DOT-X
Displays by Dotronix

DNR V SERIES
Handheld Addressable
Remote Control

DOT-X
Displays by Dotronix

User's Manual

PRECAUTIONS

This remote control contains circuits and components designed to meet specific performance and safety requirements. No component changes may be made without the written permission of the manufacturer.

To prevent electrical shock, do *not* attempt to disassemble the monitor. There are no user-serviceable parts inside. Servicing, if required, should be performed only by qualified service technicians familiar with the equipment and safety procedures.

Servicing by unauthorized personnel may be *dangerous* and will void the warranty.

If any damage to the remote control is found, report it immediately to Dotronix.

DO NOT RETURN DAMAGED MERCHANDISE TO THE MANUFACTURER UNTIL AN APPROPRIATE CLAIM HAS BEEN FILED WITH THE CARRIER AND A RETURN MATERIAL AUTHORIZATION NUMBER (RMA) HAS BEEN RECEIVED FROM THE MANUFACTURER.

Dotronix Limited Warranty

Dotronix warrants that for one (1) year from date original purchase, it will, at its option, repair, replace or refund the purchase price of any product which it manufactured that proves defective in material or workmanship in normal use and service.

To obtain service under this Warranty, contact Dotronix Inc. at the address below, within one (1) year of original purchase, to receive a Return Material Authorization (RMA) number. Then ship the product believed to be defective, transportation prepaid, for inspection.

Dotronix shall not be responsible for unauthorized returns that do not list the RMA number and quantity returned on the outside of the shipping container (i.e. on packing list in plain view).

For products supplied without a frame (Less CRT and Printed Circuit Board Mounting), the buyer must inspect the products within ten (10) days of receipt. After ten (10) days have lapsed, there shall be no warranty coverage for broken or damaged parts, or misalignment (i.e. broken torque seals where used). The products will be packed to allow Buyer to test the unit within its packing carrier.

This Warranty applies only to goods manufactured by Dotronix Inc. Various component parts manufactured by others (such as cathode ray tubes, semi-conductors, and fuses) are covered by the separate warranty of their manufacturers. Where Dotronix, Inc. warranty differs, only the warranty of the original component part manufacturer is offered. Of course, the Dotronix warranty does not apply to CRT's that are scratched, broken, burned or have imperfections in any special coatings. It also does not apply to products which have been altered, damaged, abused, or subjected to misuse, or repaired by anyone other than an authorized Dotronix repair person.

These displays require DHHS traceability under sub-part E, Section 1002.40 of the Regulations for the Administration and Enforcement of the Radiation Control for Health and Safety Act of 1968. It is the customer's responsibility to maintain records that satisfy this requirement.

THE TERMS OF THIS WARRANTY CONSTITUTES THE BUYER'S SOLE AND EXCLUSIVE REMEDY AGAINST DOTRONIX. THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCE SHALL DOTRONIX BE LIABLE FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES, OR IN ANY AMOUNT BEYOND THE REPLACEMENT COST OF THE ALLEGEDLY DEFECTIVE PART, REGARDLESS OF THE THEORY OF RECOVERY. **All products returned to Dotronix must include:**

1. A tag or label on each unit with a description of the defect or reason for return, or identify each unit on the packing list by serial number and defect.
2. A packing list attached to the outside of the shipping container showing the Return Authorization Number (RMA) and the quantity returned.

Products returned that are not identified in accordance with the above procedure will be refused and returned at Buyer's expense.

To obtain a Return Material Authorization (RMA) number contact:

DOTRONIX INC.
160 First Street S.E. • St. Paul • Minnesota • 55112-7894
Phone 651-633-1742 • FAX 651-633-1065

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INTRODUCTION

Congratulations on your purchase of a new DNR V Series with HARC (**H**andheld **A**ddressable **R**emote **C**ontrol) option.

This manual has been prepared to act as a guide in the operation of your unit when the HARC option is installed. Please read the following operating instructions carefully before using your unit so that you are familiar with all of its features and capabilities. All precautions and safety warnings should be read and strictly observed.

