



**BLONDER
TONGUE**
LABORATORIES, INC.

One Jake Brown Road
Old Bridge, NJ 08857-1000 USA
(800) 523-6049 • (732) 679-4000 • FAX: (732) 679-4353
www.blondertongue.com

INSTRUCTION MANUAL



FAxM Series

Multi-Channel Frequency Agile Modulators

Model	Stock No.
FA1M-50-860	59711B
FA2M-50-860	59712B
FA3M-50-860	59713B

651206700D

The lightning flash with arrow-head symbol within an equilateral triangle is intended to alert you to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER FROM THIS UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE

NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV System Installer’s attention that the cable distribution system should be grounded (earthed) in accordance with ANSI/NFPA 70, the National Electrical Code (NEC), in particular Section 820.93, Grounding of Outer Conductive Shield of a Coaxial Cable.

Unpacking and Handling

Each unit is shipped with all equipment assembled, wired, factory tested, and then packaged in an appropriate shipping container.

Ensure that all accessories are removed from the container and packing material before they are discarded.

Mechanical Inspection

Inspect the front and rear of the equipment for shipping damage. Make sure the equipment is clean, and no wires, cables, or connectors are broken, damaged or loose.

Precautions

Adherence to the initial installation precautions outlined in the Table below will help prevent problems arising during the installation and future maintenance of the unit.

Damage in Shipment

Should any damage be discovered after unpacking the unit, immediately file a claim with the carrier. A full report of the damage shall be made and a copy forwarded to Blonder Tongue Laboratories Inc. The company will then advise what disposition is to be made of the equipment.

Returning Product for Repair or Credit

A Return Material Authorization (RMA) Number is required on all products returned to Blonder Tongue, regardless if the product is being returned for repair or credit. Before returning product, please contact the Blonder Tongue Service Department at 1-800-523-6049, Ext. 4256 or visit our website: www.blondertongue.com for further information.

Table 1 - Installation Precautions Table

PRECAUTIONS	REQUIREMENTS
Avoid Heat Buildup	Allow (1) EIA rack space (1 ^{3/4} ") between powered headend products in the equipment racks.
Ensure easy access to rack wiring.	Allow a minimum of 18 inches behind the equipment rack(s)
Facilitate servicing and maintenance.	Allow a minimum of 36" of clearance in front of the equipment rack(s).
Avoid direct heating or air conditioning.	If unavoidable, use deflector plates.
AC power source outlets.	Locate equipment near sufficient outlets to provide power for test equipment and power tools.
Rack Support.	Make certain rack supports are sufficiently rigid to support racks.
Building leakage.	Beware of dripping water onto equipment from leaky roofs, waveguide roof entries, and cold water pipe condensations.

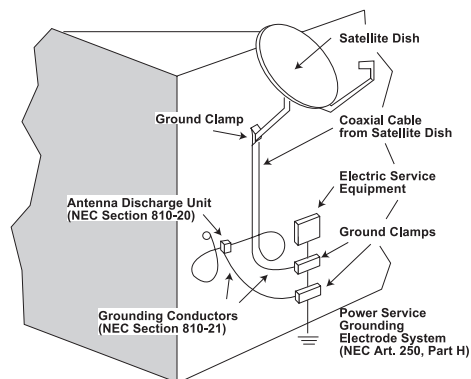
Safety Instructions

WARNING!



You should always follow these instructions to help ensure against injury to yourself and damage to your equipment.

- ▶ Read all safety and operating instructions before you operate the unit.
- ▶ Retain all safety and operating instructions for future reference.
- ▶ Heed all warnings on the unit and in the safety and operating instructions.
- ▶ Follow all installation, operating, and use instructions.
- ▶ Unplug the unit from the AC power outlet before cleaning. Use only a damp cloth for cleaning the exterior of the unit.
- ▶ Do not use accessories or attachments not recommended by Blonder Tongue, as they may cause hazards, and will void the warranty.
- ▶ Do not operate the unit in high-humidity areas, or expose it to water or moisture.
- ▶ Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious personal injury and damage to the unit. Install the unit only in a mounting rack designed for 19" rack-mount- ed equipment.
- ▶ Do not block or cover slots and openings in the unit. These are provided for ventilation and protection from overheating. Never place the unit near or over a radiator or heat register. Do not place the unit in an enclosure such as a cabinet without proper ventilation. Do not mount equipment in the rack space directly above or below the unit.



