



MOTOROLA

C-SPAN Networks

IRD Rollouts

C-SPAN 2 and C-SPAN 3

Installation Instructions

Version 3.0

Satellite downlink technical details in this document are accurate on and after 09/22/2009

Copyright 2009 by Motorola Corporation.
All rights reserved

No part of this publication may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation or adaptation) without written permission from Motorola. Motorola reserves the right to revise this document and to make changes in content from time to time without obligation on the part of Motorola to provide notification of such revision or change. Motorola provides this guide without warranty of any kind, implied or expressed, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. Motorola may make improvements or changes in the product(s) and /or the program(s) described in this document at any time.

Motorola Corporation
101 Tournament Drive
Horsham, PA 19044



Important:

On September 22nd, 2009 @ 4:00 a.m. Eastern Time, the C-SPAN2 *Analog Signal* on AMC 10 (formerly Satcom C4) Transponder 19 will no longer be transmitted.

It will be replaced with a full-transponder of Digital C-SPAN services at that time.

Affiliate systems that receive C-SPAN3 via Galaxy 10R, transponder 20 (also known as the ESPN Bristol Pod), will need to retune their existing Motorola DSR IRD to AMC 10, transponder 19 prior to September 22, 2009. We will discontinue distribution of C-SPAN3 via the Bristol Pod on September 22, 2009.

DSR units already installed onto the recently-launched (partial transponder) C-SPAN digital satellite signal will automatically change to start receiving C-SPAN2 and C-SPAN3 from the center frequency on AMC10 Transponder 19 at transition time.

Those sites that have had signal acquisition trouble with the partial transponder signal, or have not yet installed a Motorola digital IRD for C-SPAN2 or C-SPAN3 on AMC10 Transponder 19 will need to do so prior to Tuesday, September 22nd, to maintain the C-SPAN2 and C-SPAN3 services.

Please follow this new setup information and the DSR4410 instructions for installations that occur on or after Tuesday September 22nd, 2009. They reflect the signal changes that will be made on that date.



TABLE OF CONTENTS

1. INTRODUCTION	4
2. DSR-4410 INTEGRATED RECEIVER DECODER	4
2.1 DSR-4410 FRONT PANEL.....	4
2.2 DSR-4410 REAR PANEL.....	5
3. INSTALLATION INFORMATION	5
3.1 PHYSICAL INSTALLATION.....	5
3.3 CONNECTING ASI OUTPUT: DIGITAL TRANSPORT STREAM.....	6
3.3 CONNECTING ANALOG AUDIO AND VIDEO OUTPUTS.....	6
3.4 SATELLITE AND CHANNEL INFORMATION CHART.....	7
3.5 TUNING SATELLITE FEED.....	7
3.6 CONFIGURING CHANNEL PARAMETERS.....	8
3.7 RETRIEVING UNIT ADDRESS.....	8
3.8 CALLING FOR IRD AUTHORIZATION.....	8
5. WARRANTY INFORMATION	9
WITHIN 45 DAYS OF SHIPPING.....	9
OUTSIDE OF 45 DAYS OF SHIPPING.....	9

TABLE OF FIGURES

Figure 1: DSR-4410 Front Panel.....	4
Figure 2: DSR-4410 Rear Panel.....	5
Figure 3: DSR 4410 Rear View LNB Power.....	6
Figure 4: DSR 4410 Rear View ASI Output.....	6
Figure 5: DSR 4410 Analog and Video Outputs.....	6
Figure 6: Satellite and Channel Information Chart.....	7



1. Introduction

Motorola has conducted the IRD Rollout project for C-SPAN 2 and C-SPAN 3 satellite feeds. This shipment includes one Motorola DSR-4410 Integrated Receiver Decoder (IRD), which is compatible with C-SPAN 2 and C-SPAN 3 digital conversions dependent upon your C-SPAN Networks contractual agreement. This installation guide will provide you with the details needed to physically install, configure and activate this IRD for the digital conversion.

Do Not use these instructions before September 22nd 2009.

“CSPAN2_CSPAN3_Rollout_Instructions_Before_Sept_22nd.pdf”, which were included with this file, can be used to receive the signal prior to September 22nd.