SERVICE PACK CONTENTS

The service pack consists of the following:

- Storage Bag

- Remote Control

- 2 AA Batteries

- This Manual

GETTING STARTED

Refer to the monitor manual for connecting power and signal to the monitor.

For initial operation of multiple unit installations, apply power to only one unit at a time, while changing the unit identification number (Unit ID) from the factory set 01 to a sequence of unique numbers for each unit.

Unpack the remote control and install batteries.

The DNR V with HARC responds to remote control inputs in a manner similar to many other remote control devices including TVs, VCRS etc. with two important differences. First, a security code is required before access to any menus is allowed. Second, a unit selection number is required to select one unit from a group of several units, allowing individual adjustments to individual units with one remote control.

Until the security code and unit selection numbers are entered, the monitor will not respond to the remote control.

TO ACTIVATE MENUS AND CONTROLS

Stand in front of the unit (monitor) and aim the remote at the InfraRed (IR) receiver located on the lower right corner of the unit. Press and hold the ENTER key on the remote for several seconds (typically 6 to 8 seconds).

The following on screen display (OSD) will appear.

> **MODEL DNR 5 by DOTRONIX**
> **TO ACTIVATE MENUS AND CONTROLS**
> **KEY IN SECURITY CODE:**
> **THEN PRESS ENTER KEY**

The factory set security code is 5432. You can change this code at any time. Refer to a later section of this manual titled **CHANGING SECURITY CODE AND UNIT NUMBER.** At this point key in the security code 5432. As each number is pressed, an x will appear after the KEY IN SECURITY CODE: line. If you miss-key a number the x's will disappear allowing you another chance to enter the code. When the correct code is entered, press the ENTER key.

The following on screen display (OSD) will appear.

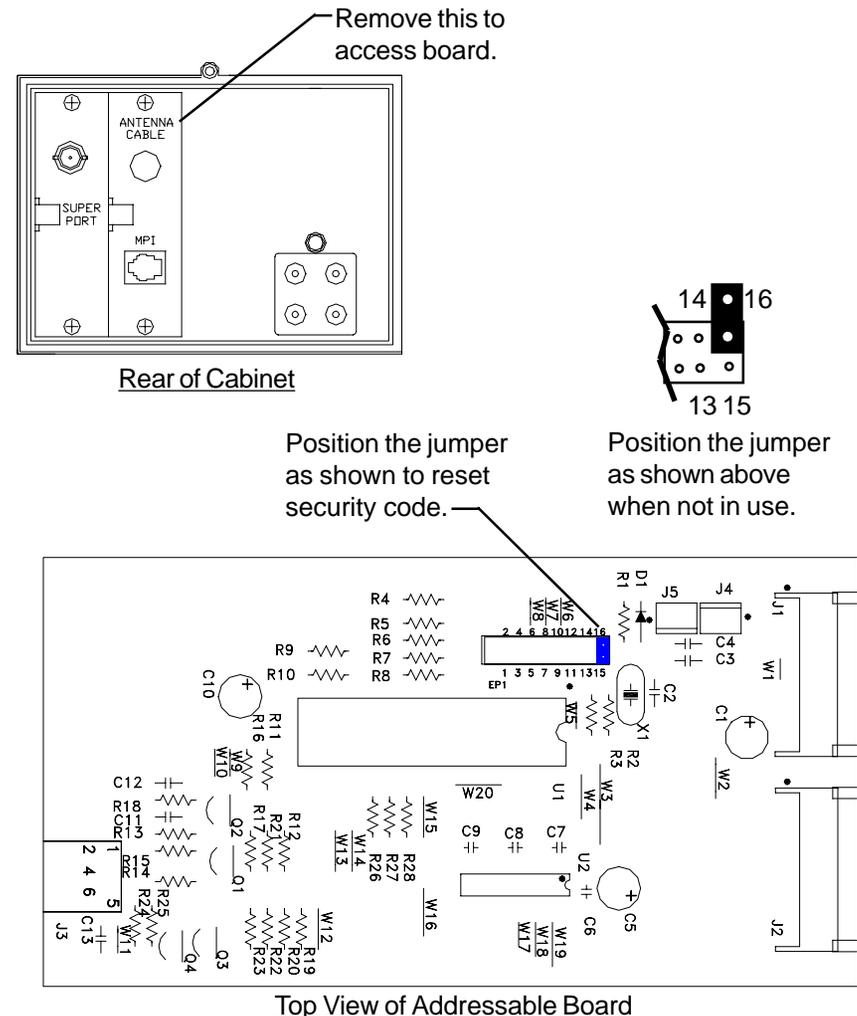> **TO ACTIVATE THIS SET KEY IN 01**
>
> **KEY IN SET #:**

