Model 8950-SID
Digital Source ID Decoder

Instruction Manual

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INFORMATION TO USERS IN EUROPE

NOTE

CISPR 22 CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to the European Union EMC directive. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

INFORMATION TO USERS IN THE U.S.A.

NOTE

FCC CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING

Changes or Modifications not expressly approved by Evertz Microsystems Ltd. could void the user's authority to operate the equipment.

Use of unshielded plugs or cables may cause radiation interference. Properly shielded interface cables with the shield connected to the chassis ground of the device must be used.

REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	Original issue	May 00

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1. OVERVIEW

The 8950-SID is a dual-purpose Source ID decoder that reads either source ID information encoded into vertical interval timecode, source ID encoded by the PESA source ID encoder system or Neilson Source ID codes encoded on line 20. The 8950-SID decodes these signals directly from the digital bitstream. The model 8950-SID VITC reader's line range can be easily programmed from the front panel, thus permitting recovery of VITC source ID data where it is encoded along with other VITC data.

The high resolution character inserter provides two independently positionable windows to show time and source ID/status (decoded from the user bits) or Neilson Source ID. Two character sizes and the choice of white or black characters with or without contrasting background mask are selected from the front panel.

Features:

- Keys source ID information recovered from D-VITC directly into digital video bitstream
- Standard unit is equipped for component digital video
- Serial digital video input provides automatic cable equalization on cable lengths up to 200 meters of low loss coax such as Belden 8281
- Serial digital video output provides two separate outputs
- Passes embedded audio and other ancillary data signals
- Character Inserter displays timecode, source ID and VTR status in the picture
- Separate positioning of each character window
- Rack mountable
- 8 or 10 bit resolution
- 16 digit Alpha-numeric display, with 10 pushbuttons

1.1. HOW TO USE THIS MANUAL

This manual is organized into 3 chapters: Overview, Installation, and Operation.

Items of special note are indicated with a double box like this.

1.2. DEFINITIONS

AES: (Audio Engineering Society): A professional organization that recommends standards for the audio industries.

AES/EBU: Informal name for a digital audio standard established jointly by the Audio Engineering Society and the European Broadcasting Union organizations.

ANALOG: An adjective describing any signal that varies continuously as opposed to a digital signal that contains discrete levels representing digits 0 and 1.

A-TO D CONVERTER (ANALOG-TO-DIGITAL): A circuit that uses digital sampling to convert an analog signal into a digital representation of that signal.

BIT: A binary representation of 0 or 1. One of the quantized levels of a pixel.

BIT PARALLEL: Byte-wise transmission of digital video down a multi-conductor cable where each pair of wires carries a single bit. This standard is covered under SMPTE 125M, EBU 3267-E and CCIR 656.

BIT SERIAL: Bit-wise transmission of digital video down a single conductor such as coaxial cable. May also be sent through fiber optics. This standard is covered under SMPTE 259M and CCIR 656.

BIT STREAM: A continuous series of bits transmitted on a line.

BNC: Abbreviation of "baby N connector". A cable connector used extensively in television systems.

BYTE: A complete set of quantized levels containing all the bits. Bytes consisting of 8 to 10 bits per sample are typical in digital video systems.

CABLE EQUALIZATION: The process of altering the frequency response of a video amplifier to compensate for high frequency losses in coaxial cable.

CCIR (International Radio Consultative Committee) An international standards committee. (This organization is now known as ITU.)

CCIR-601: (This document now known as ITU-R601). An international standard for component digital television from which was derived SMPTE 125M and EBU 3246-E standards. CCIR-601 defines the sampling systems, matrix values and filter characteristics for both Y, B-Y, R-Y and RGB component digital television signals.

CCIR-656 (This document now known as ITU-R656). The physical parallel and serial interconnect scheme for CCIR-601. CCIR-656 defines the parallel connector pinouts as well as the blanking,

sync and multiplexing schemes used in both parallel and serial interfaces. It reflects definitions found in EBU Tech 3267 (for 625 line systems) and SMPTE 125M (parallel 525 line systems) and SMPTE 259M (serial 525 line systems).

CLIFF EFFECT (also referred to as the 'digital cliff') This is a phenomenon found in digital video systems that describes the sudden deterioration of picture quality when done to excessive bit errors, often caused by excessive cable lengths. The digital signal will be perfect even though one of its signal parameters is approaching or passing the specified limits. At a given moment however, the parameter will reach a point where the data can no longer be interpreted correctly, and the picture will be totally unrecognizable.

