Motorola DSR-6100 Commercial Integrated Receiver Transcoder Operator Guide

Document No.: 578523-001

MOTOROLA

WARNING

The unauthorized modification of any unit and the sale and use of any such unit is prohibited by law. Any such modification or alteration of this product or any unauthorized reception of television programming could subject the user and seller and party modifying the unit to fines, imprisonment, and civil damages.

NOTE: 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. This digital apparatus does not exceed the Class A limits of radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Repairs and Assistance

For assistance on return or repair see "Product Support" on page 69.

Note to CATV System Installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the National Electric Code (NEC) that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Warning

To prevent electrical shock, do not use the unit electrical power plug (polarized) with an extension cord, receptacle, or other outlet unless the blades can be fully inserted to prevent blade exposure. The mains disconnect device is the appliance plug and it shall remain readily accessible and operable.

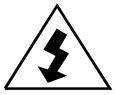
The lithium battery is not field-replaceable for the life of the product.

General Instrument Corporation doing business as
Motorola Mobility, Inc.
6450 Sequence Dr.
San Diego, CA 92121

DOCUMENT No: 578523-001 REV B, 12/9/10

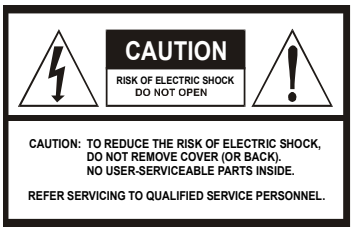
OPERATION PRECAUTIONS

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.



The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



ATTENTION

This commercial unit is intended for the decoding of DigiCipher® II television signals for commercial use. Possession of this device does not enable or entitle the possessor to receive DigiCipher II television signals. Contact program providers to obtain appropriate authorizations.

Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Use only attachments and accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled, or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Damage Requiring Service

Unplug this equipment from the power source, and contact a qualified service provider if any of the following situations occurs:

- If the power supply cord or plug is damaged.
- If liquid or objects have fallen into the unit.
- If the unit became wet from rain or water.
- If the unit was dropped or damaged.
- If the unit's performance changes.

Service

Do not try to service this product yourself. If you open or remove the cover, you may be exposed to dangerous voltage or other hazards and may void the unit's warranty. Contact a qualified service provider for all service.

ADVERTENCIA

La modificación no autorizada de cualquier unidad, y la venta y el uso del mismo está prohibida por ley. Cualquier modificación o alteración de este producto o cualquier recepción no autorizada de programación de televisión puede someter al usuario y al vendedor, y a la parte que modifica la unidad a multas, prisión y daños civiles.

NOTA: Este equipo se ha probado y se ha demostrado que cumple con los límites para un dispositivo digital clase A, según la parte 15 de las normas de la FCC. Estos límites están diseñados para ofrecer protección adecuada contra interferencia dañina cuando el equipo se utiliza en un entorno comercial. Este equipo genera, usa y puede irradiar energía de radiofrecuencia y, si no se instala y usa de acuerdo con el manual de instrucciones, puede causar interferencia dañina a las comunicaciones por radio. Es posible que el funcionamiento de este equipo en un área residencial cause interferencia dañina, en cuyo caso el usuario deberá corregir la interferencia y asumir el costo correspondiente. Este aparato digital no supera los límites de la clase A de emisiones de ruido de radio del aparato digital establecido en las Normas de interferencia de radio del Departamento canadiense de comunicaciones.

Reparación y asistencia

Para recibir ayuda sobre devolución o reparación, consulte “Product Support” en la página 69.

Nota para el instalador del sistema CATV

Este recordatorio es para que el instalador del sistema CATV considere el Artículo 820-40 del Código eléctrico nacional (NEC) que entrega pautas para una correcta conexión a tierra y, en especial, especifica que la conexión a tierra del cable debe conectarse al sistema de conexión a tierra del edificio, lo más cerca posible del punto de entrada del cable.

Advertencia

Para evitar descargas eléctricas, no use el enchufe eléctrico de la unidad (polarizado) con un cable de extensión, receptáculo u otra salida a menos que las aspas queden completamente insertadas para evitar la exposición de las aspas. El dispositivo de desconexión de la red de suministro es el enchufe del aparato y debe ser de fácil acceso y estar en funcionamiento.

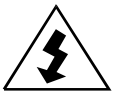
La batería de litio no se reemplaza en la instalación para mantener la vida útil del producto.

General Instrument Corporation comercializa como
Motorola Mobility, Inc.
6450 Sequence Dr.
San Diego, CA 92121

N°. DE DOCUMENTO: 578523-001 REV B, 12/9/10

PRECAUCIONES DE OPERACIÓN

ADVERTENCIA: PARA EVITAR RIESGOS DE INCENDIOS O DESCARGA ELÉCTRICA, NO EXPONGA ESTE EQUIPO A LA LLUVIA O LA HUMEDAD.



El símbolo del rayo con cabeza de flecha, dentro de un triángulo equilátero, está diseñado para alertar al usuario la presencia de "voltaje peligroso" sin aislamiento dentro del perímetro del producto que puede tener la magnitud suficiente para ser un riesgo de descarga eléctrica para las personas.

El signo de exclamación dentro de un triángulo equilátero está diseñado para alertar al usuario la presencia de importantes instrucciones de funcionamiento y mantenimiento (servicio) en la literatura que acompaña al producto.

ATENCIÓN

Esta unidad comercial está diseñada para decodificar señales de televisión DigiCipher® II para uso comercial. La posesión de este dispositivo no permite ni autoriza al dueño a recibir señales de televisión DigiCipher II. Comuníquese con los proveedores de programa para obtener las autorizaciones correspondientes.

Instrucciones de seguridad importantes

- Lea estas instrucciones.
- Guarde estas instrucciones.
- Considere todas las instrucciones.
- Siga todas las instrucciones.
- No use este aparato cerca del agua.
- Limpie sólo con un paño seco.
- No bloquee las aberturas de ventilación. Instale siguiendo las instrucciones del fabricante.
- No instale cerca de fuentes de calor como radiadores, rejillas de aire caliente, cocinas u otros aparatos que produzcan calor (incluidos amplificadores).
- No impida el propósito de seguridad del enchufe polarizado o con conexión a tierra. Un enchufe polarizado tiene dos aspas, una más ancha que la otra. Un enchufe de conexión a tierra tiene dos aspas y una tercera punta con conexión a tierra. El aspa ancha o la tercera punta está diseñada para su seguridad. Si el enchufe incluido no se ajusta a la salida, pida al electricista el repuesto de la salida obsoleta.
- Todos los servicios de mantenimiento deben realizarlos personal calificado. El servicio de mantenimiento se requiere cuando el aparato tiene algún daño, por ejemplo cuando el cable de alimentación o enchufe está dañado, se ha derramado líquido o el aparato ha sido golpeado por otros objetos, cuando se ha expuesto a lluvia o humedad, no funciona normalmente o se ha caído.
- Proteja el cable de alimentación para evitar pisarlo o que quede apretado, especialmente en los enchufes y tomas de corriente, y revise el punto de salida del aparato.
- Use exclusivamente los accesorios especificados por el fabricante.
- Desconecte el aparato durante tormentas eléctricas o cuando no se use durante un tiempo prolongado.

Daños que requieren servicio de mantenimiento

Desenchufe este equipo de la fuente de alimentación y comuníquese con un proveedor de servicio calificado si se presenta alguna de las siguientes situaciones:

- Si el cable de alimentación o enchufe está dañado.
- Si sobre la unidad ha caído líquido o algún objeto.
- Si la unidad se moja por la lluvia o el agua.
- Si la unidad se golpeó o dañó.
- Si se altera el funcionamiento de la unidad.

Servicio

No intente reparar este producto usted mismo. Si abre o retira la cubierta, es posible que se exponga a voltaje peligroso u otros daños, y anule la garantía de la unidad. Para todo tipo de mantenimiento, comuníquese con un proveedor de servicio calificado.

Table of Contents

Introducing the DSR-6100

The Motorola DSR-6100 is a commercial Integrated Receiver Transcoder, designed for broadcasters and headend operators for receiving digital satellite services. The DSR-6100 unit will process both high-definition and standard-definition video services. After the DSR-6100 unit is properly configured, it is ready to receive authorization and control information from the satellite operator.

Key Features

- Eight RF inputs
- DC-II QPSK and DVB-S2 demodulation
- DigiCipher-II security
- Gig-E and ASI Outputs with PID Aliasing
- One composite video and one diagnostic video output
- VBI reinsertion for Closed Captioning
- Two stereo pair audio output
- DTMF output
- Three Form-C relays with fault alarm indication
- Uplink controlled retunes
- Memory configuration is saved in nonvolatile memory
- A two-line, 40-character front panel with a Liquid Crystal Display (LCD)
- MPEG-2 HD and/or SD AFD output via uplink authorization
- Web Server GUI for remote operation

2

Connecting the DSR-6100

Unpacking and Connecting the DSR-6100

Cable connections, described in this chapter, are made to the back panel of the DSR-6100.

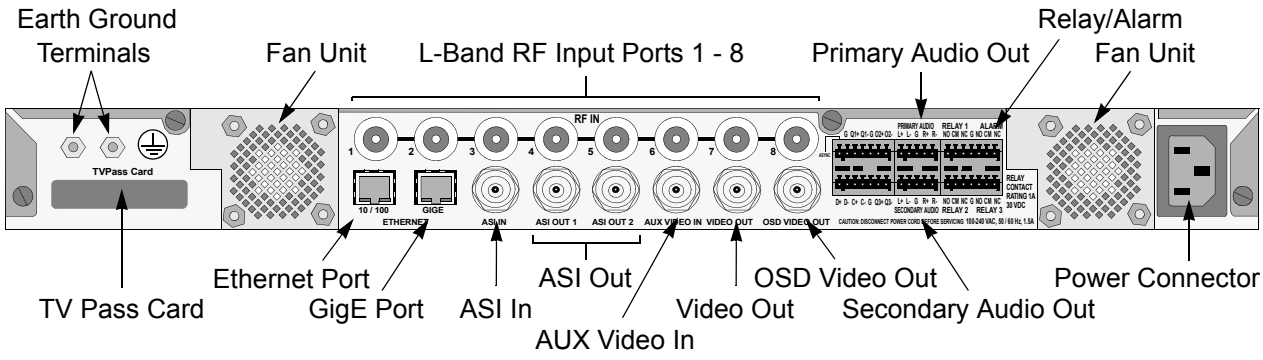


Figure 2-1: DSR-6100 Back Panel (Overview)

CAUTION: When connecting any of the eight RF IN ports, the RF-IN Antenna cable should only be connected while the DSR-6100 is properly grounded and the shield of the coaxial cable should be earthed in accordance with Article 820.93 of the NEC, ANSI/NFPA 70:2005 or equivalent.

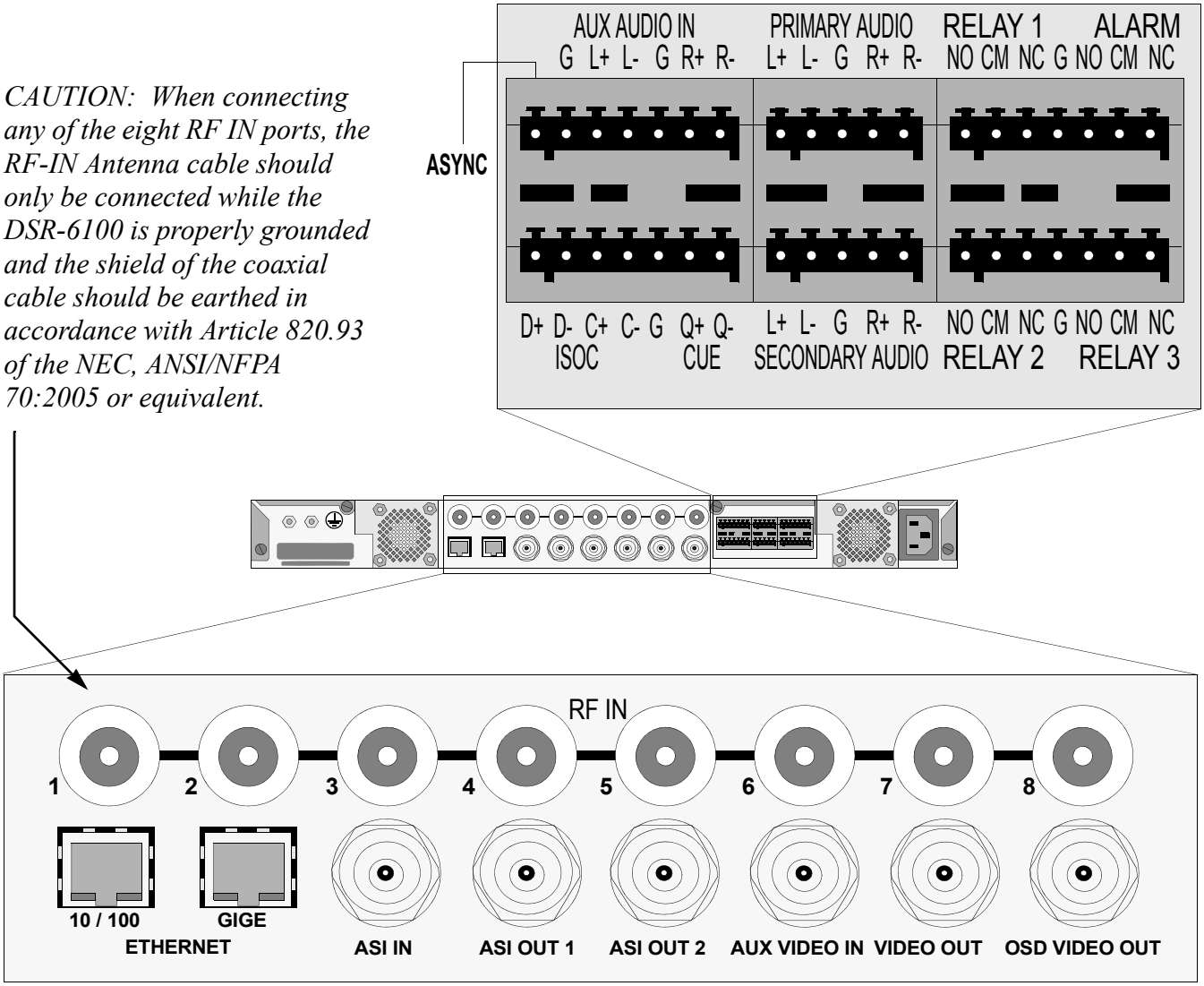


Figure 2-2: DSR-6100 Back Panel (Detailed)

Unpacking

The shipping carton contains the DSR-6100, quick disconnect terminals, a power cord, and this Operator Guide.

Rack Mounting Guidelines

The DSR-6100, with the supplied mounting brackets is designed for installation in an EIA standard 19-inch (480 mm) equipment rack. Place each DSR-6100 in a stable and level position within the rack and ensure that all front enclosure screws are tightened to 14 in-lbs. If multiple DSR-6100s are installed in a rack assembly, the operator may choose to have a certification agency evaluate the condition of the rack.

Mechanical Loading

The mounting rack location should be secure and level to avoid hazardous instability to the equipment due to uneven loading or weight distribution within the rack.

Ambient Temperature

When installing the DSR-6100 within a closed or multi-unit rack, the ambient temperature may be greater than the ambient temperature within the room. Therefore, verify that the amount of air flow required for safe operation is not compromised (maximum temperature for the equipment is 40° C). Consideration should be given to the maximum rated ambient temperature for the DSR-6100's location when planning for cooling and air circulation. To evacuate the DSR-6100's warm air output from within the mounting rack, Motorola Mobility recommends the use of a fan on top of the rack.

Circuit Overloading

If the DSR-6100 is connected to a power strip, rather than a branch circuit's direct connection, use special care to ensure that the unit is properly connected. Always consider the affect that overloading circuits might have on over-current protection and supply wiring. To ensure that circuits are not overloaded, read the DSR-6100 UL regulatory power label on top of the unit. Check all equipment power/amperage ratings to ensure the mounting rack power rating is not exceeded.

Earth Ground

Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips). The RF-IN antenna cable should only be connected while the unit is properly grounded. The shield of the coaxial cable should be earthed in YP accordance with Article 820.93 of the NEC (National Electrical Code), ANSI/NFPA 70:2005, or equivalent.

Battery Replacement

Do not replace the lithium battery used in the Motorola DSR-6100. Instead, return the DSR-6100 to a Motorola Mobility authorized service center for replacement with the same or equivalent type battery as recommended by the manufacturer.

Connecting the DSR-6100

To connect a DSR-6100 to the GigE signal, see "GigE Usage" on page 23.

To connect a DSR-6100 to an ASI signal, "ASI Usage" on page 23.

To connect a DSR-6100 to an RF signal:

1. Determine which satellite, transponder, Virtual Channel Table (VCT) number, and Virtual Channel is to be used. Contact the programmer for this system information so that the desired services can be received.
2. Connect the desired L-Band (satellite antenna LNB or LNB signal splitter) source cable to RF Input Port 1 through 8, as directed by the programmer.
3. To view video and On-Screen Diagnostics (OSD) during installation, connect the OSD Video Output on the DSR-6100 to a 75-ohm video monitor or television with composite video input (standard definition).

   Note: The DSR-6100 generates time-specific ad insertion cue tones. The programmer can include these messages in the encoded signal.
4. If cue tones are needed and made available, connect the differential Cue Tone+, Cue Tone-, and Ground terminals on the DSR-6100 to the 600-ohm device receiving the tones.

   Note: The DSR-6100 provides an alarm relay that can be used to signal an alarm condition. To indicate an alarm, the DSR-6100 provides a short-circuit electrical connection between the NC and CM terminals and an open-circuit electrical connection between the NO and CM terminals. With this configuration, the DSR-6100 is able to signal an alarm, even for the loss of AC power.
5. Plug the DSR-6100 into a power source. Verify that the LCD screen is lit.
6. Proceed with the installation using the front panel menus.
7. For details on web server GUI, see "Remote Operation" on page 13.

Remote Operation

The DSR-6100 decoder can be operated remotely from a web browser. When the decoder is contacted via an HTTP session from a computer, the decoder's web server responds to the HTTP session with a login dialog box that requires the user to login with a security-based user name and password. Once the login is successful, the decoder's web server then presents the decoder's home page to the computer and remote operation can begin.