All units are shipped from the factory programmed as unit # 01. For multiple unit installations, you will want to change the unit number of all but one unit to other numbers. Typically the units are numbered in sequence from 01 upward. The DNR 5 HARC will accept unit numbers up to 99. (If you need more than 99, consult the factory for a special program.) At this point, key in 01, the numbers will appear after the colon. If you miss-key the number, simply key in the desired number, the new number will replace the miss-keyed number. When you are satisfied with the number, press the ENTER key.

CUSTOM OPTIONS

LOST OR FORGOTTEN SECURITY CODE

A lost or forgotten security code can be handled by temporarily installing the jumper which opens the new security code screen. After installing the jumper use the remote control to change the security code as described in the **CHANGING SECURITY CODE AND UNIT NUMBER.** When the new code is saved, remove the temporary jumper and security will be re-activated with the new code.

If the new security code screen does not appear after installing the jumper, remove and restore power to the unit with the jumper in place.

Rear of Cabinet

Position the jumper as shown to reset security code.

Position the jumper as shown above when not in use.

Top View of Addressable Board

CUSTOM OPTIONS

Pressing the ENTER key saves the displayed times and as the new Start and Stop times.

After pressing the ENTER key the On Screen Display is erased until another selection is made via the remote control.

CHECKING REVISION LEVEL

On some occasions it may be useful to know the revision level of the program in the HARC. This function displays that information.

First it is necessary to enter the current security code and unit number, refer to **GETTING STARTED** earlier in this manual for the procedures to enter the security code and unit number.

**Press and hold the 8 (eight) key until the following display appears.**

DNRHARC v5.0, COPYRIGHT © DOTX

This display will be erased after 5 seconds. The monitor may switch to channel 8 as a result of this command. If so key in the desired channel and press ENTER. The AUX channel (used for external video input) is 999.

TO ACTIVATE MENUS AND CONTROLS

The following on screen display (OSD) will appear.
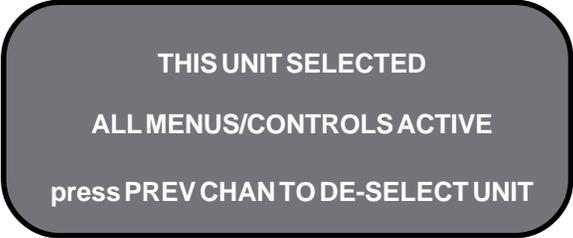
THIS UNIT SELECTED

ALL MENUS/CONTROLS ACTIVE

press PREV CHAN TO DE-SELECT UNIT

At this point, you can use the remote to control all available functions of the unit. Please refer to later sections of this manual for details on using those controls.

If this is a multiple unit (monitor) installation, this is a good time to change the unit number so that each unit will have a unique number when all units are powered up. Refer to the section of this manual titled **CHANGING SECURITY CODE AND UNIT NUMBER** for the procedure to change the unit number. If you desire, you can change the security code at the same time.

When you are done using the controls, press the PREV-CHAN key. This de-selects the unit, returning security and unit selection to their original state. To reselect this unit or to select another unit, follow the same procedure starting with pressing and holding the ENTER key.