COMPONENT ANALOG: The non-encoded output of a camera, video tape recorder, etc., consisting of the three primary colour signals: red, green, and blue (RGB) that together convey all necessary picture information. In some component video formats these three components have been translated into a luminance signal and two colour difference signals, for example Y, B-Y, R-Y.

COMPONENT DIGITAL: A digital representation of a component analog signal set, most often Y, B-Y, R-Y. The encoding parameters are specified by CCIR-601. The parallel interface is specified by CCIR-656 and SMPTE 125M.

COMPOSITE ANALOG: An encoded video signal such as NTSC or PAL video, that includes horizontal and vertical synchronizing information.

COMPOSITE DIGITAL: A digitally encoded video signal, such as NTSC or PAL video that includes horizontal and vertical synchronizing information.

D1: A component digital video recording format that uses data conforming to the CCIR-601 standard. Records on 19 mm magnetic tape. (Often used incorrectly to refer to component digital video.)

D2: A composite digital video recording format that uses data conforming to SMPTE 244M. Records on 19 mm magnetic tape. (Often used incorrectly to refer to composite digital video.)

D3: A composite digital video recording format that uses data conforming to SMPTE 244M. Records on 1/2" magnetic tape.

EBU (European Broadcasting Union): An organization of European broadcasters that among other activities provides technical recommendations for the 625/50 line television systems.

EBU TECH 3267-E: The EBU recommendation for the parallel interface of 625 line digital video signal. This is a revision of the earlier EBU Tech 3246-E standard that was in turn derived from CCIR-601.

EDH Error Detection and Handling (EDH) is defined in SMPTE RP-165 as a method of determining when bit errors have occurred along the digital video path. According to RP-165, two error detection checkwords are used, one for active picture samples, and the other on a full field of samples. Three sets of flags are used to convey information regarding detected errors, to facilitate identification of faulty equipment or cabling. One set of flags is associated with each checkword, and the third is used to evaluate ancillary data integrity. The checkwords and flags are combined into a special error detection data packet that is included as ancillary data in the serial digital signal.

EMBEDDED AUDIO: Digital audio is multiplexed onto a serial digital video data stream.

ITU: The United Nations regulatory body governing all forms of communications. ITU-R (previously CCIR) regulates the radio frequency spectrum, while ITU-T (previously CCITT) deals with the telecommunications standards.

ITU-R601: See CCIR601

PIXEL: The smallest distinguishable and resolvable area in a video image. A single point on the screen. In digital video, a single sample of the picture. Derived from the words *picture element*.

RESOLUTION: The number of bits (four, eight, ten, etc.) determines the resolution of the signal. Eight bits is the minimum resolution for broadcast television signals.

4 bits = a resolution of 1 in 16.
8 bits = a resolution of 1 in 256.
10 bits = a resolution of 1 in 1024.

SERIAL DIGITAL: Digital information that is transmitted in serial form. Often used informally to refer to serial digital television signals.

SMPTE (Society of Motion Picture and Television Engineers): A professional organization that recommends standards for the film and television industries.

SMPTE 125M: The SMPTE standard for bit parallel digital interface for component video signals. SMPTE 125M defines the parameters required to generate and distribute component video signals on a parallel interface.

SMPTE 244M: The SMPTE standard for bit parallel digital interface for composite video signals. SMPTE 244M defines the parameters required to generate and distribute composite video signals on a parallel interface.

SMPTE 259M: The SMPTE standard for 525 line serial digital component and composite interfaces.

TRS: Timing reference signals used in composite digital systems. (It is four words long).

TRS-ID: Abbreviation for "Timing Reference Signal Identification". A reference signal used to maintain timing in composite digital systems. (It is four words long.)

4:2:2 A commonly used term for a component digital video format. The details of the format are specified in the CCIR-601 standard. The numerals 4:2:2 denote the ratio of the sampling frequencies of the luminance channel to the two colour difference channels. For every four luminance samples, there are two samples of each colour difference channel.

4Fsc Four times subcarrier sampling rate uses in composite digital systems. In NTSC this is 14.3 MHz. In PAL this is 17.7 MHz.