- ▶ Operate the unit using only the type of power source indicated on the marking label. Unplug the unit power cord by gripping the plug, not the cord.
- ▶ The unit is equipped with a three-wire ground-type plug. This plug will fit only into a ground-type power outlet. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the ground-type plug.
- ▶ Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- ▶ Be sure that the outdoor components of the antenna system are grounded in accordance with local, federal, and National Electrical Code (NEC) requirements. Pay special attention to NEC Sections 810 and 820. See the example shown in the following diagram:

- ◆ We strongly recommend using an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the unit is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between the unit and other equipment. This will prevent damage caused by lightning or power line surges.
- ◆ Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an antenna, take extreme care to avoid touching such power lines or circuits, as contact with them can be fatal.
- ◆ Do not overload wall outlets or extension cords, as this can result in a risk of fire or electrical shock.
- ◆ Never insert objects of any kind into the unit through openings, as the objects may touch dangerous voltage points or short out parts. This could cause fire or electrical shock.
- ◆ Do not attempt to service the unit yourself, as opening or removing covers may expose you to dangerous voltage and will void the warranty. Refer all servicing to authorized service personnel.
- ◆ Unplug the unit from the wall outlet and refer servicing to authorized service personnel whenever the following occurs:
 - The power supply cord or plug is damaged;
 - Liquid has been spilled, or objects have fallen into the unit;
 - The unit has been exposed to rain or water;
 - The unit has been dropped or the chassis has been damaged;
 - The unit exhibits a distinct change in performance.
- ◆ When replacement parts are required, ensure that the service technician uses replacement parts specified by Blonder Tongue. Unauthorized substitutions may damage the unit or cause electrical shock or fire, and will void the warranty.
- ◆ Upon completion of any service or repair to the unit, ask the service technician to perform safety checks to ensure that the unit is in proper operating condition.

Description

The FAxM Series are professional quality multi-channel agile audio/video modulators with an output frequency range of 54-860 MHz.

The units provide a modulated aural & visual carrier on any channel in the 54 to 860 MHz range. Frequency plans including Standard CATV, IRC, HRC and Broadcast are accommodated via front panel selection. Channel tuning is easily accomplished with the use of front panel buttons following the entry instructions. All channels with appropriate FCC offsets are pre-programmed and tuned electronically via microprocessor.

The units accept any standard audio/video source such as satellite receivers, television camera, video tape recorders or demodulators. The advanced design ensures front panel access with LED indicators for all level and over-modulation controls.

Features

- One, Two or Three Combined Channels: 54 - 860 MHz, One +50 dBmV Combined Output
- Supports All Broadcast and CATV Channels, Including All HRC and IRC Assignments
- Custom SAW Filter Providing True VSB Response with Built-In FCC CATV Group Delay Pre-Distortion
- Front Panel Access to All Level Controls
- Rack Mount - 1 EIA (1.75") Spacing, Rugged Aluminum Chassis

Specifications (Typical)

RF

Frequency Range: 54-860 MHz
 Channels: CATV, VHF, UHF (STD,HRC,IRC)
 FCC Offset (pre-programmed): 0, +12.5, or 25 kHz
 Output Level - Combined Min: +50 dBmV
 Output Level Adjust: 15 dB (k)
 Aural/Visual Carrier Ratio: -10 to -17 dB (a)
 Visual Carrier Frequency Tolerance
 Standard Channels: ± 5 kHz
 FCC Aeronautical Channels: ± 3 max kHz
 4.5 MHz Aural Inter Carrier Frequency: ± 1 kHz (i)
 Channel Selectivity:
 Adjacent Aural and Below: -40 dB
 Adjacent Picture and Above: -50 dB
 Spurious Outputs: -60 dBc
 C/N Ratio In Channel: 63 dB (b)
 Broadband Noise: -70 dBc (b)
 Output Impedance: 75 ohms
 Output Return Loss: 12 dB