Some of the IRD configuration settings and control inputs that are accessible through HTTP include:

- Virtual channel and audio language selection
- Status and device information (e.g., signal strength, alarms, unit address)
- Soft reset
- Settings for acquiring a satellite signal (e.g., transponder frequency, input port)
- Video and audio output customizations
- Alarm triggers
- ASI and Ethernet output customizations

To configure the DSR-6100 for remote operation

1. Contact your network administrator for the IP Subnet Mask address, unique IP address, and default gateway address to assign to this decoder.

   Caution: To use DSR-6100 remote operation, each DSR-6100 on the subnet must be assigned a unique IP address. Failure to assign a unique IP address to each DSR-6100 on the subnet will result in loss of connectivity with the original IP address conflict.

2. To configure the decoder, use the decoder's arrow buttons on the front panel to perform the following procedures:

   - 10/100 IP Address Menu, page 49
   - 10/100 Subnet Mask Menu, page 49
   - 10/100 Default Gateway Menu, page 50

3. Use an RJ-45 cable to connect the decoder's Ethernet 10/100 port to the subnet that will be used to operate the decoder remotely.

To operate the DSR-6100 remotely

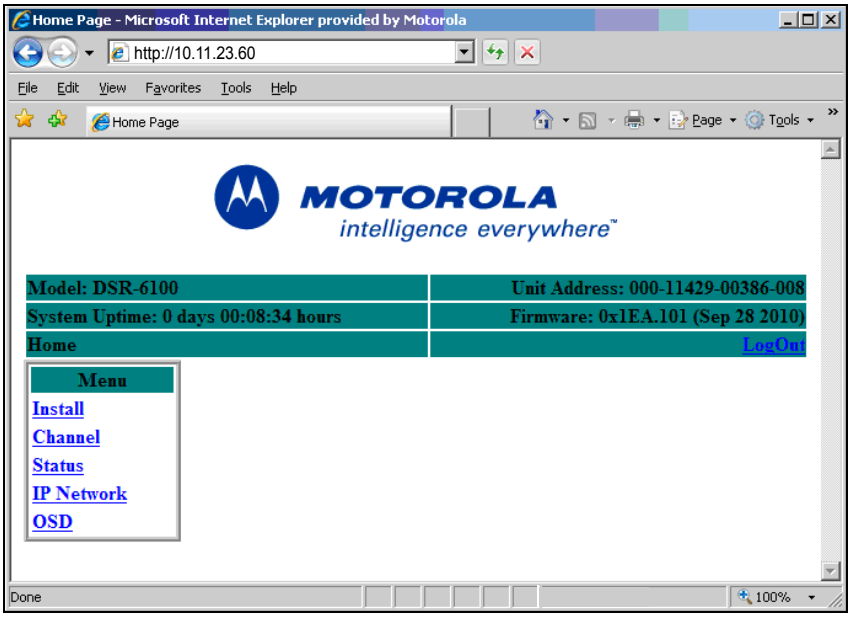
1. Open a browser session, type the decoder's unique IP address in the address bar, and press the ENTER key.

   For example, if the decoder is configured with IP address 10.11.23.60, then go to the browser, type: **http://10.11.23.60** in the address bar, and press ENTER.

2. When the login dialog box appears (as shown below), enter the User name and Password and select OK. The default user name is **ESPN**, and the password is **espn**.

   Note: Web browser login will not be available until commissioned by the uplink.

3. When the Home Page appears (as shown below), use the sidebar menu to access the decoder's various settings and control features.



3

Operating the DSR-6100

All operations described in this chapter require use of the front panel, as shown in Figure 3-1.

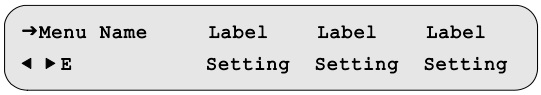
Figure 3-1: DSR-6100 Front Panel

Relay 1 - 3	Illuminates when relays 1, 2, or 3 are activated.
Alarm	Illuminates when the unit enters an alarm state.
Authorized	Illuminates when the unit is authorized by the service provider.
Bypass	Illuminates when the unit is in the bypass state.
Signal	Illuminates when the unit is locked to a valid carrier.
Download	Illuminates when the unit has successfully received new firmware and is awaiting activation.

Using the Front Panel

The front panel LCD screen displays a series of menus that can be used to configure and control the system. The name of the current menu is always in the upper left corner of the screen for easy identification.

- Beneath every menu name are symbols representing key presses that are possible from the current cursor position in the menu. Note that the available keypad moves may change during the navigation between menu fields.



- The top row, to the right of the menu name, displays the name of each field available within that menu. These are called field labels and its setting is displayed directly below.
- Beneath each label is the current setting for each field.
- Some fields may be changed by the user and others are for display purposes only. Fields that can be changed have an arrow indicator (→) just to the left of the field label. During left/right navigation, the cursor skips over the labels that cannot be changed.

In addition to the menus on the LCD screen, the LED indicators show the unit's current status. The Signal LED is lit when the unit recognizes a valid carrier signal. A valid carrier signal can be RF input, ASI input, or GigE input. The Authorized LED is lit when the DigiCipher II signal LED is lit and either (1) the programmer has transmitted the access messages to allow the unit to decrypt the signal, or (2) the signal is unencrypted or fixed key.

If the IRD is in an alarm condition, the Alarm LED is lit. See "Alarm Menu" on page 33 for more details.

Navigating the Menus

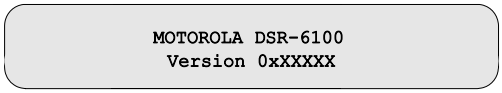
Even though the keypad options shown on the LCD screen may change for each menu and for each field, the control buttons basically do the same thing. The user may want to practice on a screen to become familiar with how the buttons work. Notice that:

- Pressing the ▲ ▼ buttons while the cursor is blinking next to the menu name (far left corner), causes the cursor to scroll to another menu.
- Pressing the ENTER button while the cursor is blinking next to the menu name (far left corner) causes the cursor to scroll to the Main, top-level menu.
- Pressing the ◀ ▶ buttons while in the top line of the menu causes the cursor to move between field labels (or the menu name and a field label). Pressing the ▶ button at the rightmost field label causes the cursor to wrap to the left side of the screen (to the menu name). Likewise, pressing the ◀ button when the cursor is at the menu name causes the cursor to wrap to the rightmost field label.
- When the cursor is blinking on a field label (top row), pressing the ENTER button causes the cursor to move below the label and enter into the field so the setting can be changed.
- When the cursor is below the label, the displayed directional controls in the left corner show what buttons can be pressed to change the setting in that field. When the ▲▼ symbol is left of the field, this indicates the ability to select from the available fields. Placing the blinking cursor on those arrows and using those arrow buttons will reveal each of the available choices for that field, one at a time. To store changes in a field and move back up to the label line, press the ENTER button.

How to Use the Menus

About Menu

The front-panel LCD displays the About menu when the DSR-6100 is initially plugged in or after a factory reset. This menu identifies the model (MOTOROLA DSR-6100) and the second line displays the DSR-6100's actual firmware version instead of 0xXXXXX, as shown below.



This menu is displayed for 10 seconds, then the front-panel LCD displays the Main menu.

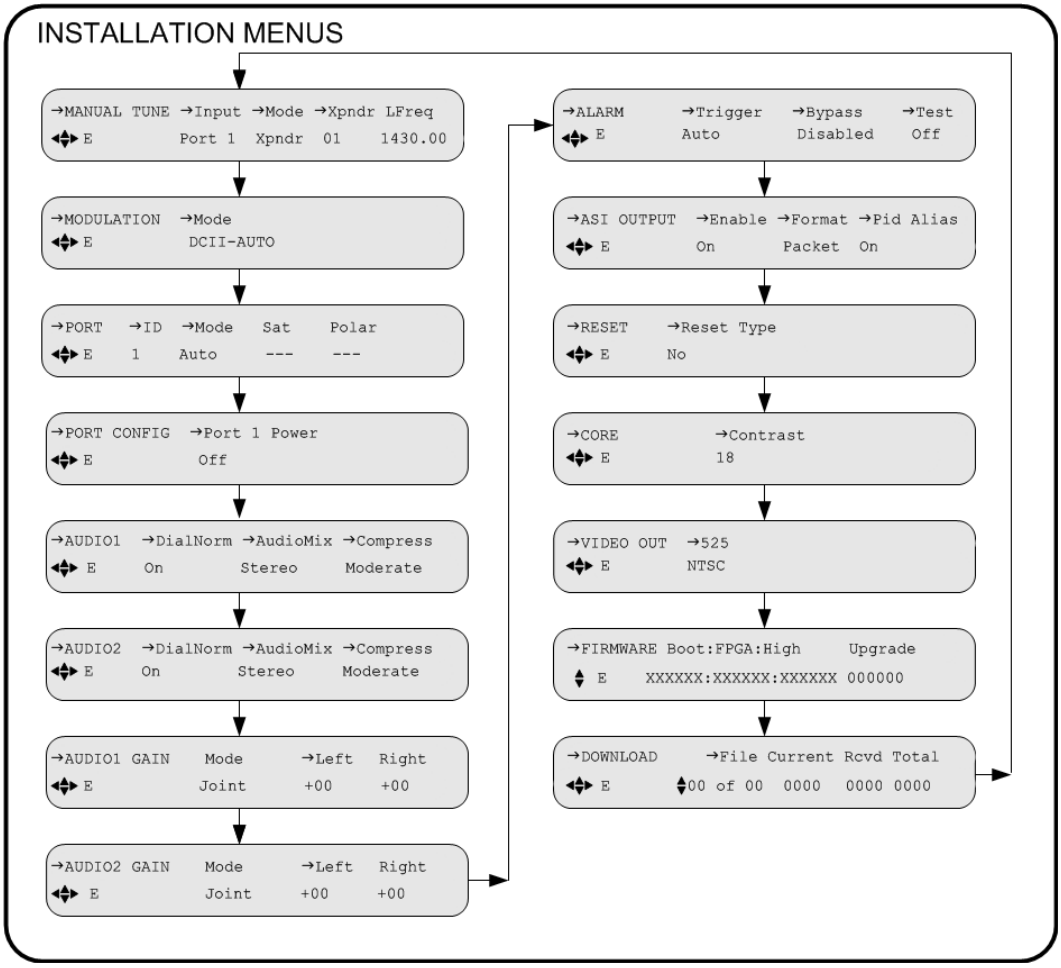
Main Menu

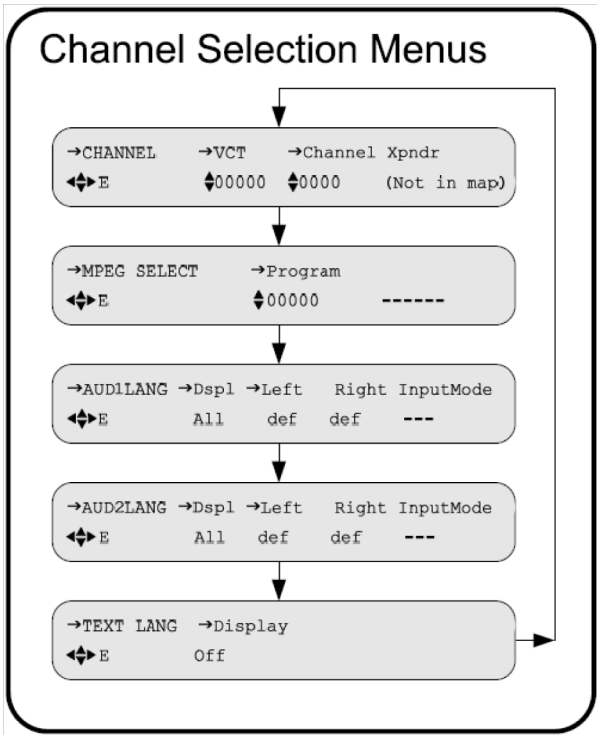
This menu is the top-level menu and can be navigated to from any other menu by pressing the ENTER button while the cursor is blinking next to the menu name. This menu allows the user to select any one of the five main menu groups: Installation menus, Channel menus, IP menus, Status menus, and Diagnostic menus.

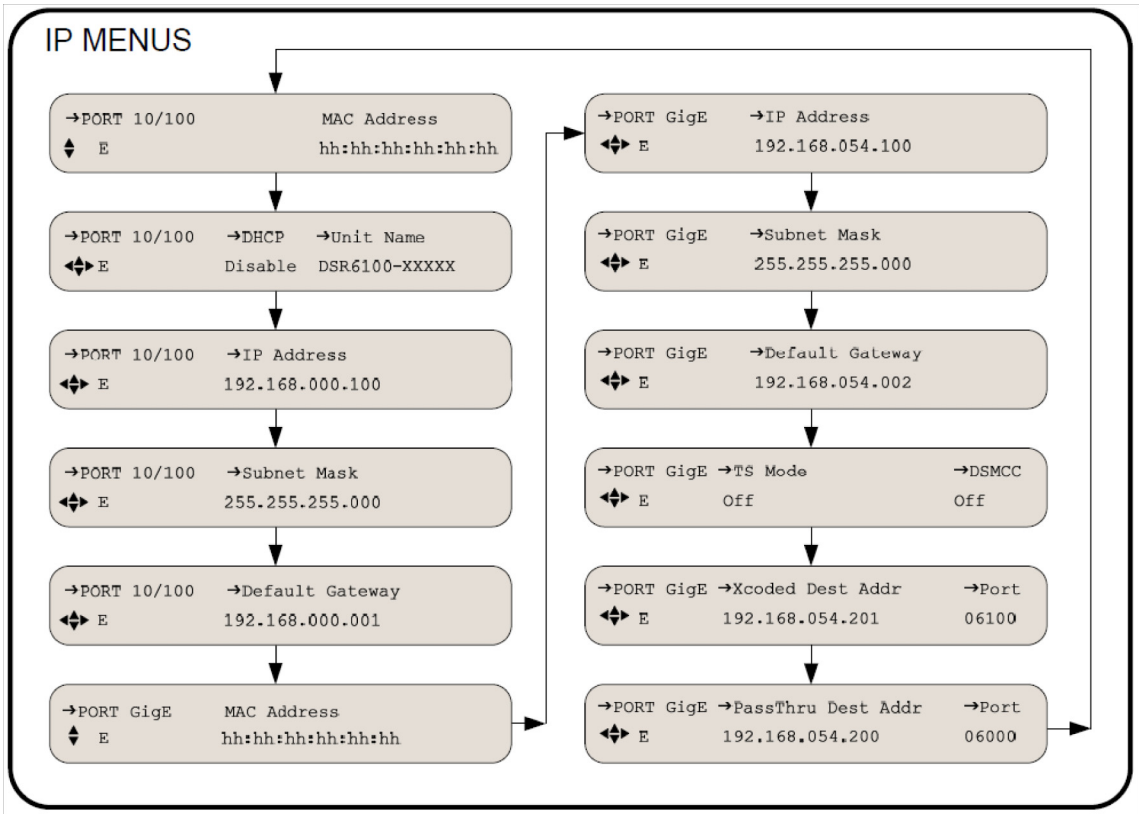
The DSR-6100 allows the user to scroll only to menus that are in the same group. To scroll to a menu that is in a different menu group, return to the main top-level menu and select the desired menu group.

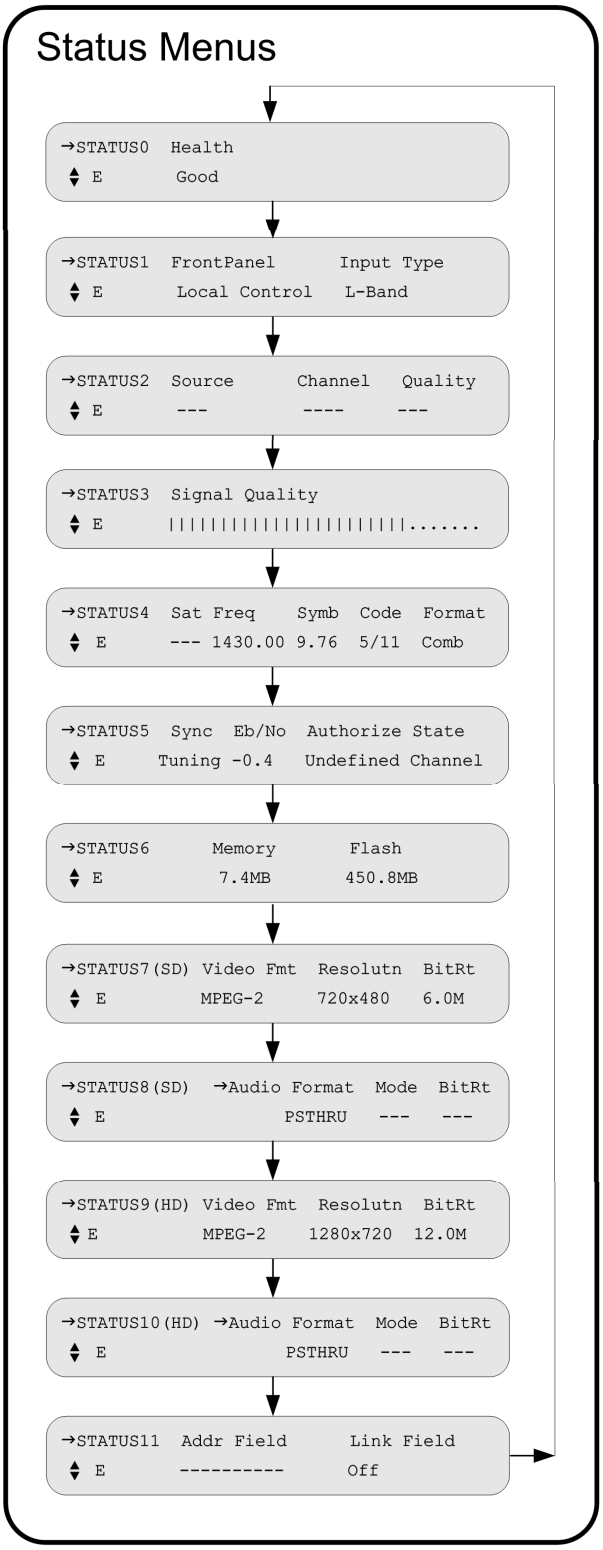
Overview of The LCD Panel Menu Tree

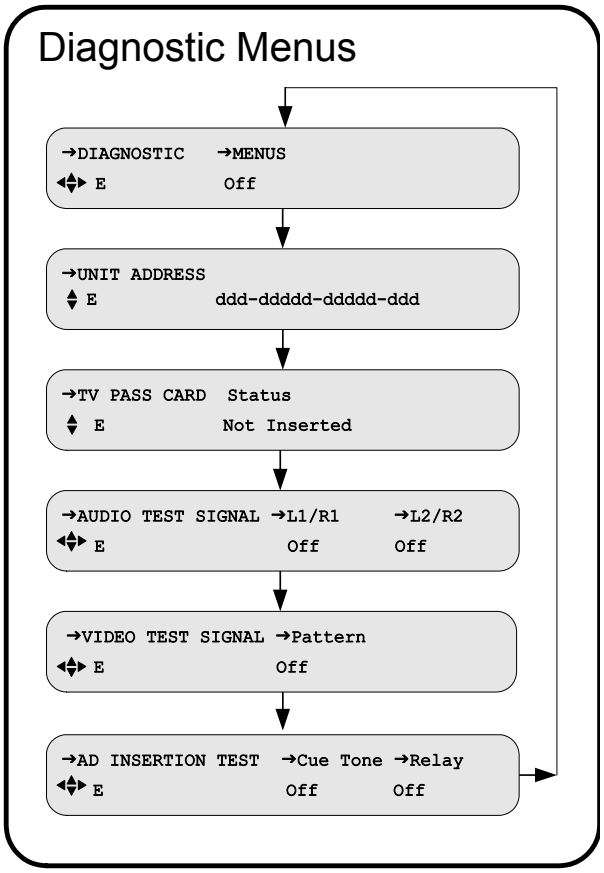
Pressing the ENTER button when the cursor is on a menu name causes the cursor to return to the main, top level menu. The charts on the following pages show the menus organized into five main groups: Installation menus, Channel selection menus, IP menus, Status menus, and Diagnostic menus.











