



## INSTALLATION & CONFIGURATION MANUAL

### **SCDM-SD1, SCDM-SD2, SCDM-SD4** **Single, Dual, Quad Input QAM Modulators**



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## SAFETY PRECAUTIONS



*The presence of this symbol is to alert the installer and user to the presence of uninsulated dangerous voltages within the product's enclosure that may be of sufficient magnitude to produce a risk of electric shock.*

**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS DEVICE TO RAIN OR MOISTURE. DO NOT OPEN THE UNIT. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.**

- ❖ DO NOT apply power to the unit until all connections have been made, all components have been installed and all wiring has been properly terminated.
- ❖ DO NOT terminate, change or uninstall any wiring without first disconnecting the unit's power adapter from the device.
- ❖ This device is supplied with the appropriately rated 12VDC power supply with the center pin positive. The use of any other power supply could cause damage and invalidate the manufacturer's warranty.
- ❖ DO NOT connect the power supply to the device if the power cord is damaged.
- ❖ DO NOT cut the power cord.
- ❖ DO NOT plug the power supply into an AC outlet until all cables and connections to the device have been properly connected.
- ❖ The device should be installed in an environment consistent with its operating temperature specifications. Placement next to heating devices and ducts is to be avoided as doing so may cause damage. The device should not be placed in areas of high humidity.
- ❖ DO NOT cover any of the device's ventilation openings.
- ❖ DO NOT cover or obstruct the device's fan or fan openings.
- ❖ If the device has been in a cold environment allow it to warm to room temperature for at least 2 hours before connecting to an AC outlet.

## PACKAGE CONTENTS

This package contains:

- ❖ One SCDM-SD1, SCDM-SD2 or SCDM-SD4 modulator
- ❖ One 12VDC 3A power supply
- ❖ One pair of mounting brackets
- ❖ Four adhesive pads
- ❖ Assorted mounting hardware
- ❖ One installation and configuration manual

Inspect the package before starting installation to ensure there is no damage and all supplied contents are present. Contact your distributor or dealer should the device be damaged or package contents are incomplete.

## SPECIFICATIONS

	SCDM-SD1	SCDM-SD2	SCDM-SD4
<b>INPUT</b>			
Video Input	Composite/ASI	Composite/ASI	Composite/ASI
Video Input Level	0.7 – 1.4V (peak-to peak)	0.7 – 1.4V (peak-to-peak)	0.7 – 1.4V (peak-to-peak)
Video Mode	NTSC/PAL	NTSC/PAL	NTSC/PAL
Audio input	Stereo	Stereo	Stereo
Audio Input Level	0.4 – 0.8V (p-to-p)	0.4 – 0.8V (p-to-p)	0.4 – 0.8V (p-to-p)
Video and Audio Input Connectors	RCA	RCA	RCA
Input Impedance	75Ω	75Ω	75Ω
<b>OUTPUT</b>			
Frequency Range	54-864MHz	54-864MHz	54-864MHz
Output Level	25dBmV	25dBmV	25dBmV
Output Impedance	75Ω	75Ω	75Ω
Channel Bandwidth	6HMz	6MHz	6MHz
Channel Level Adjustment	20 dB typical	20 dB typical	20 dB typical
MER	36 dB typical	36 dB typical	36 dB typical
Connector Type	“F” female	“F” female	“F” female
<b>MODULATION</b>			
Video Resolution	NTSC 720x480@30fps	NTSC 720x480@30fps	NTSC 720x480@30fps
Video Compression	MPEG2 MP@ML	MPEG2 MP@ML	MPEG2 MP@ML
Audio Compression	MPEG1 Layer II	MPEG1 Layer II	MPEG1 Layer II
Constellations	64 QAM / 256 QAM	64 QAM / 256 QAM	64 QAM / 256 QAM
Symbol Rate	5.056941 Msps @64QAM 5.360537 Msps @256QAM	5.056941 Msps @64QAM 5.360537 Msps @256QAM	5.056941 Msps @64QAM 5.360537 Msps @256QAM
Data Rate	26.97035 Mbps @64QAM 38.81070 Mbps @256QAM	26.97035 Mbps @64QAM 38.81070 Mbps @256QAM	26.97035 Mbps @64QAM 38.81070 Mbps @256QAM
<b>GENERAL</b>			
Power Supply	12VDC @3A	12VDC @3A	12VDC @3A
Power Consumption	1110mA (13.2W)	1300mA (15.6W)	1700mA (20.4W)
Display Language	English	English	English
Dimensions	11.8” x 7.87” x 1.75”	11.8” x 7.87” x 1.75”	11.8” x 7.87” x 1.75”
Weight	3.65 lb.	3.78 lb.	4.09 lb

