, in conjunction with the VTS-200 or VTS-300 VX-Trunk Controller, allows the VX-210 portable to be utilized in a “Fleet Dispatch” mode within a VX-Trunk II system.

The VTS-200/300 is the heart of the VX-Trunk II system. Programming and operation are performed by the System Operator/Manager, who is responsible for most all of the system-specific information utilized in programming.

This manual describes user operation, dealer installation, and dealer programming of the VTP-50. **Please read this manual in its entirety before proceeding so as to ensure your understanding of this product and its operation.**

1 • User Operation

The VX-Trunk II system is a refined version of the popular VX-Trunk operating protocol, renowned for its ease of operation. Channel selection, transmit/receive control, receiver audio muting, and other transceiver functions are all under the control of the VTP-50. Channel access is tightly controlled, and unauthorized transmission on (and monitoring of) trunking channels is not possible.

ENTERING THE VX-Trunk MODE

On VX-210 transceivers configured as “Trunking-Only” units, no particular switching is needed. The protocols described later will initiate or terminate calling, and perform other trunking operations.

In units configured both with “Trunking” and “Non-Trunking” channels, the individual channels are programmed as “Trunking” or “Conventional” channels at the time of radio programming using the regular CE-29 Programming Software.

GROUP CALL INITIATION

When operating on Trunked channels, the Subscriber may initiate a call to his working group by simply pressing the [PTT] switch on his VX-210. When a clear channel is found by the trunking system controller, the other Subscribers' radios will be paged, and the conversation may then ensue.

Once the communication is completed, the trunking system will reset itself to its normal trunked/scanning mode. No Subscriber action is required in the case of the VX-210.

SQUELCH ADJUSTMENT

Adjustment of the noise squelch, important to efficient polling of the trunking channels, is accomplished using the CE-29 Programming Software. See the "Help" file in the software for instructions.

RADIO-KILL™

If the transceiver has been remotely disabled by the System Operator/Manager, it will generate a low-frequency tone and will not operate. The transceiver must be returned to the dealer or System Operator/Manager for re-programming.

2 • *Operating Modes*

Each Subscriber in a VX-Trunk II System has three operating modes potentially available. These modes are RADIOTELEPHONE, FLEET DISPATCH, and CONVENTIONAL. The System Operator/Manager determines which of these operating modes will be made available to each Subscriber.

The VX-210/VTP-50 supports the FLEET DISPATCH mode, as well as (non-trunked) CONVENTIONAL operation.

Each Subscriber in a VX-Trunk II System is assigned at least one Subscriber ID Number. Each Subscriber ID Number is also assigned an associated Paging Code, which is the number programmed into the VTP-50 and which is used for over-the-air signaling. To accommodate Subscriber application requirements, the VTP-50 is capable of responding to two unique Paging Codes (one called “Primary,” the other “Secondary”). For obvious security reasons, the Subscriber ID and Paging Code numbers should be different, and the Paging Code should *not* be made public. If a Subscriber ID number were made the same as the user’s Paging Code, an unauthorized “subscriber” might be able to gain access to (and make calls on) the system via fraudulent means.

One additional definition required by the trunking controller is appended by the System Operator/Manager to the Subscriber ID: the radio “TYPE” (half-duplex, full-duplex, or “group”). For FLEET DISPATCH operation, the TYPE heading is always “GROUP.” When adding a VX-210 transceiver onto an existing VX-Trunk II system, be certain the TYPE heading is properly advised to the System Operator/Manager.

The features of the two available operational modes are:

- **FLEET DISPATCH** - The Subscriber belongs to an Operating Group, and may receive calls from anyone in this Operating Group. The Subscriber can call the remainder of the Operating Group by simply pressing [PTT].
- **CONVENTIONAL** - Subscribers have access to non-trunked radio channels, that allow the VX-210 to operate as a traditional two-way radio. Transceivers that generally are used in one of the other operating modes can be switched to the Conventional mode by switching to a Conventional mode channel or channel bank on the radio.