2. DSR-4410 Integrated Receiver Decoder

C-SPAN and Motorola have set up a toll-free number to help with your request, installation, authorization, and technical assistance. Once you receive your new IRD, technical questions concerning installation or operation should be directed to Motorola at 1-800-308-6272

Technical information found in this installation guide can also be found in Motorola’s, “DSR-4410 DigiCipher II Commercial Integrated Receiver Decoder Operator Guide.” The C-SPAN 2 and C-SPAN 3 IRD rollout installation instructions are included with the DSR-4410.

2.1 DSR-4410 Front Panel



Figure 1: DSR-4410 Front Panel

- PORT 0 LED
- PORT 1 LED
- RELAY LED
- ALARM LED
- LCD Front Panel Display
- AUTHORIZED LED
- BYPASS LED
- SIGNAL LED
- DOWNLOAD LED
- Keypad with directional and ENTER buttons



2.2 DSR-4410 Rear Panel

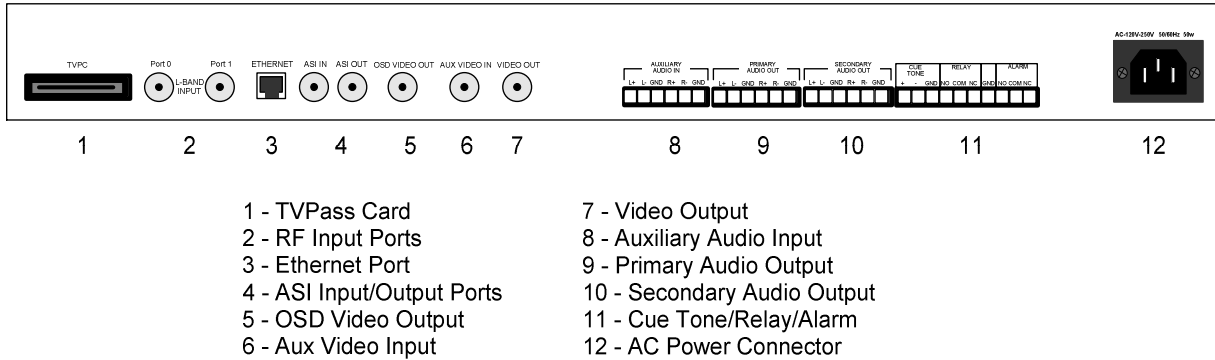


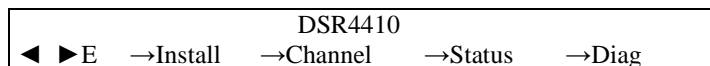
Figure 2: DSR-4410 Rear Panel

3. Installation Information

- Follow these steps to complete the DSR-4410 installation and authorization.
- For questions regarding the C-SPAN 2 and C-SPAN 3 IRD installation or DSR-4410 IRD, please contact Motorola at 1-800-308-6272.

3.1 Physical Installation

1. Install the receiver in a 19-inch universal rack and connect the power cord to an available AC outlet.
2. Apply AC power to the unit. All LED's on the DSR will go through a self-test and the LCD will temporarily display "MOTOROLA DSR4410" and the firmware version. Once the unit has completed the power up sequence, it will display the Main Menu as shown below:



- When the unit has power, the front panel Liquid Crystal Display (LCD) will display characters, and at least one Light Emitting Diode (LED) should be lit.
- If the unit fails to power up properly, remove all connections except the AC power cord. If the unit continues to fail initial boot up, contact Motorola at 1-800-308-6272.



3.2 Connecting the Satellite Feed

Connect a coaxial cable (RG-6 rated to at least 1450MHz) from the AMC10 (formerly Satcom C4 and F4) Vertical LNB to Port 0 on the rear panel of DSR-4410. DC Voltage to power an LNB is “Off” by default. This prevents failure(s) related to redundant DC Voltage within a system. If LNB Power is required, it can be activated using the Installation sub-menu labeled “CORE”.



Figure 3: DSR 4410 Rear View LNB Power

3.3 Connecting ASI Output: Digital Transport Stream

Connect the ASI Output to a down-stream processing device. This provides a Single Program Transport Stream.