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2. INSTALLATION

2.1. REAR PANEL

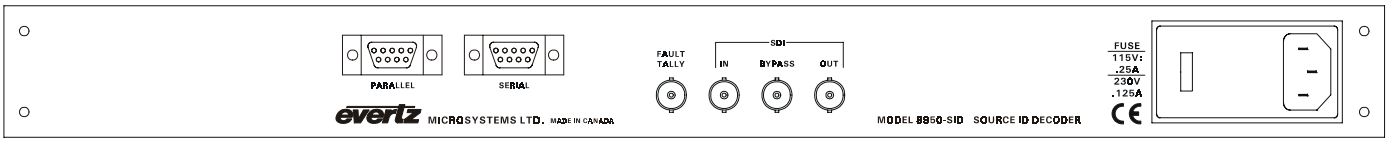


Figure 2-1: 8950-SID Rear Panel

The following sections describe the purpose of the rear panel connectors of the 8950-SID. Sections 2.1.1 to 2.1.2 describe the specific signals that should be connected to the 8950-SID.

2.1.1. Digital Video Connections

SDI IN: A BNC connector for input of 10 bit serial digital video signals compatible with the SMPTE 259M standard.

SDI BYPASS: A BNC connectors for output of 10 bit serial digital video signals compatible with the SMPTE 259M standard. This video will normally be the video input with VITC (encoded with source ID information) and characters inserted onto it. When the SDI bypass relay is activated (on power failure or from the front panel) the SDI BYPASS output is a direct relay connection to the SDI IN.

SDI OUT: A BNC connectors for output of 10 bit serial digital video signals compatible with the SMPTE 259M standard. This video will be the video input with VITC (encoded with source ID information) and characters inserted onto it. When the SDI bypass relay is activated (on power failure or from the front panel) the SDI OUT output will not have any video signal on it.

2.1.2. Tally Connections

FAULT TALLY OUT: A BNC connector for output of a SMPTE 269M fault tally. The output will be open circuit when the 8950-SID is processing video normally. The output will be grounded when the SDI bypass relay is active.

2.1.3. Remote Control Connections

SERIAL: A 9 pin female 'D' connector for connection to the RS-232/RS-422 serial communications. This port is not used at this time.

Pin	Description
1	Ground
6	Transmit Common
2	RS-422 Transmit A(-)
7	RS-422 Transmit B(+)
3	RS-422 Receive B(+)
8	RS-232 Receive and RS-422 Receive A(-)
4	Receive Common
9	Ground
5	RS-232 Transmit (do not connect for RS-422)

PARALLEL: A 9 pin female 'D' connector used for parallel remote control inputs. Loop through outputs have been provided on each of the inputs for ease of wiring multiple units in parallel. Each input has an internal 47 K ohm pull-up to +5 volts. (See section 3.6 for a complete description of the parallel remote control input operation).

Pin	Description
1	not used
6	not used
2	not used
7	not used
3	VCG Keyer On/Off Output
8	not used
4	GPI Output
9	Ground
5	VCG Keyer On/Off Input

2.1.4. Power Connections

LINE: The 8950-SID may be set for either 115v/60 Hz or 230v/50 Hz AC operation. The voltage selector switch is accessible on the rear panel. The line voltage connector contains an integral slow blow fuse (and a spare one).

2.2. MOUNTING

The 8950-SID Digital Source ID Decoder is equipped with rack mounting angles and fits into a standard 19 inch by 1 3/4 inch (483 mm x 45 mm) rack space. The mounting angles may be removed if rack mounting is not desired.

2.3. POWER REQUIREMENTS

2.3.1. Selecting the Correct Mains Voltage

Power requirements are 115 or 230 volts AC at 50 or 60 Hz, switch selectable on the rear panel. Power should be applied by connecting a 3 wire grounding type power supply cord to the power entry module on the rear panel. The power cord should be minimum 18 AWG wire size, type SST marked VW-1, maximum 2.5 m in length.

Before connecting the line power, be sure to select the proper line voltage. Also, check that the line fuse is rated for the correct value marked on the rear panel.

The power entry module combines a standard IEC 320 power inlet connector, voltage selector switch, two 5 x 20 mm fuse holders (one active, one spare) and an EMI line filter.

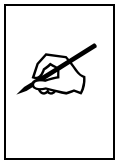
To change the mains voltage setting, open the cover of the power entry module using a small screwdriver. Remove the drum selector switch, and re-insert it so that the desired voltage is visible through the opening on the mains connector cover. Check that the correct fuse is in use as shown in section below.