FLEET DISPATCH

A Fleet Dispatch Subscriber has two Group Subscriber ID Numbers, both of which are configured as “Group” IDs under the “Type” heading.

The Group that the Subscriber will call when the Automatic PTT Mode¹ is enabled is the *Main* Group, and this Group is paged by (automatic) transmission of the “Primary Code”. Additionally, a “Secondary Code” may be defined for a Subscriber’s VX-210, allowing the dispatcher to call only that unit (or others with the same Secondary Code number).

To make a Subscriber part of only one Group, program both the Primary and Secondary Paging Codes to be the same.

¹ In the “Automatic PTT” mode, pressing the [PTT] key causes automatic transmission of the “Primary Code” for calling others in the Subscriber’s main Operating Group.

Table 2-3: VTS-200/300 ID Programming

Subscriber ID #	Type	Paging Code
30001	Group	3701
30002	Group	3702

Table 2-4: VX-210 Programming

	Group 30001 VX-210s	Groups 30001 and 30002 VX-210s
Primary Code	3701	3701
Secondary Code-A	3701	3702

CONVENTIONAL

The “Conventional” Mode of operation is implemented differently in the VX-210 transceiver (compared to earlier Vertex models). The potential for harmful interference due to “Conventional Mode” users occupying trunked channels for radio-to-radio communication can now easily be minimized.

The VX-210 has a single bank of 16 channels, as represented by the 16 positions on the rotary channel selector. For ease of programming and recall by the user, we recommend that the trunked channels be programmed together beginning with Channel 1. If the trunk system has fewer than 16 channels, and the user of the particular radio also requires use of one or more conventional channel(s), program the conventional channels in positions above the last trunked channel.

3 • Dealer Programming

These procedures are designed to be used by the installing technician after the VTP-50 has been installed in the transceiver. To program a VX-210’s VTP-50 board, you will need the CT-42A programming interface cable, the CE-26 programming diskette, and an IBM PC/AT or PS/2-compatible type computer.

To test the installation and programming of the VTP-50, you need a functioning VX-Trunk II system with the System ID Numbers and Paging Codes correctly programmed. *See the VTS-200 or VTS-300 VX-Trunk II Digital Trunking Controller manual for details on adding Subscriber ID Numbers to the system.*

ENTERING THE PROGRAMMING MODE

Before connecting the VX-210 for programming, turn off your computer and the VX-210, and connect the CT-42A programming interface cable between the computer’s serial data port and the VX-210. Then restart the computer. Turning the equipment off during interconnection avoids potential damage to the electronics.

When ready to run the program (after booting DOS), place your copy of the programming diskette (not the original!) into drive A, and log on to this drive (type **A ENT**). Then type **CE26 ENT** to start program. You should be greeted briefly by an introductory screen, as shown below.

CE-26 v1.10 PC programming tool for VTP-40/50
Yaesu Musen Co., Ltd.

Information

Current Data: [default.st2] Com Port: [1]

- 1 : Load Data from file
- 2 : Save Data to File
- 3 : Com port change
- 4 : Send password
- 5 : Upload Data from radio
- 6 : Download Data to radio
- 7 : Edit Data
- 0 : Exit this program

CE-26 Introductory Screen

Important!

Do not work directly with the CE-26 programming diskette! Make a copy of it and use the copy when programming the VX-210, since you will be storing data on it. Keep it in a safe place in case you need to make another copy of it later. The manuals that come with your computer should explain how to make a copy of a diskette. If you want to be able to boot your computer from the programming diskette copy, use the FORMAT command with /S parameter (on a blank diskette) to make a system disk, and then copy the files from the original diskette.

To enter the Programming mode, use the following procedure:

1. Turn the transceiver off.
2. Place the channel selector in the #1 position.
3. Press and hold in the [MON] button.
4. Turn on the transceiver while holding in the [MON] button.
5. Release the [MON] button after power-on.
6. You may now proceed to the Opening Menu to begin programming. Begin with Menu #4 (“**Send Password**”) before attempting to Upload data from or send data to the radio.

