



INSTALLATION MANUAL

CT-MCQD ATSC/QAM Digital/Analog Micro Demodulator



IMPORTANT INFORMATION



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "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 appliance.

WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DO NOT OPEN THE CABINET, REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

PACKAGE CONTENTS

This package contains:

One CT-MCQD ATSC/QAM Micro Demodulator

One CT-MCQD Installation Manual

PRODUCT DESCRIPTION

The CT-MCQD is an ATSC/QAM professional grade micro demodulator designed for cost effective digital-to-analog conversion of an unencrypted 8VSB (Off-Air SD/HD TV signal) or QAM unencrypted (digital CATV) RF signal to baseband NTSC video and left and right stereo audio outputs. All of the 18 ATSC video formats including HD video can be received by the CT-MCQD and converted for display on non-digital TV sets over analog channels with the use of a modulator.

SPECIFICATIONS

CT-MCQD

ATSC/QAM Digital/Analog Micro Demodulator Specifications (Typical)

RF	
1. Frequency Range	54 – 860MHz
2. 8VSB Input Channel Bandwidth	6MHz and subcarriers
3. Data Rate	19.39 Mbps
4. Noise Figure	<8dB
5. QAM Input Frequency Range	CATV 54 – 860MHz
6. QAM Data Rate	27 Mbps
7. QAM 256 Data Rate	38 Mbps
8. Input Level Range	40dBmV to -33dBmV
9. Adjacent Channel Rejection	60 dB
10. Image Rejection	40 dB
11. Demodulation Mode	8VSB, 8VSB MP@ML
12. Symbol Clock Frequency	10.762MHz
13. Input Connector	75Ω F female
GENERAL	
1. Video Output (analog)	
Frequency Response	30Hz to 4.2MHz, ± 1.5 dB
Video Output Level	1Vp-p, ± 0.2V
Impedance	75Ω
Connector Type	F-female
2. Audio L/R Outputs	
Impedance	600Ω unbalanced
Level	1Vrms±100mVp-p
Frequency Response	30Hz to 20kHz, ± 2dB
Distortion	1% maximum
Connector Type	RCA
3. Power	12V , 225mA = 2.7W ; 5V, 350mA = 1.75W
4. Operating Temperature	32 °F ~ 122 °F
MECHANICAL	
1. Dimensions	1"(W)" x 3.5" (H) x 9.25" (D)
2. Weight	0.7 lbs.

INSTALLATION AND OPERATION

NOTE TO SYSTEM INSTALLER

System installer must adhere to Article 820-40 of the NEC that provides guidelines for proper grounding and 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.

1. UNPACKING and HANDLING

Each unit is shipped assembled and factory tested.

Ensure that all accessories are removed from the container before discarding packing material

