



INSTRUCTION MANUAL

651155700K

IRD-6185 RS



Integrated Receiver, Descrambler
Stock No. 6185A



**BLONDER
TONGUE**
LABORATORIES, INC.

The Standard of Quality in TV Signal Distribution

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The lightning flash with arrowhead 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 electric shock to persons.



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



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 ELECTRIC 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 Installers attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, 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.

GENERAL INFORMATION

NOTE

VideoCipher® is a licensed trade mark of General Instrument Corporation. Blonder Tongue's IRD-6185 accepts either a VideoCipher® RS Commercial Descrambler Module or VideoCipher® II Plus Commercial Descrambler Module.

The Blonder Tongue IRD-6185 is a commercial satellite receiver and integrated VideoCipher® descrambler. The unit may be referred to as an IRD (integrated receiver/decoder) or simply a receiver in this manual.

NOTE

Without a VideoCipher® Module, the IRD-6185 will perform as a normal satellite receiver without descrambling capabilities.


The receiver is designed for use in CATV and high-end SMATV systems. The receiver and VideoCipher® module are in a common 19-inch rack-mountable chassis 1.75 inches high. The receiver uses a 950 to 1450 MHz RF input. The VideoCipher® module can be easily slid into or removed from the chassis from the front panel. The module's address label is visible through a slot on this panel.

Satellite transponder frequency selection is made by front-panel thumb switches. Either C-Band or Ku-Band transponder frequencies may be selected directly by the thumb switches.

The VideoCipher® right, left and mono audio output levels are adjustable from the rear panel. The Video output level for bypass and VideoCipher® descrambling are both adjustable from the rear panel VIDEO LEVEL potentiometer.

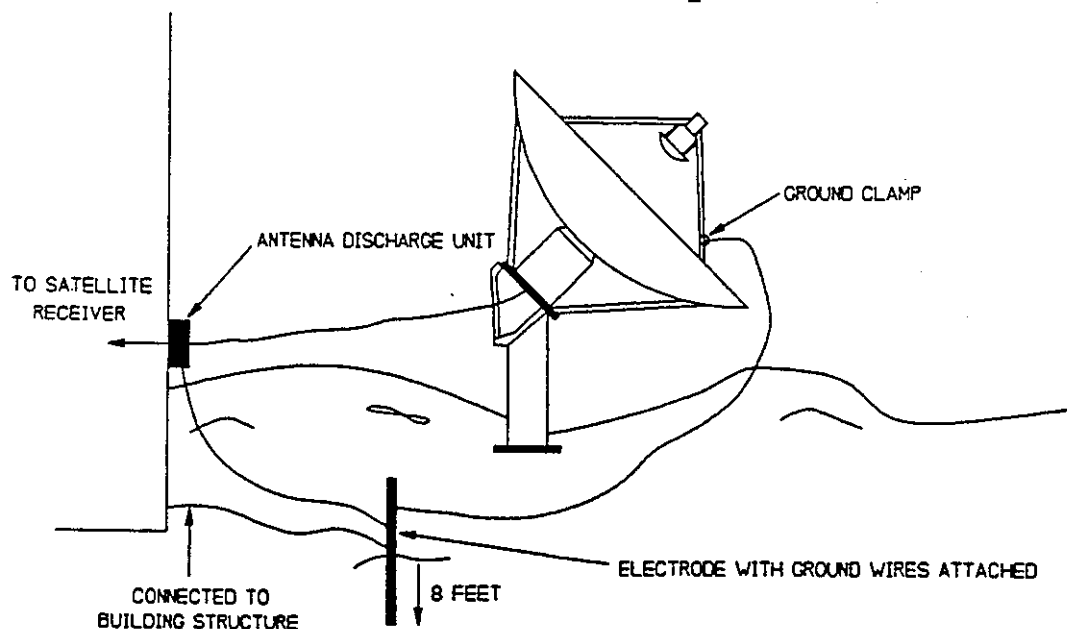
IMPORTANT SAFEGUARDS

Blonder Tongue strongly advises the user to understand the following safety instructions prior to installing and operating this equipment.