Note: Do not press the [PTT] switch during programming!

PROGRAMMING MENU DESCRIPTIONS

The programming process requires that nine steps be accomplished:

- A. Enter the Programming Mode, per the procedure just described.
- B. Send the Five Digit Access Code (Menu #4) password.
- C. Upload the radio's current data to the computer (Menu #5).
- D. Save the radio's current data to disk (Menu #2).
- E. Load an archived data file, if you do not wish to work with the radio's current data just uploaded from the radio (Menu #1).
- F. Edit the data with new programming information (Menu #7).
- G. Save the new data to disk (Menu #2) with a new file name.
- H. Download the new data to the radio (Menu #6).
- I. Re-initialize the radio after programming, by turning it Off, then On again.

The eight Menu selections displayed on the CE-26 Introductory Screen are detailed in the pages to follow. These selections are:

- 1: Load data from file
- 2: Save data to file
- 3: Com port change
4. Send password
5. Upload data from radio
6. Download data to radio
- 7: Edit data
- 0: Exit this program

1. LOAD DATA FROM FILE

Before a VX-210's VTP-50 board can be programmed, you must first "load" a Data file, which is then "Edited" via Menu selection **#7: (Edit Data)**. This selection allows recall of a file which has been previously saved to disk.

Your computer's **CE26** (sub)directory must contain at least one Data file, which is designated as an **".st2"** file. The CE-26 distribution diskette contains a default Data file, labeled **"default.st2"** which may be used as a starting point for programming of other units. The file name may contain up to eight letters or numbers, per normal DOS requirements, and can be retrieved *only* from the **CE26** (sub)directory.

To retrieve a file from the **CE26** subdirectory, use the following keystroke procedure on your computer's keyboard. In this example, we shall load the "**default.st2**" file.

(Menu Selection):	1. Load Data from file	Press 1 ENT
(Key in File name):	xxxxxxx.st2	Press default.st2 ENT
(Display):	"File Load Complete"	(If File loads OK)
	"<<data load error>>"	(If File is not loaded OK)

2. SAVE DATA TO FILE

When all VTP-50 programming is completed, the Data for that VTP-50 should be saved to disk, so it may be stored for archive and/or future programming purposes. When Data is saved to disk, it must be assigned a file name with eight letters/numbers maximum, and this file will bear the ".st2" extension. Data files will be automatically saved to the **CE26** (sub)directory.

In the example below, we will save a completed Data file for a police department by assigning it a Data File Name of "**police1.st2**" via the following procedure:

(Menu Selection):	2: Save Data to File	Press 1 ENT
(Key in File Name):	police.st2	Press police1.st2 ENT
(Display):	"File Save Complete"	(If File is saved OK)
	"<<data load error>>"	(If File is not saved OK)

3. COM PORT CHANGE

Serial data is transferred between the VTP-50 and the computer via a COM port on the computer. Either COM1 or COM2 may be used.

The currently-selected COM port is displayed in the "INFORMATION" window at the top of the CE-26 Introductory Screen. The default COM port is [1].

To "toggle" between COM1 and COM2, just press **3 ENT**. Note that the display has changed from **Com Port: [1]** to **Com Port: [2]**. If you press **3 ENT** again, the display will revert to **Com Port: [1]**.

4. SEND PASSWORD

Before data can be uploaded *from* the VX-210/VTP-50 or downloaded *to* the VX-210/VTP-50, a Five Digit Access Code must be sent to the radio. This is a security tool which allows the Dealer to complete the entry into the VTP-50 Programming Mode, while preventing unauthorized persons from gaining access to the Programming Mode. This Access Code must be sent to the radio before you attempt to upload data from or download data to the VTP-50.

In the example below, we shall access the radio by sending the Access Code **12345**.