If no remote control activity is sensed for 15 minutes, the HARC will de-activate security and it will be necessary to re-enter the security code and reselect this unit following the procedure just described.

REMOTE CONTROL

The following has been prepared to act as a guide in the operation of your REMOTE CONTROL input equipped monitors. Please read the following operating instructions carefully so that you are familiar with all of its features and capabilities before using your service module. All precautions and safety warnings should be read and strictly observed.

Press ENTER to remove menus from view or wait a few seconds and the menu will disappear itself.

Press MENU repeatedly to choose between available menus.

Press UP arrow key repeatedly until the desired option is highlighted.

PREV CHAN This returns you to the previous channel.

Press a left or right arrow key to adjust the selected menu option.
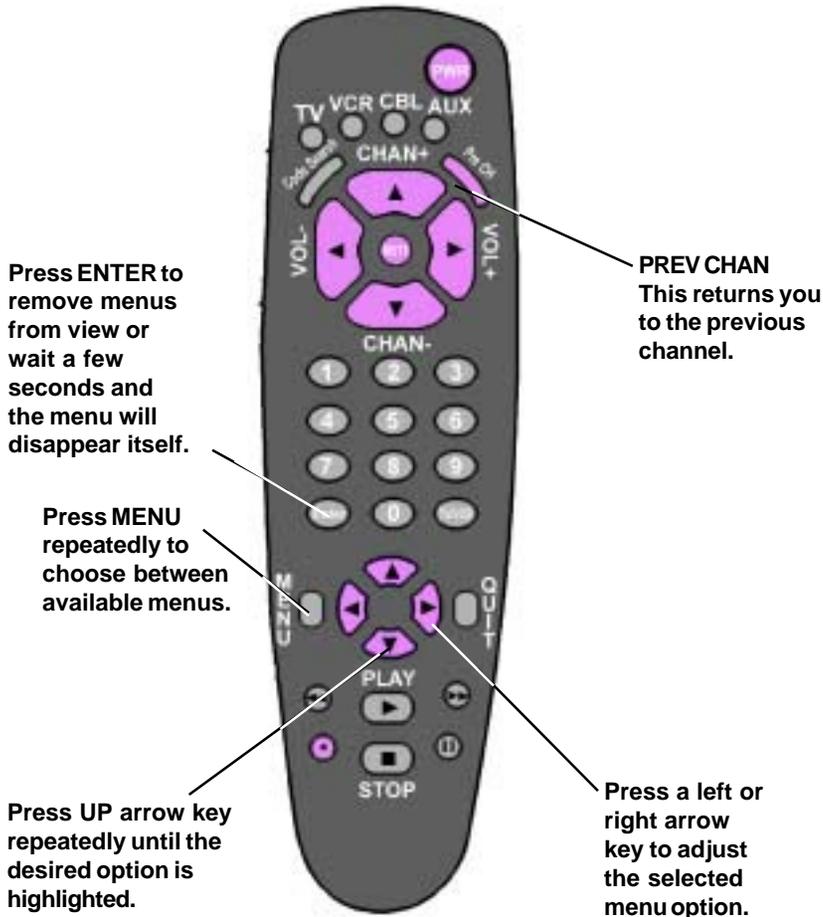
CUSTOM OPTIONS

Press and hold the 6 (six) key until the following screen appears (typically 6-8 seconds).

```
SECURITY                ON
UNIT ID                 ON
SEQUENCED START         OFF


PRESS ENTER TO SAVE & EXIT
```
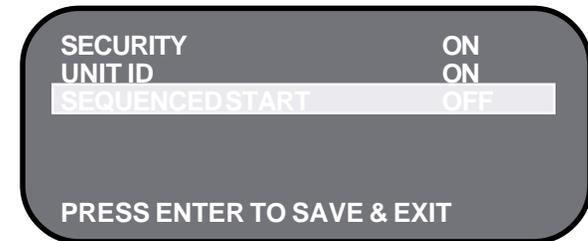
SECURITY.: Options are On or Off

UNIT ID: Options are On or Off

SEQUENCED START: In wall applications this delays power up of units 1/10 second for every unit ID #, (ID #1 = 1/10 second delay, ID #90 = 9 second delay) Options are On or Off

HARC MENU

If you have changed the unit number from the factory setting, the current number will appear where the 01 is shown above. To change the number, key in the new number. Then press the ENTER key. If you do not wish to change the number, simply press the ENTER key. Pressing the ENTER key saves the number and makes it active for all future operations requiring the unit number. It is not necessary to save the unit number in a safe place since the unit will display its unit number on screen whenever a unit number is required.