Video

Input Level: 1.0 V p-p (d)
 Frequency Response fv-0.5 MHz to fv+4.2 MHz:
 ± 1.0 dB
 P-P Video to RMS Hum Ratio: 65 dB
 Video Signal-to-Noise Ratio, NTC-7 Weighted:
 62 dB
 Differential Gain: 2.0 % (d)
 Differential Phase: 1.0 ° (d)
 C/L Delay Inequality: see note(c)
 Over Modulation Indicator: 87.5, ± 2.5 %
 Input Impedance: 75 ohm
 Input Return Loss: 24 dB, min

Audio

Input Level: 140 mV RMS (e)
 Frequency Range: 20 Hz to 20 kHz
 Pre-Emphasis-Mono: 75 μ s
 Frequency Response: ± 1.0 dB (g)
 If Pre-Emphasis Defeated: +0.5 dB
 Audio Signal-to-Noise: 58 dB (e)
 Total Harmonic Distortion: 0.6% (h)
 Over Modulation Indicator : 25, ± 2 kHz
 Input Impedance: Greater than 10 K ohm,
 unbalanced

General

Power Requirements: 110 VAC to 260 VAC
 Frequency: 47 to 63 Hz
 Temperature Range: 0° to +50° C
 AC Current (I): 0.32 Amp for 115 VAC
 Output Voltage: +12 Vdc, + 5 Vdc
 Max Current Output / Voltage: 0.7 Amp

Mechanical

Dimensions (WxHxD): 19 x 1.75 x 14.25 in
 Weight: 7 lbs (approx)

Connectors (Back Panel)

Video Input: "F" Type, Female
 Audio Input: RCA Phono
 RF Output: "F" Type, Female

Controls (Front Panel)

Channel Selection: Up/Down Push-Buttons
 Video Level: Control
 A/V Ratio: Control
 Audio Level: Control
 RF Output Level: Control
 Channel Enter: Push-Button

Indicators (Front Panel)

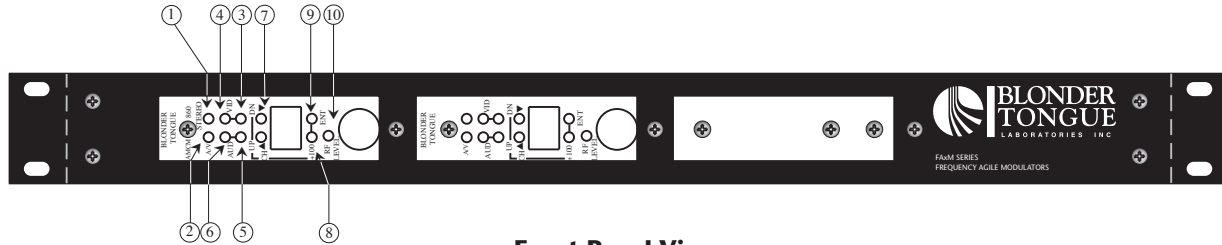
2 Digital LED Channel Display
 +100 Indicator: LED, RED
 Video Over Modulation: LED, RED
 Audio Over Modulation: LED, RED
 Stereo Indicator: LED, GREEN - Not Used

NOTES

- (a) continuously adjustable
- (b) 4 MHz bandwidth, +50 dBmV output, 3 channels combined
- (c) meets FCC CATV group delay pre-distortion requirements for color transmission
- (d) 87.5% depth of modulation
- (e) for 25 kHz peak deviation
- (f) available via internal jumper setting
- (g) referenced to standard 75 μ s pre-emphasis
- (h) 30 Hz to 15 kHz, 25 kHz deviation
- (i) 0 °C to +50 °C
- (k) continuously adjustable, optimum performance at +40 to +50 dBmV
- (l) AC current with 3 modules installed

Operating Controls

All operating controls and indicators for the modulators are located on, or are accessible from the front panel.