(Menu Selection):	4: Send Password	Press 4 ENT
(Display):	Input the Five Digit Access Code>>	Press 12345 ENT
(Display):	<<Password was accepted>>	(If Access Code is OK)
	<<!! ERROR !!>> [-2]	(If Access Code is Wrong)

If you get the <<!!ERROR!!>> [-2] message, enter the correct Access Code; if this does not work, check the data communication path between the radio and computer, and try again.

It *may* be necessary, in some circumstances of corruption of data, to turn the radio off and return it to the “Trunk Parameters Programming Mode” to regain communications with the VTP-50.

5. UPLOAD DATA FROM THE VTP-50.

Before sending any new data to a VX-210/VTP-50, you should always *upload* the *existing* data (if any) *from* the VTP-50, and store it in case it may be needed in the future. Once you have uploaded the data, per this Menu selection, you should *save* it to disk, assigning it a File Name per the instructions for Menu #2.

Data that has been uploaded from a radio may be edited immediately after you have saved it to disk, using Menu #7 (**Edit Data**), and the *revised* data may, in turn, be saved to disk under a new File Name (per Menu #2). In this way, both original and revised data will be available in your programming data archive.

To retrieve data from a VX-210/VTP-50:

(Menu Selection):	5: Upload Data from Radio	Press 5 ENT
(Display):	<<Uploading>>	
(Display):	FINISH	(If Upload is Successful)
	<<!! ERROR !!>> [-2]	(If Upload is not Successful)

Again, if the <<!! ERROR !!>> [-2] message appears, go back to Menu #4 and enter the correct Access Code. If the error message persists, check the data communication path for a bad connection, and try again.

6. DOWNLOAD DATA TO RADIO

Data which has been programmed and saved to disk, loaded from disk, or uploaded and edited, is sent to the VX-210/VTP-50 using Menu #6 (**DOWNLOAD DATA TO RADIO**). This download may only be performed after successful entry of the Five Digit Access Code via Menu #4.

To send data to a VX-210/VTP-50:

(Menu Selection):	6. Download Data to Radio	Press 6 ENT
(Display):	Press [Space] to start downloading.	Press [Space]
(Display):	<<Downloading>>	
(Display):	FINISH	(If Successful)
	<<!! ERROR !!>> [-2]	(If Download is not Successful)

If the <<!! ERROR !!>> [-2] message appears, go back to Menu #4 and enter the correct Access Code. If the error message persists, check the data communication path for a bad connection, and try again.

7. EDIT DATA

This Menu selection is the one used for most all programming functions within CE-26. The [Edit Data] Menu selection contains a series of intuitive, easy-to-use sub-menu selections, so that individual parameters can be quickly programmed.

A summary of the available Programming Options appears below.

Table 3-1: Summary of Programming Options & Codes

FEATURE	PERMISSIBLE VALUES	FACTORY DEFAULT
1. BASIC PARAMETERS		
System Tone	(See Chart below)	3
Primary Code	<i>nnnn</i>	0000
Secondary Code	<i>nnnn</i>	0000
Lower Block Decode	<i>nnnn</i>	0000
Upper Block Decode	<i>nnnn</i>	0000
Five Digit Access Code	<i>nnnnn</i>	12345
Trunking System ID #	<i>nn</i>	00
2. FEATURES ON/OFF		
Priority Subscriber	On/Off	Off
Busy Channel Detect	Carrier/System tone	System Tone
Automatic PTT Mode	(Must be On)	Off
Clear Channel Alerting Mode	On/Off	Off
Radio-Kill	Must be Active	Active

DESCRIPTION OF PROGRAMMING OPTIONS

When MENU selection #7 (EDIT DATA) is chosen, the following sub-menu will appear:

- 1: Basic Parameters
- 2: Features On/Off
- 3: Group Code
- 4: Speed Dial
- 0: Return to previous menu

The paragraphs below will detail the programming options available under MENU selection #7 (EDIT DATA). The first programming option described (**System Tone**) will be detailed extensively, to demonstrate the simple programming steps thoroughly. The remaining programming options will be detailed in summary form, as the procedure is fundamentally identical for all steps.

