C2N-TAMFMXM
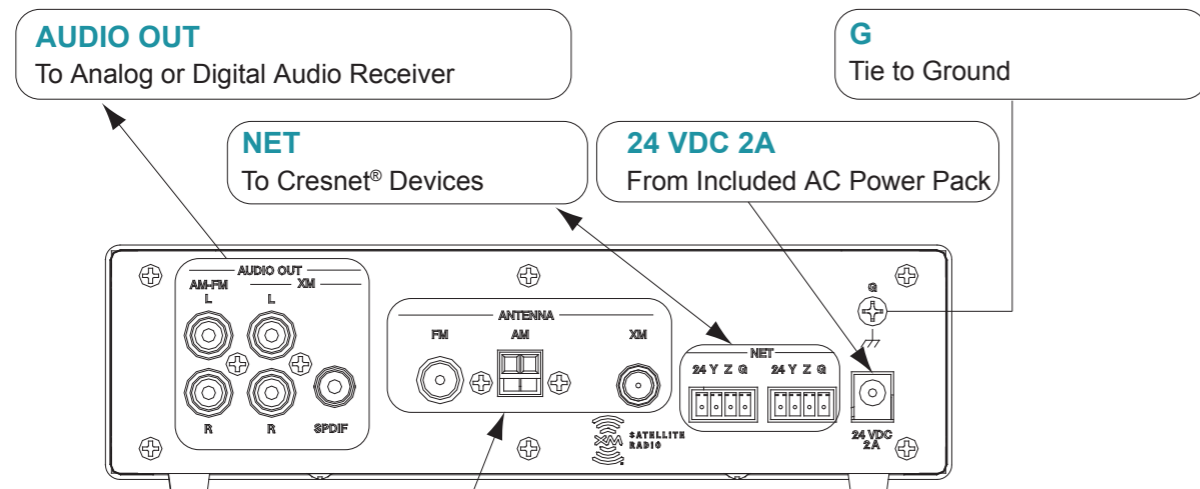## AM/FM and XM® Satellite Radio Tuner
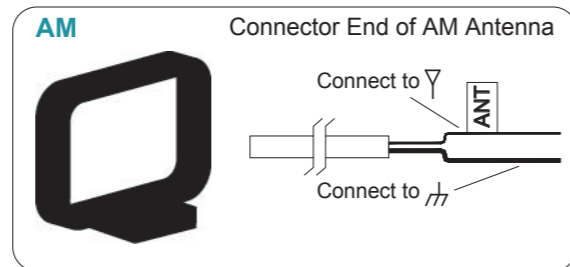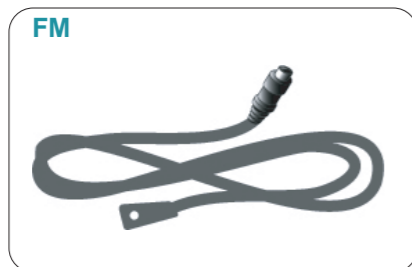
1 **Hardware Hookup**

Make the necessary connections as called out in the diagram below. Connect power last.

AUDIO OUT	**G**
To Analog or Digital Audio Receiver	Tie to Ground

NET	**24 VDC 2A**
To Cresnet® Devices	From Included AC Power Pack

ANTENNA (FM, AM, and XM)

From Included Antennae

FM	AM	Connector End of AM Antenna	XM	Attach to **XM** port using included adapter

Connect to ANT

Connect to ⏚

Notes on Antenna Orientation:

AM: Orient the AM loop antenna so that the flat surface of the loop antenna faces the metropolitan area originating the broadcast signals. This is particularly necessary when signals are weak. If you are not aware of the source or directions of the signals to which you will listen, simply rotate the loop antenna in clear space for maximum signal strength. The supplied antenna has a folding stand that allows the antenna to stand on a flat surface.

FM: The recommended FM antenna is an outdoor type available in electronics stores. Use the included FM antenna if an outdoor antenna cannot be used. The included antenna may require reorientation if the signal is weak. Best results can occur if the length of the antenna faces the metropolitan area from which the desired FM signal originates. The supplied antenna has a fitting at its end that will enable you to fasten it in place.