Installation Menus

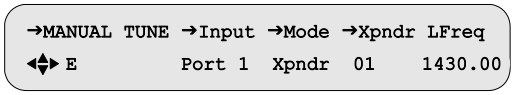
The purpose of the installation menus is to configure the ports and choose settings that remain fixed over time. This section describes in detail each of the Installation menus, fields, and options displayed on the LCD panel.

Return to the main top-level menu and then select the installation menu group.

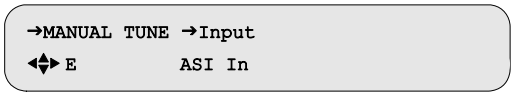
With the blinking cursor at the upper left, press ENTER button to return to the main top-level menu. Press the ◄ ► buttons until the cursor is at the Install label, and press the ENTER button. The DSR-6100 displays the previously selected sub-menu.

Manual Tune Menu

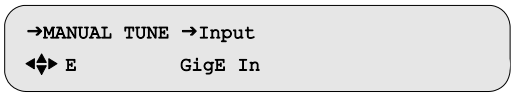
Use this menu to begin to acquire a DigiCipher II system signal, by selecting a transponder frequency for one of the eight L-Band inputs. In addition, this menu allows a user to select the ASI input or GigE input, as an alternative to RF ports 1 through 8.



To specify an RF input port, see "RF Usage" on page 24.



To specify the ASI In as the input port, see "ASI Usage" on page 23.

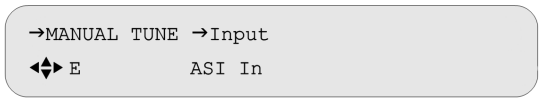


To specify the GigE In as the input port, see "GigE Usage" on page 23.

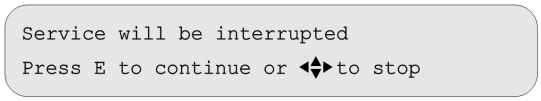
ASI Usage

Input Field

Use this section to specify the ASI input port. The Input field displays the active input. Press the ▶ button until the cursor is at the Input label and press the ENTER button. Press the ▲ ▼ buttons to scroll to ASI In. Press ENTER to confirm the selection and return to the top line of the menu.



The following screen prompts the user to confirm the selection and exit the field.



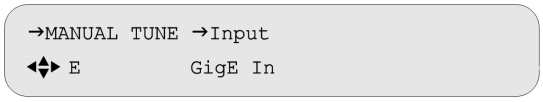
If you press any arrow button (◀ ▶ ▲ ▼) at this point, the Caution screen disappears and the MANUAL TUNE menu reappears without any changes. To set the port selection, press the ENTER button.

Skip to page 30 to set the remaining installation fields.

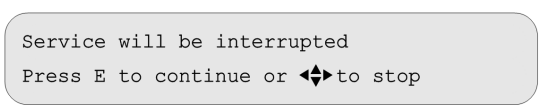
GigE Usage

Input Field

Use this section to specify the GigE input port. The Input field displays the active input. Press the ▶ button until the cursor is at the Input label and press the ENTER button. Press the ▲ ▼ buttons to scroll to GigE In. Press ENTER to confirm the selection and return to the top line of the menu.



The following screen prompts the user to confirm the selection and exit the field.



If you press any arrow button (◀ ▶ ▲ ▼) at this point, the Caution screen disappears and the MANUAL TUNE menu reappears without any changes. To set the port selection, press the ENTER button.

GigE Input IP Addr Field **Default: 239.001.001.001**

Use the following procedure to set and view the Input GigE IP address on the back panel of the DSR-6100. Press the ▲ ▼ buttons until the GigE Input IP Addr menu appears. Use this menu to enter an IP address for the Ethernet port. The address is represented in the common dotted-decimal format. Contact the network administrator for details about configuring the Ethernet port for operation on your local network.

Important: Do not configure the IP Address of the 10/100 and GigE to be on the same subnet.

Press the ▶ button until the cursor is at the IP Address label, and press the ENTER button to move into the field. Use the arrow buttons (◀ ▶ ▲ ▼) to enter the desired address and then press ENTER to confirm the selection and exit the field.

Skip to page 30 to set the remaining installation fields.

RF Usage

Use this section to select one of the eight RF input ports so that the DSR-6100 can acquire the DigiCipher II system signal and automatically download network data required for operation.

Because many satellite broadcasters use standard C-band transponder center frequencies, selecting a transponder number is the default tuning mode. Use the Xpndr option in the Mode field and edit the Xpndr (transponder) field (described on page 26), for tuning such signals.

For offset-frequency C-band, fractional transponders, or Ku-band satellite broadcasts, use the LFreq field in the Mode field (described on page 26), and directly edit the L-band frequency field.

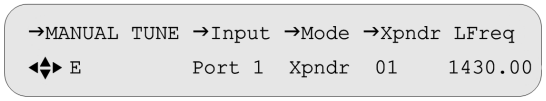
The DSR-6100 does not actually require any distinction between C-band and Ku-band satellite signals in order to tune and acquire a compatible signal. However, correct modulation information is necessary. For details on modulation, see "Modulation Menu" on page 27.

Input Field **Default: Port 1**

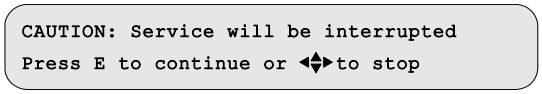
The Input field displays the active input. To select the input:

Press the ▶ button until the cursor is at the Input label and press the ENTER button.

Press the ▲ ▼ buttons to scroll to the input that is connected. Unless changed, the DSR-6100 displays Port 1. Press ENTER to confirm the selection and return to the top line of the menu. If Port 1 through Port 8 is selected, then use the arrow buttons (◀ ▶ ▲ ▼) to specify the other fields (Mode field, Xpndr field, and Lfreq field) as needed. These three fields are not visible when ASI In or GigE In is selected.



The following screen prompts the user to confirm the selection and exit the field.



If you press any arrow button (◀ ▶ ▲ ▼) at this point, the Caution screen disappears and the MANUAL TUNE menu reappears without any changes. To set the port selection, press the ENTER button.

Mode Field **Default: Xpndr**

The Mode field allows selection of the frequency plan type for the satellite signal to which the DSR-6100 is tuned. If the application is a North American C-band satellite center frequency, select the transponder number in the Xpndr field. Otherwise, set this field to LFreq and also set the new field (LFreq) as described below. The L Freq option can be used for current satellite LNB signals, including C-band and Ku-band.

Press the ▶ button until the cursor is on the Mode label. Then press the ENTER button to move into the field. There are two choices: Xpndr and L Freq. Press the ▲ ▼ buttons to display the desired choice. Then press the ENTER button to confirm the selection and exit the field.

If Xpndr is selected, choose a transponder in the Xpndr field. The frequency in the LFreq field is set automatically and cannot be edited.

If L Freq is selected, the Xpndr field no longer appears because the transponder/ frequency relationship is not known. Select a transponder frequency between 950 and 2150 MHz in the LFreq field. This field is not available when Input field is set to either ASI In or GigE In.

Xpndr Field

This field is not available when Input field is set to either ASI In or GigE In. This field is not available when the Mode field is set to LFreq.

This field allows selection of an initial satellite transponder number and can only be used if the Xpndr option in the Mode field is selected. The Xpndr field cannot be edited if L Freq in the Mode field is selected. Press the ▶ button until the cursor is at the Xpndr label. Then press the ENTER button to move into the field.

Then press the ▲ ▼ buttons to select the desired transponder number. Since the associated transponder/frequency tables are stored in the DSR-6100, scroll through the transponder numbers and notice that the associated frequency (shown in the LFreq field to the right) automatically changed with the selection (970-1430 MHz). There are 24 transponder options, and when the desired transponder selection is displayed, press the ENTER button to confirm selection and move the cursor back up to the field label.

LFreq Field

This field is not available when Input field is set to either ASI In or GigE In. If the Mode field is set to Xpndr, this field is set automatically and cannot be edited.

If the LFreq option in the Mode field is chosen, use this field, to directly tune the frequency. Press the ▶ button until the cursor is at the LFreq label. Then press the ENTER button to move into the field.

Use the arrow buttons (◀ ▶ ▲ ▼) to select the desired frequency. Select a frequency between 950 MHz and 2150 MHz and press the ENTER button to confirm the selection and move the cursor back up to the field label.

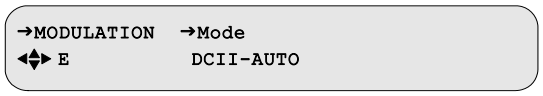
For those satellite carriers which are offset (C-band or Ku-Band), use the L Freq option to enter the exact center frequency of a carrier, rather than using a nearby-but-not-exact C-band transponder center frequency. Long-term frequency tracking is best if the user enters a precise carrier center frequency.

Contact the programmer or network operator for details about the satellite, transponder, and frequencies being used. If one frequency is identified as the root transponder, using this frequency may expedite the download process during installation.

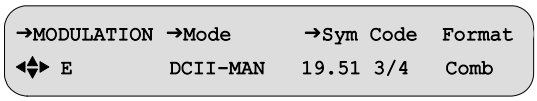
Modulation Menu

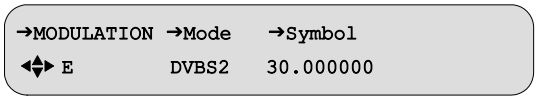
This menu is not available when the Manual Tune menu has the Input field set to ASI In or GigE In. That option is described on page 25.

This menu, together with the Manual Tune menu, allows the user to initially acquire a DigiCipher II signal. Press the ▲ ▼ buttons until the MODULATION menu appears. Press the ENTER button to continue.



When the DCII-MAN option is selected, the user must additionally specify a Symbol/Code/Format combination. When the Mode field is set to DVBS2, the user must additionally specify a Symbol Rate (Msps).





Note: DVB-MAN and 8PSK-TC are not supported and should not be used.

Mode Field **Default: DCII-AUTO**

Press the ▶ button until the cursor is at the Mode label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the options: DCII-AUTO, DCII-MAN, or DVBS2. Select a mode and press ENTER to exit the field.

Note: In order to receive a DVB-S2 modulated carrier, the DSR-6100 must be set to DVBS2 mode, and the correct Symbol Rate (Msps) must be entered in the Symbol field. In DCII-MAN mode, the correct Symbol Rate (Msps) must be entered in the Symbol field, Code field, and Format field. If DCII-AUTO is selected, the DSR-6100 searches through all available DC-II Symbol/Code/Format combinations to acquire a signal and then remains locked on that signal.

Symbol / Code / Format Fields **Default: 19.51 3/4 Comb**

This field is not available when the Mode field is set to DCII-AUTO. If the Mode field is set to DCII-MAN, press the ▶ button until the cursor is at the Symb label and press the ENTER button to move into the field. Use the ▲ ▼ buttons to scroll through the Symbol/Code/Format combinations. Select the combination provided by your programmer and press ENTER to confirm and exit the field.

If the Mode field is set to DVBS2, the Symbol field can be edited to any value up to 33.000000 by using the ▲ ▼ buttons.

Port Menu

Use this menu to configure RF In ports (Port 1 through Port 8). This menu is not available when the Manual Tune menu has the Input field set to ASI In or GigE In. That option is described on page 25.

Because the DSR-6100 has eight RF input ports that can potentially be used to switch and tune signals from multiple satellite antenna, the DSR-6100 demands there be an accurate association of the port with the Satellite and Polarity designators programmed in the Uplink encoder system(s) to which we plan to downlink from on each port.

Because accuracy is critical, a default Auto mode automatically updates the Sat (Satellite) and Polar (Polarity) fields for the one port that is currently being tuned. This automatic population of the fields occurs upon entry of acceptable channel information.

To ensure success in getting initial authorization, decryption, and output, leave this menu unchanged in Auto mode (as shown below).

→PORT	→ID	→Mode	Sat	Polar
◆ E	1	Auto	---	---

If the Uplink Signal Provider gives detailed instructions, set the Mode field to Manual and set the Sat (Satellite) field and Polar (Polarity) field. Any mismatch between what is entered into these fields and the Uplink encoder Satellite and Polarity designations for the services will prevent authorization decryption and service output. Satellite names and polarity designators for a given service do not necessarily reflect actual satellite names or even the correct polarity of the actual signal. These values are set within the provider's encoder system.

ID Field **Default: 1**

Use this field to choose which port to configure (1 through 8). Press the ▸ button until the cursor is at the ID field, press the ENTER button to move into the field, use the ▲ ▼ buttons to choose a port and press the ENTER button to confirm the selection and exit the field.

Mode Field **Default: Auto**

Use the Mode field to select the mode for port setup. Press the ▸ button until the cursor is at the Mode label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to choose the desired mode (either AUTO and MANUAL) and press the ENTER button to confirm the selection and exit the field.

Sat Field **Default: ---**

If the Mode field is set to Manual, use this field to select a satellite name for the designated port. This field is not editable when the Mode field is set to Auto.

Press the ▸ button until the cursor is at the Sat label. Press the ENTER button to move into the field. Use the ◂ ▸ buttons to select the character position to be changed. Then use the ▲ ▼ buttons to scroll through the character choices and press the ENTER button to confirm selection and exit the field.

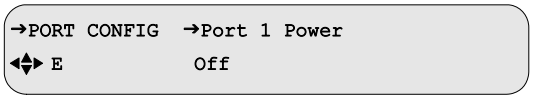
This field displays dashes (---) when the port is not related to a satellite.

Polar Field **Default: ---**

If the Mode field is set to Manual, use this field to select a polarity for the designated port. Press the ▸ button until the cursor is at the Polar label. Press the ENTER button to move into the field and press the ▲ ▼ buttons to display the options: H/LHP (Horizontal/Left-Hand Polarity) or V/RHP (Vertical/Right-Hand Polarity). Select a polarity and press ENTER button to confirm the selection and exit the field.

Port Config Menu

Use this menu to configure Low Noise Block (LNB) power for RF In Port 1. This menus is not available when Input field is set to either ASI In or GigE In

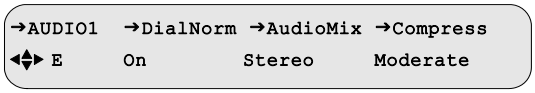


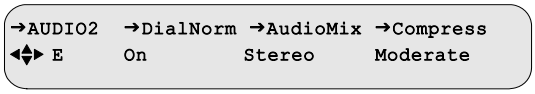
Port 1 Power Field **Default: OFF**

Use this field to direct power to the external Low Noise Block (LNB). Press the ▸ button until the cursor is at the Port 1 Power label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the options: OFF and ON. When the ON option is selected, the DSR-DSR-6100 supplies 16-22 VDC on the RF In Port 1 antenna input connector, as shown in Figure 2-2 on page 10.

Audio1 and Audio2 Menus

Use these menus to customize the audio output. Press the ▲ ▼ buttons until the Audio1 or Audio2 menu appears (shown below).





DialNorm Field — Default: On

The DialNorm field allows the user to normalize speech levels to a constant level over all channels—raising or lowering the volume of the dialogue to a level that is appropriate for the background sound track.

Press the ► button until the cursor is at the DialNorm label. Press the ENTER button to move into the field. There are two options, On and Off. Press the ▲ ▼ buttons to change the setting. Press ENTER to confirm the selection and exit the field.

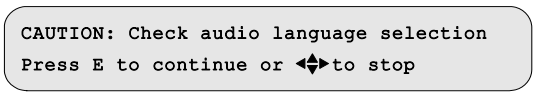
AudioMix Field — Default: Stereo

Note: If the audio input mode is stereo and you are connecting to a mono modulator, you must set this field to Mono.

This field allows selection of the audio processing options. Press the ► button until the cursor is at the AudioMix label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the options:

- Stereo — Stereo output on both left and right channel
- Surround — Enhanced stereo with surround pass-through
- Mono — Mono output on left channel
- Dual Mono — Mono output on both left and right channels

Caution: If Dual Mono is selected, a caution screen appears. If Dual Mono is selected and then changed to another option, the caution screen appears again.



This caution message denotes possible conflicts between this menu and the language selection menus that could mute the audio. By pressing the ENTER button (ignoring the caution), the DSR-6100 changes to Dual Mono, and uses the language previously selected for Mono (or Stereo) for both left and right channels.

To select a single language for Mono, Dual Mono, or Stereo output, see "AUD1LANG and AUD2LANG Menus" on page 44.