1.  VideoCipher® Module Installation - Serious electrical damage will result if power is not turned off prior to installing or removing the VideoCipher® Module.
2. Read Instructions - All safety and operating instructions should be read before operating this equipment.
3. Retain Instructions - Safety and operating instructions should be retained for future reference.
4. Heed Warning - All warnings on the equipment and in the operating instructions should be adhered to.
5. Follow Instructions - Installation, operating and use instructions should be followed.
6. Cleaning - Unplug the equipment from the AC power outlet before cleaning. Do not use liquid cleaners or aerosol cleaners.
7. Attachments - Do not use accessories or attachments not recommended by B-T as they may cause hazards.
8. Water and Moisture - Do not operate in high-humidity areas.
9. Accessories - Do not place this equipment on an unstable cart, stand, tripod, bracket or table. The unit may fall, causing serious personal injury and serious damage to the unit. Install only in a mounting rack recommended by B-T. The installation of this equipment and/or any required component or accessory must be as described in the Installation Section of this manual.
10. Ventilation - Do not block or cover slots and openings in this equipment. These are provided for ventilation and protection from overheating. Never place this equipment near or over a radiator or heat register. This equipment should not be placed in an environment where proper ventilation is not provided. Therefore, do not mount equipment in the rack space directly above or below the receiver.
11. Power Sources - Operate this equipment only from the type of power source indicated on the marking label.
12. Grounding or Polarization - This equipment is equipped with a polarized AC line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug into the outlet, try reversing the plug. If the plug still does not fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
13. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
14. Outdoor Antenna Grounding - Be sure that the outdoor components of the antenna system are grounded in accordance with local, Federal and National Electric Code (NEC) requirements. Pay particular attention to NEC Sections 810 and 820. See Typical Antenna Grounding illustration (Pg. 4).
15. Lightning - For added protection during a lightning storm, or when the equipment is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between this equipment and the antenna subsystem. This will prevent damage to the equipment that could be caused by lightning or power line surges.
16. Power Lines - The antenna subsystem should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing the antenna subsystem, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.
17. Overloading - Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

IMPORTANT SAFEGUARDS (Cont'd.)

18. Object and Liquid Entry - Never push objects of any kind into this equipment through openings as the objects may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the equipment.
19. Servicing - Refer all servicing to qualified Blonder Tongue personnel; opening or removing covers may expose dangerous voltages.
20. Damage Requiring Service - Unplug the equipment from the wall outlet and refer servicing to qualified Blonder Tongue service personnel under the following conditions:
 - a. if the power supply cord or plug is damaged;
 - b. if liquid has been spilled, or objects have fallen into the equipment;
 - c. if the equipment has been exposed to rain or water;
 - d. if the equipment does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions. An improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation;
 - e. if the equipment has been dropped or the cabinet has been damaged;
 - f. if the equipment exhibits a distinct change in performance which is an indication of need for service.
21. Replacement Parts - When replacement parts are required, ensure that the service technician has used replacement parts specified by Blonder Tongue. Unauthorized substitutions may result in fire, electric shock or other hazards.
22. Safety Check - Upon completion of any service or repair to the equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.



Typical Antenna Grounding

SPECIFICATIONS

PERFORMANCE SPECIFICATIONS

RF Section

Frequency Range: 950 to 1450 MHz
Input
Level: -25 to -60 dBm
Impedance: 75Ω
L.O. Leakage
RF Input: -60 dBm
LNB Power at RF
Input Connector: +17V DC @Nominal
250 ma

Field-Time
Waveform Distortion: 3%

Audio Performance (Unscrambled)

Subcarrier Frequency Tunable
5.4 MHz to 8.2 MHz: 6.8 MHz Fixed
De-emphasis: 75 μSec
Output Level: 0 dBm Fixed
Adjustable to +17
dBm

IF Section

IF Frequency: 70 MHz
IF Bandwidth (-3 dB): 30 MHz

Output Impedance: 600 ohms Balanced
Harmonic Distortion: (50 Hz to 15 KHz) 1%
Frequency Response: (50 Hz to 15 KHz)
1 dB

Video Performance (Unscrambled)

Video Output Level: 0.5 to 1.5 V p-p
Output Impedance: 75 Ohms
Differential Gain: Less Than 4%
Differential Phase: Less Than 2.5°
Short Time Distortion: Less Than 2%
Line Time Distortion: Less Than 1%

Hum and Noise
(50 Hz to 15 KHz): -60 dB

OPERATING ENVIRONMENT

Temperature Range: 0° to +50° C
Power Supply: 115 VAC +/- 10%

GENERAL

Dimensions: 19" W x 1-3/4" H x
20" D
Shipping Weight: 19 lbs.