2.3.2. Changing the Fuse

The fuse holder is located inside the power entry module. To change the fuse, open the cover of the power entry module using a small screwdriver. The fuse holder on the bottom contains the active fuse. The one at the top contains a spare fuse. Pull the bottom fuse holder out and place a fuse of the correct value in it. Use slo blo (time delay) 5 x 20 mm fuses rated for 250 Volts with the following current ratings:

For 115 Volt operation	250 mA
For 230 Volt operation	125 mA

Make sure that the arrow is pointing down when you replace the fuse holder. Close the door on the power entry module and connect the mains voltage.



Never replace with a fuse of greater value.

2.4. CONNECTING THE DIGITAL VIDEO

2.4.1. Video Input

The 8950-SID decoder requires that a digital video source with VITC (with timecode, source ID and VTR status encoded) be connected to the SDI IN video input. The 8950-SID decoder may be configured to accept either 525 or 625 line digital video in the component (4:2:2) format. The VIDEO TYPE parameter on the front panel menu must be set correctly to match the video input. (See section 3.6.1 for information on changing the video type setting).

The Video LED indicator will be On when there is video present matching the selected video type. When it is blinking it indicates that there is no video present, or the wrong video type is selected.

2.4.2. Video Output

The SDI BYPASS and SDI OUT outputs contain the input video with character data keyed in by the keyer. Connect one of these outputs to any input on your system that accepts 8 or 10 bit SERIAL digital video. The two outputs are identical except that the SDI BYPASS output is protected by the bypass relay. When the relay is active, the SDI BYPASS output is directly connected to the SDI input, and the SDI OUT output will have not video output.

2.5. CONNECTING THE GENERAL PURPOSE INPUTS AND OUTPUTS

The 9 pin PARALLEL I/O connector has 1 general purpose input and 2 general purpose outputs. The GPI input is active low. This means that if you leave an input floating (not connected) then it will not be activated. Lowering the GPI input to a voltage below 0.8 volts will activate the input. The user can activate GPIs simply by connecting the GPI input pins to Ground using a button, switch, relay or an open collector transistor.

The outputs are internally pulled up to 5 volts. Care must be taken to limit the load to 0.5W so there is no affect on the power supply source in the frame.

Each I/O pin is electrically wired so it can be used as either an input or output. When the pins are used as inputs, the software turns off the output driver transistor. Figure 2-2 shows the circuitry for each of the I/O pins.

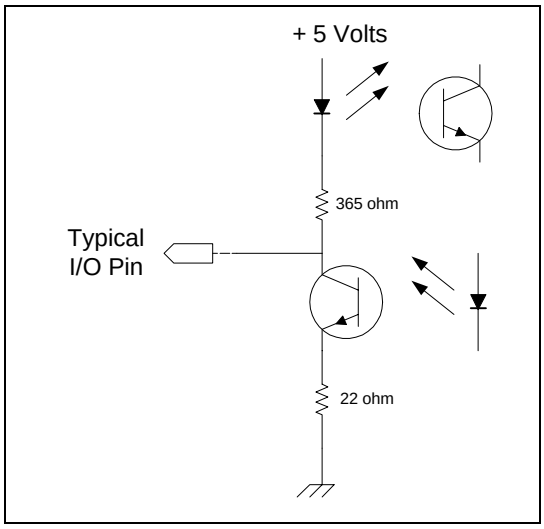


Figure 2-2: Typical GPIO Circuitry.

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3. HOW TO OPERATE THE DIGITAL SOURCE ID DECODER

3.1. AN OVERVIEW OF KEY AND DISPLAY FUNCTIONS

Figure 3-1: Front Panel Layout

The display area consists of an 16 digit alphanumeric display, 6 LED status indicators and a 10 pushbutton keypad.

The keypad is used to control the front panel menu system, to position the character display windows, and to provide control of the front panel display. When the **SHIFT** key is held down, the meanings of some of the keys are modified, gaining quick access to a wider variety of functions. (Throughout this manual **SHIFT +** indicates that you should hold down the **SHIFT** key while pressing the second key.)

A front panel programming menu provides a quick and simple method of configuring the 8950-SID Digital Source ID Decoder for your application.

Section 3.3 gives detailed information on the specific operations required to control the 8950-SID.