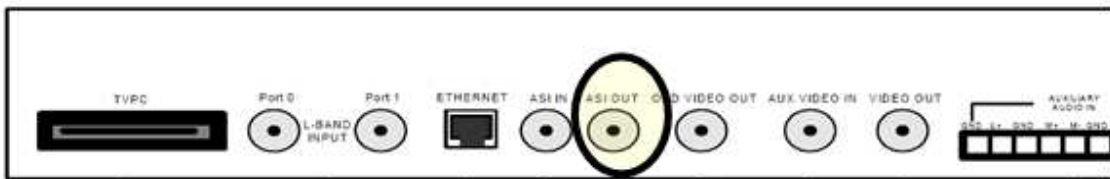


Figure 4: DSR 4410 Rear View ASI Output

3.3 Connecting Analog Audio and Video Outputs

When facing the rear panel, the Analog Video output port for “live” system use is the furthest to the right and labeled “VIDEO OUT”. The Video output port labeled “OSD VIDEO” should only be used for troubleshooting purposes.

Use the enclosed green terminal blocks, for making Audio connections. Use PRIMARY AUDIO OUT for default program audio. Since these are differential pairs, it is recommended to use two pair shielded audio cables rather than the single wire and shield type. For best quality audio, please take care to ground the shield on both the IRD GND terminal and at the channel modulator end.

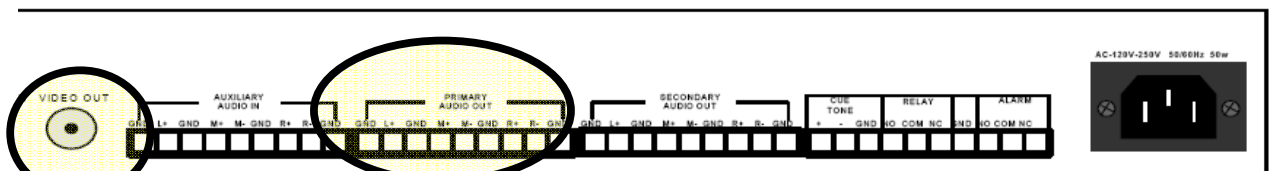


Figure 5: DSR 4410 Analog and Video Outputs



3.4 Satellite and Channel Information Chart

The Satellite and Channel Information Chart below, Figure 3, provides detailed information for the C-SPAN2 and C-SPAN3 IRD Roll-outs multiplex. This information is required to properly configure the DSR-4410 IRD.

Network	Satellite. Polarization Transponder L-Frequency	Symbol Rate FEC Rate Mode Modulation	Virtual Channel Table	Virtual Channel	MPEG Service Number	Video	Audio 1
C-SPAN 2	AMC 10 (135° W) Vertical Transponder 19 1070.00 MHz	29.27 Msps ¾ Combined DCII Manual	932	102	12	NTSC	English
C-SPAN 3	AMC 10 (135° W) Vertical Transponder 19 1070.00 MHz	29.27 Msps ¾ Combined DCII Manual	932	103	13	NTSC	English

Figure 6: Satellite and Channel Information Chart

Please note that the new **digital** carrier is on AMC 10, transponder 19, the historical Analog satellite carrier home of C-SPAN2. On September 22nd 2009 the C-SPAN2 Analog satellite signal will go dark and this new digital satellite signal will be expanded to use the entire 36 MHz satellite transponder and 1070.00 MHz transponder 19 L-Band center frequency.

3.5 Tuning Satellite Feed

1. From the Main Menu use the ◀▶ to select **Install**. Press **ENTER**.
2. Use the ▼▲ buttons to select the **MANUAL TUNE** menu. (if not there already)
3. On the **MANUAL TUNE** menu, press ▶ to **Mode** and press **ENTER**.
4. Use the ▼ or ▲ button to change the **Mode** from Xpndr to **L Freq**. Press **ENTER**.
5. Press the ▶ button to access the **LFreq** field and press **ENTER** to move the cursor down to the frequency value. Use ▲▼◀▶ buttons to edit to **1070.00**. Press **ENTER** to save.
6. Use the ◀▶ buttons to move the cursor to **MANUAL TUNE**. (upper left corner)
7. Press the ▼ button to access the **MODULATION** menu.
8. Use the ◀▶ buttons to select **Mode**, press **ENTER**.
9. Press the ▲ button once to select **DCII-MAN**. Press **ENTER**.
10. Use the ▶ button to select **Symbol Code Format**. Press **ENTER**.
11. Press the ▲ button **thirty times** to access the **29.27 3/4 Combined** choice. Press **ENTER** to save.
12. Press ▶ button once to move the cursor back to **MODULATION**. (upper left corner)
13. Press **ENTER** to display the **Main Menu**.