S/N Ratio (Lum.
Weighted, Max. C/N): 59 dB

Chrominance to Luminance
Gain Inequality: 4 IRE
Delay Inequality: ±26 nSec

Frequency Response

0.5 MHz: ±.25 dB
1.0 MHz: ±.35 dB
2.0 MHz: ±.45 dB
3.0 MHz: ±.6 dB
3.58 MHz: ± .35 dB
4.2 MHz: ±.6 dB

NOTE

Specifications are subject to change without
notice.

CONTROLS AND CONNECTIONS

This section describes the receiver's controls, indicators, and connectors.

FRONT PANEL

Indicators

- (1) **SYNC.** (Green LED). Lights when an encrypted signal is recognized by the VideoCipher® Module. Note that this does not mean that the signal is descrambled by the module; descrambling occurs only if authorized.
- (2) **AUTH.** (Green LED). Lights when a scrambled signal is recognized by the VideoCipher® Module and descrambling is authorized by the module.
- (3) **BYPASS.** (Red LED). Lights when an unscrambled signal is received, indicating that the VideoCipher® module is bypassed. The receiver functions as a conventional receiver for video and sub-carrier audio.
- (4) **SIGNAL.** Green LED. Lights when the RF input signal is between -25 dBm and -60 dBm.
- (5) **POWER INDICATOR.** Green LED

Controls

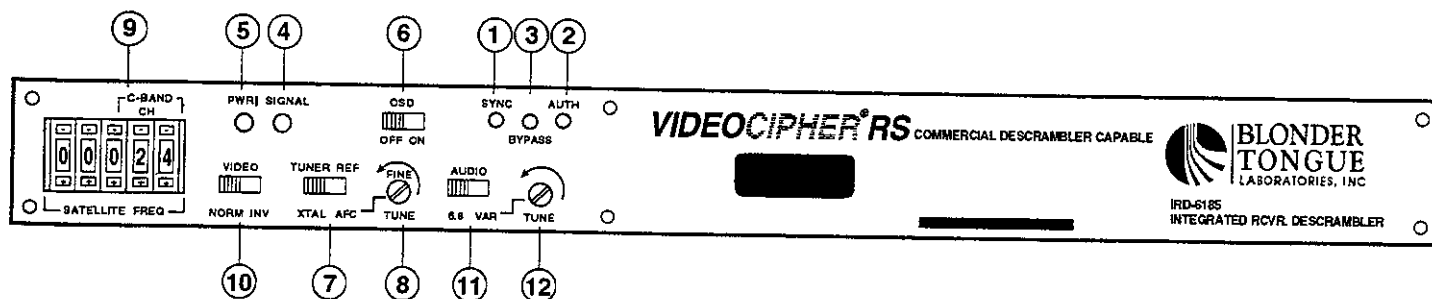
- (6) **OSD OFF/ON.** Slide switch, normally set to OFF. Functional only on receivers with an installed VideoCipher® module that has On Screen Display (OSD) capability. Turns the On-Screen Display (OSD) on or off. This switch is recessed to protect against being turned on accidentally.

- (7) **TUNER REF XTAL - AFC.** Slide switch, normally AFC. In the AFC position, automatic frequency control circuitry will "lock on" to incoming RF signals that drift up to ± 5 MHz in frequency. In the XTAL position, automatic frequency control circuitry is disabled and tuning is fixed.
- (8) **FINE TUNE.** Provides a ± 5 MHz fine tuning adjustment of the receiver frequency. Tune for best video performance.
- (9) **CHANNEL FREQUENCY SELECTION.** The receiver is tuned to the desired satellite transponder by the setting of a 5-section thumbwheel switch. Standard C band channels can be selected by setting the switch for 1 - 24. Downlink frequency selection can also be done in 1 MHz steps by setting the switches to 3700 - 4200 MHz. Selection in 1 MHz steps may also be done for input frequencies by setting the switches to 950 - 1450 MHz.