3.1.1. The Setup Pushbutton Group

The Setup key group consists of the **SELECT, SETUP** and ←, →, ↑, ↓ keys and is used to navigate the front panel programming menu system, to position character windows and to enter the source ID message.

SETUP Enters the Setup mode that is used to set up various modes of operation. Pressing SETUP again while in this mode exits the Setup mode. (See also section 3.3.)

SELECT When in the Setup mode the SELECT key is used to activate the current choice for the selected item**.**

↑ ↓ ← → When in the Setup mode, the ↑ & ↓ arrow keys are used to move up and down the main items in the menu system and the ← & → arrow keys are used to show the menu choices for the current item. (See also section 3.3.)

When in the VITC window select mode, the arrow keys are used to position the individual character windows on the screen. (See also section 3.5.1.)

When not in either the Setup mode or the VITC window select mode, the arrow keys are used to position all the character windows on the screen. (See also section 3.5.2.) SHIFT + arrow keys are used to provide fine adjustment of the character generator raster.

3.1.2. The Character Window-Button Group

CHAR GEN WINDOW Initiates VITC window select mode and highlights the selected window. Use the arrow keys to move the window, use the CHAR GEN ON/OFF key to turn the window on or off. Press the MODE key again to select the next VITC window. Press the MODE key a third time to return to the normal VITC display mode.

CHAR GEN ON/OFF Turns the character generator ON and OFF. When in the VITC window select mode the CHAR GEN ON/OFF key is used to turn individual windows ON and OFF.

3.1.3. The Display-Button

DISPLAY Selects what data is being displayed on the front panel. Each time it is pressed it cycles to the next display data.

When VITC Source ID is being displayed

Description	Example
VTR Timecode	`TIME 12:45:30:00`
Source ID Message	`ID:  VTR-10`
VTR Status	`STATUS: STOP`

When Neilson Source ID is being displayed

Description	Example
Source name with Source ID CODE	`NBC NYC CH1 033`
Uplink name and destination name	`WNBC-P  NBCNY`
Contact Information	`212 664 7442`
Source Location	`040:45  073:58`
Time and Source ID code	`12:40:00 PM 255`
Date, Test bit and Source ID code	`01/20  T=0  255`

3.1.4. An Overview of the SHIFT Key functions

When the **SHIFT** key is held down, the meanings of some of the keys are modified, gaining quick access to a wider variety of functions. Following is a summary of the shifted key functions

SHIFT+SETUP Enters the Engineering Setup menu system

SHIFT+SELECT Resets the 8950-SID to factory defaults when you are in the FACTORY RESET menu item of the Engineering Setup Menu

SHIFT+↑ & SHIFT+ ↓ Fine adjustment of character vertical raster position

SHIFT+← & SHIFT+ → Fine adjustment of character horizontal raster position

3.1.5. An Overview of the Status Indicators

There are 6 status indicators located on the front panel that show operational status of the 8950-SID at a glance.

4:2:2 Indicates that 8950-SID is configured for component digital signals

BYPASS Indicates that 8950-SID is operating in the Bypass Mode. The SDI video input is directly connected to the SDI Bypass output and the 8950-SID will have no effect on the video signal.

COMM Indicates that the 8950-SID is communicating with an external computer device

VIDEO Indicates that serial digital video is present. If it is blinking, it indicates a valid digital video signal is not present