Important Note: The “**Automatic PTT**” Mode must be set to **ON**, and “**Radio Kill**” must be **ACTIVE** in order for the VX-210 to operate correctly.

7.1: BASIC PARAMETERS

7.1.1: System Tone

This Program Code sets the (sub-audible) CTCSS System Tone to that used by the trunking system. The subscriber units in a trunking system can use this tone to detect that a trunking channel is busy. **All subscriber units on a trunking system MUST be programmed with the same System Tone that is programmed into the VTS-200/300 Controller.**

The System Tones that can be used are EIA standard CTCSS tones:

Tone #	System Tone
0	100.0 Hz
1	107.2 Hz
2	114.8 Hz
3	123.0 Hz
4	131.8 Hz
5	141.3 Hz
6	151.4 Hz

To Program the System Tone:

① The CE-26 Introductory Screen Menu looks like this:

- 1 : Load Data from File
- 2 : Save Data to File
- 3 : Com port change
- 4 : Send password
- 5 : Upload Data from radio
- 6 : Download Data to radio
- 7 : Edit Data
- 0 : Exit this program

Activate the “**7 : Edit Data**” option from the above Menu by pressing **7 ENT**.

② The “**7 : Edit Data**” Menu then appears:

- 1 : Basic Parameters
- 2 : Features On/Off
- 3 : Group Code
- 4 : Speed Dial
- 0 : Return to Previous Menu

Select the “**1 : Basic Parameters**” option by pressing **1 ENT**.

③ Now the “**1 : Basic Parameters**” sub-menu will appear:

- 1 : System Tone : [3]
- 2 : Primary Code : [0000]
- 3 : Secondary Code : [0000]
- 4 : Lower Block Decode : [0000]
- 5 : Upper Block Decode : [0000]
- 6 : Five Digit Access Code : [12345]
- 7 : Trunking System ID : [00]
- 0 : Return to Previous Menu

Select the “**1 : System Tone**” option by pressing **1 ENT**.

④ The following prompt will now appear:

Input New Parameter >

Referring to the “Acceptable System Tones” chart above, enter a digit between **0** (which represents 100 Hz) and **6** (151.4 Hz), then press ENT. For example, to program 114.8 Hz, press **2 ENT**.

⑤ The program will now return you to the “**1 : Basic Parameters**” Menu, from which other programming selections can be made. Pressing **0 ENT** while in any Menu will return you to the *previous* Menu level.

This completes the programming of the System Tone. The sections which follow will summarize the programming steps for the other parameters available via the **7 : Edit Data** Menu option.

7.1.2: Primary (Paging) Code

The Primary Code consists of a four-digit number that is imbedded in the VX-Trunk II digital transmission. Any four digit number from 0000 to 9999 may be used. *See Section 2 (Operating Modes) before assigning the Primary Code.*

To program the Primary Code:

Press **7 ENT** to select **[7](Edit Data)**, followed by **1 ENT** for **[1](Basic Parameters)**, then press **2 ENT** to choose **[2](Primary Code)**. Now enter the desired Primary Code (4 digits).

Example: To program a unit's Primary Code to be 1234.
7 : Edit Data ENT
1 : Basic parameters ENT
2 : Primary Code ENT
[1234] ENT

Keep in mind that, if the system is using Priority Call Override, the Subscriber's Priority Level is the *first digit of the Subscriber ID*. In the above example, the user's Priority Level is **1**.

The Primary Code should also be entered as "Group Code 0" under the Group Code parameter.