Specifications are subject to change without prior notice

## HARDWARE INSTALLATION and CONNECTIONS

1. The unit can be rack mounted in a standard EIA 19" rack. Attach the rack mounts if the unit is to be installed in a rack.
2. Use a 75Ω coaxial cable with RCA connectors to connect the **video source** (e.g., CATV, DVD, VCR, Camera) to the unit's **yellow RCA VIDEO INPUT jack** (IN1...IN4 depending on the SCDM model).

Repeat this step for each video source connection.

It is highly recommended that quality coaxial cable and connectors be used for all video source connections.

3. Use RCA cables to connect the **audio source** to the red / white **AUDIO L and AUDIO R INPUT jacks** (IN1...IN4 depending on the SCDM model). Use the red and white jacks for audio input or either one for a single input.

Repeat this step for each audio source connection.

Be sure the video and audio connections for each source are consistent with the unit's inputs (IN1...IN4 depending on the SCDM-SD model).

It is highly recommended that quality cables and connectors be used for all audio source connections.

4. Use a quality 75Ω coaxial cable with "F" connectors from the unit's **RF OUT jack** to the **distribution system** (combiner or reverse splitter) or directly to a television.
5. Connect the included 12VDC 3A power supply to the unit's **DC 12V POWER jack**.
6. Connect the 12VDC 3A power supply to an appropriately rated AC power outlet.

## MODULATOR SETUP AND CONFIGURATION

### FACTORY DEFAULT

IMPORTANT: This unit is defaulted to Rogers Cable Specifications.

The SCDM's front panel is used to configure the modulator as desired.

- ❖ Power up the device and wait until the booting process is complete.
- ❖ Once complete, press the **Scroll Up/Down button** until "**Default Config**" appears in the menu. After "**Default Config**" appears press the **OK button**.
- ❖ Power down the unit by removing the power supply cable from the DC 12V power jack.
- ❖ Wait 5 seconds and re-connect the power supply.

## MODULATOR CONFIGURATION

Once the modulator is powered back up it will go through an internal booting process. When “**Running**” appears in the LCD Display the unit is ready for programming or operation.

- ❖ **Password** – Press the OK button to select a 4-digit password. Use the **Scroll Up/Down button to search and select individual numbers for the password**. The default password is 0000. Press the OK button for each number to set the password.
- ❖ **Advanced Menu** – To access the Advanced Menu first enter the password by pressing the OK button. Once the correct password is entered press the OK button and the LCD Screen will display “Advanced Menu Output Channel”. The following configuration options are available under Advanced Menu:
  - **Output Channel** – Use the Scroll Up/Down button to change the output channel. Channels 2 to 135 are available. Once the desired output channel is selected press the OK button to set the channel.
  - **Attenuation** – Use the Scroll Up/Down button to select Attenuation. Press the OK button to enter the Attenuation menu. Use the Scroll/Up down button to select the desired attenuation in 1dB increments from 0 to minus 20 dB. Once the desired attenuation level is found press the OK button to set.
  - **Constellation** – Use the Scroll Up/Down button to select Constellation. Press the OK button to enter the Constellation menu. The modulator allows for either QAM256 or QAM64. Select the desired Constellation then press the OK button to set.
  - **Interleaver** – Use the Scroll Up/Down button to select Interleaver. Press the OK button to enter the Interleaver menu. Use the Scroll Up/Down button to select the desired Interleaver values then press the OK button to set.
  - **Channel Type** – Use the Scroll Up/Down button to select Channel Type. Press the OK button to enter the Channel Type menu. Menu options are STD, HRC and IRC. The factory default is STD. Use the Scroll Up/Down button to select the desired Channel Type and press the OK button to set.
  - **RF Output** – Use the Scroll Up/Down button to select RF Output. Press the OK button to enter the RF Output menu. Menu options are Normal, Inverted and C.W. The factory default is Normal. Use the Scroll Up/Down button to select the desired RF Output and press the OK button to set.
  - **Brightness** – Use the Scroll Up/Down button to select Brightness. Press the OK button to enter the Brightness menu. Use the Scroll Up/Down button to select the desired Brightness value (0 to 255) and press the OK button to set. Factory default is 128
  - **Contrast** – Use the Scroll Up/Down button to select Contrast. Press the OK button to enter the Contrast menu. Use the Scroll Up/Down button to

select the desired Contrast value (0 to 255) and press the OK button to set. Factory default is 128.