XM: Aim the antenna toward the southern sky, where the satellite is located. If the antenna is placed outdoors, it should be in an area where there are no obstacles within 20 to 60 degrees of elevation facing the southern sky. The antenna should be placed on a flat surface that is parallel to the ground. If the antenna is placed where obstacles such as buildings or trees are in the path to the satellite, the antenna may not receive radio waves from the satellite. Certain areas provide satellite radio ground repeaters that retransmit satellite radio signals. Extension cables are available from Crestron®.
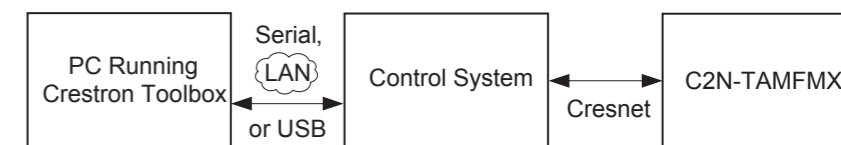
2 **Establish Communication**

Use Crestron Toolbox™ for communicating with the C2N-TAMFMXM; refer to the Crestron Toolbox help file for details.

There is a single method of communication: Indirect communication.

NOTE: Required for setting the Net ID and loading firmware.

Indirect Communication

PC Running Crestron Toolbox	Serial, LAN or USB	Control System	Cresnet	C2N-TAMFMXM

The **NET** port on the C2N-TAMFMXM connects to the control system via Cresnet:

1. Establish communication between the PC and the control system as described in the latest version of the 2-Series Control Systems Reference Guide (Doc. 6256) which is available from the Crestron Web site (www.crestron.com/manuals).
2. Use the Address Book in Crestron Toolbox to create an entry for the C2N-TAMFMXM using the expected communication protocol (indirect). Select the Cresnet ID of the C2N-TAMFMXM as listed in section **3** below and the address book entry of the control system that is connected to the C2N-TAMFMXM.
3. Display the C2N-TAMFMXM's "System Info" window (click the ⓘ icon); communications are confirmed when the device information is displayed.

3 **Net ID**

The Net ID of the C2N-TAMFMXM has been factory set to **9F**. The Net IDs of multiple C2N-TAMFMXM devices in the same system must be unique. The Net ID may also be set from a personal computer (PC) via Crestron Toolbox (refer to "Establish Communication" in section **2**).

For Regulatory Compliance information, refer to the latest version of Doc. 7291.

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4 **Operation**

Select a Band
- To listen to AM radio press **AM**.
- To listen to FM radio, press **FM**.
- To listen to XM Satellite radio, press **XM**.

Tuning
The C2N-TAMFMXM can tune stations manually, scan through the band (AM and FM bands only), tune by category (XM), or store/recall presets.

Manual Tuning
To manually tune a station:
1. Select a band as described in "Select a Band" above.
2. Press **MENU** to display the band's list of options.
3. Press ▼ or ▲ to display *Manual Tuning* and press **ENTER**.
4. Press and hold ▼ or ▲ to tune down or up (respectively) until the desired station is displayed.
5. (XM only) Press **ENTER** to select the displayed station

Scan Tuning (AM and FM Bands Only)
To scan within a band:
1. Select the AM or FM band as described in "Select a Band" above.
2. Press **MENU** to display the band's list of options.
3. Press ▼ or ▲ to display *Scan Stations* and press **ENTER**.
4. Press and release▼ or ▲ to scan down or up (respectively) to the next received station.

Category Tuning (XM Only)
To tune by category:
1. Select the XM tuner as described in "Select a Band" above.
2. Press **MENU** to display the list of options.
3. Press ▼ or ▲ to display *Categories* and press **ENTER**.
4. Press ▼ or ▲ until the desired category is displayed and press **ENTER**.
5. Press ▼ or ▲ until the desired channel is displayed and press **ENTER**.

Store/Recall Presets
Each band of the C2N-TAMFMXM can store and recall up to 20 preset stations.
To store a preset:
1. Tune to a station as described in "Manual Tuning", "Scan Tuning (AM and FM Bands Only)", or "Category Tuning (XM Only)" above.
2. Press **MENU**.
3. Press ▼ or ▲ until *Presets* is displayed.
4. Press **ENTER** to display the list of presets.
5. Press ▼ or ▲ until the desired preset location is displayed.
6. Press and hold **ENTER** for three seconds until the "Saving Preset" message is displayed.