Compress Field **Default: Moderate**

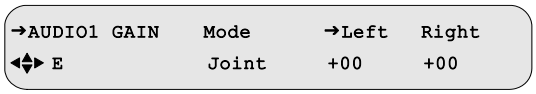
This field allows control of the degree of audio level compression. Press the ▶ button until the cursor is at the Compress label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the options:

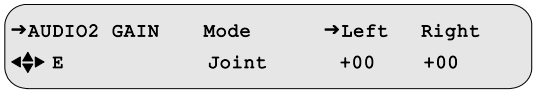
- Heavy — Reduces the louder audio signals and boosts the softer signals using tighter compression thresholds in order to eliminate dramatic fluctuations in the audio signal level and suppress dynamic range of the audio signal.
- Moderate — Provides some reduction and amplification of the audio signal, but the thresholds are wider apart, providing moderate dynamic range of the audio signal.
- Off — Compression is not used and provides full dynamic range of the audio signal.

Press the ENTER button to confirm the selection and exit the field.

Audio1 and Audio2 Gain Menus

These menus allow adjustment of the audio signal output level from +00 to -20 dB, in 1 dB increments. Press the ▲ ▼ buttons until the desired menu appears (either AUDIO1 GAIN or AUDIO2 GAIN).





The user may adjust the output levels of the left and right channels jointly. The output level of the right channel tracks the setting for the left channel when the output levels are adjusted jointly.

Mode Field **Default: Joint**

Note: The Mode field is not editable.

This field is associated with the Audio Gain port and is always set to Joint. This means, both channels are configured jointly using the Left field settings as the control for both audio channels.

Left and Right Fields **Default: +00**

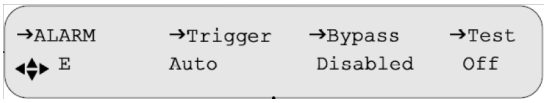
Note: The Right field is not editable.

The Left field allows adjustment of the output level of the Left and Right audio signals. Press the ▶ button until the cursor is at the Left label, and press the ENTER button to move into the field. Use the ▲ ▼ buttons to simultaneously adjust the output level for the Left and Right audio signals from +00 to -20 dB, in 1 dB increments.

Press the ENTER button to confirm the selections.

Alarm Menu

This menu allows the user to set up different bypass modes in case the DSR-6100 goes into an alarm condition. Press the ▼ button until the Alarm menu is located (shown below).



The alarm can be activated for any of the following conditions:

- The DSR-6100's tuner loses lock when the input is RF.
- The DSR-6100 cannot lock to the ASI input when the input is ASI.
- The DSR-6100 is unable to render video.
- The DSR-6100 is not authorized to access the selected service.
- The DSR-6100 loses power.
- The DSR-6100 GigE Port Link state is inactive when the Input field (described on page 25) is set to GigE In.

Trigger Field — Default: Auto

The Trigger field allows the user to select the trigger condition to activate an alarm on the IRD. When the alarm is activated, the Alarm LED illuminates and the alarm relay indicates an alarm condition.

Press the ▶ button until the cursor is at the Trigger label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the five options:

- Disabled — Disables any trigger for an IRD alarm.
- Auto — Enables all triggers for an IRD alarm.
- No Signal — Alarm is triggered when the IRD loses the incoming signal.
- No Video — Alarm is triggered when the IRD loses video input.
- No Auth (Authorization) — Alarm is triggered when the IRD is not authorized to access a selected service.

Press the ENTER button to select the option shown and exit the field.

Bypass Field **Default: Disabled**

Press the ▸ button until the cursor is at the Bypass label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the options:

- Bypassed — The Bypass mode is activated and the DSR-6100 loops through the auxiliary video and audio inputs regardless of DigiCipher II system service authorization status. The Bypass LED on the front panel is always lit when the DSR-6100 is in the bypass state.
- Disabled — The DSR-6100 ignores the auxiliary inputs for video and audio and attempts to output the satellite data, regardless of authorization status.
- Alarm — The DSR-6100 automatically switches to the bypassed state if it enters the alarm condition. At such time, the Aux Video and Audio inputs are routed to the IRD output, and the front panel Bypass LED is lit. When the DSR-6100 exits the alarm condition, the unit switches back to satellite video and audio.

Press the ENTER button to select the option shown and exit the field.

Test Field **Default: Off**

Note: The Test field returns to the default value (Off) when the field is exited.

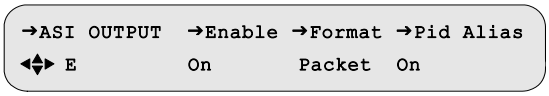
The Test field provides an IRD alarm test when this field is set to On. Press the ▲ ▼ buttons to display the two options: Off or On.

Caution: Selecting the alarm test function with the Bypass Field set to Alarm causes the satellite Video and Audio to be bypassed. This may result in a service outage when the analog video and audio outputs to the cable plant.

Press the ENTER button to select the option shown and exit the field.

ASI Output Menu

Press the ▲ ▼ buttons until the ASI Output menu appears. Use this menu to configure the digital ASI output. It is used to define the format of the ASI output and to enable PID aliasing.



Note: The DSR-6100 provides two ASI outputs:

ASI#1: *The DSR-6100 has the ability to output an MPEG-4 transport multiplex stream at a data rate of either 54 Mbps or 81 Mbps, depending on whether PID aliasing is enabled or not. When PID aliasing is enabled, the DSR-6100 outputs an MPEG-4 transport stream that contains only one MPEG program and at a data rate of 54 Mbps; that program is identified as MPEG Program #1 and the PIDs for the constituent components are remapped to a consistent set, as described in Tables 3-1 and 3-2 on page 36. This MPEG program corresponds to the program content that is available at the analog video and audio outputs (the monitored program). Otherwise, when PID aliasing is disabled, the DSR-6100 outputs an MPEG transport stream at a data rate of 81 Mbps, which contains all of the MPEG programs that the DSR-6100 receives from the uplink.*

ASI#2: *The DSR-6100 also has the ability to convert the incoming MPEG-4 program to both an MPEG-2 HD (High Definition) Program and a MEPG-2 SD (Standard Definition) Program. Both the HD and the SD programs are carried in the same transport stream and at a data rate of 54 Mbps. The SD program is identified as MPEG program #1 and the HD Program is identified as MPEG Program #2. The PIDs are identified in Tables 3-1 and 3-2 on page 36.*

Table 3-1: DSR-6100 Transport Stream Outputs

Unit Configuration			Outputs (Additional PID assignments are designated in Table 3-2)			
Phase	**Input**	**PID Aliasing**	**ASI 1**	**ASI 2**	**GigE Pass Through**	**GigE Transcoded**
1	MPEG-2	Off	(Same as input)	(Same as input)	(Same as input)	(N/A)
1	MPEG-2	On	Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	(N/A)
2	MPEG-2	Off	(Same as input)	(Same as input)	(Same as input)	(N/A)
2	MPEG-2	On	Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	(N/A)
2	MPEG-4	Off	(Same as input)	SD Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	(Same as input)	SD Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021
			(Same as input)	HD Program 2 Video PID: 0801 Audio #1 PID: 0802 Audio #2 PID: 0803	(Same as input)	HD Program 2 Video PID: 0801 Audio #1 PID: 0802 Audio #2 PID: 0803
2	MPEG-4	On	Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	SD Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	SD Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021
			Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	HD Program 2 Video PID: 0801 Audio #1 PID: 0802 Audio #2 PID: 0803	Program 1 Video PID: 1E00 Audio #1 PID: 1020 Audio #2 PID: 1021	HD Program 2 Video PID: 0801 Audio #1 PID: 0802 Audio #2 PID: 0803

Table 3-2: Additional DSR-6100 Output PIDs

Component	Program 1 PIDs	Program 2 PIDs	Notes
PAT	0x0000	0x0000	(N/A)
Network	0x1A00	0x1A00	(N/A)
PMT	0x1C00	0x0800	(N/A)
Video	0x1E00	0x0801	(N/A)
Audio	0x1020+I	0x0802+i	(N/A)
DPI	0x10C0+i	0x0815+i	(N/A)
DSMCC	0x01A0+i	0x081C+i	ASI#1 has no Program 2. For ASI #2, DSMCC data is not included in Program 1 or Program 2.
Subtitles	0x1040+i	(See Note)	Subtitles are not supported by the DSR-6100. However, if they are carried in the input, the DSR-6100 will pass through subtitles in Program 2 using the PIDs from the unanticipated component PID pool (described below).
ISOC data	0x1840	(See Note)	ASI#1 has no Program 2. For ASI #2, ISOC data is not included in Program 1 or Program 2.
ASYNC data	0x1860	(See Note)	ASI#1 has no Program 2. For ASI #2, ASYNC data is not included in Program 1 or Program 2.
Others	0x1025 to 0x103F	0x0825 to 0x083F	Other component types that are unanticipated (i.e., unknown at this time) are aliased to a PID value from the specified pool that is reserved for unanticipated components. EBIF is considered deemed unanticipated because no generally-accepted component type has been allocated for EBIF components.

Enable Field **Default: On**

Note: The ASI output can be disabled by control information from the Uplink Programmer (Broadcast Network Controller [BNC]).

When ASI output is disabled by the BNC, this field is not editable and displays Lock Off. Otherwise, if the BNC enables the ASI output, this field is editable with the default value (On). Press the ▲ ▼ buttons to display the options (On and Off).

Format Field **Default: Packet**

When PID Alias is set to On, use this field to specify the transport stream packet structure either as a burst of contiguous bytes (Packet), or as individual bytes (Byte).

Pid Alias Field **Default: On**

When this field is set On, the DSR-6100 remaps all PIDs to a constantly-set of values and incorporates the remapped value in the output transport stream. When the Uplink Programmer enforces PID aliasing, the PID Alias field displays Lock On and becomes uneditable.

Reset Menu

Press the ▲ ▼ buttons until the Reset menu appears. Use this menu to execute factory defaults and perform power cycle resets.

```
→RESET    →Reset Type
◀✥▶ E     No
```

Reset Type Field **Default: No**

Press the ▶ button until the cursor is at the Reset Type label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the options: No, Factory Defaults, or Power Cycle.

Factory Defaults Option

Use the Factory Defaults option to reset the system to the programming values originally set by the factory firmware.

CAUTION: Selecting this reset option deletes all defined setups and downloaded information. This operation interrupts service output, so use it carefully.

Press the ENTER button. The following caution message appears and indicates that all programming will be lost if the action proceeds.

```
CAUTION: IRD memory will be reset
Press E to continue or ◀✥▶to stop
```

Press any arrow button (◄ ► ▲ ▼) to back out of the field and leave it unchanged. Otherwise, press the ENTER button to proceed. The following message displays.

```
Factory Default reset in progress..
```

Power Cycle Option

The Power Cycle option reboots the DSR-6100 without losing internal user setup information or downloaded network information. Pressing the ENTER button causes the following caution message to appear.

```
CAUTION: Reset will interrupt service
Press E to continue or ◄▲▼►to stop
```

Press any arrow button (◄ ► ▲ ▼) to back out of the field and leave it unchanged, or press the ENTER button to proceed. The following message displays:

```
Power Cycle reset in progress. . .
Press E to continue or ◄▲▼►to stop
```

Core Menu

Press the ▲ ▼ buttons until the Core menu appears. Use this menu to change the front panel LCD contrast.

```
→CORE          →Contrast
◄▲▼► E         18
```

Contrast Field Default: 18

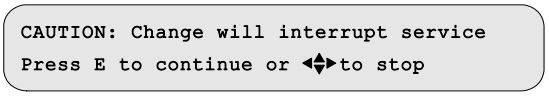
To adjust the LCD contrast, press the ► button until the cursor is at the Contrast label, and press the ENTER button to move into the field. Use the arrow buttons (▲ ▼) to select a value between 0 and 30, with 0 representing the least contrast and 30 the most. Adjust the contrast so that the LCD panel can be read clearly. Press the ENTER button to confirm the selection and exit the field.

Video Out Menu

Press the ▲ ▼ buttons until the VIDEO OUT menu appears. Use this menu to modify the video output format. When the input to the uplink encoder is 525-line, the field here selects the unit output, either NTSC or PAL-M.

525 Field **Default: NTSC**

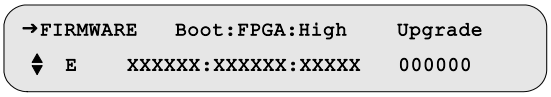
Press the ▶ button until the cursor is at the 525 label, and press the ENTER button to move into the field. This field allows selection of the output format for 525-line video as either NTSC or PAL-M. Use the ▲ ▼ buttons to specify the desired option and press the ENTER button to confirm the selection. Pressing the ENTER button causes the following caution message to appear.



Press any arrow button (◀ ▶ ▲ ▼) to back out of the field and leave it unchanged, or press the ENTER button to proceed.

Firmware Menu

Press the ▲ ▼ buttons until the Firmware menu appears. This menu displays the DSR-6100's firmware release information, which is equivalent to the product version number. This menu cannot be changed, but since the firmware is periodically updated, this menu confirms that the update was successful. This menu is used most commonly in troubleshooting. The High version value (shown below) is the current firmware version.



Boot:FPGA:High Field

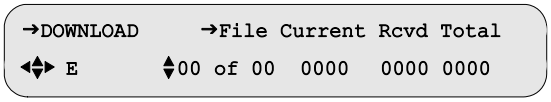
This field displays the version of boot, FPGA, and the high code. The boot code is loaded at the factory. The FPGA and high codes may be upgraded to later versions by a download that is delivered over the satellite signal from either the L-band or ASI input. The code versions are represented by a six-digit hexadecimal number. This field is non-editable.

Upgrade Field

The Upgrade field displays the version of the upgrade code that is available. This field displays 000000 when no upgrade code is available. Available upgrades are installed the next time the DSR-6100 is rebooted. This field is non-editable.

Download Menu

Press the ▲ ▼ buttons until the DOWNLOAD menu appears. Use this menu to monitor the status of the current code download. This menu is used most commonly in troubleshooting.



During a background code download, the DSR-6100 collects the upgrade code in the background while concurrently decoding video and audio services. This menu may be selected anytime before, during, and after a background code download.

File Field

The File field consists of two sub-fields. The first sub-field is editable and selects, by index, a download file for monitoring. The second sub-field is non-editable and indicates the total number of files that have been downloaded and/or are available to be downloaded.

Current Field

This non-editable field pertains to the file selected in the File field and indicates the ID for the current segment received by the DSR-6100 during the download of the file.

Rcvd Field

This non-editable field indicates the number of segments that the DSR-6100 has received for the file selected in the File field.

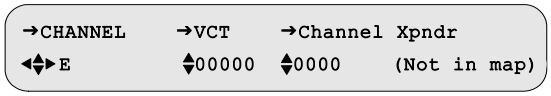
Total Field

This non-editable field displays the ID for the last segment of the file selected in the File field.

Channel Menus

Channel Menu

Press the ▲ ▼ buttons until the Channel menu appears. Use this menu to select an active VCT, select the Virtual Channel, and view the name of the current transponder.



VCT Field

Use this field to select a Virtual Channel Table (VCT) number. Contact the program provider for the correct VCT number to enter for that encoder system. Press the ► button until the cursor is at the VCT label, and press the ENTER button to move into the field. While ensuring that the cursor remains on the up/down symbol (▲▼), press the ▲ ▼ buttons to scroll throughout the available VCTs. (If the network has four VCTs, then only four VCTs appear in this field.) Press the ENTER button to confirm the selection and exit the field.

This field also provides a second method for selecting the VCT. To do this, use the ◄ ► buttons to select the digit to change and then, while the cursor is on that digit, press the ▲ ▼ buttons to display the required value. Repeat this process for each applicable digit. Press the ENTER button to confirm the selection and exit the field.

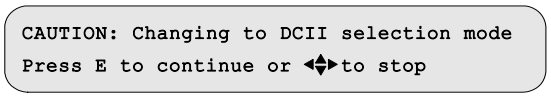
Channel Field

Use the Channel field to select the Virtual Channel for the output service. The DSR-6100 supports channel values from 0000 to 4095. Press the ► button until the cursor is at the Channel label, and press the ENTER button to move into the field. While ensuring that the cursor remains on the up/down symbol (▲▼), press the ▲ ▼ buttons to scroll through the available Virtual Channels. (If the chosen VCT contains twenty-four Virtual Channels, then only twenty-four Virtual Channels appear in this field.) Press the ENTER button to confirm the selection and exit the field.

This field also provides a second method for selecting the Virtual Channel. To do this, use the ◄ ► buttons to select the digit to change and then, while the cursor is on that digit, press the ▲ ▼ buttons to display the required value. Repeat this process for each applicable digit. Press the ENTER button to confirm the selection and exit the field.

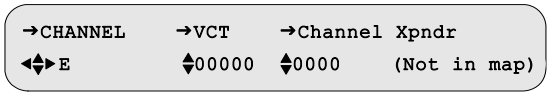
The DSR-6100 displays caution messages for the following conditions:

- A caution message is displayed when changing from an MPEG program number selection to a Virtual Channel.

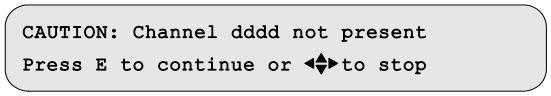


  Press any arrow button (◄ ► ▲ ▼) to back out of the field and leave it unchanged. Otherwise, press the ENTER button to proceed.

- If a Virtual Channel is selected that is not in the chosen VCT, then a warning message, “Not in map” is displayed to the right of the Virtual Channel.



- Virtual Channels identify satellite and polarity attributes. The RF input ports are set up with satellite and polarity attributes. For more details, see "Port Menu" on page 28. The DSR-6100 uses these satellite and polarity attributes to determine which RF port to use. However, if a Virtual Channel is selected that does not match the satellite and polarity attributes of either port, then the DSR-6100 is unable to determine which port to use and the following caution message is displayed.



Press any arrow button (◄ ► ▲ ▼) to back out of the field and leave it unchanged. Otherwise, press the ENTER button to proceed.

Note: The DSR-6100 cannot decode the chosen Virtual Channel until a port is set up with the applicable satellite and polarity information.