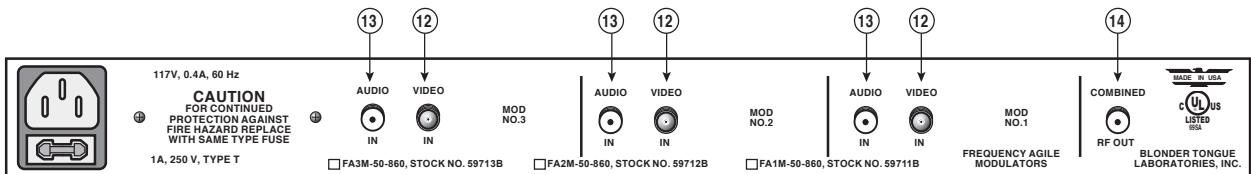


Front Panel View

- 1. Stereo Indicator** - Lit when video and stereo audio are present.
- 2. Audio/Video Ratio Adjustment** - Adjustment of the A/V Ratio is permitted from approximately -19 dB (full clockwise position) to approximately -10 dB (full counterclockwise position) by rotating the potentiometer.
- 3. Video Adjustment** - Adjustment of the Video Modulation Level is permitted by rotating the potentiometer.
- 4. Video Over Modulation LED Indicator**
- 5. Audio Adjustment** - Adjustment of the Audio Modulation Level is permitted by rotating the potentiometer.
- 6. Audio Over Modulation LED Indicator**
- 7. Up/Down Buttons** - Used to set the desired channel or mode.
- 8. +100 Indicator** - Lights when channel settings are 100 -135.
- 9. Channel ENT Button** - Enter button used to enter a desired channel or mode.
- 10. RF Level Adjustment** - Potentiometer adjustment used to set the output level. Has a range of 15 dB, optimum performance with a 10 dB adjustment.

Connections

All connections to the units are made at the rear panel.



Rear Panel View

- 12. Video Input** - "F" Connector
- 13. Audio Input** - RCA Connector
- 14. RF Output** - "F" Connector

Unit Mounting

Mount the unit in a standard 19" EIA rack, ensuring access to rear connections and front controls. Make sure adequate ventilation exists in the vicinity of the unit.

Preparation for Use

Plug in the 3-prong connector of the AC power cord into a suitable 117 Volt, 60 Hz AC outlet of adequate current carrying capacity. Use appropriate cables (75 Ohm coaxial) to connect the program source to the video and audio input connectors and the RF output of the unit to the system input.

Programming Each Agile Modulator

Each unit comes factory set to operate in the Standard CATV Mode. Each unit has 4 valid operating modes, STD CATV, IRC, HRC & Broadcast UHF/VHF. If you wish to change the operating mode skip to the next section.

Programming the Unit

The AMCM unit comes factory set to operate in the Standard CATV mode.

The unit has 4 valid operating modes: STD CATV, IRC, HRC & Broadcast UHF/VHF. (Skip to the next section for programming the operating mode)

Programming a Channel

1. Navigate to the desired channel number by depressing the CH ▲ UP and ▼ DN buttons.
 - a. Continuous past 99 for channels 100-135, the +100 red LED will illuminate.
2. Press the ENT button when you reach the desired channel setting. This will tune the modulator output to the corresponding channel frequency for this entry.
 - a. The LED display will blink continuously during the channel programming process and will not change the output frequency the unit is programmed until the ENT button is depressed.
 - b. The unit has a special feature that alerts an operator of an inadvertent or desired change to the channel display by flashing the LED readout. The LED display will continue to flash for 30 seconds if the ENT button is not depressed and then will return to the display of the previously programming channel entry setting.



**See Appendix A For a complete list of available channels -
CATV STD; IRC & HRC 1-135 and Broadcast 2-69**

Operating Mode Selection

The unit has 4 valid operating modes: STD CATV, IRC, HRC & Broadcast UHF/VHF.

The AMCM unit comes factory set to operate in the Standard CATV mode.

To change the operating mode:

1. Simultaneously depress the CH ▲ UP and ▼ DN buttons for approximately 5 seconds.
2. The Channel LED display will switch to the operating mode selection.
3. Use the CH ▲ UP and ▼ DN buttons to select the desired mode:
 - a. C = STD CATV
 - b. H = HRC
 - c. I = IRC
 - d. U = Broadcast (VHF/UHF)
4. After selecting the desired mode depress the ENT button to set the mode.
5. The unit will return to the channel display mode.
 - a. Programming will reflect the mode chosen – See Appendix A for a detailed frequency plan.
 - b. The programming mode will also flash continuously during the programming process. The LED display will continue to flash for 30 seconds if the ENT button is not depressed and then will return to the display of the previously programming channel & mode entry setting.