7.1.3: Secondary (Paging) Code

This is the "Secondary" subscriber code for this radio. If a Secondary Code is programmed, this radio will also respond to it as an incoming Group call. The Secondary Code consists of a four-digit number that is imbedded in the VX-Trunk II digital transmission. Any four digit number from 0000 to 9999 may be used. *See Section 2 (Operating Modes) before assigning the Secondary Code.*

To program the Secondary Code:

Press **7 ENT** to select **[7](Edit Data)**, followed by **1 ENT** for **[1](Basic Parameters)**, then press **3 ENT** to choose **[3](Secondary Code)**. Now enter the desired Secondary Code (4 digits).

Example: To program a unit's Secondary Code to be 5678.

7 : Edit Data ENT
1 : Basic parameters ENT
3 : Secondary Code ENT
[5678] ENT

7.1.4/7.1.5: Block Decode

The Block Decode feature is used to receive any group calls placed to a defined range of paging codes. Block Decode is enabled by programming the Lower Block Decode to the lowest numbered paging code of the desired range, and the Upper Block Decode to the highest numbered paging code of the range. These codes are used for incoming calls only. They should be Disabled (**0000**) if they are not used. Block Decode is limited to a maximum range of 20 call codes (for example, **2001** through **2020**).

Example:

Lower Block Decode: 6000

Upper Block Decode: 6010

The subscriber unit will receive any calls placed to paging codes 6000 through 6010.

This feature is useful for allowing a subscriber to receive calls placed to various groups or sub-groups. A common application is to allow a supervisor of more than one group to receive all calls which are placed to any of the groups under his control. The Block Decode is programmed to decode the range of paging codes which are assigned to the desired groups.

When the Upper Block Decode is Disabled (off), the Lower Block Decode functions in the same manner as the Secondary Code.

7.1.4: Lower Block Decode

Input New Parameter >

Example: To program a unit's Lower Block decode Number to be 1200.

7 : Edit Data ENT
1 : Basic parameters ENT
4 : Lower Block decode ENT
[1200] ENT

7.1.5: Upper Block Decode

Input New Parameter >

Example: To program a unit's Upper Block decode Number to be 1220.

7 : Edit Data ENT
1 : Basic parameters ENT
5 : Upper Block decode ENT
[1220] ENT

7.1.6: Five Digit Radio Access Code

The Five Digit Access Code is a security tool which allows the Dealer or System Operator/Manager to enter the VTP-50 Programming Mode, while keeping others from surreptitiously entering and using the Programming Mode. The Five Digit Access Code is Dealer programmable, and may be set to any five-digit number between 00000 and 99999.

Be sure to write down the new Five Digit Access Code when changing it, and store the Access Code in a safe place. If the Five Digit Access Code is lost or forgotten, ***access to the VTP-50 Programming Mode will be impossible!*** If this *should* happen, the VTP-50 will have to be replaced by the factory.

We strongly recommend that the Five Digit Access Code be left at the default value (**12345**). If the Access Code is changed, and is later lost or forgotten, the VTP-50 will have to be **REPLACED** if any programming changes are needed.

To change the Five Digit Access Code:

Press **7 ENT** to select [**7**](**Edit Data**), followed by **1 ENT** for [**1**](**Basic Parameters**), then press **6 ENT** to choose [**6**](**Five Digit Access Code**). Now key in the five-digit code, then key in the five digit code once more. If the new Five Digit Access Code was entered identically both times during the programming sequence, the new Access Code will be accepted.

Example: To change the Five Digit Access Code to 56789.

7 : Edit Data ENT
1 : Basic Parameters ENT
6 : Five Digit Access Code ENT
[56789] ENT

7.1.7: Trunking System ID Number

All VX-Trunk II systems utilize a Trunking System ID Number, from 0 to 99, which “identifies” the trunking system to the individual portable and mobile subscriber units. All subscriber units on a trunking system must be programmed with the same Trunking System ID Number, and the system will only acknowledge subscriber units bearing a matching Trunking System ID Number.

For example, if a subscriber unit with a Trunking System ID Number of 1 tries to access a trunking system with a Trunking System ID Number of 5, access will be denied.