- **Saturation** – Use the Scroll Up/Down button to select Saturation. Press the OK button to enter the Saturation menu. Use the Scroll Up/Down button to select the desired Saturation value (0 to 255) and press the OK button to set. Factory default is 128.
- **Sharpness** – Use the Scroll Up/Down button to select Sharpness. Press the OK button to enter the Sharpness menu. Use the Scroll Up/Down button to select the desired Sharpness value (0 to 255) and press the OK button to set. Factory default is 64.
- **Hue** – Use the Scroll Up/Down button to select Hue. Press the OK button to enter the Hue menu. Use the Scroll Up/Down button to select the desired Hue value (0 to 255) and press the OK button to set. Factory default is 128.
- **Device Address** – Use the Scroll Up/Down button to select Device Address. Press the OK button to enter the Device Address menu. Use the Scroll Up/Down to select the Desired Address ranging from 1 to 255 then press the OK button to set.
- **Set TS ID (Stream ID)**. Use the Scroll Up/Down button to set TS ID. Press the OK button to enter the TS menu. Use the Scroll Up/Down to select the TS ID ranging from 1 to 65535 then press OK to set.
- **Set Region Name**. If required, use Scroll Up/Down button to set Region Name. Press the OK button to enter the Region Name. Use the Scroll Up/Down button to select the first character of the desired Region Name then press the OK button to set. Repeat the process until the desired Region Name is completed. Factory Default is USA.

**Note: Do not Change.**

- **Default Configuration** –



**Caution: Once the OK button is pressed at the Default Config menu the unit will automatically reset to the factory default.**

**All settings or changes to the encoder/modulator will be lost.**

If you wish to set the modulator back to the factory default settings use the Scroll Up/Down button to reach Default Configuration then press the OK button.

- **VCN-** To enable Virtual Channel Mapping Scroll to VCN Menu. Press OK to enter the VCN menu. Select Enable to turn on VCN functionality. If VCN is not enabled- the output channels will be dependent on the output channel /physical number. Factory default: **Disable**.
- **1 Video Input** – Use the Scroll Up/Down button to select 1 Video Input. Press the OK button to enter the 1 Video Input menu. Use the Scroll Up/Down button to select the Video Input option: NTSC, PAL, ASI. The factory default is NTSC. Press the OK button to set. If the modulator has more than one video input scroll through the Advanced Menu for the additional video input menus.

- **1 Program Num** – Use the Scroll Up/Down button to select 1 Program Num. Press the OK button to enter the 1 Program Num menu. Use the Scroll Up/Down button to select the desired 1 Program Num option ranging from 0 to 65535 then press the OK button to set. Factory default is 1001. If the modulator has more than one video input scroll through the Advanced Menu for the additional Program Num menus.
- **1 Short Channel Name** – Use the Scroll Up/Down button to select Short Channel Name. Press the OK button to enter the Short Channel Name menu. Use the Scroll Up/Down menu to select the first character of the desired Short Channel Name then press the OK button to set. Repeat the process until the Short Channel Name is completed. If the modulator has more than one video input scroll through the Advanced Menu for additional Short channel name menus.

**The Short Name can be 7 characters long.**

Factory Default is MY-DVT1.

- **1 Long Ch Name** – Use the Scroll Up/Down button to select Long Channel Name. Press the OK button to enter the Long Channel Name menu. Use the Scroll Up/Down menu to select the first character of the desired Long Channel Name then press the OK button to set. Repeat the process until the Long Channel Name is completed. If the modulator has more than one video input scroll through the Advanced Menu for additional Long channel name menus.