VITC IN Indicates that VITC is being read

SID IN Indicates that Source ID data is being read

3.2. AN OVERVIEW OF THE FRONT PANEL PROGRAMMING MENU

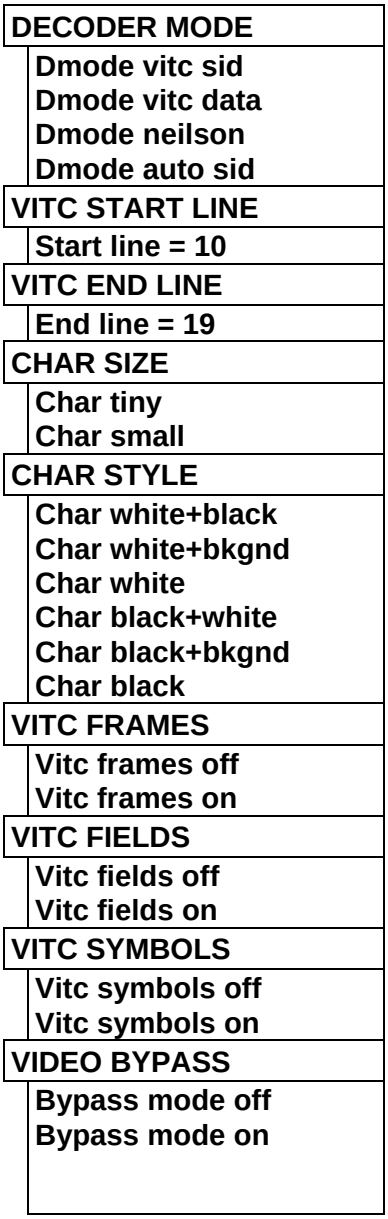

Figure 3-2: Overview of the 8950-SID Programming Menu System

The key to the operational flexibility of the 8950-SID Digital Source ID Decoder lies in the front panel programming menu system. The programming menu system uses the 16 digit alphanumeric display and provides a quick, intuitive method of configuring the 8950-SID Digital Source ID Decoder, guiding you to the correct setup for your application. The six keys in the Setup key group (**SELECT**, **SETUP,** ← → ↑ ↓) are used to cycle through the various items on the programming menu.

The 8950-SID menu system consists of a main menu with two or more choices for each menu item. The sub menu items are shown in lower case to allow them to be easily distinguished from the main level items. Figure 3-2 is an overview of the front panel menu system, and shows all the menu items and where you will find the menu choices. To enter the front panel programming menu, press the **SETUP** key.

The two vertical arrow keys (🡅, 🡇) allow you to move vertically within the menu tree. When you have selected the desired menu item, press the ➔ key to reveal the choices for that item. The choice that is currently selected will be blinking. When you have selected the desired sub menu choice press the **SELECT** key to save your choice.

When you have made all the desired changes, press the **SETUP** key to return to the normal display mode.

To aid in finding the descriptions of the various menu items in sections 3.3 to 3.4, the drop down menu items and its sub menu items are shown in the margin of the manual, next to the description as shown.

Each of the menu items is described in section 3.3, with an explanation of what each choice does.

3.2.1. Engineering Setup Menu

The Engineering Setup menu allows the advanced user to change various internal parameters of the 8950-SID, or to invoke several advanced modes.

This menu should be used by advanced users only, as improper use can overwrite user setups.

DISPLAY LEVEL
Display level 6
FACTORY RESET
Sh+sel=reset
SOFTWARE VERSION
DR84D2.M R991207

Figure 3-3: Overview of the 8950-SID Engineering Menu

The 8950-SID Engineering Setup menu consists of a main menu with two or more choices for each menu item. The sub menu items are shown in lower case to allow them to be easily distinguished from the main level items. Figure 3-3 is an overview of the Engineering Setup menu, and shows all the menu items and where you will find the menu choices. To enter the Engineering Setup menu, press the **SHIFT+SETUP** keys. Each of the menu items is described in section 3.3, with an explanation of what each choice does.

3.3. PROGRAMMING THE 8950-SID OPERATIONAL MODES

The front panel menu is used to configure the basic operational modes of the 8950-SID Digital Source ID Decoder such as selecting which keyer is active, etc.

3.3.1. Selecting the Decoder Mode

DECODER MODE
- **Dmode vitc sid**
- **Dmode vitc data**
- **Dmode neilson**
- **Dmode auto sid**

The **DECODER MODE** menu item is used to select whether the 8950-SID will decode VITC source ID information, or Neilson Source ID.

Select **vitc sid** to decode only VITC Source ID information and display it properly formatted.

Select **vitc data** to decode ONLY VITC Source ID information and display it in raw data format. This mode is used for engineering debug purposes only.

Select **neilson** to decode Neilson Source ID information only.

Select **autosid** to decode either Neilson Source ID information or VITC Source ID information, whichever is present. If both are present Neilson Source ID information will be decoded.

3.3.2. Setting The VITC Reader Line Range

The **VITC START LINE** and **VITC END LINE** menu items are used to select the lines that are enabled for VITC reading.

VITC START LINE
- **Start line = 10**

The **VITC START LINE** menu items used to set the first line that VITC will be read from. To view the current setting press the ➔ key. The current line number will be blinking. To set a different line use the ← or ➔ keys. To accept the new value press the **SELECT** key.