2. MECHANICAL INSPECTION

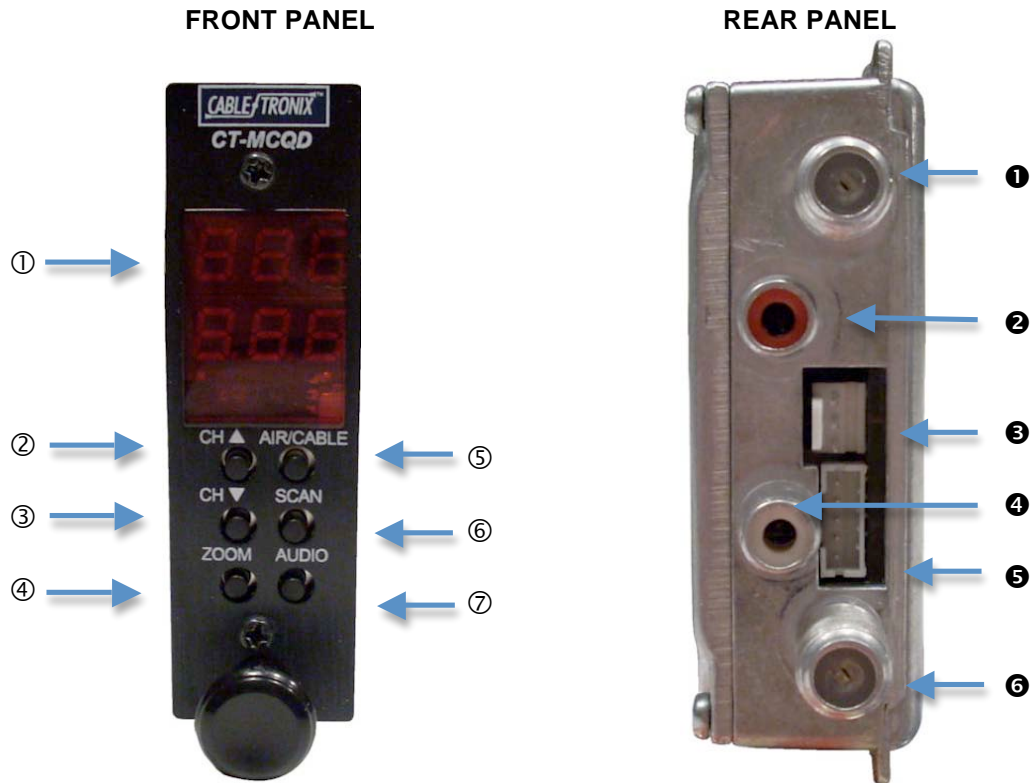
Inspect the front and rear of the equipment for shipping damage. Make sure the equipment is clean, and no connectors are broken, damaged, or loose. If equipment appears to be damaged or defective please contact your distributor or Cabletronix at 1-610-429-1511 for assistance.

3. THE USE OF RACK MOUNTABLE CHASSES AND POWER SUPPLIES

The CT-MCQD is designed to be mounted in a rack chassis designed for micro modulators, and powered by power supplies intended for micro demodulators and designed to fit in the micro demodulator rack chassis. The Cabletronix CTRC-12 12-unit rack chassis, and the Cabletronix CTPS-12 single 12-unit power supply or Cabletronix CTPS-12DUAL redundant power supply should be used with the CT-MCQD. Use of another power supply can void the warranty. Up to 12 CT-MCQDs can be configured into a single CTRC-12.

Some chassis and power supplies from other vendors and distributors may work, but actual configurations will vary by vendor. It is critical to note that (a) the power supply harness being used MUST come from the vendor providing the power supply, (b) the power supply must be designed for powering Cabletronix brand micro demodulators and installation in a micro demodulator rack chassis, and (c) power supply harnesses and power supplies are NOT always interchangeable among vendors. Using the wrong power supply harness and/or power supply can damage the CT-MCQD. Contact your distributor for more information.

4. PRODUCT DIAGRAM



- ① Message and Channel Display
- ② CHANNEL UP
- ③ CHANNEL DOWN
- ④ ZOOM
- ⑤ AIR/CABLE Channel Selection of Off-Air (8VSB) or Cable (QAM)
- ⑥ SCAN
- ⑦ AUDIO

- ❶ ANTENNNA IN for Off-Air or CATV, F-Connector
- ❷ AUDIO RIGHT Output, RCA Connector
- ❸ POWER Connector
- ❹ AUDIO LEFT Output, RCA Connector
- ❺ RS-232 DATA PORT
- ❻ VIDEO OUT, F-Connector