**The Long Name can be 16 characters long.**

Factory Default is ATSC-Digital-TV1

- **1 Source ID.** Use the Scroll Up/Down button to set 1 Source ID. Press the OK button to enter the 1 Source ID menu. Use the Scroll Up/Down to select the 1 1 Source ID. ranging from 1 to 65535 then press OK to set.
- **1 Aspect Ratio** – Use the Scroll Up/Down button to select 1 Aspect Ratio. Press the OK button to enter the 1 Aspect Ratio menu. Use the Scroll Up/Down button to select the desired Aspect Ratio option of 4:3 or 16:9 then press the OK button to set. Factory default is 4:3. If the modulator has more than one video input scroll through the Advanced Menu for additional Aspect Ratio menus.
- **1 Video Output** – The SCDM-SD Series is set at MPEG2.
- **1 Audio Input** – The SCDM-SD Series is set at Analog.
- **1 Audio Output** – The SCDM-SD Series is set at MP2.
- **1 VCN Channel-** Use the Scroll Up/Down button to 1 VCN Channel in the Advanced Menu. Press the OK button to enter the 1 VCN Channel menu. Set the 1 VCN Channel using the Scroll Up/Down buttons. Set Virtual Channel from 1-16383. Set 1VCN,2VCN,3VCN,4VCN as required.

To **exit the Advanced Menu** use the Scroll Up/Down button to select Exit then press the OK button. Exit Exit Menu will appear on the LCD screen. Press the OK button twice to exit.



- ❖ Once the settings are made and the modulator is programmed (a) remove power from the unit by disconnecting the power supply cable from the DC 12V jack, (b) wait 5 seconds and (c) reconnect the power cable to the unit's DC 12V jack. This will allow the modulator to capture the new settings.

### **CABLE PROVIDER SETUP**

Rogers: 988-991

Allows 4 channels to be modulated. Each input must be set to a program number ranging from 1-4 and will show on the below channels.

Output Channel: 99 MHz | Channel 96

Program 1: 988

Program 2: 989

Program 3: 990

Program 4: 991

Cogeco: 398

Output Channel varies by area:

