



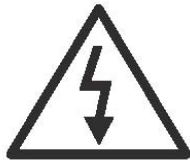
# INSTALLATION MANUAL

## CTA-30/1000 Wall Mount Distribution Amplifier

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### ***IMPORTANT INFORMATION***

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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 CTA-30/1000 Wall Mount Distribution Amplifier
- One CTA-30/1000 Installation Manual

## PRODUCT DESCRIPTION

The CTA-30/1000 is a wall mount push-pull amplifier producing signals with extremely low distortion and harmonic content. The unit is capable of CATV 2 to 139 and 95 to 99 channel operation from 54 MHz to 1000 MHz. The CTA-30/1000's low-noise and low distortion specs allow it to be used in large networks requiring amplifier cascading. Key features include: adjustable slope control, adjustable gain control, input and output test ports, easy access controls, and shielded RFI enclosures.

## SPECIFICATIONS

### CTA-30/1000

Wall Mount Distribution Amplifier Specifications (Typical)

| <b>RF</b>                 |                                |
|---------------------------|--------------------------------|
| 1. Bandwidth              | 54-1000 MHz                    |
| 2. Gain                   | 30 dB                          |
| 3. Gain Adjust Range      | 0 – 12 dB variable             |
| 4. Slope Adjust Range     | 0 – 9 dB variable              |
| 5. Flatness               | +/- 1.5 dB per channel         |
| 6. Noise Figure           | 7.5 dB                         |
| 7. Maximum Output         | 45 dBmV for 54 channels        |
| 8. Cross Modulation       | -62 dB                         |
| 9. Second Order Beats     | -60 dB                         |
| 10. Composite Triple Beat | -58 dB                         |
| 11. Return Loss In        | >20 dB                         |
| 12. Return Loss Out       | >12 dB                         |
| 13. Test Ports            | -20 dB                         |
| <b>GENERAL</b>            |                                |
| 1. Power Requirements     | 115 VAC, 60Hz, 4W              |
| 2. Operating Temperature  | 32 °F ~ 122 °F                 |
| 3. Connectors             | All "F" Type                   |
| <b>MECHANICAL</b>         |                                |
| 1. Dimensions             | 8" (W) x 4.50" (H) x 2.75" (D) |
| 2. Weight                 | 2.3 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

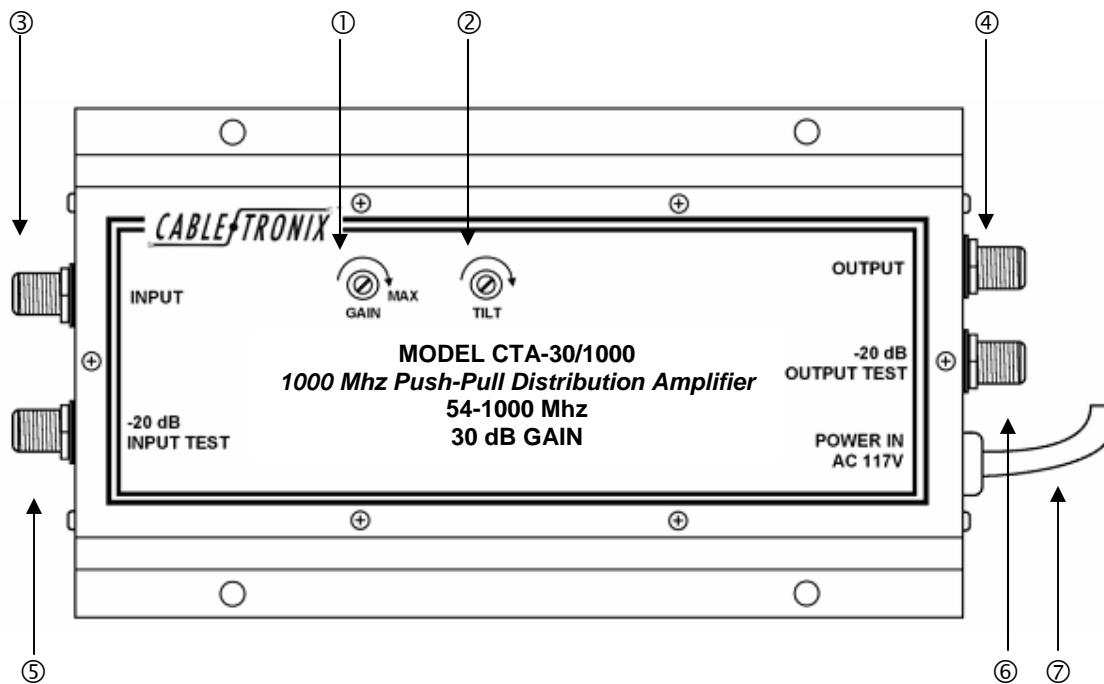
Each unit is shipped with all equipment assembled, and factory tested.