00001 - 00024	Standard C band
03700 - 04200	C band downlink frequency (1 MHz steps)
00950 - 01450	Receiver input frequency (1 MHz steps)
11700 - 12200	Ku band downlink frequency (1 MHz steps)
- (10) **VIDEO NORMAL - INVERT.** Switch to NORMAL for C-Band, INVERT for Ku-Band.
- (11) **AUDIO 6.8/VAR.** When set in the 6.8 position during unscrambled operation, supplies at the audio output terminal, the audio from the 6.8 MHz sub-carrier.
- (12) **TUNE.** This control tunes the audio sub-carrier when in the variable position.

CAUTION

The On-Screen Display, when turned on, is included with the receiver's video signal output. Make sure this is acceptable with current operations before setting the OSD switch to ON.



Front View

CONTROLS AND CONNECTIONS (Cont'd.)

REAR PANEL

Controls

- (13) VIDEO LEVEL. Controls the video level at the rear-panel VIDEO OUTPUT connector.
- (14) AUDIO L/R/MONO. Controls the audio levels at the rear-panel terminal connectors for left, right, and mono audio.
- (15) AUDIO LEVEL. Fixed-variable switches between internal calibrated 0 dBm output level and variable audio output level.

Connectors

The items below (#16 through #22) are twelve spade lug screw terminals of a barrier terminal strip on the rear of the receiver.

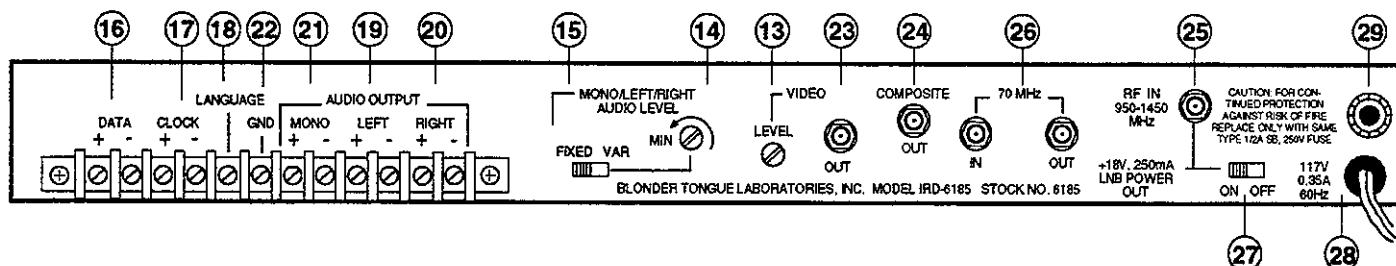
- (16) DATA. Two screw terminals (+ and -). RS422 differential outputs. Data + corresponds to the inverting output of an RS-422 line driver. Used only when the VideoCipher® Module is installed.
- (17) CLOCK. Two screw terminals (+ and -). RS422 differential outputs. Clock + corresponds to the inverting output of an RS-422 line driver. Used only when the VideoCipher® Module is installed.
- (18) LANGUAGE. One screw terminal. Used only when the VideoCipher® Module is installed. When the VideoCipher® uplinked channel is in the bilingual mode, grounding this terminal will cause the audio on the left uplinked audio channel to be output on both the left and right audio output terminals; an open circuit causes the audio on the right uplinked audio channel to be output on the same terminals.
- (19) LEFT. Two screw terminals for 600 Ohms balanced left audio out. Used with ground terminal.

- (20) RIGHT. Two screw terminals for 600 Ohms balanced right audio out. Used with ground terminal.
- (21) MONO. Two screw terminals. Contains the sum of the signals of the right and left audio terminals. 600 Ohms balanced; used with ground terminal.
- (22) GND. Screw terminal. Chassis/signal ground.
- (23) VIDEO OUTPUT. F-type Connector. Provides the filtered and clamped video out of the VideoCipher® Module. If the module is bypassed or not installed, filtered and clamped video from the receiver's FM demodulator circuits is present at this output.
- (24) COMPOSITE OUTPUT. F-type Connector. Provides composite (baseband) video out of the receiver. Non de-emphasized, non clamped.
- (25) RF INPUT. F-type connector. Input for 950 to 1450 MHz from an antenna subsystem.