Xpndr Field

This non-editable field displays the current (Xpndr) transponder name (alpha/numeric) that is downloaded. If a Virtual Channel is selected that is not in the chosen VCT, then a warning message, (Not in map) is displayed to the right of the Virtual Channel. This field serves as a label or identifier for the signal source. For more details, see "Port Menu" on page 28.

MPEG SELECT Menu

Use this menu to select which service is displayed at the video and audio outputs by specifying the MPEG program number. Press the ▲ ▼ buttons until the MPEG SELECT menu appears. The MPEG program number can be used instead of a Virtual Channel, but only if the DSR-6100 is already tuned to the appropriate L-band or ASI input signal.

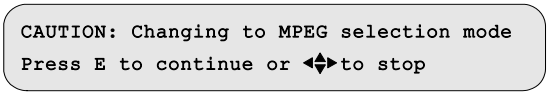
Program Field **Default: 00000**

Press the ▶ button until the cursor is at the Program label, and press the ENTER button to move into the field. While ensuring that the cursor remains on the up/down symbol (◆), press the ▲ ▼ buttons to scroll throughout the available MPEG programs. (If the current L-band or ASI input signal contains four MPEG programs, then only four MPEG programs appear in this field.) Press the ENTER button to confirm the selection and exit the field.

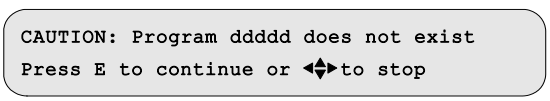
This field also provides a second method for selecting the MPEG program. Use the ◀ ▶ buttons to select the digit to change and then, while the cursor is on that digit, press the ▲ ▼ buttons to display the required value. Repeat this process for each applicable digit. Press the ENTER button to confirm the selection and exit the field.

The DSR-6100 displays caution messages for the following conditions:

- A caution message is displayed when changing from a Virtual Channel to a MPEG program number. Press any arrow button (◀ ▶ ▲ ▼) to back out of the field and leave it unchanged. Otherwise, press the ENTER button to proceed.



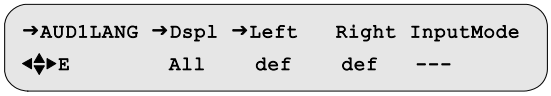
- A caution message displays when an MPEG program number is selected which does not exist.

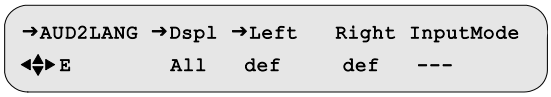


Press any arrow button (◀ ▶ ▲ ▼) to back out of the field and leave it unchanged. Otherwise, press the ENTER button to proceed.

AUD1LANG and AUD2LANG Menus

These menus (Audio1 and Audio2 Language) have three fields to modify and view the status of the language for the Audio1 and Audio2 outputs. Also, use this menu to view the mode of the audio signal as it is received from the programmer and before any subsequent down mixing that the DSR-6100 may perform. Press the ▲ ▼ buttons until the desired menu appears (either AUD1LANG or AUD2LANG).





Note: If the Left and Right field have a language followed by a two-digit value (00 to 99), this indicates the specified language, followed by the dialect. For example, use Eng13 for the 13th version of English. Use this feature for languages with multiple dialects.

Dspl Field **Default: All**

Press the ▶ button until the cursor is at the Dspl (Display) label, and press the ENTER button to move into the field. Select the option that applies to the Left and Right. There are three options: All, Avail, and Status. Press the ▲ ▼ buttons to specify the desired option.

- All — Use the arrow button (◀ ▶ ▲ ▼) to enter the three-letter code in the Left field. It may be necessary to select languages that are not functional at this time, but will be functional in the future. Press the ENTER button to confirm the selection and exit the field.
- Avail — Use the Available option to scroll through the languages supported by the system while the cursor is in the Left and Right fields. Furthermore, use this option to scroll through only the languages available for the active service. (If the active service has only three languages, as listed for the Virtual Channel or program, only three appear. If the user changes the service, the number of languages may also change.) Press the ENTER button to confirm the selection and exit the field.
- Status — Use the Status option to view the actual audio language. The actual language can differ from the chosen language. This may occur when the user's choice for language is unavailable. The bullets in the next topic describe the rules that govern which language is used.

Left and Right Fields

Press the ▸ button until the cursor is at the Left label, and press the ENTER button to move into the field. If the Dspl field is set to All and the AudioMix field (described on page page 30) is set to Dual Mono, then Left and Right will have separately editable fields. Otherwise, they are controlled together as a pair from the Left field alone.

Also use these fields to set the language through the following three options:

Any language, if the language is set to All.

The currently available languages, if the Dspl is set to Avail.

def (default), if the Dspl field is set to either All or Avail. Press the ▲ ▼ buttons to specify the desired option. Press the ENTER button to confirm the selection and exit the field.

The following bullets describe the rules that govern which language is used:

- If def (default) is selected, the Audio 1 and Audio 2 outputs default to the first and second language, respectively, that is listed for the service. It is suggested that programmers run their language listing so that this default is the language that matches the audio.
- If the AudioMix field (described on page 30) is set to Surround, Stereo, or Mono and the user's choice for language is not available, the audio output is the default language.
- If the AudioMix field (described on page 30) is set to Dual Mono and a language pair is not available that matches the user's choice for Left and Right languages, the DSR-6100 selects and outputs the first occurrence of the Left language choice. The system cannot take a Left from one audio pair and a Right from another. If there is no match for the Left language choice, the DSR-6100 uses the default language.
- There is an interaction between the Language (Lang) menu and the AudioMix field (described on page 30): If the user had previously selected Stereo or Mono in the AudioMix field and a specific language as the audio output in the Lang menu, but later changes the AudioMix menu setting to Dual Mono, the Dual Mono changes in this menu to the same language specified for both Dual Mono channels and a caution screen displays. After changing the AudioMix menu to Dual Mono, reselect the languages desired here, in this menu.
- If the user previously selected Dual Mono in the AudioMix field with two different languages as audio outputs in the Language menu, but later selects Stereo, Stereo Surround, or Mono in the AudioMix field, the output in this Language menu defaults to the first occurrence of a specified language (the one defined for the Left channel first, then for Right channel if there is no match for the Left). In this case, the same caution screen appears.

InputMode Field

This read-only field indicates the incoming audio mode of the active service.

Text Lang Menu

This Text Language menu has the Display field and is used to modify and view the status of the language of the video subtitles. Press the ▲ ▼ buttons until the Text Lang (Text Language) menu appears.

Display Field **Default: Off**

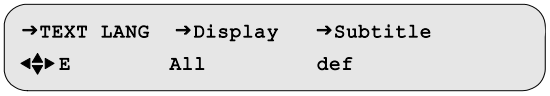
Press the ▶ button until the cursor is at the Display label and press the ENTER button to move into the field.

This field has the following options:

- Off This option disables subtitles. Press the ENTER button to confirm the selection and exit the field.
- Status Use this option to view the actual text language. The actual language can differ from the chosen language when the user's choice for language is unavailable. The bullets on page 45 describe the rules that govern which language is used. Press the ENTER button to confirm the selection and exit the field.
- Avail Use the Available option to scroll through the languages supported by the system while the cursor is in the field. Furthermore, selection of this option allows you to scroll through only the languages available for the active service. (If the active service has only three languages, as listed for the Virtual Channel or program, only three appear. If the user changes the service, the number of languages may also change.) Press the ENTER button to confirm the selection and exit the field.
- All Use this option to enter the desired subtitle language in the Subtitle field which may or may not be present in that service. You may wish to select languages that are not functional at this time, but will be functional in the future. Press the ENTER button to confirm the selection and exit the field.

Subtitle Field **Default: def**

Press the ▶ button until the cursor is at the Subtitle label, and press the ENTER button to move into the field.



Use one of the following options to set the language:

- If the Display is set to All, use the Subtitle field to specify any language. Use the arrow button (◀ ▶ ▲ ▼) to enter the three-letter code.
- If the Display is set to Avail, the Subtitle field will list the currently available languages.

Press the ▲ ▼ buttons to specify the desired option. Press the ENTER button to confirm the selection and exit the field.

Note: If the Display field is set to Status, use the read-only Subtitle field to view the current language.

IP Menus

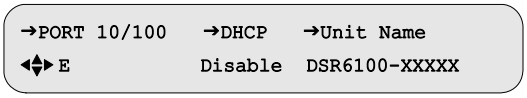
Use the IP menus to configure the 10/100 and GigE ports.

10/100 MAC Address Menu

Use the following procedure to view the 10/100 MAC address for the left Ethernet port on the back panel of the DSR-6100. Press the ▲ ▼ buttons until the 10/100 MAC Address menu appears. This menu displays the Ethernet port's MAC address. The address is represented in a hexadecimal format and it is not editable.

10/100 DHCP Menu

Press the ▲ ▼ buttons until the Port 10/100 DHCP menu appears. The front panel screen displays the DHCP and Unit Name fields. DHCP (Dynamic Host Configuration Protocol) allows the Satellite Multiplex Decrypter to obtain a set of IP parameters from a DHCP server. The DHCP server ensures that all these IP addresses are unique. This automates and facilitates the Satellite Multiplex Decrypter's access to the network. The management of the IP address pool, in this case, is handled by the server, and not by a human administrator.



DHCP Field **Default: Disable**

Move into the field and choose either Enable or Disable.

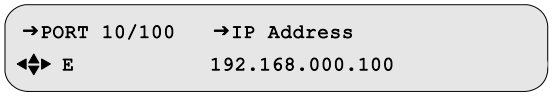
Unit Name Field **Default: DSR6100-XXXXX**

The Unit Name is fully editable. It is placed into the outgoing DHCP request and is used for registration. The Unit Name, in most cases, is only a suggestion to the DHCP server and may be updated with a different name upon receiving the DHCP registration reply. If an updated name is received from a DHCP server, the Unit Name will be adjusted to show this change and will replace the user-entered name. The default name is DSR6100-XXXXX. The XXXXX is the DSR-6100's IP address in decimal.

10/100 IP Address Menu

Default: 192.168.000.100

Use the following procedure to set and view the IP address for the left Ethernet port on the back panel of the DSR-6100. Press the ▲ ▼ buttons until the IP Address menu appears. Use this menu to enter an IP address for the Ethernet port. The address is represented in the common dotted-decimal format. Contact the network administrator for details about configuring the Ethernet port for operation on your local network.



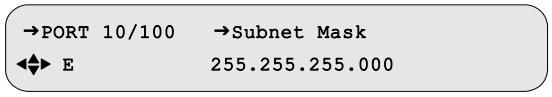
Important: Do not configure the IP Address of the 10/100 and GigE to be on the same subnet.

Press the ▶ button until the cursor is at the IP Address label, and press the ENTER button to move into the field. Use the arrow buttons (◀ ▶ ▲ ▼) to enter the desired address and then press ENTER to confirm the selection and exit the field.

10/100 Subnet Mask Menu

Default: 255.255.255.000

Use the following procedure to set and view the Subnet Mask address for the left Ethernet port on the back panel of the DSR-6100. Press the ▲ ▼ buttons until the Subnet Mask menu appears. The subnet mask is represented in the common dotted-decimal format. Contact the network administrator for details about configuring the Ethernet port for operation on your local network.

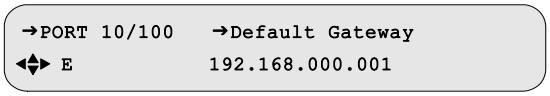


Press the ▶ button until the cursor is at the Subnet Mask label, and press the ENTER button to move into the field. Use the arrow button (◀ ▶ ▲ ▼) to enter the desired address and then press the ENTER button to confirm the selection and exit the field.

10/100 Default Gateway Menu

Default: 192.168.000.001

Use the following procedure to set and view the Default Gateway address for the left (10/100) Ethernet port on the back panel. Press the ▲ ▼ buttons until the 10/100 Default Gateway menu appears. The IP Gateway is an address that is represented in the common dotted-decimal format. Contact the network administrator for details about configuring the Ethernet port for operation on your local network.

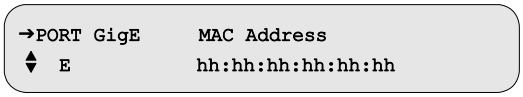


Press the ▶ button until the cursor is at the 10/100 Default Gateway label, and press the ENTER button to move into the field. Use the arrow buttons (◀ ▶ ▲ ▼) to enter the desired gateway address and press the ENTER button to confirm the selection and exit the field.

Port GigE MAC Address Menu

Default: hh:hh:hh:hh:hh:hh

To view the GigE MAC address for the right Ethernet port on the back panel, press the ▲ ▼ buttons until the Port GigE menu appears. The address is represented in a hexadecimal format and it is not editable.



GigE IP Address Menu

Default: 192.168.054.100

Use the following procedure to set and view the GigE IP address for the right Ethernet port on the back panel of the DSR-6100. Press the ▲ ▼ buttons until the GigE IP Address menu appears. The address is represented in the common dotted-decimal format. Contact the network administrator for details about configuring the GigE port for operation on your local network.

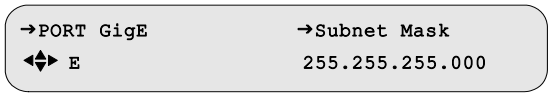
Important: Do not configure the IP Address of the 10/100 and GigE to be on the same subnet.

Press the ▶ button until the cursor is at the IP Address label, and press the ENTER button to move into the field. Use the arrow buttons (◀ ▶ ▲ ▼) to enter the desired address and then press the ENTER button to confirm the selection and exit the field.

GigE Subnet Mask Menu

Default: 255.255.255.000

Use the following procedure to set and view the GigE Subnet Mask for the right Ethernet port on the back panel of the DSR-6100. Press the ▲ ▼ buttons until the GigE Subnet Mask menu appears. The GigE subnet mask is represented in the common dotted-decimal format. Contact the network administrator for details about configuring the GigE port for operation on your local network.

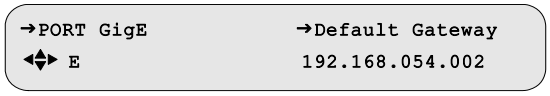


Press the ▶ button until the cursor is at the Subnet Mask label, and press the ENTER button to move into the field. Use the arrow button (◀ ▶ ▲ ▼) to enter the desired address and then press the ENTER button to confirm the selection and exit the field.

GigE Default Gateway Menu

Default: 192.168.054.002

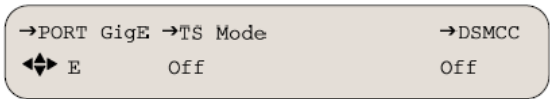
Use the following procedure to set and view the GigE Default Gateway address for the right Ethernet port on the back panel of the DSR-6100. Press the ▲ ▼ buttons until the GigE Default Gateway Address menu appears. The GigE Default Gateway is an address that is represented in the common dotted-decimal format. Contact the network administrator for details about configuring the GigE port for operation on your local network.



Press the ▶ button until the cursor is at the GigE Default Gateway label, and press the ENTER button to move into the field. Use the arrow buttons (◀ ▶ ▲ ▼) to enter the desired address and then press the ENTER button to confirm the selection and exit the field.

GigE TS Mode Menu

Press the ▲ ▼ buttons until the Port GigE TS Mode menu appears. Use this menu to select which transport stream is routed to the GigE port and whether the DSMCC data is also routed to the GigE port.



TS Mode Field **Default: Off**

Press the ▶ button until the cursor is at the TS Mode label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to choose one of the four options: Off, Transcoded, Passthru, or Transcoded+Passthru. When the Passthru or Transcoded+Passthru is selected, a copy of the ASI #1 transport stream is routed to the GigE port. When the Transcoded or Transcoded+Passthru is selected, a copy of the ASI #2 transport stream is routed to the GigE port. Press ENTER to confirm the selection and exit the field.

DSMCC Field **Default: Off**

Press the ▶ button until the cursor is at the DSMCC label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to choose either Off or On. When On is selected, the DSR-6100 outputs an IP stream that contains DSMCC data, when the input MPEG-4 program contains DSMCC data. Press ENTER to confirm the selection and exit the field.

GigE Xcoder Dest Addr Menu

Press the ▲ ▼ buttons until the Port GigE Xcoder Dest Addr menu appears. Use this menu to set the GigE transcoded destination address and the associated port.

Xcoded Dest Addr Field **Default: 192.168.054.201**

Press the ▶ button until the cursor is at the Xcoded Dest Addr label, and press the ENTER button to move into the field. Use the arrow button (◀ ▶ ▲ ▼) to enter the desired address and press the ENTER button to confirm the selection and exit the field.

Port Field **Default: 06100**

Press the ▶ button until the cursor is at the Port label, and press the ENTER button to move into the field. Use the arrow button (◀ ▶ ▲ ▼) to enter the desired value and then press the ENTER button to confirm the selection and exit the field.

GigE PassThru Dest Addr Menu

Press the ▲ ▼ buttons until the Port GigE PassThru Dest Addr menu appears. Use this menu to set the GigE pass through destination address and the associated port.

PassThru Dest Addr Field **Default: 192.168.054.200**

Press the ▶ button until the cursor is at the PassThru Dest Addr label, and press the ENTER button to move into the field. Use the arrow button (◀ ▶ ▲ ▼) to enter the desired address and then press the ENTER button to confirm the selection and exit the field.

Port Field **Default: 06000**

Press the ▶ button until the cursor is at the Port label, and press the ENTER button to move into the field. Use the arrow button (◀ ▶ ▲ ▼) to enter the desired value and then press the ENTER button to confirm the selection and exit the field.

Status Display Menus

Status display menus provide information regarding the current status of the DSR-6100. This menu lists important Satellite Multiplex Decrypter parameters. These fields are not editable, and the displayed information is either (1) the result of changes in an installation or channel selection menu, or (2) a parameter the DSR-6100 reports as part of its operation.

Status0 Menu

Press the ▲ ▼ buttons until the Status0 menu appears.

This status-only field displays the following status conditions. Press the ▶ button until the cursor is at the Health label, and press the ENTER button. Use the ▲ ▼ buttons to scroll through any errors displayed.

- Good — No Alarm Condition. The DSR-6100 is working correctly.
- Alarm:Video lost — The DSR-6100 does not have primary Video Out. This could be due to loss of authorization or signal.
- Alarm:Signal lost — The DSR-6100 does not have signal lock.
- Alarm:Authorization lost — The DSR-6100 is not authorized for the current service.
- Alarm:Fan fault — One or more fans have stopped working and need to be replaced.
- Alarm:Transcodes Fault — One of the transcoders has faulted.