After pressing the ENTER key the On Screen Display is erased until another selection is made via the remote control.

AVAILABLE MENUS

Your monitor is menu operated. In other words, adjustments to the monitor are made via a list of choices which appear on your monitor screen. To view these menus, press the MENU key on the remote control. Press MENU repeatedly to toggle through the available menus.

Setup Menu	Video Menu	Audio Menu
Auto Program	**Contrast**	**Bass**
Add/Del/Blnk	**Brightness**	**Treble**
Ch. Labels	**Color**	**Balance**
Clock Set	**Tint**	**Audio Mode**
Caption/Text	**Sharpness**	**Front Surr**
Language	**Picture Pref**	**Soundrite**
		Audio Pref

BASIC MENU OPERATION

The remote control buttons which are most frequently used for menu operations are shown here. In addition to these buttons, the number buttons may also be used where a number value is necessary, such as setting the time on the monitor.

Set Up Menu	Function
Auto Program	Finds and stores active channels with the CHANNEL Up/Down arrows.
Add/Del/Blnk	Creates a list of favorite channels to use with CHANNEL Up/Down arrows.
Channel Labels	Assigns a network/station label, or call letters to channels. (Example: If you assign ABC to channel 13, then ABC will appear when you select channel 13.
Clock Set	Sets the monitor's clock to the current time.
Caption/Text	Displays closed captions or text when available on the selected channel. Options are Off, Caption 1, Caption 2, Caption 3, Caption 4, Text 1, Text 2, Text 3, and Text 4.
Language	Displays a choice of three different languages, English, Spanish or French.

* No internal speakers supplied.

INSTALLERS MENU ADJUSTMENTS

To access the Installer's Menu, press and hold the MENU key until the User Menu display disappears, then press 9876, (this may take a couple tries) and then ENTER to access the Installer's Menu.

```
┌─────────────────────────────────────┐
│ 1390-04        2.08        01        │
│ Microcontroller  Program    Font     │
│ Part Number      Revision   Revision │
│   03HPos9    Factory Option          │
│                                      │
│ Build Date              TE Status    │
│ 10/04/00          TE=10110000        │
└─────────────────────────────────────┘
```

The black bar near the top of the screen indicates the part number of the software in the display. To the right is a number indicating that the module has been tested. The date on the black bar near the bottom of the screen indicates the date the module went through the factory.

When the Installer's menu appears, it displays the third Service Menu item: POWER MANAGE. Use the Up/ Down Arrow keys to toggle through all of the adjustments. Use Left/Right Arrows to make a change to the

00 FACT MENU: Use SELECT UP and DOWN Keys to select item 00, the Factory Mode. This item is used by the Factory when the module is being tested. It has two positions: 0 and 1. In the field, this item should always be left off (Zero is off).

When this item is off, only the first twenty-four items in the Installer's Menu can be accessed. They appear one at a time near the middle left of the screen. When this item is set to 1, 81 menu items are available.

In the Factory Menu, only the selected menu item is displayed, near the top of the screen, as shown in the figure above.

When the Factory Menu is on, the AC Power-On feature is always enabled regardless of the setting of AC ON in the Installer's Menu. The display will automatically come on when AC is applied.

Use the remote to reenter the Installer's Menu to turn the Factory Menu off. The Factory Mode may also be turned off by setting the clock, or running the Auto Program feature in the customer Set Up menu.