Troubleshooting

A continuous flashing Channel Display indicates a Error Condition detected by the unit microcontroller. Sample conditions include:

- Channel Selector Entry does not match the channel number on which the modulator is operating, the display will flash for 30 seconds and then revert back to the previous CH entry
- Mode Selector Entry does not match the mode on which the modulator is operating, the display will flash for 30 seconds and then revert back to the previous mode entry
- E1 is displayed if the Input & VCO is Not Locked
- E2 is displayed if the Output VCO is Not Locked

Correction Suggestions

The User should perform the following steps to correct an Error Condition:

1. Check that the Channel Display is set to the desired channel & reset as appropriate
2. Check that the unit is set to the appropriate desired operating mode
3. Verify the unit output on a spectrum analyzer
4. Disconnect & reconnect power to the unit

If an error condition continues to be displayed, unit should be replaced and serviced

Appendix A

Frequency Allocation Tables

EIA Chan.	Standard Video	Incremental Video (IRC)	Harmonic Video (HRC)
02	55.2500	55.2625	54
03	61.2500	61.2625	60
04	67.2500	67.2625	66
01	NA	73.2625	72
05	77.2500	79.2625	78
06	83.2500	85.2625	84
95	91.2500	91.2625	90
96	97.2500	97.2625	96
97	103.2500	103.2625	102
98	109.2750	109.2750	Cannot lock to comb ref. refer to FCC regs
99	115.2750	115.2750	
14	121.2625	121.2625	120
15	127.2625	127.2625	126
16	133.2625	133.2625	132
17	139.2500	139.2625	138
18	145.2500	145.2625	144
19	151.2500	151.2625	150
20	157.2500	157.2625	156
21	163.2500	163.2625	162
22	169.2500	169.2625	168
07	175.2500	175.2625	174
08	181.2500	181.2625	180
09	187.2500	187.2625	186
10	193.2500	193.2625	192
11	199.2500	199.2625	198
12	205.2500	205.2625	204
13	211.2500	211.2625	210
23	217.2500	217.2625	216
24	223.2500	223.2625	222
25	229.2625	229.2625	228
26	235.2625	235.2625	234
27	241.2625	241.2625	240
28	247.2625	247.2625	246
29	253.2625	253.2625	252
30	259.2625	259.2625	258
31	265.2625	265.2625	264
32	271.2625	271.2625	270
33	277.2625	277.2625	276
34	283.2625	283.2625	282
35	289.2625	289.2625	288
36	295.2625	295.2625	294
37	301.2625	301.2625	300
38	307.2625	307.2625	306
39	313.2625	313.2625	312
40	319.2625	319.2625	318
41	325.2625	325.2625	324
42	331.2750	331.2750	330
43	337.2625	337.2625	336
44	343.2625	343.2625	342
45	349.2625	349.2625	348
46	355.2625	355.2625	354
47	361.2625	361.2625	360
48	367.2625	367.2625	366
49	373.2625	373.2625	372
50	379.2625	379.2625	378
51	385.2625	385.2625	384
52	391.2625	391.2625	390
53	397.2625	397.2625	396
54	403.2500	403.2625	402
55	409.2500	409.2625	408
56	415.2500	415.2625	414
57	421.2500	421.2625	420
58	427.2500	427.2625	426
59	433.2500	433.2625	432
60	439.2500	439.2625	438
61	445.2500	445.2625	444
62	451.2500	451.2625	450