Wait for the green **SIGNAL** LED to illuminate. This can take up to 2 minutes. Do not proceed to the next step if the **SIGNAL** LED does not come on; proceed to Basic Troubleshooting Tips for No Signal Lock in Section 4.



3.6 Configuring Channel Parameters

Before viewing video and audio on the DSR-4410 IRD, the operator must select the correct Virtual Channel Table (VCT) ID and Channel number. In addition, the IRD must be authorized for the intended service. Follow the steps below to enter the correct VCT ID and Channel number.

14. From the Main Menu use the ◀▶ button to select **Channel**. Press **ENTER**.
15. Use the ▶ button to move the cursor to **VCT**, press **ENTER**.
16. Use the ▼▲ buttons to *reveal* the **VCT** number **932**. Press **ENTER** to save.
17. Use the ▶ button to move the cursor to **Chnl**, press **ENTER**.
18. Use the ▼▲ buttons to scroll through available channel numbers.
Use **102 for C-SPAN2 & 103 for C-SPAN3**. Press **ENTER** to save.
19. Use the ◀▶ button to move the cursor to **CHANNEL**. Press **ENTER** to return to the **Main Menu**.
20. If you receive an error when selecting the channel contact Motorola at 1-800-308-6272.

3.7 Retrieving Unit Address

The Unit Address can be obtained from a sticker on the bottom of unit, on the outside of the shipping carton. Easier still, the Unit Address can be retrieved through the IRD menus. It is in the 16-digit format: 000-03XXX-XXXXX-XXX. The final three digits are not needed for authorization.

21. From main menu use the ◀▶ to highlight **Diag**(nostics).
Press **ENTER** then use ▼ button to view the **Unit Address**.
22. Provide this Unit Address to Motorola for Authorization. (See next step.)
Once the unit is authorized, the **AUTHORIZED** LED will illuminate and DSR4410 output will begin.

3.8 Calling for IRD Authorization

Motorola will administer network authorizations for your IRD Monday through Friday 8 AM to 8PM EST. For authorization, have your new DigiCipher Unit Address(s), and contact Motorola via toll free, 1-800-308-6272. A Motorola IRD Specialist will authorize your new DigiCipher Unit Address.

4. Basic Troubleshooting tips for no DigiCipher/Signal lock

- Confirm the correct signal cable, AMC 10 Vertical, is connected to the L-Band input Port 0.
- In the Installation→Modulation menu, verify Mode = DCII-MAN, Symbol Code Format = 29.27 ¾ Combined
- Verify Input Port 0 and L-Band Freq 1070.00 MHz is selected in the Installation→Manual Tune menu.
- For additional help contact Motorola 1-800-308-6272.



5. Warranty Information

- Please note this section does not replace the limited liability and warranty information found in the DSR 4410 user guide. It purposes it to outline the process to follow to have a unit replaced or repaired.

Motorola's Defect Return Policy requires that Motorola verify that the equipment is defective. Motorola Standard Warranty is that if a DSR-4410 (shipped for this project) is found to be defective within 45 days from when the unit was shipped out of the Motorola facility and needs to be replaced, Motorola will replace the unit. Units failing outside the 45 day window will be repaired under warranty.

Within 45 Days of Shipping

1. Contact project call center at 1-800-308-6272.
2. Call Center will verify that the equipment is defective.
3. Motorola will supply RA for unit to be returned within 2 business days.
4. Defective unit is returned to Motorola
5. Motorola confirms return of old unit and ships replacement.

Outside of 45 Days of Shipping

1. Contact Motorola's Technical Response Center (TRC) at 1-888-944-4357
2. TRC will verify the equipment is defective.
3. TRC will supply repair facility 800 number.
4. Repair Facility will supply RSA for unit to be sent in for warranty repair.