01 PRESET PX: Stores the video customer menu adjustments in the nonvolatile memory of the EAROM. Selections are Custom and Preset-Store. Settings for Contrast, Brightness, Color and Tint are stored in this manner. 0 is custom and 1 is Preset stored.

02 PRESET AX: Stores customer Audio menu adjustments in the nonvolatile memory of the EAROM. Selections are Custom and Preset-Store. Settings for Bass, Treble, Balance and SoundRite are stored in this manner. 0 is custom and 1 is Preset stored.

HARC MENU

CHANGING SECURITY CODE AND UNIT NUMBER

The security code and the unit number can be changed with the remote control. First it is necessary to enter the current security code and unit number, refer to **GETTING STARTED** earlier in this manual for the procedures to enter the security code and unit number.

Press and hold the 0 (zero) key until the following screen appears (typically 6-8 seconds).

```
┌──────────────────────────────────────┐
│                                      │
│     KEY NEW 4 DIGIT SECURITY CODE    │
│                                      │
│                                      │
│        THEN PRESS ENTER KEY          │
│                                      │
└──────────────────────────────────────┘
```

If you do not wish to change the security code, pressing ENTER does not allow you to escape. If you wish to change the code, key in the new code. As you key in numbers, x's will appear on the screen. When you have keyed in 4 digits, the screen will change as follows.

```
┌──────────────────────────────────────┐
│     KEY NEW 4 DIGIT SECURITY CODE    │
│                 xxxx                 │
│        THEN PRESS ENTER KEY          │
│    KEY NEW CODE AGAIN TO CONFIRM #   │
│        THEN PRESS ENTER KEY          │
└──────────────────────────────────────┘
```

At this point, you must key in the new number again or key in the current code if you wish to retain the current code. Then press the ENTER key. This saves the new code and makes it active for all future operations requiring the security code.

Retain the new security code in a safe place for future reference.

The following on screen display (OSD) will appear.

```
┌──────────────────────────────────────┐
│                                      │
│    KEY NEW 2 DIGIT UNIT ID NUMBER    │
│                                      │
│                 01                   │
│                                      │
│         THEN PRESS ENTER             │
│                                      │
└──────────────────────────────────────┘
```

INSTALLERS MENU ADJUSTMENTS

58 AUTO CAMPORT: Enable Camport sense. When in 1 Camport sense is enabled and when Camport connector plug is detected the display will change to the Camport source. Range is 0-1.

59 ACK MASK: Not used.

60 POLL RATE: Select Poll rate for MPI communications. Range is 20-169.

61 TIMING PULSE: Select timing pulse for MPI communications. Range is 186-227.

62 DIS. SETUP M: Disable/Enable displaying Setup Menu . Range 0-1.

63 DIS. AUDIO M: Disable/Enable displaying Audio Menu. Range 0-1.

64 DIS. VIDEO M: Disable/Enable displaying Video Menu. Range 0-1.

65 DIS. VCHIP M: Disable/Enable displaying Parental. M. Range 0-1.

66 CH -TIME: Disable/Enable displaying CH TIME. Range 0-1.

67 EN. SET. COL: Disable/Enable custom colors for Setup Menu. Range 0-1

68 EN. AUD. COL: Disable/Enable custom colors for Audio Menu. Range 0-1.

69 EN. VID. COL: Disable/Enable custom colors for Video Menu. Range 0-1.

70 EN. PTL. COL: Disable/Enable custom colors for Parental Menu. Range 0-1.

71 EN. CH-T COL: Disable/Enable custom colors for CH TIME. Range 0-1.

72 FOR. SETUP M.: Select between (0 to 7) to set foreground color for Setup Menu.

Menu colors: 0-Black, 1-Red, 2-Green, 3-Yellow, 4-Blue, 5-Magenta, 6-Cyan, 7 White

73 FOR. AUDIO M.: Select between (0 to 7) to set foreground color for Audio Menu.

74 FOR. VIDEO M.: Select between (0 to 7) to set foreground color for Video Menu.

75 FOR PTL M.: Select between (0 to 7) to set foreground color for Parental Menu.

76 FOR CH-TIME: Select between (0 to 7) to set foreground color for Ch-Time.

77 BCK. SETUP M.: Select between (0 to 7) to set background color for Setup Menu.

78 BCK. AUDIO M.: Select between (0 to 7) to set background color for Audio Menu.

79 BCK. VIDEO M.: Select between (0 to 7) to set background color for Video Menu.

80 BCK. PTL M.: Select between (0 to 7) to set background color for Parental Menu.

81 BCK. CH-TIME: Select between (0 to 7) to set background color for Ch-Time.

Underlined commands are used most often.