NOTE

17 VDC is present on the center conductor of the RF INPUT connector for use in powering external in-line devices, such as LNBCs and LNAs.

- (26) EXT 70 MHz provided for the use of external I.F. filter.
- (27) LNB POWER ON-OFF. Controls LNB power to the RF Input connector.
- (28) AC POWER CORD. The receiver is on when this cord is connected to AC power; there is no power on/off switch on the receiver.
- (29) FUSE. 250 VAC, 0.5 Ampere, slo-blow line fuse.



Rear View

INSTALLATION & OPERATION

MODULE INSTALLATION

CAUTION

Serious electrical damage will result if power is not turned off prior to installing or removing the VideoCipher® Module.



The desired Transponder for C-Band may be selected by using the C-band Transponder number, downlink frequency or input to receiver frequency. Set Tuner Ref Switch to AFC. Adjust Fine Tune to center.

To install a VideoCipher® Module into the receiver, perform the following steps:

1. Disconnect the receiver's AC power cord from the AC source.
2. Remove 6 screws from the receiver front panel.
3. Remove the front panel from the receiver.
4. Carefully insert the VideoCipher® Module into the front of the receiver until the module's connectors engage the receiver's internal connectors.
5. Replace the panel and the six screws.

OPERATION

Turn-on

The receiver is on when its AC power cord is connected to an AC power source. There is no on/off switch on the unit.

Connect the satellite feed. The output from the LNB, either horizontal or vertical, is connected to the RF Input. The RF Input also supplies +17 VDC for LNB powering. If this +17V is not desired, it can be switched off using the LNB power on-off switch.

Connect the rear panel Video Output and Audio Output to a video monitor or modulator. With an authorized Module installed and tuned to the correct Transponder, the green AUTH LED should light after the IRD has received the authorization signal. The green SYNC LED should light when an encrypted signal is received even if not authorized.

The fine tune may be adjusted for best video performance.

The rear panel Video and Audio level controls may be adjusted for proper signal level to the modulator.

The on-screen display may be activated by momentarily sliding the OSD switch to On. The on-screen display will appear for a few minutes. See Diagnostics Section for OSD information.

Sub-Carrier Audio is available at the rear panel audio outputs when not receiving a scrambled signal. The audio is selected on the front panel to 6.8 MHz or tuned to any sub-carrier from 5.4 MHz to 8.2 MHz when set to variable.

DIAGNOSTICS

ON-SCREEN DISPLAY (OSD)

The OSD is available only if the VideoCipher® II Plus Module is installed in the receiver, and then only if the OSD ON/OFF switch is ON. The display below shows the OSD format. All data of the display refers to information about or detected by the VideoCipher® RS Module, and does not consider any functions or operation of the rest of the receiver. The following paragraphs describe the displayed data:

The first data on the display is not numbered and is the software code version (V1.0 in the example).

LINE 1. The first 8 digits are the unit address of the VideoCipher® RS Module installed in the receiver. Format is hexadecimal with a range of 020030000-02390FFF.

V1.0 CODE VERSION			
1)	01020304-FF-15 <small>UNIT ADDRESS SEED STATE UA/SEED STATE CRC</small>		
2)	F:0990 <small>TIERS F0-FFh</small>	E:C000 <small>TIERS E0-EFh</small>	D:0000 <small>TIERS D0-DFh</small>
3)	B:0000 <small>TIERS B0-BFh</small>	A:0000 <small>TIERS A0-AFh</small>	9:0000 <small>TIERS 90-9Fh</small>
4)	7:0000 <small>TIERS 70-7Fh</small>	6:0000 <small>TIERS 60-6Fh</small>	5:0000 <small>TIERS 50-5Fh</small>
5)	3:0000 <small>TIERS 30-3Fh</small>	2:0000 <small>TIERS 20-2Fh</small>	1:0000 <small>TIERS 10-1Fh</small>
6)	00 <small>GEO. REGION</small>	000-000-000 <small>GEOGRAPHIC LOCATION</small>	
7)	00-00-00 <small>CAT. NO.CAT. SEQ.CH. NO.</small>	0 0000 <small>CONSUMER KEY SEQ SYNC 24 COUNT</small>	0-0-000000 <small>PRG SEQ. FRAME COUNT</small>
8)	0 <small>SYNC STATE</small>	0 <small>SERVICE SELECTION</small>	*000000 <small>EPOCH FRAME COUNT</small>
9)	0000 <small>UNIT ADDRESSED</small>	0000 <small>ALL MESSAGES</small>	0000 <small>FRAME COUNT MSGS</small>
10)	0:00E-00/0:00E-00 <small>SHORT-TERM SIG. STRENGTH LONG-TERM SIG. STRENGTH</small>		00 <small>AUDIO HOLDS</small>
11)	SCRAMBLING : SCRAMBLED		
12)	AUTH: NOT AUTHORIZED		
HBO-E			
TOP GUN			

