

CTA-50-550 User Manual





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 accompany 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

- One CTA-50-550 CATV Distribution Amplifier
- One CTA-50-550 Instruction manual

PACKAGE DESCRIPTION

The CTA-50-550 is a professional quality broadband launch amplifier designed to produce clean signals for a commercial grade CATV network. Employing a push/pull design, the CTA-50-550 produces high output levels with extremely low distortion and harmonic content. As a broadband amplifier with a frequency range of 54-550 MHz, the CTA-50-550 supports CATV channels 2-78, with forward path amplification only.

SPECIFICATION

Specifications	
RF	
Bandwidth	54-550 MHz
Gain	50 dB
Gain Adjust Range	0-18 dB variable
Slope Adjust Range	0-18 dB variable
Flatness	± 0.5 dB per Channel
Noise Figure	7 dB
Maximum Output	45 dBmV for 54 Channels
Cross Modulation	-57 dB
Second Order Beats	-70 dB
Composite Triple Beat	-61 dB
Return Loss In	13 dB
Return Loss Out	15 dB
Test Ports	-20dB
General	
Power Requirements	117 VAC, 60 Hz
Operating Temperature	32-122°F (0-50°C)
Connectors	All "F" Type
Mechanical	
Dimensions	8"x 5.35"x 2.03" (203.2 x 135.9 x 51.6 mm)
Weight	3.19 lbs. (1.45 kg)
Warranty	2 Years Limited

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

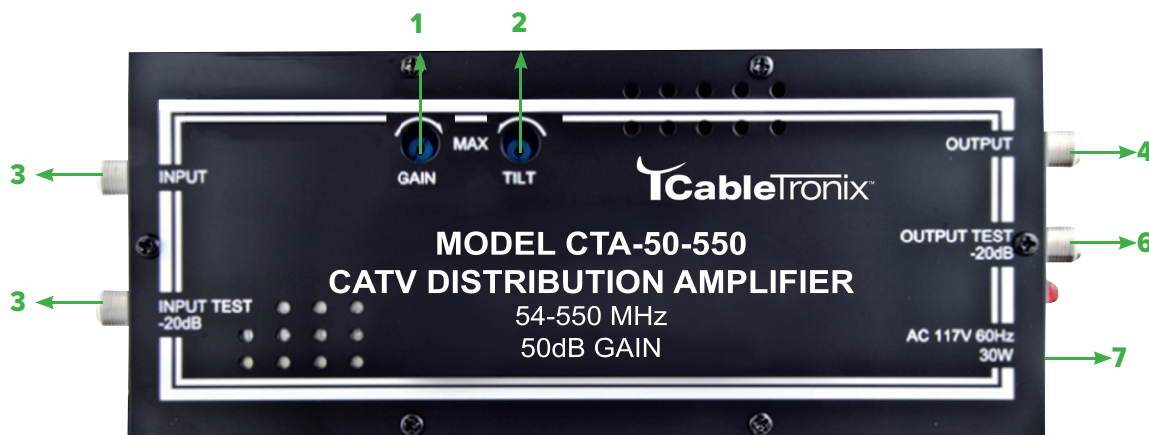
Each unit is shipped with all equipment assembled, and factory tested.

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



PRODUCT DIAGRAM

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



4. HARDWARE CONNECTIONS

- a. Mount the CTA-50-550 securely onto a wall or equipment rack using screws or bolts through the mounting tabs.
- b. Connect a 75ohm coaxial cable with F-connectors from the RF source output to CTA-50-550's Input port.
- c. Connect a 75ohm coaxial cable with F-connectors from the CTA-50-550's Output port to the RF distribution network.
- d. Terminate the Input Test port with a CableTronix F-59T terminator when not in use.
- e. Terminate the Output Test port with a CableTronix F-59T terminator when not in use.
- f. Connect the CTA-50-550 to an appropriate power source capable of powering this device. Be certain that power source is capable of handling the load if the CTA-50-550 and other equipment are being powered by it.