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 us at 1-610-429-1511 for assistance.

#### 3. PRODUCT DIAGRAM



|   |                                |   |
|---|--------------------------------|---|
| 1 | <b>Gain Adjust</b>             | For RF gain adjustment                                  |
| 2 | <b>Tilt Adjust</b>             | For Slope adjustment over the entire bandwidth          |
| 3 | <b>Input</b>                   | Input RF signal   |
| 4 | <b>Output</b>                  | Amplified RF signal available for output                |
| 5 | <b>-20 dB Input Test Port</b>  | Input test port to monitor input level to the amplifier |
| 6 | <b>-20 dB Output Test Port</b> | Output test port for amplifier setup and monitoring     |
| 7 | <b>Power Cable</b>             | For connection to a 120 VAC, 60Hz outlet                |

#### 4. HARDWARE CONNECTIONS

- Mount the CTA-30/1000 securely onto a wall or equipment rack using screws or bolts through the mounting tabs.
- Connect a 75ohm coaxial cable with F-connectors from the RF source output to CTA-30/1000's Input port.
- Connect a 75ohm coaxial cable with F-connectors from the CTA-30/1000's Output port to the RF distribution network.
- Terminate the Input Test port with a Cabletronix F-59T terminator when not in use.
- Terminate the Output Test port with a Cabletronix F-59T terminator when not in use.
- Connect the CTA-30/1000 to an appropriate power source capable of powering this device. Be certain that power source is capable of handling the load if the CTA-30/1000 and other equipment are being powered by it.

#### 5. ADJUSTMENT

The chart below shows the proper operation levels for the CTA-30/1000. Note the listed performance criteria are for specific numbers of channels, and must be de-rated accordingly when inserting additional channels. However, the amplifier's gain does not change. Therefore, as the number of channels increases from seven (7) channels, the input level and the output level must be reduced. Exceeding the input levels listed below will product intermodulation and picture distortion.

| <b>Number Of Channels</b> | <b>Maximum Level Input (dB)</b> | <b>Maximum Level Output (dB)</b> |
|---------------------------|---------------------------------|----------------------------------|
| 7                         | 44 dBmV                         | 66 dBmV                          |
| 12                        | 41 dBmV                         | 63 dBmV                          |
| 36                        | 32 dBmV                         | 54 dBmV                          |
| 54                        | 23 dBmV                         | 45 dBmV                          |
| 78                        | 18 dBmV                         | 40 dBmV                          |
| 108                       | 14 dBmV                         | 36 dBmV                          |
| 125                       | 11 dBmV                         | 32 dBmV                          |
| 158                       | 8 dBmV                          | 30 dBmV                          |

Connect an RF spectrum analyzer or signal level meter to the CTA-30/1000's Input Test port.

Turn the CTA-30/1000's Gain Adjust control to achieve the input and output levels identified above. Additional attenuators may be needed to further reduce the input level.

The CTA-30/1000's Tilt Adjust control should be used to set the appropriate slope per system specifications. Note that the Tilt Adjust allows the adjustment of the gain-to-frequency characteristic of the amplifier.

When making adjustments always apply the following principles:

- ✓ Input signal levels should ALWAYS exceed the noise figure of the amplifier by 3 to 6 dB.
- ✓ The primary purpose of tilt (equalization) in a cable TV plant is to compensate for the slope generated in coaxial cable between the high and low TV frequencies. When various TV channels, with respect to frequency, are transmitted through coaxial cable they are subjected to increasing attenuation (loss). Simply put, as the frequencies of the TV carriers are increased, attenuation loss (dB) increases. A variable tilt control is installed in this amplifier to compensate for this slope in cable resulting in a flat frequency response at the output

## 8. TROUBLESHOOTING

- a. Ensure you are using quality multiple shielded cables with quality radial or compression F-connectors.
- b. Ensure the F-connector's center conductor is making solid contact with the CTA-30/1000's Input and Output ports, and the appropriate RF source and RF distribution network connectors.
- c. When taking measurements it is always best to use an RF spectrum analyzer or quality signal level meter. Initially, level measurements should be taken from the CTA-30/1000's Output port. However, for testing while the amplifier is in service use the Input Test and Output Test ports for setup and field maintenance. Note that each Test port is padded down -20 dB and the 20 dB must be added back in when determining level settings and output.
- d. Further troubleshooting assistance can be found on-line at [www.northamericancable.com](http://www.northamericancable.com) and [www.cabletronix.com](http://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