If you wish to allow subscriber units to “roam” on different VX-Trunk II systems, just set all the Trunking System ID Numbers for the various systems to the identical number.

To program the VTP-50 with a Trunking System ID Number, press **7 ENT** to select [7](**Edit Data**), followed by **1 ENT** for [1](**Basic Parameters**), then press **7 ENT** to choose [7](**Trunking System ID #**). Now enter the new Trunking System ID Number (2 digits).

Example: To program the Trunking System ID Number to be 54

7 : Edit Data ENT
1 : Basic Parameters ENT
7 : Trunking System ID # ENT
[54] ENT

7.2: FEATURES ON/OFF

7.2.1: Priority Subscriber Enable

Enabling this Program Code makes a subscriber unit a Priority Subscriber. A Priority Subscriber can pre-empt calls currently in progress on the trunking system.

- * Care must be exercised when using this feature. A Priority Subscriber is capable of terminating important calls of other subscribers. If too many Priority Subscribers are enabled, the Priority Subscribers themselves will be competing for available trunking channels. Additional trunking channels should be installed if the system is heavily loaded.

A Priority Override is possible only if the Subscriber engaging in the Priority Override has a higher Priority Level than the current Subscriber on a channel. There are ten Priority Levels, from 0 (lowest priority) to 9 (highest priority). The Priority Level of a VX-Trunk II Subscriber is determined by the first digit of the Subscriber’s (Primary or Secondary) Paging Code.

For example, consider a Subscriber with a Paging Code of 2468 (Priority Level 2) who is currently using a trunking channel. If a Subscriber with a Paging Code of 6722 (Priority

Level 6) attempts a Priority Override on the same trunking channel, the override will be successful. The call in process will be terminated, and Subscriber Unit 6722 will be granted access to that channel. If a Subscriber with a Paging Code of 1234 (Priority Level 1) attempts a Priority Override on that trunking channel, on the other hand, the Override attempt will be unsuccessful since the latter Subscriber has a lower Priority Level assigned to his or her Paging Code. Moreover, the original Subscriber on the channel cannot be overridden by another Subscriber with an *equal* Priority Level. That is, if a Subscriber with a Paging Code of 2401 (Priority Level 2) attempts a Priority Override on the same channel as Subscriber 2468, the Override attempt will be unsuccessful.

Press **7 ENT** to select **[7](Edit Data)**, followed by **2 ENT** for **[2](Features On/Off)**, then press **1 ENT** to choose **[1](Priority Subscriber)**. Now press **1 ENT** (On) or **0 ENT** (Off).

Example: To make a “regular” Subscriber a Priority Subscriber

7 : Edit Data ENT

2 : Features On/Off ENT

1 : Priority Subscriber ENT

[1] ← (Turning the “Priority Subscriber” feature On)

7.2.2: Busy Channel Detection Type

Subscriber units normally determine that a particular trunking channel is busy by detection of the (Subaudible CTCSS) System Tone. This is the recommended mode of operation. If, however, your system shares a radio channel or channels with another radio system, you will likely need to inhibit your Subscribers from transmitting if the other system’s users are occupying the channel. This is done by programming the VTP-50 to know that a channel is busy simply by the detection of an incoming RF carrier (instead of a CTCSS System Tone) on the channel. Be certain that the VX-210’s Squelch is set correctly.

It can be seen that, if your trunking system shares channels with another system or systems, the efficiency and capacity of *your* system will suffer.

Press **7 ENT** to select **[7](Edit Data)**, followed by **2 ENT** for **[2](Features On/Off)**, then press **2 ENT** to choose **[2](Busy Channel Detect)**. Now press **0 ENT** (Carrier) or **1 ENT** (System Tone).