5. ADJUSTMENT

The chart below shows the proper operation levels for the CTA-50-550. 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.

Number of Channels	Maximum Level Input (dB)	Maximum Level Output (dB)
7	11 dBmV	61 dBmV
12	4 dBmV	54 dBmV
36	-2 dBmV	48 dBmV
54	-5 dBmV	45 dBmV
77	-7 dBmV	43 dBmV

Connect an RF spectrum analyzer or signal level meter to the CTA-50-550's Input Test port.

Turn the CTA-50-550'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-50-550'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

6. 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-50-550'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-50-550'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 and www.cabletronix.com in addition to support from CableTronix sales engineers at 1-610-429-1511.



CABLETRONIX - 2 Years Limited Warranty

CABLETRONIX. (the “Company”) warrants to the Original Purchaser that the item purchased is free from defects in workmanship or material under normal use. This warranty starts on the date of shipment of the hardware to the Original Purchaser.

During the warranty period, the Company agrees to repair or replace, at its sole option, without charge to Original Purchaser, any defective component. To obtain service, the Original Purchaser must return the item to the Company properly packaged for shipping. All defective products must be returned to the Company within thirty (30) days of failure. Products must be returned with a description of the failure and Return Merchandise Authorization (RMA) number supplied by the Company. To receive a RMA number and a return shipping address on where to deliver the hardware, call 610-429-1821. The shipping, and insurance charges incurred in shipping to the Company will be paid by Original Purchaser, and all risk for the hardware shall remain with the Original Purchaser until such time as Company takes receipt of the hardware. Upon receipt, the Company will promptly repair or replace the defective unit, and then return said unit to Original Purchaser, shipping prepaid. The Company may use reconditioned or like-new parts or units, at its sole option, when repairing any hardware. Repaired products shall carry the same amount of outstanding warranty as from original purchase. Any claim under the warranty must include dated proof of purchase or invoice. In any event, the Company’s liability for defective hardware is limited to repairing or replacing the hardware.

This warranty is contingent upon proper use of the hardware by Original Purchaser and does not cover: if damage is due to Acts of God (including fire, flood, earthquake, storm, hurricane or other natural disaster), accident, unusual physical, electrical, or electromechanical stress, modifications, neglect, misuse, operation with media not approved by the Company, tampering with or altering of the hardware, riot, war, invasion, act of foreign enemies, hostilities (regardless of whether war is declared), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation, terrorist activities, nationalization, government sanction, blockage, embargo, labor dispute, strike, lockout or interruption or failure of electricity, air conditioning, or humidity control, Internet, network, or telephone service.

The warranties given herein, together with any implied warranties covering the hardware, including any warranties of merchantability or fitness for a particular purpose, are limited in duration to one year from the date of shipment to the Original Purchaser. Jurisdictions vary with regard to the enforceability of warranty limitations, and you should check the laws of your local jurisdiction to find out whether the above limitation applies to you.

The Company shall not be liable to your for loss of data, loss of profits, lost savings, special, incidental, consequential, indirect, or other similar damages arising from breach of warranty, breach of contract, negligence, or other legal action even if the Company or its agent has been advised of



the possibility of such damages, or for any claim brought against you by another party. Jurisdictions vary with regard to the enforceability of provisions excluding or limiting liability for incidental or consequential damages. You should check the laws of your local jurisdiction to find out whether the above exclusion applies to you.

This warranty allocates risks of product failure between Original Purchaser and the Company. The Company's hardware pricing reflects this allocation of risk and the limitations of liability contained in this warranty. The warranty set forth above is in lieu of all other express warranties, whether oral or written. The agents, employees, distributors, and dealers of the Company are not authorized to make modification to this warranty, or additional warranties binding on the Company. Accordingly, additional statements such as dealer advertising or presentations, whether oral or written, do not constitute warranties by the Company and should not be relied upon. This warranty gives you specific legal rights. You may also have other rights which vary from one jurisdiction to another.