5. HARDWARE CONNECTIONS

- a. The CT-MCQD is designed for installation in a chassis designed for micro demodulators. Micro demodulator chassis such as the Cabletronix CTRC-12 can be mounted in standard 19" EIA racks.
- b. The Cabletronix CTRC-12 12-unit rack chassis and Cabletronix CTPS-12 single 12-unit power supply or CTPS-12DUAL redundant power supply should be used with the CT-MCQD. Up to 12 CT-MCQDs can be configured into a single CTRC-12/CTPS-12. Some chassis and power supplies from other vendors and distributors may also be used, but actual configurations will vary by vendor. Contact your distributor for more information.
- c. When configuring the CT-MCQD in the chassis and power supply it is critical that the power harness being used is from the same vendor as the power supply, and is designed for that specific supply. Power supply harnesses among vendors are not interchangeable and can severely damage the CT-MCQD.
- d. The use of a surge protector and a UPS is highly recommended. Product warranty does not cover surge or spike damages.
- e. Connect a 75-ohm coaxial cable with proper connectors from the **CT-MCQD's Antenna Input Port** to the Off-Air antenna or other video source.
- f. For mono audio output, connect an audio patch cable with RCA male connectors on both ends between the **CT-MCQD's Audio LEFT (White) Output Port** (RCA female connector) to the **modulator's audio input port**. For output to a stereo modulator use patch cables from the **CT-MCQD's Audio LEFT (White) Audio RIGHT (Red) Output Ports**.
- g. Connect a coaxial cable using an male F-connector to the **CT-MCQD's Video Output Port** and a male F-connector to the **modulator's video input port**.
- h. Note you will require 1 CT-MCQD for each channel or subcarrier to be converted and demodulated. You will also require 1 modulator for each channel to be remodulated.
- i. Connect the CT-MCQD to the power harness and power supply installed in the micro demodulator chassis.

6. SETTINGS

- a. Confirm the CT-MCQD is powered on.
- b. Select receive signal from Off-Air (8VSB) or Cable (QAM) using the CT-MCQD's **AIR/CABLE Selection Switch**.
- c. Press the **CT-MCQD's SCAN Switch**. The CT-MCQD will initiate a search for available signals/channels in the given area. "**SEARCH**" will appear in the **CT-MCQD's Display**. The search process can take several minutes. You should know what channels are available in that area so you can determine which of those signals needs to be converted and demodulated. Note the scan may be need to be done more than once.
- d. When the search is complete one of the found channels will appear in the

CT-MCQD's Display. As the CT-MCQD may have found multiple channels use the **CH UP** and **CH DOWN Buttons** to scroll through the available channels until you find the one to be converted and demodulated. The **CT-MCQD's Lock LED** will glow indicating a channel has been found and selected.

- e. The desired channel should have sufficient signal strength to produce a quality image.
- f. To select the appropriate or desired aspect ratio press the **CT-MCQD's ZOOM Switch**. 4:3 for standard screen display and 16:9 for widescreen display. Note the available aspect ratio may be channel and program dependent making selection impossible. Selected aspect ratio will be shown in the **CT-MCQD's Display**.
- g. The CT-MCQD includes a **Zoom** feature that allows the selected channel's image to be displayed either as FULL (full screen display) or LETTER (letter box with smaller image surrounded by a black border). You may use the **CT-MCQD's ZOOM Switch** to select either FULL or LETTER with selection being shown in the **Display**. However, the Zoom feature is channel dependent. Further, as the Zoom setting could be considered a viewer preference it may be advisable leave the setting in the default position.

7. TROUBLESHOOTING

- a. Ensure you are using quality multiple shielded cables with quality radial or compression F-connectors. It is recommended Belden 9167 cable be used to prevent signal ingress or egress.
- b. Ensure the cables' center conductors are making solid contact with the CT-MCQD's **Antenna Input, Audio Output, and Video Output ports**.
- c. If the CT-MCQD is receiving power but no signal, check to be sure the RF cable is securely connected between the CT-MCQD and the antenna.
- d. If the CT-MCQD is not receiving power make sure the power cable is firmly connected. Be sure the power source is properly rated to handle the CT-MCQD's load especially if other equipment is being powered by that same source.
- e. It is highly recommended the **CT-FANRK** 3-unit rack mountable fan be used as significant heat reduction may as much as double the CT-MCQD's life span.
- f. Further troubleshooting assistance can be found on-line at www.cabletronix.com in addition to support from Cabletronix sales engineers at 1-610-429-1511.

This is a notice to inform you that content passing through this device may contain strong language or depictions of violence, sex, or substance abuse. This unit contains no parental control features. Parental discretion is advised.