VITC END LINE
- **End line = 19**

The **VITC END LINE** menu item is used to set the second line that VITC will be read from. To view the current setting press the ➔ key. The current line number will be blinking. To set a different line use the ← or ➔ keys. To accept the new value press the **SELECT** key.

VITC START LINE and VITC END LINE determine a range of lines that the 8950-SID will look for VITC on. It will attempt to read VITC from the lower number to the higher number.

3.3.3. Selecting the Character Size

CHAR SIZE
- **Char tiny**
- **Char small**

The **CHAR SIZE** menu item is used to select one of two sizes for the character generator's display.

The **Char tiny** character size occupies 8 lines per field for each character row. This permits 28 vertical positions on the raster in NTSC.

The **Char small** character size occupies 16 lines per field for each character row. This permits 14 vertical positions on the raster in NTSC.

3.3.4. Selecting the Character Style

CHAR STYLE
- **Char white+black**
- **Char white+bkgnd**
- **Char white**
- **Char black+white**
- **Char black+bkgnd**
- **Char black**

The **CHAR STYLE** menu item is used to select whether the background mask will be used and whether the characters will be white or black. The on screen format menus are always white characters keyed into a black background mask.

Select **Char white** to disable the background and key white characters directly into the picture.

Select **Char white + black** to key white characters on a black background mask into the picture.

Select **Char white + bkgnd** to key white characters on a transparent gray background mask into the picture.

Select **Char black** to disable the background and key black characters directly into the picture.

Select **Char black + white** to key black characters on a white background mask into the picture.

Select **Char black + bkgnd** to key black characters on a transparent white background mask into the picture.

3.3.5. Selecting whether the Frames, Fields and Symbols will be displayed on the VITC

VITC FRAMES
- **Vitc frames off**
- **Vitc frames on**

The **VITC FRAMES** menu item is used to select whether the frames will be shown when the time is displayed in the character inserter.

Select **Vitc frames off** to hide the timecode frames.

Select **Vitc frames on** to show the timecode frames.

VITC FIELDS
Vitc fields off
Vitc field on

The **VITC FIELDS** menu item is used to select whether the fields will be shown when the time is displayed in the character inserter.

Select **Vitc fields off** to hide the timecode fields.

Select **Vitc fields on** to show the timecode fields.

VITC SYMBOLS
Vitc symbols off
Vitc symbols on

The **VITC SYMBOLS** menu item is used to select whether the **T** and **U** symbols will be shown in front of the time and user bit displays of the VITC.

Select **Vitc symbols off** to hide the symbols.

Select **Vitc symbols on** to show the symbols.

3.3.6. Turning on the SDI Video Bypass

BYPASS MODE
Bypass mode off
Bypass mode on

The **BYPASS MODE** menu item is used to select whether the video bypass relay will be active or not. This allows the user to manually put the 8950-SID in Bypass mode. In this mode, the input video is directly connected to the output, and the encoder will no longer be active.

Select **Bypass mode off** to turn off the Bypass relay and process the incoming video through the source ID decoder.

Select **Bypass mode on** to activate the video bypass relay and disable the decoder.

3.4. PROGRAMMING THE ENGINEERING SETUP FUNCTIONS

The Engineering Setup Menu is used to set the serial port baud parameters, front panel display brightness, reset the 8950-SID to factory defaults, etc. The Engineering Setup menu items are normally required only during installation. See section 3.2.1 for information on using the Engineering Setup menu system.

3.4.1. Adjusting the Front Panel Display Brightness

DISPLAY LEVEL
Display Level = 2

The **DISPLAY LEVEL** menu item is used to adjust brightness of the front panel display. Use the ← and →keys to adjust.

3.4.2. Resetting the 8950-SID to Factory Defaults

FACTORY RESET
Sh+sel = reset

The **FACTORY RESET** menu item is used to return the 8950-SID to its factory defaults. When you press the ← or → keys, the display shows **Sh+sel = reset**. When you press **SHIFT + SELECT** the 8950-SID will reload its factory defaults and show the message.

```
Reset done
```

3.4.3. Displaying the 8950-SID Software version

SOFTWARE VERSION
DR84D2.M R991207

The **SOFTWARE VERSION** menu item is used to display the 8950-SID's software version. When you press the ← or → keys, the display shows the software version which will be something like:

```
DR84D2.M R991207
```

3.5. CHARACTER GENERATOR FUNCTIONS - VITC SOURCE ID

When VITC Source ID is being decoded there are two separately positionable character windows displaying time or VITC Source ID/Status available. When Neilson Source ID is being decoded there are two separately positionable character windows. One window displays the same information being displayed on the front panel and the other window is a multi-line window displaying all the Neilson Source ID data.