(Continued in next column.)

4 **Operation (Continued)**

To recall a preset:
1. Select a band as described in "Select a Band".
2. Press **MENU** to display the list of options.
3. Press ▼ or ▲ to display *Presets* and press **ENTER**.
4. Press ▼ or ▲ until the desired preset location is displayed.
5. Press **ENTER** to recall the preset.

Display Station Information
A tuned station may contain information about the station, the artist, or the song that is currently playing.

To view available information, press **DISP**. Press **DISP** again to view additional information.

Advanced Features (XM Band)
The C2N-TAMFMXM can display information about the XM radio tuner such as the Radio ID and signal strength.
To view the Radio ID:
1. Select the XM tuner as described in "Select a Band".
2. Press **MENU** to display the list of options.
3. Press ▼ or ▲ to display *Radio ID* and press **ENTER**. The Radio ID will be displayed.
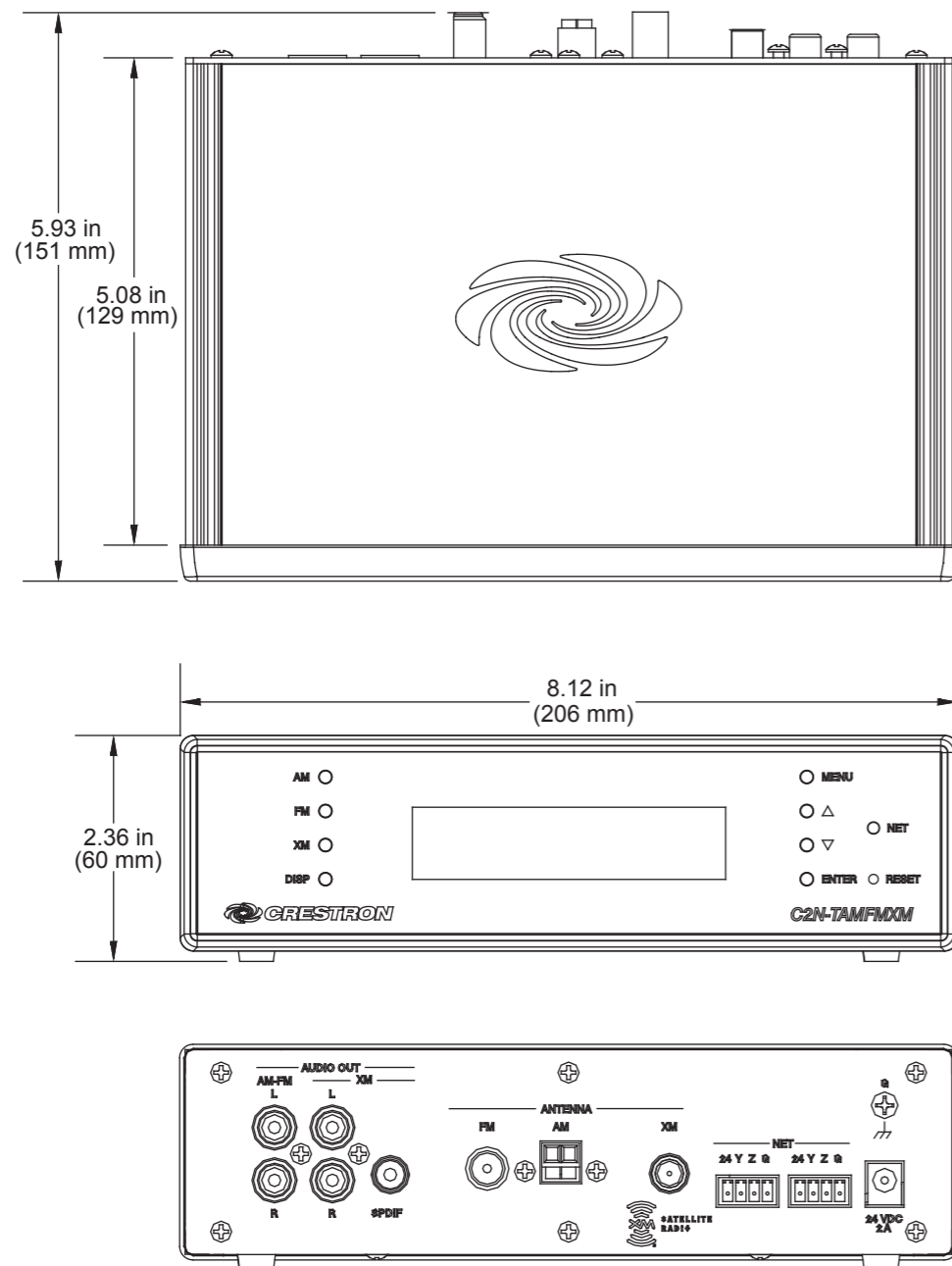4. Press **MENU** to return to the list of options.