INSTALLERS MENU ADJUSTMENTS

03 POWER MANAGE: Range is 0-7. 1-7 is the length of time (in hours) that the set will continue to operate if unattended. When the set nears turn off time, an on-screen message appears telling you to press any key to continue normal viewing. When set to 0, this feature is inactive.

04 VERT POS: Moves On-Screen Displays vertically. The Range is from 0-25. This adjustment is generally set at 5.

05 HORZ POS: Moves On-Screen Displays horizontally. Range is from 1-15. Generally set at 9.

06 BAND/AFC: There are eight positions:

0 is Broadcast fixed	2 is HRC afc	4 is Broadcast afc	6 is HRC fixed
1 is CATV afc	3 is ICC afc	5 is CATV fixed	7 is ICC fixed

07 MIN VOLUME: Allows adjustment of minimum volume level. Range is 0-63. When this item is set to 0, the sound level can be adjusted down to zero.

08 MAX VOLUME: Allows the adjustment of maximum volume level. Range is 0-63. When this item is set to 63, the set has full adjustment capability.

09 AC ON: Has two positions; 0 is off, and 1 is on. In ON position, the display set will turn on and off when AC power is applied.

10 KEY DEFEAT: Prevents the end user from accessing screen menus on the front panel (Menu, Select, Adjust), only can be accessed by the Menu in the remote control.

11 STRT CH: Determines the channel that is selected automatically each time the display is turned on and sets the audio volume level at turn-on. Range is 0-255. 0 is the Aux position and 255 is Off. Use ADJUST to change the channel number.

12 STRT VOL: Determines the volume that is selected automatically each time the display is turned on and sets the audio volume level at turn-on. Range is 0-255. 0 is the Aux position and 255 is off.

13 HOSPITAL MODE: The default is 0 for Concierge and 1 for Hospital Models. If it is 1 the Private IR codes are selected. Used with feature level to select IR code type. Range is 0-2.

14 CHAN LOCK: Defeats tuning operations. Range is 0-1. 0 is Off and 1 is On. In combination with the START channel, it can lock-on a particular channel

15 GHOST CH: Ghost channel when item #11 is set to zero. Zero is off and 1 is on. When on, the channel number will stay on screen at all times, unless captions are present. The number moves slightly to prevent damage to the screen. If captions are on, ghost channel will not be present.

16 SCAN MODE: Range is 0-3. The sets turn off when channel scan buttons are being used. In 0 mode, scan off is inoperative. In position 1, the set will turn off between auxiliary and lowest channel. In position 2, the set will turn off between auxiliary and FM. In position 3, the set turns off after an FM station

INSTALLERS MENU ADJUSTMENTS

scan. In scan modes 1,3 the power On/Off could be changed with Start Ch SM=1 Factory items and Start channel.
Scan Mode Characteristics

0 AUX, TV, VCR3, VCR4	2 AUX, TV, VCR3, VCR4, FM
1 AUX, TV, VCR3, VCR4, ON/OFF	3 AUX, TV, VCR3, VCR4, FM, ON/OFF

17 TEXT MODE: Turns text mode on or off in the users menu. Range is 0-1. Zero is off and one is on. In on mode, user can call up text mode. Set to 0 unless text is being used.