Note: When the Alarm Trigger (described on page 33) is set to Disable, the STATUS0 Health field displays Good, even if error conditions are present.

Status1 Menu

Press the ▲ ▼ buttons until the Status1 menu appears.

FrontPanel Field

This status-only field displays whether the user is able to control the DSR-6100 completely from the front panel or whether some front-panel functions are disabled. When this field displays Local Control, this means the panel is not locked and the local user has access to all menu functions. This means the DSR-6100 provides typical front-panel control. All menus and fields operate as described in this manual. When Locked-Out is displayed, access to front-panel control is disabled by the Uplink Programmer.

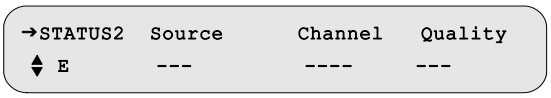
Input Type Field

This status-only field displays the input connector on which the active signal is received. This field displays one of three messages:

- L-Band This designates the input source (from RF Port 1 to RF Port 8 on the back panel).
- ASI This designates the input source is from ASI In port on the back panel.
- GigE-In This designates the input source is from GigE In port on the back panel.

Status2 Menu

This menu does not appear if the Input field (described on page 25) is set to ASI In or GigE In. Press the ▲ ▼ buttons until the STATUS2 menu appears. This screen displays the source name, channel number, and the signal quality of the incoming signal.



Source Field

This status-only field displays the source name, which was entered by the programmer or network operator at the encoder/uplink to identify the source. Dashes are displayed when no information is available.

Channel Field

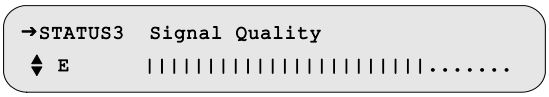
This status-only field displays the selected Virtual Channel number (from the Channel menu). Dashes are displayed when no information is available.

Quality Field

This status-only field displays a number from 1 to 100 so that the quality level of the signal can be judged. The signal quality is also displayed as a large bar graph in the Status3 menu. If it is 35 or less, take action at your site to increase the dish size or improve the Low Noise Block (LNB) to prevent occasional loss of output.

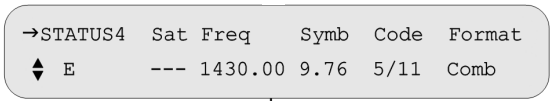
Status3 Menu

This menu does not appear if the Input field (described on page 25) is set to ASI In or GigE In. Press the ▲ ▼ buttons until the STATUS3 menu appears. This screen displays the quality level of the signal as a large bar graph that expands to fill the entire LCD screen. The following example shows the quality at about 75.



Status4 Menu

This menu does not appear if the Input field (described on page 25) is set to ASI In or GigE In. Press the ▲ ▼ buttons until the STATUS4 menu appears. This screen displays the satellite name and signal tuning characteristics.



Sat Field

This status-only field displays the satellite name from the downloaded network information. Dashes (---) are displayed when no information is available.

Freq Field

This status-only field displays the downlink frequency of the L-band signal. This may be different from the frequency that was initially set in the Manual Tune menu.

Symb Field

This status-only field displays the symbol rate (megasymbols per second) of the L-band signal. Dashes (---) indicate that no information is available.

Code Field

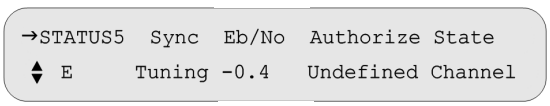
This status-only field displays the code rate (Error Control Coding for Forward Error Correction) of the L-band signal.

Format Field

This status-only field displays the format of the L-band signal. The field displays either Comb (Combined) or Split. Dashes (---) are displayed when no information is available.

Status5 Menu

This menu does not appear if the Input field (described on page 25) is set to ASI In or GigE In. Press the ▲ ▼ buttons until the STATUS5 menu appears. This screen displays the sync, Eb/No, and authorization state of the DSR-6100.



Sync Field

This status-only field displays the acquisition Sync state. The Sync state can be either Locked or Tuning.

Eb/No Field

This status-only field displays a value from 0.0 to 35.0 that designates a measurement of the signal-to-noise ratio.

Authorize State Field

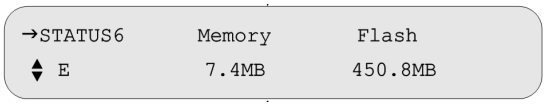
This status-only field displays the authorization state of the currently-selected channel. This field indicates how the Satellite Multiplex Decrypter is authorized. If the Authorization State is Not Authorized, the field will alternate, and display a reason why it is not authorized (e.g., Missing Map). Table 3-3 describes each authorization state.

Table 3-3: Authorization States

Authorize State	Description
Missing Map	Incorrect Virtual Channel Table Number
Undefined Channel	Incorrect Virtual Channel Number
Undefined Service	Incorrect Service Number
Unencrypted	Service is not Encrypted
Unknown	Unknown State
No Program Rekey	Program Rekey Message is Missing
No Working Key	Working Key Epoch Message is Missing
No Event Blackout	Event Blackout Message is Missing
No Category Key	Missing Category Key is Missing
Old Category Seq	Old Category Sequence in Program Rekey Message
Subscrb With Tape	Subscribed With Taping
Subscrb w/o Tape	Subscribed Without Taping
Bad Seed Chksum	Bad Seed Checksum
Not Subscribed	Not Subscribed
Regional Blackout	Regional Blackout
Event Blackout	Event Blackout
Circular Blackout	Circular Blackout

Status6 Menu

Press the ▲ ▼ buttons until the STATUS6 menu appears. This screen displays the DSR-6100's Memory (free memory) and Flash memory.



Memory Field

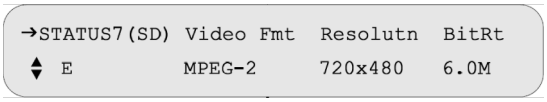
This status-only field displays the amount of free volatile memory in MB units that is available for use by the operating system.

Flash Field

This status-only field displays the amount of free non-volatile memory in MB units that is available for use by the operating system.

Status7(SD) Menu

Press the ▲ ▼ buttons until the Status7(SD) menu appears. This screen displays the video encoding configuration for the SD program.



Video Resolution Field

The Video Resolution field indicates the display resolution of the transcoded video. This is represented as the number of distinct pixels in the horizontal dimension and the number of scan lines.

Note: The Video Resolution field does not include a designation for (p) progressive or (i) interlaced to denote the scan type for the SD video.

Bit Rate Field

The Bit Rate field indicates the data rate of the transcoded video.

Status8(SD) Menu

Press the ▲ ▼ buttons until the Status8(SD) menu appears. This screen displays the audio encoding configuration for the transcoded SD program.

Audio Field

Use this field to choose which audio channel to display the status. Press the ▶ button until the cursor is at the Audio field, then use the ▲ ▼ buttons to choose the first audio channel (0) or the second audio channel (1). The default is 0. Press the ENTER button to confirm the selection and exit the field.

Format Field

This field is always set to PSTHRU (pass-through) and cannot be changed.

Mode Field

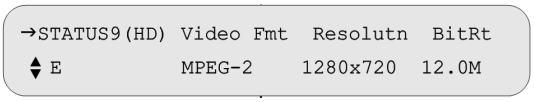
The Mode field indicates the mode (stereo or mono) of the transcoded audio for the selected audio channel. Dashes (---) designate no information is available.

BitRt Field

The BitRt (Bit Rate) field indicates the data rate of the transcoded audio. Dashes (---) designate no information is available.

Status9(HD) Menu

Press the ▲ ▼ buttons until the Status9(HD) menu appears. This screen displays the video encoding configuration for the transcoded HD program.



Video Field

The Video field indicates the format of the incoming video, either MPEG-2 or MPEG-4.

Resolutn Field

The Video Resolution field indicates the display resolution of the transcoded video.

This is represented as the number of distinct pixels in the horizontal dimension and the number of scan lines.

Note: The Video Resolution field does not include a designation for (p) progressive or (i) interlaced to denote the scan type for the SD video.

BitRt Field

The BitRt (Bit Rate) field indicates the data rate of the transcoded video.

Status10(HD) Menu

Press the ▲ ▼ buttons until the Status10HD menu appears. This screen displays the audio encoding configuration for the transcoded HD program.

Audio Field

Use this field to choose which audio channel to display the status. Press the ▶ button until the cursor is at the Audio field, then use the ▲ ▼ buttons to choose the first audio channel (0) or the second audio channel (1). The default is 0. Press the ENTER button to confirm the selection and exit the field.

Format Field

This field is always set to PSTHRU (pass-through) and cannot be changed.

Mode Field

The Mode field indicates the mode (stereo or mono) of the transcoded audio for the selected audio channel. Dashes (---) designate no information is available.

BitRt Field

The Bit Rate field indicates the data rate of the transcoded audio. Dashes (---) designate no information is available.

Status11 Menu

Press the ▲ ▼ buttons until the Status11 menu appears. This status-only screen displays the multicast IP Address and Link status of the GigE input when receiving a transport stream input.

Addr field

This status-only field displays the multicast IP address (range 224.000.000.000 to 239.255.255.255) that is currently used to receive an input transport stream in the common dotted-decimal format. Dashes (---) designate no information is available.

Link field

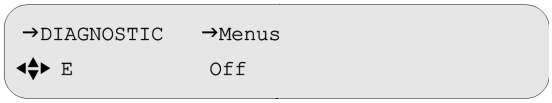
This status-only field indicates the connection speed (10, 100, or 100 Mbps) of the GigE port. Off indicates that there is no connection to an Ethernet network.

Diagnostic Menus

Use the DSR-6100's diagnostic menu to acquire information for troubleshooting purposes. The menus also provide test waveforms and use other diagnostic information displayed on an NTSC television monitor connected through the back panel video output.

CAUTION: Turning on diagnostics changes the video or audio output, and these diagnostic screens or tones may be transmitted to the cable customers if the unit is connected to the cable plant.

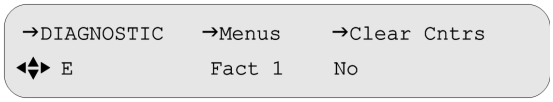
Press the ▲ ▼ buttons until the DIAGNOSTIC menu appears.



Menus Field **Default: Off**

Use the Menus field to enable or disable the on-screen diagnostics. Press the ▶ button until the cursor is at the MENUS label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to scroll to the desired screen. Press the ENTER button to confirm the selection and exit the field.

Notice that if the Menus field is set to any option other than Off, Diag F, or Diag G; the Clear Cntrs (Clear Counters) field also appears.



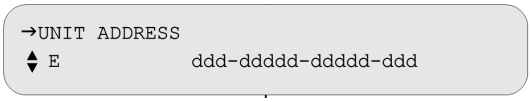
Use the ▲ ▼ buttons to choose the desired option (Fast Facts 1 through 5 or Diag A through Diag G) and press the ENTER button to confirm the selection and exit the field. For more information about Fast Facts screens, see "Diagnostics" on page 75.

Clear Cntrs Field

Use this field to reset selected counters to zero. This field is primarily for use with hotline troubleshooting, and it is recommended that it be used only when so directed and does not affect the unit's operation, but it may give misleading troubleshooting results. To clear counters, press the ▶ button until the cursor is at the Clear Cntrs label, and press the ENTER button to move into the field. Press the ▼ button to select Yes and press the ENTER button to reset the counters to zero and return the field to No.

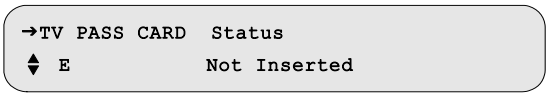
Unit Address Menu

Press the ▲ ▼ buttons until the Unit Address menu appears. This read-only menu displays the DSR-6100's 16-digit electronic address (range: 000-00000-00000-000 to 999-99999-99999-999). The program provider uses this address to identify a specific DSR-6100 for authorization and retune messages. The display enables the user to view the address from the front panel rather than reading the label on the back panel.



TV Pass Card Menu

The DSR-6100 does not initially require a TV Pass Card®, but if one is required, the program provider typically supplies one. The program provider uses the TV Pass Card address and unit address to identify a specific DSR-6100 for authorization messages. Press the ▲ ▼ buttons until the TV Pass Card menu appears.

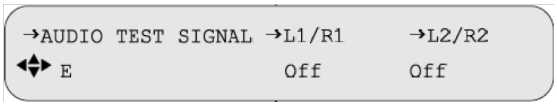


Use this menu to view the TV Pass Card address from the front panel of the DSR-6100. There are three Status field options:

- Not Inserted
- xxx-xxxxx-xxxxx-xxx (a unique TV Pass Card address, range: 000-00000-00000-000 to 999-99999-99999-999)
- xxx-xxxxx-xxxxx-xxx Needs Mating.

Audio Test Signal Menu

Use this menu to validate audio connection by transmitting internally-generated audible tones to the audio output ports.



Caution: This selection replaces audio.

L1/R1 and L2/R2 Fields **Default: Off**

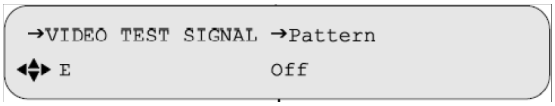
Use the appropriate field (either L1/R1 or L2/R2) to choose one of the following test tones:

- 1000
- 4040, 3960 (two tones)

At the completion of the test, press the ENTER button to disable the test, exit the field, and return the field to the default setting (Off).

Video Test Signal Menu

Press the ▲ ▼ buttons until the Video Test Signal menu appears. Use the full-field video test signal to display different test patterns by selecting the Pattern field.



Caution: This selection replaces video.

Pattern Field **Default: Off**

Press the ▶ button until the cursor is at the Pattern label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the test patterns. Choose from the options listed below:

NTSC/PAL M Test Pattern Options
Color Bar
IRE 100 Ramp
NTSC 7 Comb
Red Field
NTSC 7 Comp
5 Step Stair
Unmod Y Ramp
Off (Default)

Test signals override any active service component, and the DSR-6100 displays diagnostics over the video test patterns if diagnostics are enabled. (For details, see "Menus Field" on page 63.) To disable the selected video test signal, return to the Off setting or press the ENTER button to exit the field.

Ad Insertion Test Menu

Ad insertion signals are generated by the DSR-6100, but controlled by the uplink programmer. Local cable companies use ad insertion signals to control and to queue the insertion of commercials in cable headends. There are two ways to provide ad insertion. One is a dedicated digital DTMF differential output for cue tones. The other way is to use a dedicated contact closure relay. Use the Ad Insertion Test menu to turn on and off the cue tones and the relays.

```
→AD INSERTION TEST  →Cue Tone →Relay
◆▲▼▶ E                Off       Off
```

CAUTION: Output to the customers may be interrupted. When turned on, the ad insertion signals can be sent to the local headed equipment.

Press the ▲ ▼ buttons until the Ad Insertion Test menu appears.

Cue Tone Field **Default: Off**

Use this field to turn on and off the cue tone test. Press the ▶ button until the cursor is at the Cue Tone label, and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the two options: On and Off. If On is selected, the DSR-6100 generates a DTMF code (0-9*#ABCD) on the cue tone output. This field returns to the default value (Off) when the ENTER button is pressed to exit the field.

Relay Field **Default: Off**

Use the Relay field to individually turn On and Off each of the three ad insertion relays. Press the ▶ button until the cursor is at the Relay label and press the ENTER button to move into the field. Press the ▲ ▼ buttons to display the options. The available options are Off, Relay1 On, Relay2 On, and Relay3 On. This field returns to the default value (Off) when the ENTER button is pressed to exit the field.

Note: To review cue tone and relay signal connections on the back panel, see Figure 2-2 on page 10.

Troubleshooting

Before contacting the Hotline (described on page 69), review Table 4-1 for problems and suggested solutions.

Table 4-1: Troubleshooting Solutions

Problem	Possible Cause	Solution	Reference
LCD blank and no LEDs lit.	No power to unit.	Plug in the unit.	
LEDs illuminate, but LCD is blank or too dark to read.	LCD contrast out of adjustment.	Adjust LCD contrast.	See Install/Core menu, Contrast Field.
No picture and no signal LED indication.	No LNB signal port connection.	Connect LNB coax.	See "Connecting the DSR-6100" on page 9.
Poor audio or low audio level.	Audio levels incorrect.	Adjust audio levels.	See "Audio1 and Audio2 Gain Menus" on page 32.
Will not acquire signal lock.	Port not configured.	Check port selection, modulation, and frequency setting.	See "Installation Menus" on page 22.
Incorrect output audio language.	Wrong language setting or audio port connection.	Confirm audio connection choice and related audio language setting.	See "AUD1LANG and AUD2LANG Menus" on page 44.

Product Support

If You Need Help

For assistance with Motorola Mobility products only, contact the Motorola Mobility Technical Response Center (TRC), 24 hours a day, 7 days a week:

- Inside the U.S.: 1-888-944-HELP (1-888-944-4357)
- Outside the U.S.: 1-215-323-0044
- Motorola Online: http://businessonline.motorola.com
  This offers a searchable solutions database, technical documentation, and low-priority issue creation and tracking.

Calling for Repairs

If repair is necessary, call Motorola Mobility's authorized repair vendor, World Wide Digital at 1-800-227-0450 or 1-956-541-0600 for shipping address and a Return for Service Authorization (RSA) number before sending the unit for repair. The RSA number must be prominently displayed on all equipment cartons and shipping label. World Wide Digital is open from 8:00 AM to 5:00 PM Central Time, Monday through Friday.

When shipping equipment for repair, follow these steps:

1. Pack the unit securely.
2. Enclose a note describing the exact problem.
3. Enclose a copy of the invoice to verify the warranty status.
4. Label all cartons and shipping labels with the RSA number.

6

Downlink/L-Band Frequency Conversion Tables

A distributor or programmer can provide the latest L-band frequency plans at purchase time. Use the following formulas to perform calculations for both C-band and Ku-band transponders, or for installing a new satellite.