EIA Chan.	Standard Video	Incremental Video (IRC)	Harmonic Video (HRC)
63	457.2500	457.2625	456
64	463.2500	463.2625	462
65	469.2500	469.2625	468
66	475.2500	475.2625	474
67	481.2500	481.2625	480
68	487.2500	487.2625	486
69	493.2500	493.2625	492
70	499.2500	499.2625	498
71	505.2500	505.2625	504
72	511.2500	511.2625	510
73	517.2500	517.2625	516
74	523.2500	523.2625	522
75	529.2500	529.2625	528
76	535.2500	535.2625	534
77	541.2500	541.2625	540
78	547.2500	547.2625	546
79	553.2500	553.2625	552
80	559.2500	559.2625	558
81	565.2500	565.2625	564
82	571.2500	571.2625	570
83	577.2500	577.2625	576
84	583.2500	583.2625	582
85	589.2500	589.2625	588
86	595.2500	595.2625	594
87	601.2500	601.2625	600
88	607.2500	607.2625	606
89	613.2500	613.2625	612
90	619.2500	619.2625	618
91	625.2500	625.2625	624
92	631.2500	631.2625	630
93	637.2500	637.2625	636
94	643.2500	643.2625	642
100	649.2500	649.2625	648
101	655.2500	655.2625	654
102	661.2500	661.2625	660
103	667.2500	667.2625	666
104	673.2500	673.2625	672
105	679.2500	679.2625	678
106	685.2500	685.2625	684
107	691.2500	691.2625	690
108	697.2500	697.2625	696
109	703.2500	703.2625	702
110	709.2500	709.2625	708
111	715.2500	715.2625	714
112	721.2500	721.2625	720
113	727.2500	727.2625	726
114	733.2500	733.2625	732
115	739.2500	739.2625	738
116	745.2500	745.2625	744
117	751.2500	751.2625	750
118	757.2500	757.2625	756
119	763.2500	763.2625	762
120	769.2500	769.2625	768
121	775.2500	775.2625	774
122	781.2500	781.2625	780
123	787.2500	787.2625	786
124	793.2500	793.2625	792
125	799.2500	799.2625	798
126	805.2500	805.2625	804
127	811.2500	811.2625	810
128	817.2500	817.2625	816
129	823.2500	823.2625	822
130	829.2500	829.2625	828
131	835.2500	835.2625	834
132	841.2500	841.2625	840
133	847.2500	847.2625	846
134	853.2500	853.2625	852
135	859.2500	859.2625	858

VHF Broadcast Channels Channel	Video (MHz)
2	55.25
3	61.25
4	67.25
5	77.25
6	83.25
7	175.25
8	181.25
9	187.25
10	193.25
11	199.25
12	205.25
13	211.25
UHF Broadcast Channels Channel	Video (MHz)
14	471.25
15	477.25
16	483.25
17	489.25
18	495.25
19	501.25
20	507.25
21	513.25
22	519.25
23	525.25
24	531.25
25	537.25
26	543.25
27	549.25
28	555.25
29	561.25
30	567.25
31	573.25
32	579.25
33	585.25
34	591.25
35	597.25
36	603.25
37	609.25
38	615.25
39	621.25
40	627.25
41	633.25
42	639.25
43	645.25
44	651.25
45	657.25
46	663.25
47	669.25
48	675.25
49	681.25
50	687.25
51	693.25
52	699.25
53	705.25
54	711.25
55	717.25
56	723.25
57	729.25
58	735.25
59	741.25
60	747.25
61	753.25
62	759.25
63	765.25
64	771.25
65	777.25
66	783.25
67	789.25
68	795.25
69	801.25

NOTE: Refer to unit specifications for their respective operating ranges.

Limited Warranty

Blonder Tongue Laboratories, Inc. (BT) will at its sole option, either repair or replace (with a new or factory reconditioned product, as BT may determine) any product manufactured by BT which proves to be defective in materials or workmanship or fails to meet the specifications which are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing (i) for a period of one (1) year from the date of original purchase (or such shorter period of time as may be set forth in the license agreement specific to the particular software being licensed), with respect to iCentral™ (hardware and software) and all other software products (including embedded software) licensed from BT, (ii) for a period of one (1) year from the date of original purchase, with respect to all MegaPort, IPTV products and fiber optics receivers, transmitters, couplers and integrated receivers/distribution amplifiers (including TRAILBLAZER™, RETRO-LINX™ and TWIN STAR™ products) as well as for VideoCipher® & DigiCipher® satellite receivers, and (iii) for a period of three (3) years from the date of original purchase, with respect to all other BT products. Notwithstanding the foregoing, in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third party vendors and contained in BT products and on certain private-label products manufactured by third parties for resale by BT are of shorter duration or otherwise more limited than the standard BT limited warranty. In such cases, BT's warranty with respect to such third party proprietary sub-assembly modules and private-label products will be limited to the duration and other terms of such third party vendor's warranty. In addition, certain products, that are not manufactured but are resold by BT, carry the original OEM warranty for that product. The limited warranty set forth in this paragraph does not apply to any product sold by BT, which at the time of sale constituted a Closeout Product.