NOTE: The Small Letters are Explanations; They Do Not Appear on the Display

DIAGNOSTICS (Cont'd.)

The second group (2 digits) on line 1 is the "seed state" of the cryptographic processor. The format is hexadecimal. Any value other than FF indicates a defective or compromised cryptographic processor.

The last group on line 1 is the "unit address/seed state cyclic redundancy check (CRC)." The format is hexadecimal and can be any value 00-FF.

LINES 2-5. Lines 2 through 5 contain the tiers assigned to the unit. The tiers are displayed in hexadecimal notation, for example:

2) 3:1000 2:0000 1:0000 0:00FE

This example shows that tiers 1-7 and 60 are assigned to this module. Each group of numbers displays the status of 16 tiers.

0:xxxx displays tiers 0-15

1:xxxx displays tiers 16-31

2:xxxx displays tiers 32-47

3:xxxx displays tiers 48-63

4:xxxx displays tiers 64-79

5:xxxx displays tiers 80-95

6:xxxx displays tiers 96-111

7:xxxx displays tiers 112-127

8:xxxx displays tiers 128-143

9:xxxx displays tiers 144-159

A:xxxx displays tiers 160-175

B:xxxx displays tiers 176-191

C:xxxx displays tiers 191-207

D:xxxx displays tiers 208-223

E:xxxx displays tiers 224-239

F:xxxx displays tiers 240-255

LINE 6. Line 6 displays the following information (set when a module receives its initial authorization):

☐ Geographic Region (not currently supported).

A value of 00 should be displayed.

☐ Geographic Location.

This is a 36-bit number representing the location of the descrambler in 3 coordinates: x, y, z. Each point on the earth can be given a location in this way, accurate to approximately 2 miles.

This information is used for circular blackouts. The format is three groups of hexadecimal numbers, range 000-000-000 to FFF-FFF-FFF.

☐ Time Zone.

This is a hexadecimal number with a range of 0-2F (0-47 decimal). Values and their representations are:

04 = Hawaii

08 = Pacific Standard Time (PST)

0A = Mountain Standard Time (MST)

0C = Central Standard Time (CST)

0E = Eastern Standard Time (EST)

10 = Atlantic Standard Time (AST)

☐ Daylight Savings Enable

Indicates whether the module is to implement daylight savings time. The format is binary, as follows:

1 = The module is to implement daylight savings time.

0 = The module is not to implement daylight savings time.

LINE 7. Line 7 displays the following information:

☐ Current Category Number

All descramblers are placed in groups called categories. Some authorization numbers are addressed to categories of descramblers instead of individual descramblers. The category number informs the descrambler which group of descramblers it belongs to. The format is hexadecimal and the range is 00-FF.

☐ Current Category Sequence Number

This number increments by 1 each month. Since the number is derived from a decryption, it will be incorrect if the seeds in the unit are lost. The format is hexadecimal and the range is 00-FF.

☐ Channel Number

This is the VideoCipher® channel number, formerly known as "Provider ID."

☐ Sync-24 Detection Counter

This number identifies the kind of sync-24 being detected. Approximately 28 should be detected every second. The format is decimal and the range is 0000-9999.

DIAGNOSTICS (Cont'd.)

□ Sync Type

This number identifies the kind of sync-24 being detected. The format is decimal and the values are 0 = no sync-24s detected; 4 = VideoCipher® sync-24 detected.