To view the signal strength:
1. Select the XM tuner as described in "Select a Band".
2. Press **MENU** to display the list of options.
3. Press ▼ or ▲ to display *Antenna Aiming* and press **ENTER**. The signal strength will be displayed.
4. Press **MENU** to return to the list of options.

2

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quickstart guide

5 Dimensions

5.93 in
(151 mm)

5.08 in
(129 mm)

8.12 in
(206 mm)

2.36 in
(60 mm)

AM
FM
XM
DISP

MENU
△
▽ NET
ENTER RESET

CRESTRON   C2N-TAMFMXM

AUDIO OUT
AM-FM   XM
L   L
R   R   SPDIF

ANTENNA
FM   AM   XM

NET
24 Y Z G   24 Y Z G

SATELLITE
RADIO

24 VDC
2A

6 Specifications

SPECIFICATION	DETAILS
AM Tuner	
Frequency Range	530 to 1710 kHz (9 or 10 kHz steps)
Sensitivity	3.5μV (RF input level 10dB S+N/N)
Selectivity	10kHz
Alternate Channel Selectivity	55dB
Image Rejection	35dB
IF Rejection	60dB
FM Tuner	
Frequency Range	87.50 to 108 MHz (50 or 100 kHz steps)
Usable Sensitivity	11dBf mono; 60dBf stereo
S/N Ratio	64dB @ 65dBf mono; 56dB @ 65dBf stereo
IF Rejection	100dB
AM Rejection	55dB
Stereo Separation	27dB
XM Tuner	
THD+N	<0.01% @1kHz
S/N Ratio	>97dB balanced, >95dB unbalanced, 20Hz-22kHz A-weighted
Crosstalk	>-90dB 20Hz-22kHz
Power Requirements	8 Watts (0.34 Amps @ 24 Volts DC)
	PW-2407W (included): 100-240 Volts AC, 50/60 Hz
Environmental	
Temperature	41° to 113°F (5° to 45°C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	27 BTU/Hr
Enclosure	
Chassis	Steel, black matte powder coat finish
Faceplate	Extruded aluminum, black matte plastic finish with polycarbonate label overlay
Mounting	Freestanding or 0.5U 19-inch rack-mountable (adhesive feet included)
Dimensions	
Height (with feet)	2.36 in (60 mm)
Width	8.12 in (206 mm)
Depth	5.93 in (151 mm)
Weight	4.3 lb (2.0 kg)

Notes on XM Radio

It is prohibited to copy, decompile, disassemble, reverse engineer, or manipulate any technology incorporated in receivers compatible with the XM Satellite Radio system. Furthermore, the AMBE® voice compression software included in this product is protected by intellectual property rights including patent rights, copyrights, and trade secrets of Digital Voice Systems, Inc. The user of this or any other software contained in an XM Radio is explicitly prohibited from attempting to copy, decompile, reverse engineer, or disassemble the object code, or in any other way convert the object code into human-readable form. The software is licensed solely for use within this product.

Hardware and required basic monthly subscription sold separately. Installation costs and other fees and taxes, including a one-time activation fee may apply. Subscription fee is consumer only. All fees and programming subject to change. Subscriptions subject to Customer Agreement available at xmradio.com. Only available in the 48 contiguous United States. ©2011 XM Satellite Radio Inc. All rights reserved.

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