849 MHz | Channel 133

609 MHz | Channel 88

765 MHz | Channel 119

603 MHz | Channel 87

759 MHz | Channel 118

579 MHz | Channel 83

753 MHz | Channel 117

567 MHz | Channel 81

705 MHz | Channel 109

Program Number: 398

Shaw: 716

Output Channels: 855 MHz | Channel 134

Constellation: QAM64

Program Number: 1

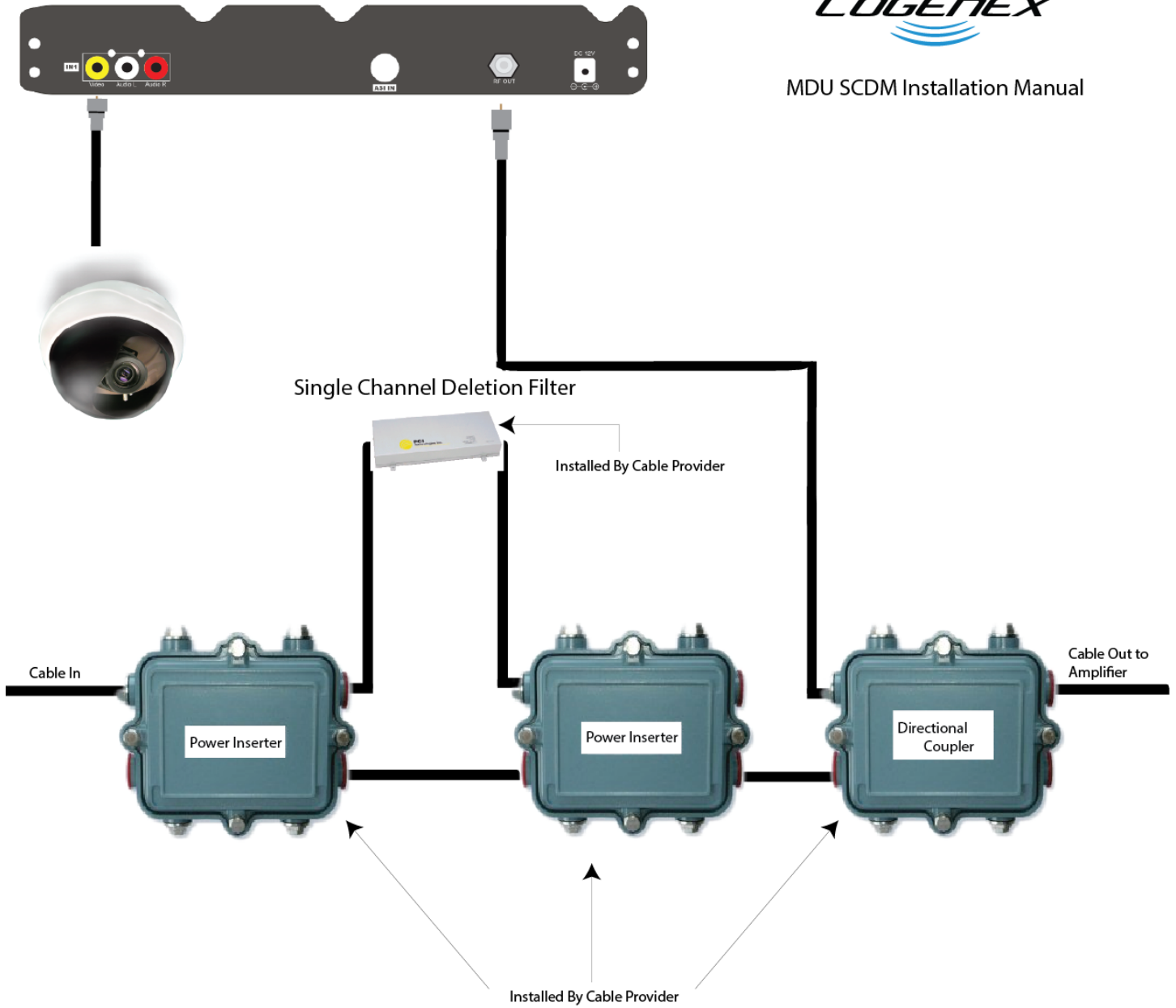
### SCDM-SD MODULATOR NOTES

PRODUCT NOTES:

ITEM	VALUE
PASSWORD	
SERIAL NUMBER	
INSTALLATION DATE	
PURCHASE DATE	
VIDEO 1 INPUT	
VIDEO 2 INPUT	
VIDEO 3 INPUT	
VIDEO 4 INPUT	