BT will at its sole option, either repair or replace (with a new or factory reconditioned product, as BT may determine) any product sold by BT which at the time of sale constituted a refurbished or closeout items ("Refurbished Product" and "Closeout Product"), which proves to be defective in materials or workmanship or fails to meet the specifications which are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing, for a period of ninety (90) days from the date of original purchase. Notwithstanding the foregoing, in some cases, the warranty on third party software and on certain proprietary sub-assembly modules manufactured by third party vendors and contained in BT products and on certain private-label products manufactured by third parties for resale by BT are of shorter duration or otherwise more limited than the BT limited warranty for Closeout Products. In such cases, BT's warranty for Closeout Products constituting such third party software, third party proprietary sub-assembly modules and private-label products will be limited to the duration and other terms of such third party vendor's warranty. In addition, notwithstanding the foregoing, (i) certain Closeout Products that are not manufactured (but are resold) by BT, carry the original OEM warranty for such products, which may be longer or shorter than the BT limited warranty for Refurbished or Closeout Products. All sales of Refurbished or Closeout Products are final.

To obtain service under this warranty, the defective product, together with a copy of the sales receipt or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to: Blonder Tongue Laboratories, Inc., One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover damage resulting from (i) use or installation other than in strict accordance with manufacturer's written instructions, (ii) disassembly or repair by someone other than the manufacturer or a manufacturer-authorized repair center, (iii) misuse, misapplication or abuse, (iv) alteration, (v) lack of reasonable care or (vi) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

OTHER THAN THE WARRANTIES SET FORTH ABOVE, BT MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, AS TO THE CONDITION, DESCRIPTION, FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY OR AS TO ANY OTHER MATTER, AND SUCH WARRANTIES SUPERSEDE ANY ORAL OR WRITTEN WARRANTIES OR REPRESENTATIONS MADE OR IMPLIED BY BT OR BY ANY OF BT'S EMPLOYEES OR REPRESENTATIVES, OR IN ANY OF BT'S BROCHURES, MANUALS, CATALOGS, LITERATURE OR OTHER MATERIALS. IN ALL CASES, BUYER'S SOLE AND EXCLUSIVE REMEDY AND BT'S SOLE OBLIGATION FOR ANY BREACH OF THE WARRANTIES CONTAINED HEREIN SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT F.O.B. SHIPPING POINT, AS BT IN ITS SOLE DISCRETION SHALL DETERMINE. BT SHALL IN NO EVENT AND UNDER NO CIRCUMSTANCES BE LIABLE OR RESPONSIBLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, PUNITIVE, DIRECT OR SPECIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT LIABILITY OR OTHERWISE OR ANY OTHER LEGAL THEORY ARISING DIRECTLY OR INDIRECTLY FROM THE SALE, USE, INSTALLATION OR FAILURE OF ANY PRODUCT ACQUIRED BY BUYER FROM BT.

All claims for shortages, defects and non-conforming goods must be made by Buyer in writing within five (5) days of receipt of merchandise, which writing shall state with particularity all material facts, concerning the claim then known to Buyer. Upon any such complaint, Buyer shall hold the goods complained of intact and duly protected, for a period of up to sixty (60) days. Upon the request of BT, Buyer shall ship such allegedly nonconforming or defective goods, freight prepaid to BT for examination by BT's inspection department and verification of the defect. BT, at its option, will either repair, replace or issue a credit for products determined to be defective. BT's liability and responsibility for defective products is specifically limited to the defective item or to credit towards the original billing. All such replacements by BT shall be made free of charge f.o.b. the delivery point called for in the original order. Products for which replacement has been made under the provisions of this clause shall become the property of BT. Under no circumstances are products to be returned to BT without BT's prior written authorization. BT reserves the right to scrap any unauthorized returns on a no-credit basis. Any actions for breach of this contract must be commenced by Buyer within thirteen (13) months after the cause of action has accrued. A copy of BT's standard terms and conditions of sale, including the limited warranty, is available from BT upon request. Copies of the limited warranties covering third party proprietary sub-assembly modules and private label products manufactured by third parties are also available from BT on request. VideoCipher® & DigiCipher® are registered trademarks of Motorola Corp.



**BLONDER
TONGUE**
LABORATORIES, INC.

One Jake Brown Road
Old Bridge, NJ 08857-1000 USA
(800) 523-6049 • (732) 679-4000 • FAX: (732) 679-4353
www.blondertongue.com