The four arrow keys (↑, ↓, ←, →) control the position of all the windows. The **CHAR GEN ON/OFF** key selects whether the video character generator (VITC) keyer is on or off. The use of these keys in combination with the **CHAR GEN WINDOW** key selects which windows are displayed and their position on the screen. The CHAR SIZE item of the Setup menu is used to select character size.

3.5.1. Selecting and Positioning the Individual Character Inserter Windows - VITC Source ID Mode

Press **CHAR GEN WINDOW** to enable the window select mode. Both windows will appear on the character screen with the window for the time highlighted. Use the arrow keys (↑, ↓, ←, →) to position the time window on the screen. Use the **CHAR GEN ON/OFF** key to turn the window on or off. Press the **CHAR GEN WINDOW** key to highlight the source ID window. Use the **CHAR GEN ON/OFF** key to turn the source ID window on or off and the arrow keys to move it to the desired location. Press the **CHAR GEN WINDOW** key to highlight the status window. Use the **CHAR GEN ON/OFF** key to turn the status window on or off and the arrow keys to move it to the desired location. Press the **CHAR GEN WINDOW** key to return to normal display mode.

For example, to move only the Time window down, leaving the source ID/status window in the same place, press **CHAR GEN WINDOW** and press the 🡻 key. Press the **CHAR GEN WINDOW** key three times to return to the normal display mode.

3.5.2. Selecting and Positioning the Individual Character Inserter Windows - Neilson Source ID Mode

Press **CHAR GEN WINDOW** to enable the window select mode. Both windows will appear on the character screen with the window for the time highlighted. Use the arrow keys (🡹, 🡻, 🡸, 🡺) to position the Source ID window on the screen. Use the **CHAR GEN ON/OFF** key to turn the window on or off. Press the **CHAR GEN WINDOW** key to highlight the multi-line summary window. Use the **CHAR GEN ON/OFF** key to turn it on or off and the vertical arrow keys (🡹, 🡻) to move it to the desired location. There is only vertical positioning of this display. Press the **CHAR GEN WINDOW** key to return to normal display mode.

3.5.3. Positioning the Overall Character Display

In the normal VITC display mode, when none of the windows are highlighted, the arrow keys (🡹, 🡻, 🡸, 🡺) move all the displayed windows by the same relative amount. For example, to move the time and source ID/status windows both down by one line press the 🡻 key.

3.5.4. Making Fine Adjustments To The Character Generator Raster Position

In the normal VITC display mode, when none of the windows are highlighted, holding down the shift key while pressing the arrow keys (🡹, 🡻, 🡸, 🡺) move the complete character raster in fine increments on the picture. The range of fine adjustment is limited when the character windows are positioned near the edges of the screen.

3.5.5. Special VITC Indicators

In VITC Source ID mode the following special indicators are used between the seconds and frames digits of the time window in the character inserter to identify non drop frame and drop frame code (NTSC only).

Non Drop Frame Colon (:)
Drop Frame (NTSC) Period (.)

3.6. PARALLEL REMOTE CONTROL FUNCTIONS

A 9 pin D connector located on the rear panel labeled REMOTE CTL provides 1 parallel control input. A loop through output has been provided for ease of wiring multiple units in parallel. This loop through output is driven in the software so that it follows the sense of the input. A general purpose output that follows the sense of the encoded GPI status bit in the Source ID is also provided. The pinout of the D connector is as follows:

Pin		Description
1		not used
	6	not used
2		not used
	7	not used
3		VCG Keyer On/Off Output
	8	not used
4		GPI Output
	9	Ground
5		VCG Keyer On/Off Input

VCG KEYER ON/OFF Provides an alternate method of turning the character inserter generator On and Off. The character inserter is toggled On or Off by a high to low transition on this input. This input has equal priority with the front panel **CHAR GEN ON/OFF** key.

GPI OUTPUT When the source ID decoder senses that the GPI status bit in the encoded source ID signal is on it will activate a GPI output. (closed to ground)

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