□ Program Sequence

This number increments after each program. The format is modulo 4 (0-3).

□ Current Frame Count

This number is incremented by 15 every 2 seconds. The format is hexadecimal with a range of 000000-FFFFFF.

LINE 8. This line contains the following information:

□ Current Sync State

The range is 0 through 4, representing the following:

- 0 = Non-VideoCipher® channel;
- 1 = VideoCipher® sync-24 seen, waiting for messages;
- 2 = Fade has occurred. Will either recover (go to 3) or drop to 0;
- 3 = Fully acquired, awaiting authorization or not authorized;
- 4 = Fully authorized, subject to circular black-out.

□ Service Selection

Indicates which service is currently selected and is being output. Utility data is available simultaneously with the VideoCipher® Video/Audio Service. 0 = VideoCipher® Video/Audio.

□ Epoch Frame Count

This number represents the frame count at which the current program ends. An asterisk prior to the number means that free preview is in effect. The format is hexadecimal with a range of 000000-FFFFFF.

LINE 9. This line contains the following information:

□ **Number of good Unit Addressed CATEGORY REKEY (authorization) messages received.** The format is decimal with a range of 0000-9999.

□ **Number of all non-frame count messages (all messages) received by**

the unit. The format is decimal with a range of 0000-9999.

□ **Number of frame count messages received by the unit.**

This counter is a good indicator of the VideoCipher® signal quality. If the number is increasing rapidly, then signal quality is good. If the number is increasing slowly or sporadically, then the signal quality is poor. It should be incremented by 15 every 2 seconds. The format is decimal with a range of 0000-9999.

LINE 10. This line contains the following information:

□ **Short-term signal strength or bit error rate (BER).**

This is a count of the number of detected bit errors in exponential notation over the last 4 to 5 seconds. A perfect BER value is 0.00E-0.

□ **Long-term signal strength or bit error rate (BER).**

This is a count of the number of detected bit errors in exponential notation over the last 45 seconds. A perfect BER value is 0.00E-0.

□ Audio Holds

This number represents the ability of the module to successfully descramble the scrambled input signal. Video and audio are muted when the value exceeds 90. Format is hexadecimal and the range is 0-FF.

LINE 11. This line indicates the scrambling mode in text characters as one of the following messages:

SCRAMBLING: SCRAMBLED SCRAMBLING:
UNSCRAMBLED SCRAMBLING: FIXED KEY

LINE 12. This line indicates the authorization state as one of the following messages:

AUTH: NOT AUTHORIZED (not subscribed or blacked out) AUTH: AUTHORIZED (subscribed)
MISSING PROGRAM INFO (missing program rekey information)

NEEDS INSTANT TRIP (module needs full CATEGORY REKEY message)

REMAINING 2 LINES (not numbered).

The last two lines on the display are reserved for the program or service name currently selected.

LIMITED WARRANTY

Blonder Tongue Laboratories, Inc. ("B-T"), for a period of three (3) years from the date of original purchase, will at its sole option, either repair or replace (with a new or factory reconditioned product, as B-T may determine) any product manufactured by B-T 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. 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.

In some cases, the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in B-T products (including, without limitation, VideoCipher® IICM commercial descrambler modules) are of shorter duration or otherwise more limited than the standard B-T limited warranty. In such cases, B-T's warranty with respect to such third-party proprietary sub-assembly modules will be limited to the duration and other terms of such third-party vendor's warranty.

OTHER THAN THE WARRANTIES SET FORTH ABOVE, B-T 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 B-T OR ANY OF B-T'S EMPLOYEES OR REPRESENTATIVES OR IN ANY OF B-T'S OTHER BROCHURES, MANUALS, CATALOGS, LITERATURE OR OTHER MATERIALS. IN ALL CASES, BUYER'S SOLE AND EXCLUSIVE REMEDY AND B-T'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 B-T IN ITS SOLE DISCRETION SHALL DETERMINE. B-T 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 FROM B-T.