Table 6-1: Calculation for C-Band Transponders (Using 3,740 MHz Downlink Frequency)

Formula for converting a C-band Frequency to an L-band Frequency	Example calculation if downlink frequency is 3,740 MHz
5,150 MHz <minus> Frequency Downlink (DL) <equals> Frequency (L-band)	5,150 MHz -3,740 MHz 1,410 MHz

Table 6-2: Calculation for Ku-Band Transponders (Using 12,019 MHz Downlink Frequency)

Formula for converting a Ku-band Frequency to an L-band Frequency	Example calculation if downlink frequency is 12,019 MHz
Frequency Downlink (DL) <minus> 10,750 MHz <equals> Frequency (L-band)	12,019 MHz -10,750 MHz 1,269 MHz

7

Language Abbreviations

Note: This list of languages was recommended to system operators as the appropriate identifiers for audio, subtitle, and text information. Refer to Language Menu operation.

Language	Abbreviation
Arabic	ara
Armenian	arm
Balinese	ban
Basque	baq
Batak	btk
Bengali	ben
Bhojpuri	bho
Bulgarian	bul
Burmese	bur
Catalan	cat
Chinese	chi
Croatian	scr
Cue (Tones)	cue
Czech	cze
Danish	dan
Dutch	dut

Language	Abbreviation
Egyptian	egy
English	eng
Esperanto	epo
Faroese	fao
Finnish	fin
French	fre
German	ger
Greek	gre
Gujarati	guj
Hebrew	heb
Hindi	hin
Hiri Motu	hmo
Hungarian	hun
Indonesian	ind
Interlingua	ina
Iranian	ira

Language	Abbreviation
Irish	iri
Italian	ita
Panjabi	pan
Japanese	jpn
Javanese	jav
Kashmiri	kas
Korean	kor
Kurdish	kur
Latin	lat
Malay	may
Mandar	mdr
Marathi	mar
Miscellaneous	mis
Mongolian	mon
Nepali	nep
Norwegian	nor
Otomian Lang.	oto
Pahlavi	pal
Persian	per

Language	Abbreviation
Philippine (Other)	phi
Polish	pol
Portuguese	por
Rajasthani	raj
Romanian	rum
Russian	rus
Samoan	smo
Scots	sco
Sindhi	snd
Spanish	spa
Swahili	swa
Swedish	swe
Tagalog	tgl
Tamil	tam
Thai	tha
Urdu	urd
Vietnamese	vie
Welsh	wel

Diagnostics

Introduction

The Fast Fact Diagnostic screens (1 through 5) are a part of the unit's firmware created during product development and are based on the needs of the particular unit. The Fast Facts screens are used as a method of viewing information and diagnostic data associated with the unit. All values and information shown on the Fast Fact Diagnostic screens update when displayed, unless otherwise noted. Information about these screens is described here for documentation purposes only.

Notes:

1. *Hexadecimal numbers are displayed with none or more leading zeros (0) to pad to their individual field width.*

2. *Decimal numbers are right-justified in their individual display rectangle and are not padded with leading zeros (0).*

3. *Decimal numbers may be displayed with or without a trailing decimal point to distinguish them from hexadecimal numbers. The default is no trailing decimal point.*

Viewing the Fast Fact Diagnostic Screens

The diagnostic screens (Figure 8-1) are available via the On-Screen Display (OSD) video out using a video monitor connected to the OSD Video Out port on the back of the unit.

To view the OSD diagnostic screens, press the ▲ ▼ buttons on the front of the unit until the Diagnostic menu appears, and press the ENTER button to access the Diagnostic menu on the unit.

```
→DIAGNOSTIC   →MENUS
◄✥► E          Off
```

Press the ► button to navigate to the Menus field and press the ENTER button to move into the field.

```
→DIAGNOSTIC   →MENUS     →Clear Cntrs
◄✥► E          Diag E    No
```

Use the ▲ ▼ buttons to choose one of the Fast Fact Diagnostic screens.

Note: Pressing the ENTER button while viewing a particular OSD diagnostic screen allows for the continued display of the OSD diagnostic information while allowing the user to navigate thru other front-panel menus.

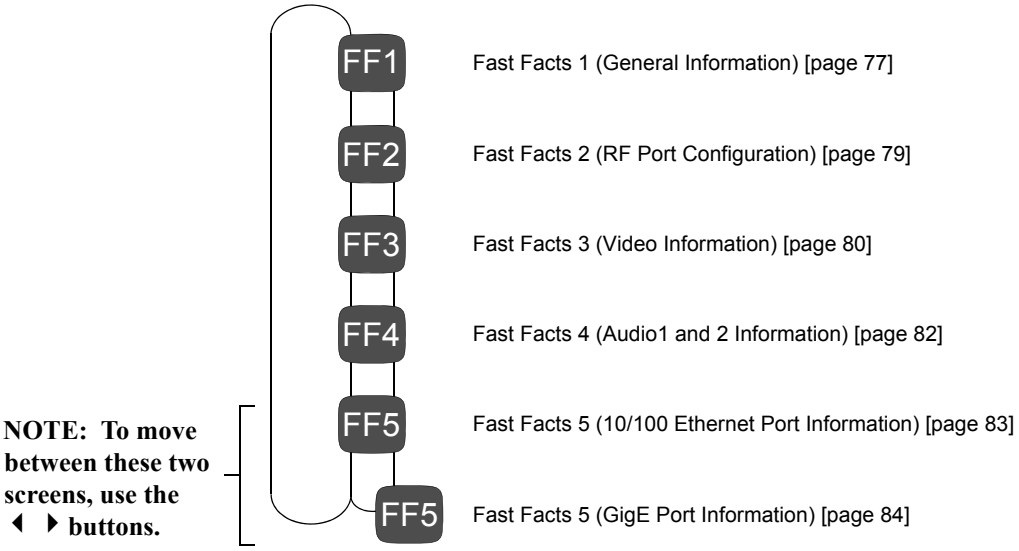
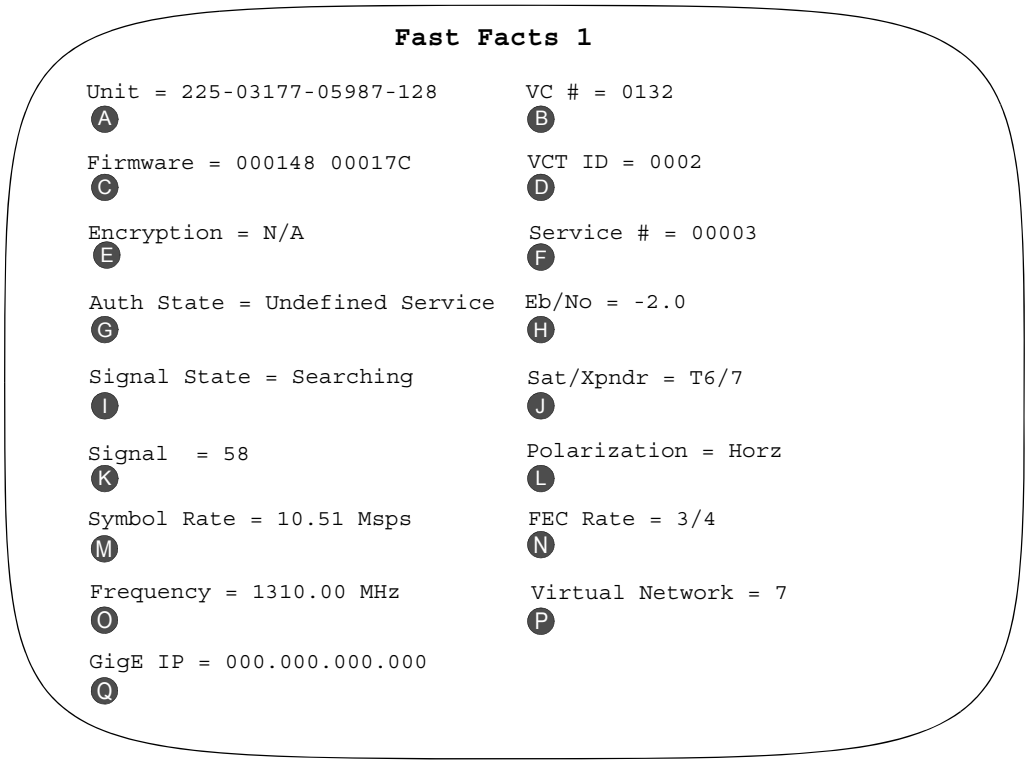


Figure 8-1: Fast Fact Diagnostic Screens

Fast Facts 1

The Fast Facts 1 screen displays general information relating to the basic functionality of the unit.

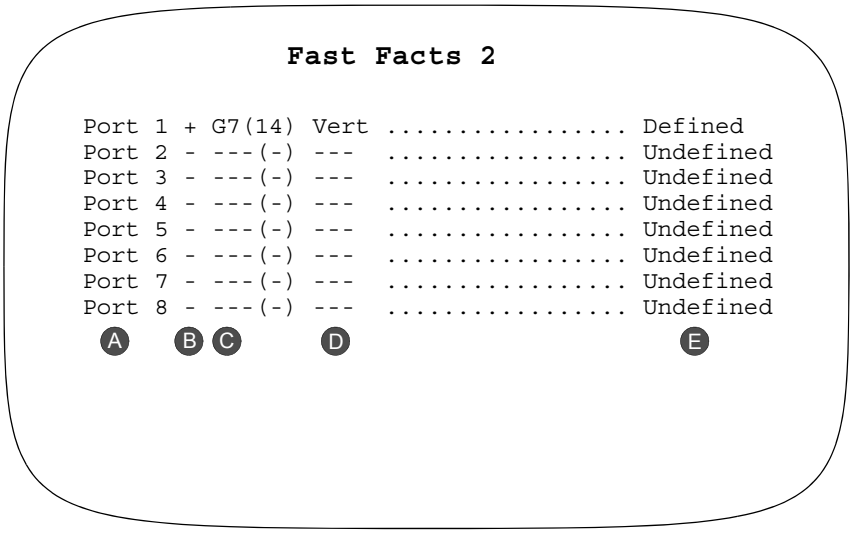


Field	Name	Definition
A	Unit	Displays the 16-digit unit address on the screen.
B	VC#	Displays the Virtual Channel number.
C	Firmware	Displays the firmware version in the boot sector of ROM and the application section.
D	VCT ID	Displays the current VCT ID.
E	Encryption	Displays if the current service is encrypted or not.
F	Service	Displays the service number for the current program.
G	Auth State	If the current service is encrypted, this field displays the current authorization state of the IRD.
H	Eb/No	Shows the Signal to Noise (Eb/No) of the signal.
I	Signal State	Shows the received signal state. It can either be Locked or Searching, depending on whether the IRD is locked to a signal, or not.

Field	Name	Definition
J	Sat/Xpndr	Displays the satellite name and transponder number. If the satellite name is null, then the satellite number is used.
K	Signal Strength/ Signal	Displays the signal quality, if the signal is DigiCipher II. Otherwise, it displays the Signal Strength. Both values are normalized to be between 0 and 100%.
L	Polarization	Displays the polarization for the currently tuned-to transponder, either: Horz Horizontal Vert Vertical
M	Symbol Rate	Displays the current symbol rate.
N	FEC Rate	Displays the Forward Error correction (FEC) coding rate.
O	Frequency	Displays the current RF frequency.
P	Virtual Network	Displays the DSR-6100's currently tuned-in Virtual Network.
Q	GigE IP	Displays the current GigE input IP address.

Fast Facts 2

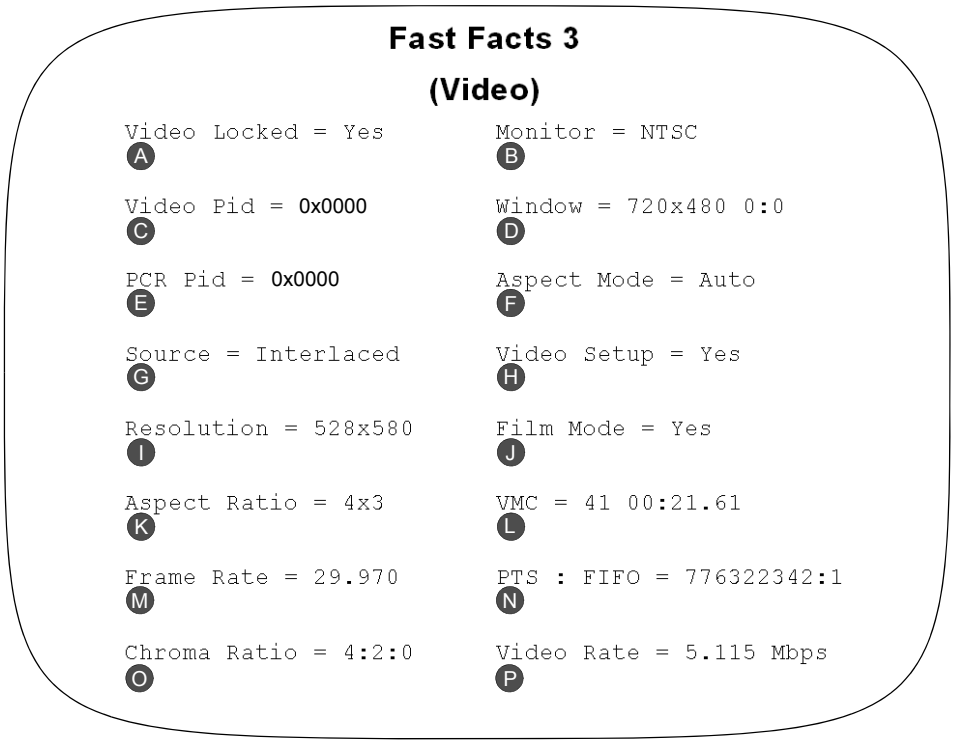
The Fast Facts 2 screen displays the DSR-6100's port configuration.



Field	Name	Definition
A	Port Number	The port number being described (Port 1 through Port 8).
B	Active Status	+ Indicates the port is active. - Indicates the port is inactive.
C	Satellite Name	The name of the current satellite. The Satellite ID is displayed within brackets.
D	Polarization	The polarity transponder associated with the port, either: Horz Horizontal Vert Vertical
E	Configuration Status	The configuration status of the port, either: Defined, Undefined, or Not Supported.

Fast Facts 3

The Fast Facts 3 screen displays information relating to video information.

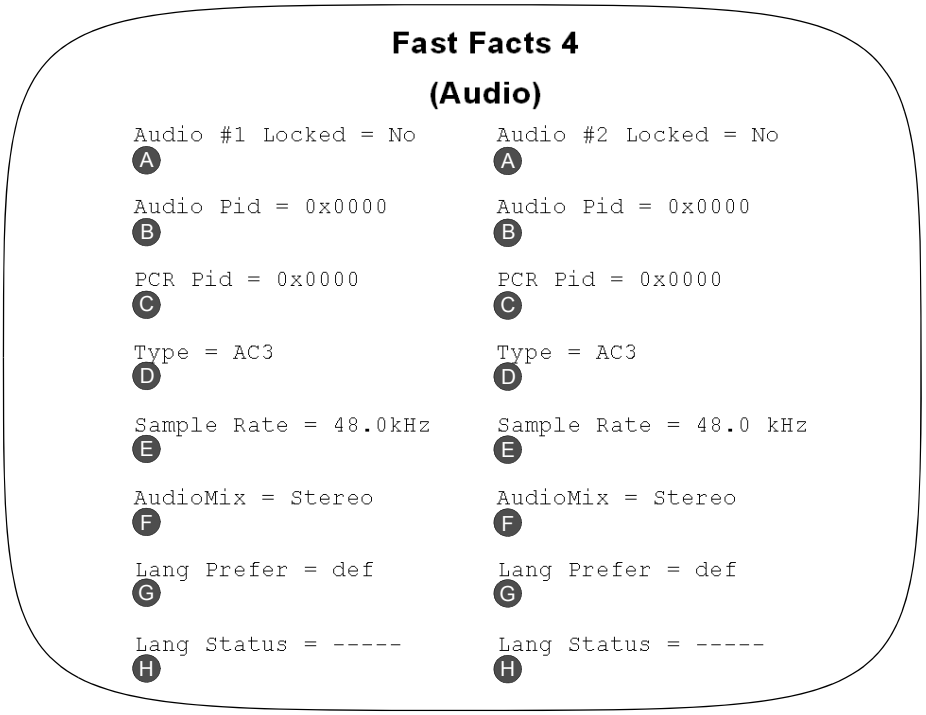


Field	Name	Definition
A	Video Locked	An indication of video lock status. Yes denotes the video for the unit is being received and locked. No denotes the video is not being received.
B	Monitor	Displays the current output format of the video display.
C	Video PID	Displays the current Program Identification (PID) number for the video.
D	Window Dimensions	Displays the current dimensions of the video display: Width x Height, Xpos : Ypos (or mute)
E	PCR Pid	Displays the current Program Clock Reference (PCR) PID.
F	Aspect Mode	Displays the current aspect mode for the incoming video.
G	Source Format	Displays the source format: either Interlaced or Progressive.
H	Video Setup	Displays the indication if the video setup (pedestal) is active, either Yes or No.
I	Resolution	Displays the Horizontal Size x Vertical Size of the received video.

Field	Name	Definition
J	Film Mode	Displays the indication of Film Mode activation. Either Yes (active) or No (inactive).
K	Aspect Ratio	Displays the aspect ratio of the video within the transport stream.
L	Video Mute Count (VMC)	Displays the current video mute count.
M	Frame Rate	Displays the frame rate code of the stream.
N	PTS : FIFO	Displays the video Presentation Time Stamp (PTS) followed by the Picture FIFO Depth Count.
O	Chroma Ratio	Displays the Chrominance format for the video within the transport stream.
P	Video Rate	Displays the rate (in Mbps) of the video within the transport stream.

Fast Facts 4 (Audio 1 and 2)

The Fast Facts 4 screen displays information relating to audio information. There are two columns of information displayed. The left column is for the first audio program, and the right column is for the second audio program.