18 SLEEP TIMER: Enables sleep timer key. Range is 0-1. Zero is off and 1 is on.

19 ALARM: Enables Alarm Key. Range is 0-1. Zero is off and 1 is on.

20 CH OVER RIDE: Zero is off, one is on. In on mode, the display works normally. This item is generally set to off so it can be controlled with entertainment unit. In off mode, Auto Program and Channel Add/Delete do not function.

21 OLD OCV: (On Command Video) Not used.

22 CAPTION LOCK: Zero is off, 1 is on. Set to 1 for operation to restore previous on/off state after display is initially turned on.

23 FUNCTION PRE: (Function Menu Channel Preview) Range is 0-1. Zero is off and one is on. Set to 1 to suppress channel preview screen in the function menu for some pay per view systems.

24 FEATURE LEVEL: Not used.

25 TRAP 3.58: Zero is off, one is on. Set to 1 for normal display operation. Set to 0 if Y/C is used or chassis has a comb filter.

26 RF BAND PASS: Sets adjustment range of the customer control for brightness in therefore mode. Range is 0-1. Set to 1.

27 RF BRT: (RF brightness) Sets adjustment range of customer control for brightness in RF mode. Range is 0-63. A typical value is 30.

28 AUX BRT: (Auxiliary Brightness) Sets adjustment range of the customer control for brightness in AUX mode. Range is 0-63. Typical value is 30.

29 MAX CONTRAST: Sets adjustment range of customer control for contrast. Range is 0-63. Typical value is 63.

30 VERT SIZE: (Vertical Size) Range is 0-254.

31 HORZ SIZE: (Horizontal Size) Range is 0-254.

32 VERT PHASE: (Vertical Phase) Range is 0-7.

33 HORZ PHASE: (Horizontal Phase) Range is from 0-31.

34 AUDIO LEVEL: Sound Attenuation range is 0-63.

INSTALLERS MENU ADJUSTMENTS

35 RF AGC: (Rf Automatic Gain Control) Range is from 0- 63. 48 is a general setting. Tune in weakest available channel and adjust for a snow-free picture.

36 HORZ AFC: Range is 0-1. Set to 0. O=AFC2 Normal. 1=AFC2 X 3.

37 WHITE COMPRESS: (White Compression) The range is 0 to 1. Set to 0. 0 = Enable and 1 = Disable.

38 60HZ SW: (60 Hertz Switched) The range is 0 to 2.

39 PIF VCO: (PIF Voltage Controlled Oscillator) . Range is 0-127.

40 RED CUT: B&W tracking adjustment. Range is 0-254. Typical value is 20.

41 GREEN CUT: B&W tracking adjustment. Range is 0-254. Typical value is 0.

42 BLUE CUT: B&W tracking adjustment. Range is 0-254. Typical value is 28.

43 GREEN GAIN: B&W tracking adjustment. Range is 0-254. Typical value is 45.

44 BLUE GAIN: B&W tracking adjustment. Range is 0-254. Typical value is 70.

45 6 KEY SYSTEM: Keyboard type. Set to 1 for 6 key and 0 for 10 key. Range 0-1.

46 A ATT: Audio Attenuation adjustment.

47 A VCO: (Voltage-Controlled Oscillator) range is 0-63. Typical value range 10-39.

48 A FILTER: (Second Audio Program Voltage-Controlled Oscillator) Stereo, SAP, and dBx filter adjustment. Range is from 0-63.

49 A SPECTRL: Adjustment of stereo separation (3kHz). Range is 0-63.

50 WIDE BAND: Adjustment of stereo separation (300kHz). Range is 0-63.

51 MAX BLK HRS: Determines the maximum block hours that V-chip could be programmed. Range is 0-99.

52 STRT CH SM: Enable start channel at scan mode. Range is 0-1.

53 RADIO: Enable or disable the access to radio function.

54 AUX: Enables the access to auxiliary input.

55 VCHIP: Enable the V Chip Function.

56 MUTE DISABLE: If it is enabled (set to 1) it disables the functionality of the Mute Key.

57 EN LA7222: Used in Conceirge Models to enable separate auxiliary inputs (Camport and Rear Auxiliary)