All claims for shortages, defects and non-conforming goods must be made by the customer 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 the customer. Upon any such complaint, the customer shall hold the goods complained of intact and duly protected for a period of up to sixty (60) days. Upon the request of B-T, the customer shall ship such allegedly nonconforming or defective goods, freight prepaid to B-T for examination by B-T's inspection department and verification of the defect. B-T, at its option, will either repair, replace or issue a credit for products determined to be defective. B-T'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 B-T 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 B-T. Under no circumstances are products to be returned to B-T without B-T's prior written authorization. B-T reserves the right to scrap any unauthorized returns on a no-credit basis. Any actions for breach of a contract of sale between B-T and a customer must be commenced by the customer within thirteen (13) months after the cause of action has accrued. A copy of B-T's standard terms and conditions of sale, including the limited warranty, is available from B-T upon request.

VideoCipher® IICM is a registered trademark of General Instrument Corp. You may obtain a copy of the limited warranty covering third-party proprietary subassembly modules from Blonder Tongue.

VideoCipher® IICM COMMERCIAL MODULE

Service and Repair Procedures for Licensees

General Instrument has established certain policies and procedures for the service and repair of VideoCipher® IICM commercial descrambler modules contained in Integrated Receiver/Descrambler (IRD) products sold by properly licensed Original Equipment Manufacturers (OEM). Modules must be returned to the General Instrument Repair Center by the Commercial System Operator ("Operator") in accordance with the procedure outlined below.

A. Shipping Modules to General Instrument for Repair

1. The Operator must obtain a Return Material Authorization (RMA) prior to the return of modules to General Instrument. Technical assistance and/or RMA numbers may be obtained from the VideoCipher® hotline at 800-845-2748. Current hotline hours of operation are 8:30 a.m. to 9:00 p.m. EST, Monday through Friday.
2. The Operator will be advised of the RMA Number to be used. The Operator must affix a label with the RMA number to each module being returned. The Operator will also prepare a cover letter containing a brief description of the failure.
3. Modules and cover letters shall be returned to the following address:

General Instrument Corporation
P. O. Box 700
Hickory, N.C. 28603
Reference: RMA#(s) nnnnnnn, nnnnnnn
4. Prior to return, modules must be packed individually in electrostatic discharge (ESD) bags provided with original purchase or an equivalent ESD bag and packed in the original packing box or an equivalent padded container. A \$2.00 charge will apply for all modules not returned in ESD bags.
5. Multiple modules covered by the same RMA number must be shipped at the same time.
6. Incoming modules must be returned, shipping costs prepaid by sender. C.O.D. shipments will be refused.
7. Modules received without a Return Material Authorization and/or cover letter may be delayed from repair or replacement.

B. Receipt and Processing of Returned Modules

1. Repaired or replaced modules will be returned to the Operator referencing the original RMA with a copy of the packing slip included. Return shipping costs will be prepaid by General Instrument on warranty returns to Operator. Return freight charges on non-warranty repairs will be charged COD. The packing slip will include information with regard to the old and new module address code and repair determination.
2. A purchase order will be required in order to process all non-warranty modules returned for repair work. The Operator contact named on the RMA will be notified of replacement or repair charges. Charges will be invoiced per the then-current VideoCipher® IICM Commercial Descrambler Module Price List for the following:
 - a. All module non-warranty repairs.
 - b. Modules returned with failures that General Instrument cannot duplicate (CND).
 - c. Replacement or repair of modules, that in General Instrument's sole discretion, are determined to have been tampered with (voided warranty).
 - d. All modules returned without ESD bags.

Invoicing will occur at the time of shipment of modules back to the Operator. Prices for repair services are subject to change without notice.

3. Modules returned during the original warranty period that are repaired or replaced will carry either a ninety (90) day warranty or the remaining period of the original warranty, whichever is longer.

Non-warranty repaired or replacement modules will carry a ninety (90) day warranty. Any module returned for repair (warranty or non-warranty) which is determined in General Instrument's sole discretion to have been tampered with will be replaced at the full module price and carry a ninety (90) day warranty.

THIS DOCUMENT SETS FORTH REPAIR PROCEDURES ONLY. THE TERMS OF THE GENERAL INSTRUMENT WARRANTY ARE LIMITED TO THOSE SET FORTH IN THE APPROPRIATE CONTRACT BETWEEN GENERAL INSTRUMENT AND THE OEM.



**BLONDER
TONGUE**
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