MDU SCDM Installation Manual

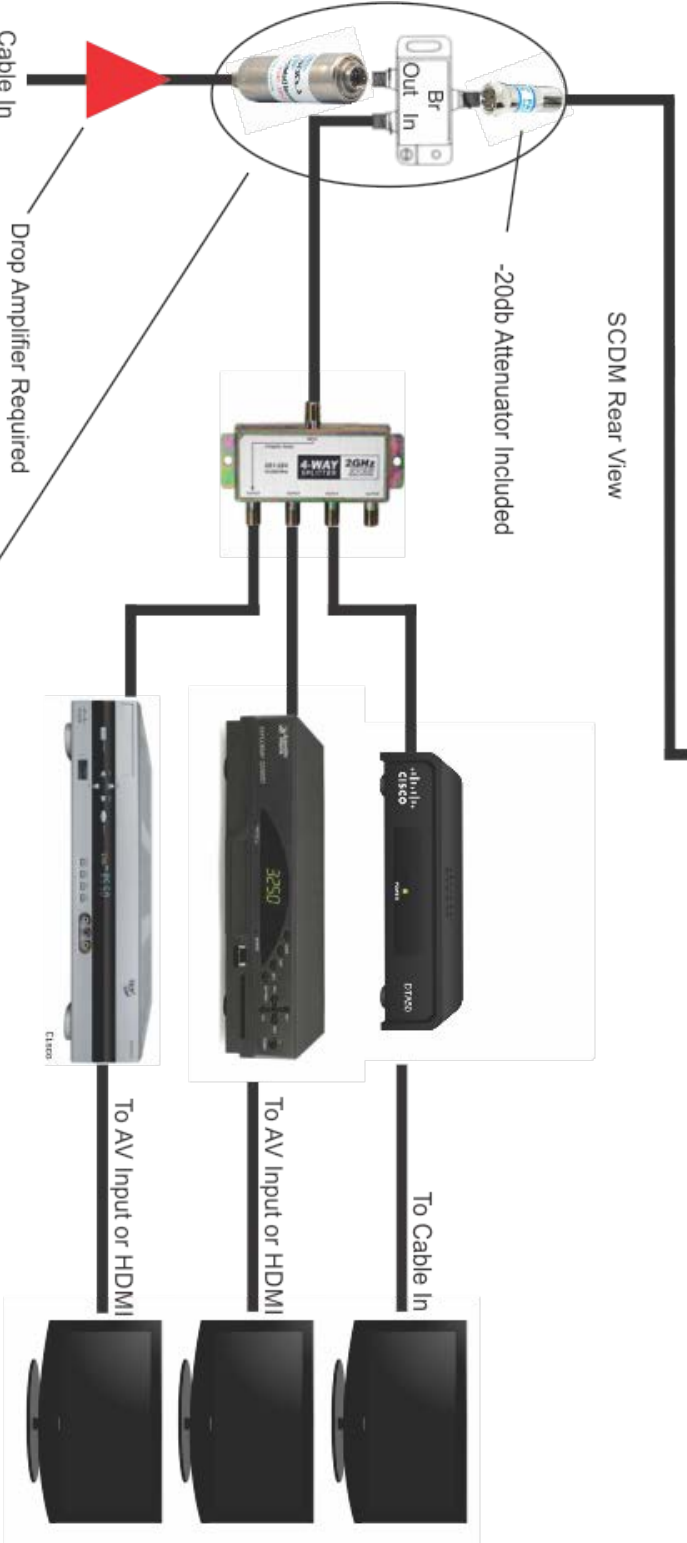


\* Note: Modulated channel signal must be balanced with an adjacent channel



# Full Digital Set Top Box Installation

< +6 dbmV from cable provider

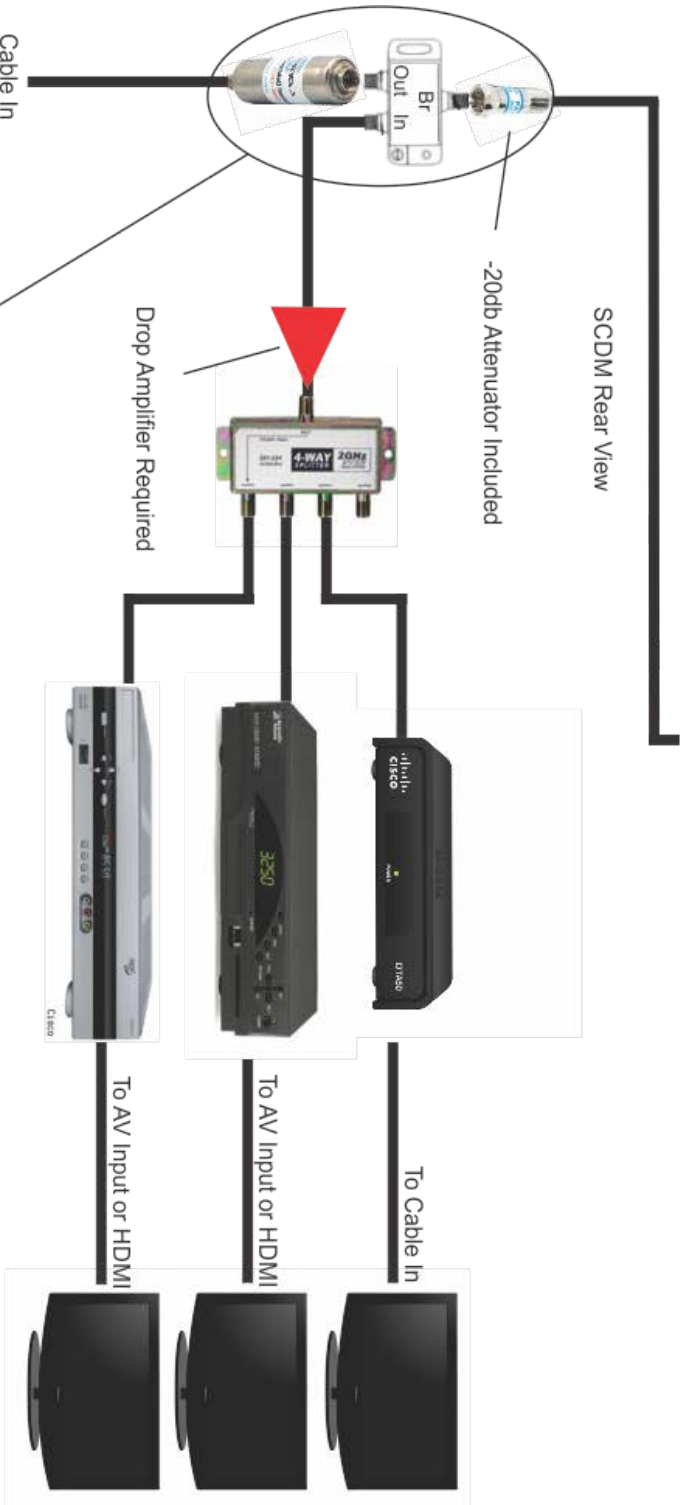


Supplied/Required filter varies by cable provider, please verify with you cable provider  
 The Filter must remain on the Out spigot for proper functionality.



# Full Digital Set Top Box Installation

> +10 dbmV from cable provider