Example: To make a unit use System Tone for “Busy Channel Detect,”

7 : Edit Data ENT

2 : Features On/Off ENT

2 : Busy Channel Detect ENT

[1] ENT (To select “System Tone” for the “Busy Channel Detect” type)

7.2.3: Automatic PTT Mode

The Automatic PTT Mode makes radio operation simple for the fleet-dispatch operator. With this mode enabled, the Subscriber simply presses the [**PTT**] switch on the VX-210 to gain channel access. The VTP-50 will automatically call the other Subscribers’ Secondary Code (corresponding to this unit’s *Primary Code*) for Fleet-Dispatch type trunking systems.

To program the Automatic PTT Mode, press **7 ENT** to select [7](**Edit Data**), followed by **2 ENT** for [2](**Features On/Off**), then press **3 ENT** to choose [3](**Automatic PTT Mode**). Now press **1 ENT** (On) or **0 ENT** (Off).

Example: To enable the Automatic PTT Mode

7 : Edit Data ENT

2 : Features On/Off ENT

3 : Automatic PTT Mode ENT

[1] ENT (To activate the Automatic PTT Mode)

Important Note: *The Automatic PTT Mode must be enabled.
The VX-210/VTP-50 will not operate on the
trunked system if it is disabled.*

7.2.4: Emergency Call Override

This feature is not available on the VX-210/VTP-50, and should be left in the “**Off**” mode.

7.2.5: Clear Channel Alerting Mode

This feature is not available on the VX-210/VTP-50, and should be left in the “**Off**” mode.

7.2.6: Radio-Kill

This Program Code is used to re-activate a transceiver that has been remotely disabled (by the System Operator/Manager) with the Radio-Kill function of the VTS-200. When programming the VTP-50, be certain that this parameter is left in the “**Active**” mode, as the VX-210/VTP-50 will not function if it is disabled.

Example: To re-activate a VX-210

7 : Edit Data ENT
2 : Features On/Off ENT
6 : Radio-Kill ENT
[1] ENT

7.3: GROUP CODE

This programming feature sets the Group Code parameter. The VX-210/VTP-50 uses *only* Group Code 0 (zero). Program the desired Group Code number into Group 0 (this should be the same number as the “Primary Code” for this radio. All other groups should be *Off*. In Item #17, enter the “Current Group” number to be **00**.

Example: To set the Group Codes on a VX-210

7: Edit Data ENT
3: Group Code ENT
1: Group Code 0 (Enter desired four-digit code) ENT
17: Group Code 17 (Enter 00) ENT

7.4: SPEED DIAL

This programming feature is utilized only with the VTP-40, in conjunction with the Vertex model VX-10, and is not available in conjunction with the VX-210.

RETURNING TO NORMAL TRANSCEIVER OPERATION

To return the transceiver to normal operation after programming is complete, turn the transceiver Off, then On again.

Exit From CE-26 Software

Once all programming is completed, and the radio has been re-initialized per the last section, press **0 ENT** from the CE-26 Introductory Screen to exit from CE-26.

ARCHIVE INFORMATION

A worksheet for noting the VX-210 frequency programming information is provided below. Make a copy of this worksheet, then store it in a safe place for future reference.

To obtain a “hard copy” listing of the VTP-50 parameters associated with each VX-210 transceiver, press [**Print Screen**] on your computer’s keyboard when all parameters in the **7: [Edit Data]** section are completed.

Table A-1: Frequency Matrix

Be sure to note the Channel Group (where applicable) in the “Radio Channel #” column below (e.g. **1-01**, **1-02**, etc.).

Trunking Channel #	Radio Channel #	Transmit Freq.	Receive Freq.
Trunking Channel #1			
Trunking Channel #2			
Trunking Channel #3			
Trunking Channel #4			
Trunking Channel #5			
Trunking Channel #6			
Trunking Channel #7			
Trunking Channel #8			
Trunking Channel #9			
Trunking Channel #10			
Trunking Channel #11			
Trunking Channel #12			
Trunking Channel #13			
Trunking Channel #14			
Trunking Channel #15			
Trunking Channel #16			