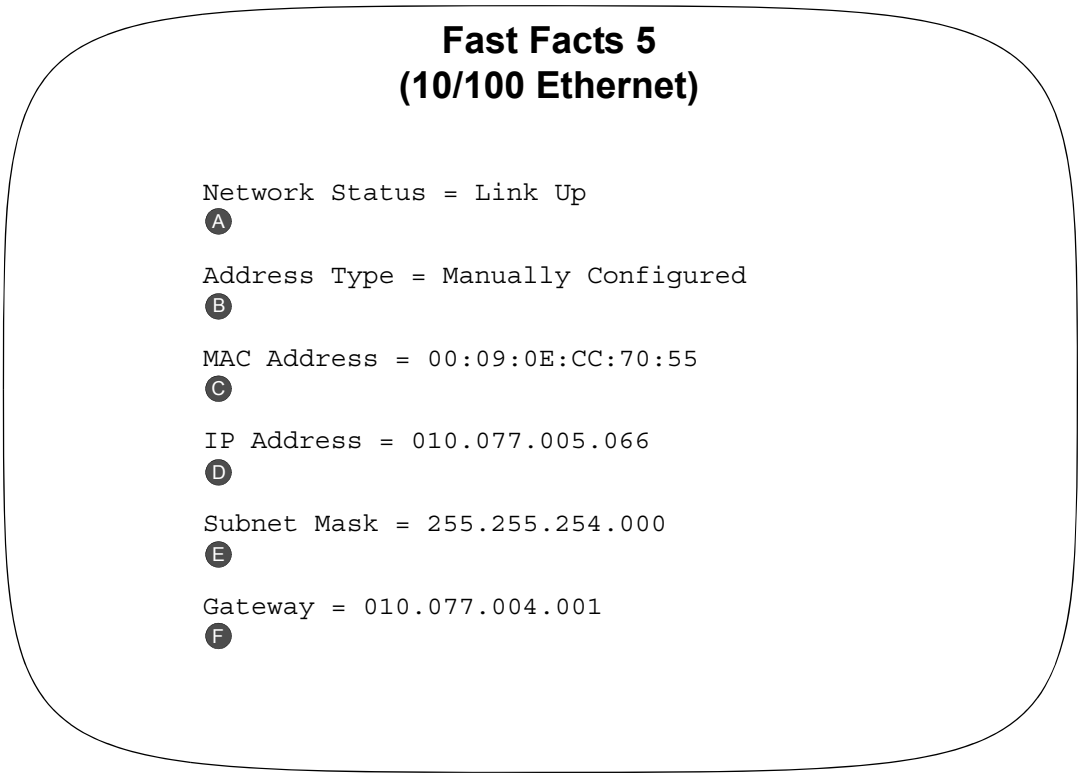


Field	Name	Definition
A	Audio Locked	Displays the indication of audio lock status for both audio programs. If yes, then the audio for the unit is being received and locked. If No, then the audio is not being received.
B	Audio Pid	Displays the current Audio PID for both audio programs.
C	PCR Pid	Displays the current PCR PID for both audio programs.
D	Type	Displays the audio stream type: MPEG, AAC, AC3, etc.
E	Sample Rate	Displays the sampling rate (in kHz) of both audio programs.
F	Audio Mix	Displays the audio processing mode for both audio programs: Mono, Stereo, Surround, etc.
G	Language Preference	Displays the preferred language setting for both audio programs.
H	Language Status	Displays the language status for both audio programs.

Fast Facts 5 (10/100 Network)

The Fast Facts 5 screen displays information relating to the Ethernet port (left RJ-45 port on back of unit) configuration.

Note: To move between these two Fast Fact 5 screens, use the ◀ ▶ buttons.

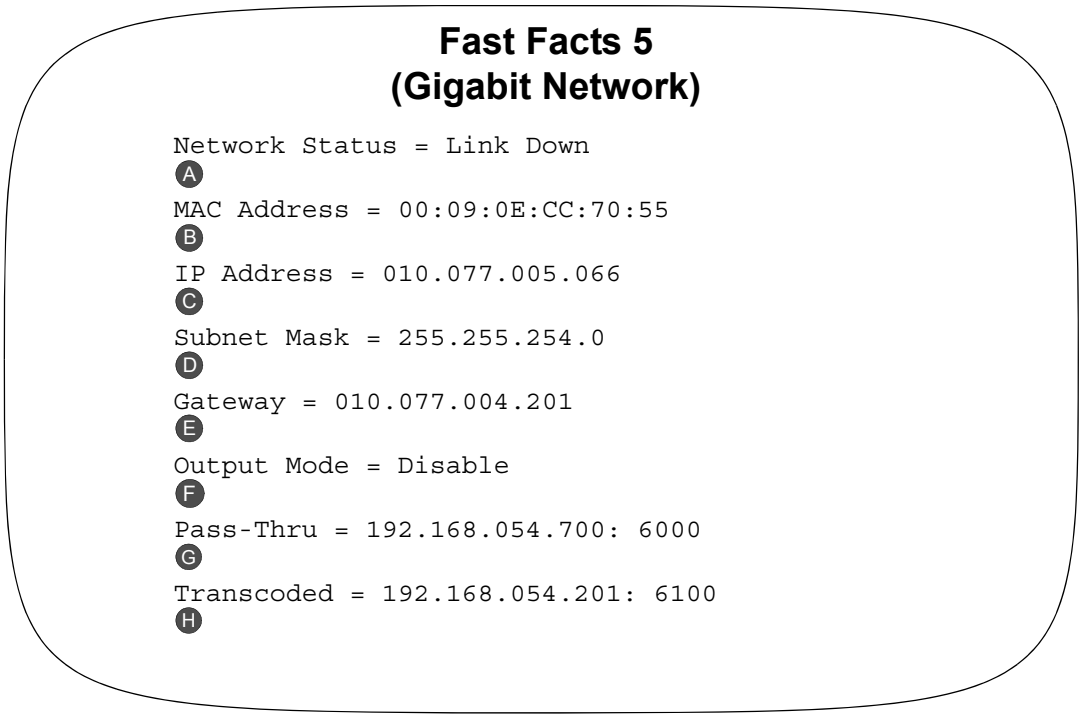


Field	Name	Definition
A	Network Status	Displays connectivity status (either Link Up or Link Down).
B	Address Type	Displays address type.
C	MAC Address	Displays the MAC address of the unit.
D	IP Address	Displays the current IP address of the unit.
E	Subnet Mask	Displays the current subnet mask of the unit.
F	Gateway	Displays the current gateway of the unit.

Fast Facts 5 (Gigabit Ethernet)

The Fast Facts 5 (Gigabit Ethernet) screen displays information relating to Gigabit Ethernet port (right RJ-45 port on back of unit) configuration.

Note: To move between these two Fast Fact 5 screens, use the ◀ ▶ buttons.



Field	Name	Definition
A	Network Status	Displays the connectivity status (either Link Up or Link Down).
B	MAC Address	Displays the MAC Address of the GigE port.
C	IP Address	Displays the IP address of the GigE port.
D	Subnet Mask	Displays the Subnet Mask of the GigE port.
E	Gateway	Displays the Gateway of the GigE port.
F	Output Mode	Displays type of MPEG streams that are output from the GigE port. This could be off, pass-through, transcoded, or both pass-through and transcoded.
G	Pass-Thru	Displays the GigE IP address and port to where the pass-through MPEG stream is sent.
H	Transcode	Displays the GigE IP address and port to where the transcoded MPEG stream is sent.

DSR-6100 Specifications

RF	
Input Frequency Range	950 to 2150 MHz
Input RF Level	-25 to -65 dBm
RF Port Impedance	75 Ohms
RF Port Return Loss	12 dB minimum
Port-to-Port Isolation	40 dB minimum

Transmission Standard	
DVB-S2	Symbol Rates: 3 to 33 Msps 8PSK Code Rates: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 QPSK Code Rates: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
DigiCipher II	Symbol Rates: 3.25, 4.88, 7.32, 9.76, 11.7, 14.6, 19.5, 29.7 Msps QPSK Code Rates: 5/11, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 7/8

Video	
Video Level	1.0V p-p compliant with RS-250C
Video Output Impedance	75 Ohms
Chrominance-luminance Delay Line	±26 nsec
Differential Gain	4%
Differential Phase	1.5 degrees

Audio	
Two pairs	Four channels
Peak Audio Level	+20 dBm analog (0 dBFS)
Analog Output Level	Adjustable over the range of 0/-20 dB in 1 dB steps
Frequency Response	± 1 dB, 20 Hz to 20 KHz
Total Harmonic Distortion	0.25% at 1 KHz

Connectors	
RF In	F-type connector (Qty 8)
Video Out	BNC connector (Qty 1)
OSD Video Out	BNC connector (Qty 1)
Alarm	Terminal block (Qty 1)
Cue Tone (Labeled: Q+ and Q-)	Terminal block (Qty 1)
Audio Out	Terminal block (Qty 2)
ISOC Data	Terminal block (Qty 1)
ASYNC	(not implemented)
Contact Closure (Labeled: Relay 1, 2, and 3)	Terminal block
ASI In	BNC connector (Qty 1)
ASI Out	BNC connector (Qty 2)
AUX Video In	BNC connector (Qty 1)
AUX Audio In	Terminal block (Qty 1)
CF Type1	CF connector (Qty 1)
TV Pass Card	TV Pass Card connector (Qty 1)
Ethernet 10/100	RJ-45 connector (Qty 1)
Ethernet GigE	RJ-45 connector (Qty 1)

Electrical	
Power Requirements	100 to 240 VAC, 50/60Hz, 1.5A maximum, 290 Btu
LNB Power on RF Port 1	16 to 22 VDC, 450mA maximum

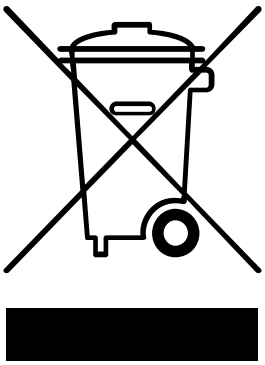
Mechanical		
Dimensions	20.5" x 19" x 1.75" 27" x 22" x 7.5"	(IRD without packaging) (IRD with packaging)
Weight	18.5 lbs. [8.4 kg] 12.5 lbs. [5.7 kg]	(Finished goods with packaging and accessory) (Without packaging)

Special Instructions
For restricted access locations, install the DSR-6100 only in restricted-access areas (dedicated equipment rooms, equipment closets, or the like) in accordance with Articles 110-26, 110-27, or the NEC ANSI/NFPA70, or per the applicable code in the country of installation. Always connect the protective earthing to one the two permanently-protective Earthing Terminals on the back panel of the DSR-6100. For exact location, see Figure 2-1 on page 9. CAUTION: When connecting any of the eight RF IN ports, the RF-IN Antenna cable should only be connected while the DSR-6100 is properly grounded and the shield of the coaxial cable should be earthed in accordance with Article 820.93 of the NEC, ANSI/NFPA 70:2005, or equivalent.

Caring for the Environment by Recycling

When you see this symbol on a Motorola product, do not dispose of the product with residential or commercial waste.

For full details, see the following link:
www.Motorola.com/recycling



Recycling your Motorola Equipment

Please do not dispose of this product with your residential or commercial waste. Some countries or regions, such as the European Union, have set up systems to collect and recycle electrical and electronic waste items. Contact your local authorities for information about practices established for your region. If collection systems are not available, call Motorola Customer Service for assistance.

Beskyttelse af miljøet med genbrug

Når du ser dette symbol på et Motorola-produkt, må produktet ikke bortskaffes sammen med husholdningsaffald eller erhvervsaffald.

Genbrug af dit Motorola-udstyr

Dette produkt må ikke bortskaffes sammen med husholdningsaffald eller erhvervsaffald. Nogle lande eller områder, f.eks. EU, har oprettet systemer til indsamling og genbrug af elektriske og elektroniske affaldsprodukter. Kontakt de lokale myndigheder for oplysninger om gældende fremgangsmåder i dit område. Hvis der ikke findes tilgængelige indsamlingssystemer, kan du kontakte Motorola Kundeservice.

Umweltschutz durch Recycling

Wenn Sie dieses Zeichen auf einem Produkt von Motorola sehen, entsorgen Sie das Produkt bitte nicht als gewöhnlichen Haus- oder Büromüll.

Recycling bei Geräten von Motorola

Bitte entsorgen Sie dieses Produkt nicht als gewöhnlichen Haus- oder Büromüll. In einigen Ländern und Gebieten, z. B. in der Europäischen Union, wurden Systeme für die Rücknahme und Wiederverwertung von Elektroschrott eingeführt. Erkundigen Sie sich bitte bei Ihrer Stadt- oder Kreisverwaltung nach der geltenden Entsorgungspraxis. Falls bei Ihnen noch kein Abfuhr- oder Rücknahmesystem besteht, wenden Sie sich bitte an den Kundendienst von Motorola.

Cuidar el medio ambiente mediante el reciclaje

Cuando vea este símbolo en un producto Motorola, no lo deseche junto con residuos residenciales o comerciales.

Reciclaje de su equipo Motorola

No deseche este producto junto con sus residuos residenciales o comerciales. Algunos países o regiones, tales como la Unión Europea, han organizado sistemas para recoger y reciclar desechos eléctricos y electrónicos. Comuníquese con las autoridades locales para obtener información acerca de las prácticas vigentes en su región. Si no existen sistemas de recolección disponibles, solicite asistencia llamando el Servicio al Cliente de Motorola.

Recyclage pour le respect de l'environnement

Lorsque vous voyez ce symbole sur un produit Motorola, ne le jetez pas avec vos ordures ménagères ou vos rebuts d'entreprise.

Recyclage de votre équipement Motorola

Veuillez ne pas jeter ce produit avec vos ordures ménagères ou vos rebuts d'entreprise. Certains pays ou certaines régions comme l'Union Européenne ont mis en place des systèmes de collecte et de recyclage des produits électriques et électroniques mis au rebut. Veuillez contacter vos autorités locales pour vous informer des pratiques instaurées dans votre region. Si aucun système de collecte n'est disponible, veuillez appeler le Service clientèle de Motorola qui vous apportera son assistance.

Milieubewust recycleren

Als u dit symbool op een Motorola-product ziet, gooi het dan niet bij het huishoudelijk afval of het bedrijfsafval.

Uw Motorola-materiaal recycleren.

Gooi dit product niet bij het huishoudelijk afval het of bedrijfsafval. In sommige landen of regio's zoals de Europese Unie, zijn er bepaalde systemen om elektrische of elektronische afvalproducten in te zamelen en te recycleren. Neem contact op met de plaatselijke overheid voor informatie over de geldende regels in uw regio. Indien er geen systemen bestaan, neemt u contact op met de klantendienst van Motorola.

Dbałość o środowisko - recykling

Produktów Motorola oznaczonych tym symbolem nie należy wyrzucać do komunalnych pojemników na śmieci.

Recykling posiadanego sprzętu Motorola

Produktu nie należy wyrzucać do komunalnych pojemników na śmieci. W niektórych krajach i regionach, np. w Unii Europejskiej, istnieją systemy zbierania i recyklingu sprzętu elektrycznego i elektronicznego. Informacje o utylizacji tego rodzaju odpadów należy uzyskać od władz lokalnych. Jeśli w danym regionie nie istnieją systemy zbierania odpadów elektrycznych i elektronicznych, informacje o utylizacji należy uzyskać od biura obsługi klienta firmy Motorola (Motorola Customer Service).

Cuidando do meio ambiente através da reciclagem

Quando você ver este símbolo em um produto Motorola, não descarte o produto junto com lixo residencial ou comercial.

Reciclagem do seu equipamento Motorola

Não descarte este produto junto com o lixo residencial ou comercial. Alguns países ou regiões, tais como a União Européia, criaram sistemas para colecionar e reciclar produtos eletro-eletrônicos. Para obter informações sobre as práticas estabelecidas para sua região, entre em contato com as autoridades locais. Se não houver sistemas de coleta disponíveis, entre em contato com o Serviço ao Cliente da Motorola para obter assistência.

Var rädd om miljön genom återvinning

När du ser den här symbolen på en av Motorolas produkter ska du inte kasta produkten tillsammans med det vanliga avfallet.

Återvinning av din Motorola-utrustning

Kasta inte denna produkt tillsammans med det vanliga avfallet. Vissa länder eller regioner, som t.ex. EU, har satt upp ett system för insamling och återvinning av el- och elektronikavfall. Kontakta dina lokala myndigheter för information om vilka regler som gäller i din region. Om det inte finns något insamlingssystem ska du kontakta Motorolas kundtjänst för hjälp.

リサイクルによる環境保護

モトローラ製品にこの記号が表示されている場合、製品を家庭または商業廃棄物として処分しないでください。

モトローラ装置のリサイクル

本製品を家庭または商業廃棄物として処分しないでください。欧州連合などの国または地域によっては、電気的・電子的廃棄物を収集およびリサイクルするシステムがあります。お住まいの地域で決められている方法についての情報は、地方自治体にお問い合わせください。収集システムがない場合、モトローラ・カスタマーサービスまでお問い合わせください。

재활용으로 환경 보호하기

Motorola 제품에 이 표시가 있는 경우, 해당제품을 가정용 또는 상업용 폐기물과 함께 버리지 마십시오.

Motorola 기기의 재활용

이 제품을 가정용 또는 사업용 폐기물과 함께 버리지 마십시오.유럽연합과 같은 일부 국가 또는 지역에서는 전기 및 전자 폐기물 용품을 수집하여 재활용하는 시스템이 구축되어 있습니다.해당지역에 구축되어 있는 절차에 관한 정보는 지역 관할당국에 연락하십시오.수집 시스템이 존재하지 않는 경우, 도움을 받기 위해 Motorola 고객서비스부로 연락하십시오.

重复利用，保护环境

如果 Motorola 产品上具有这个标识，请勿将产品丢弃到家庭或商业垃圾中。

Motorola 设备的重复利用

请勿将本产品丢弃到家庭或商业垃圾中。某些国家或地区，例如欧盟，已经建立起回收和重复利用电气与电子废弃物的体系。请与当地相关机构联系，获取有关所在地区相关规定的信息。如果当地尚未建立回收体系，请致电 Motorola 客户服务以寻求帮助。

注意環保問題

在你看到產品上有Motorola的標誌時，請勿以住家或商用的廢棄物方式處置。

Motorola 設備的回收

請勿以住家或商用的廢棄物方式處置。某些國家或地區，如歐盟，已對廢棄的電器和電子產品制訂回收以及再利用體制。請與您所在地的管理機構諮詢相關規定。

若您所在的地區並未設置回收機制，請電Motorola客服部諮詢相關事宜。

MOTOROLA

6450 Sequence Dr.
San Diego, CA 92121
Document No: 578523-001, Rev. B