Supplied/Required filter varies by cable provider, please verify with your cable provider. The Filter must remain on the Out spigot for proper functionality.



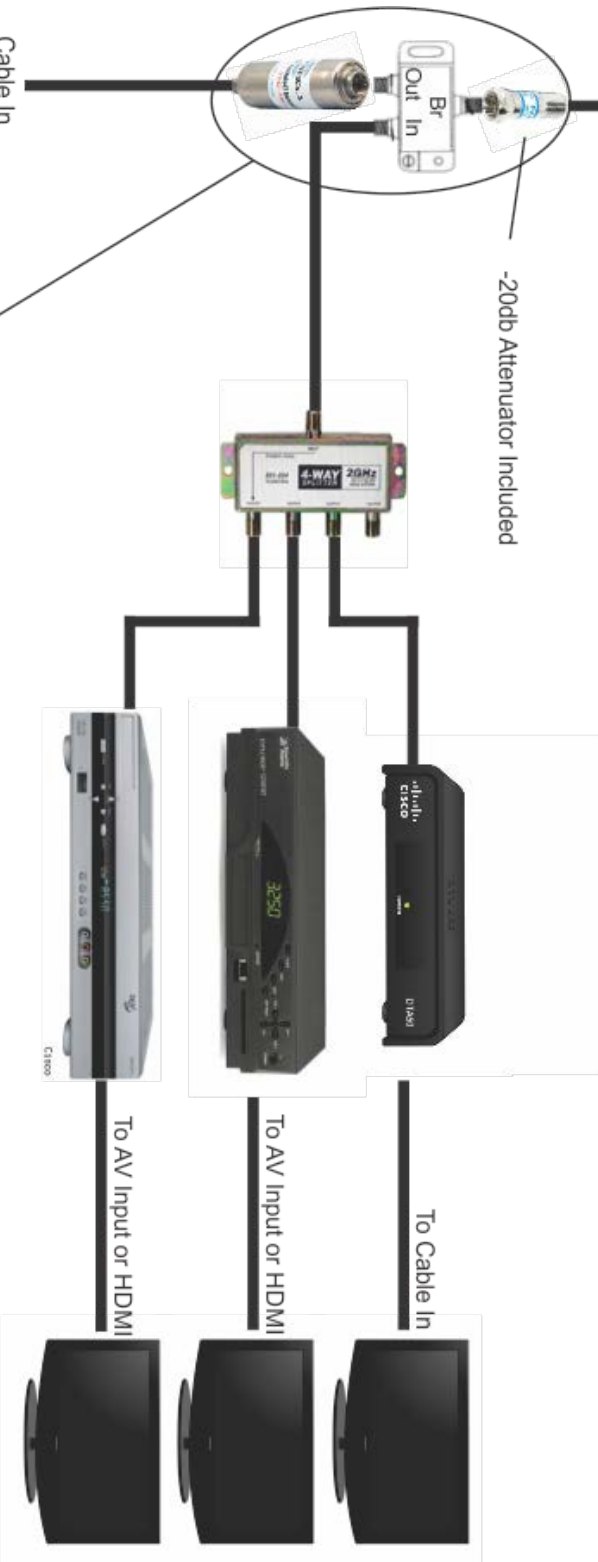
# Full Digital Set Top Box Installation

> +14 dbmV from cable provider



SCDM Rear View

SCDM-SD Rear View



Supplied/Required filter varies by cable provider, please verify with your cable provider. The Filter must remain on the Out spigot for proper functionality.