



NXG-CRYPTOLINK TIVO

OTT BULK IPTV VIDEO RE-DISTRIBUTION MODULE FOR B2B



STOCK #	MODEL NAME	DESCRIPTION
6774 4	NXG-Cryptolink TiVo	TiVo bulk video ingest and descrambling module

We recommend that you write the following information in the spaces provided below.

Purchase Location Name:	
Purchase Location Telephone Number:	
NXG-Cryptolink TiVo Serial Number(s):	

The information contained herein is subject to change without notice. Revisions may be issued to advise of such changes and/or additions.

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CROSS-REFERENCE & HYPERLINKING USAGE

This guide makes use of hyperlinks for the Table of Contents, some cross-reference linking between sections, and external hyperlinking to web addresses. This has been done to assist the reader in finding the information they are seeking in a much quicker way. In addition to hyperlinking, the Table of Contents also makes use of the bookmarking feature present in the Adobe Reader application.

PRODUCT AND DOCUMENTATION UPDATES

The latest user documentation (PDF) and Firmware Updates can be obtained by visiting our website. Navigate to the product page by entering the full Model Name in the search field. **Firmware Updates** can also be directly accessed under the "Support" section of the website. If you cannot find your product model on the website, please reach out to Tech Support through our [support request form](#).

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 [review our return policies](#) or [contact our service department](#) for further information.

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SECTION 1 – GENERAL & SAFETY INSTRUCTIONS



The **STOP** sign symbol is intended to alert you to the presence of **REQUIRED** operating and maintenance (servicing) instructions that if not followed, may result in product failure or destruction.



The **YIELD** sign symbol is intended to alert you to the presence of **RECOMMENDED** operating and maintenance (servicing) instructions.



The **LIGHTNING** flash symbol 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 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

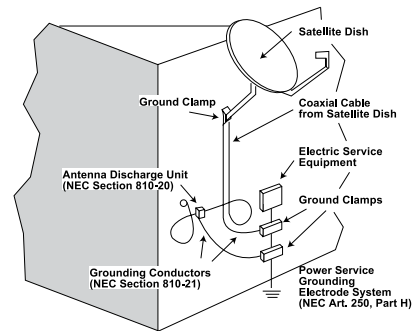
This reminder is provided to call the CATV System Installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



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

- **Elevated Operating Ambient** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature per Section 2.3.
- **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).
- 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-mounted 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 the antenna. 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 the 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.

SECTION 2 – PRODUCT SUMMARY

2.1 PRODUCT APPLICATION & FEATURES

APPLICATION

The **NXG-Cryptolink TiVo** module allows Cable, Fiber Optic, and Telco Operators to support Hospitality, Enterprise, and Healthcare customers in managing all their video services from one location, integrated directly into Service Operator's video distribution system.

With the Blonder Tongue NXG Cryptolink module, there is no need to purchase additional servers, STB or hospitality TV's to support SMB/Hospitality customers. Customers can simply add the Cryptolink TiVo module to a NXG headend and create linear channel lineups at each customer's property in QAM, IP or Analog/NTSC formats.

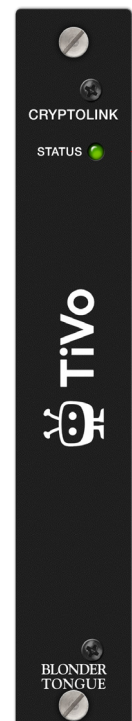
KEY FEATURES

- ▶ OTT Video to Linear Broadcast Conversion
- ▶ Descrambles 64 Channels (per blade) for SMB and Hospitality
- ▶ Creates Operator Service demarcation point for B2B
- ▶ Descrambles Widevine DRM on MPEG-DASH ABR Unicast
- ▶ Selectable ABR profiles on a per channel basis
- ▶ Uses standard TiVo residential unicast feeds, no need to create separate dedicated bulk video multicast feeds
- ▶ Deployed as Edge/IP architecture or centralized with HE/CO-based RFOG distribution architecture

2.2 PRODUCT MODULE DESCRIPTION

A Status LED: Status indicator colors are as follows.

- ▶ OFF = Indicates the module is not correctly connected or receiving power.
- ▶ GREEN = Indicates the module is running without errors.
- ▶ AMBER = Indicates that one or more warnings have been detected.
- ▶ RED = Indicates that one or more errors have been detected.



2.3 PRODUCT SPECIFICATIONS

INPUT	
DATA PORTS	
ABR Protocol	MPEG - DASH
IP	2.5 Gb from NXG Backplane (IP from Master Controller)
Encryption	L3 Widevine with TiVo Interfaces
Video Resolution	Pass-through
Closed Captioning	EIA-608 / EIA-708
Addressing	Unicast
AUDIO FORMAT	
Input Formats	Pass-through only
Rates	Pass-through only
GENERAL	
Dimensions (W x H x D)	1.15 x 7.0 x 15.5 in (29 x 178 x 394 mm)
Weight	2.0 lbs (0.9 kg)
Power	DC via NXG Mainframe Backplane
Power Consumption	20 W
Operating Temp.	32 to 122 °F (0 to 50 °C)
Storage Temp.	-13 to 158 °F (-25 to 70 °C)
Operating Humidity	0 to 95% RH @ 35 °C max, non-condensing

OUTPUT	
UDP	SPTS to NXG Mainframe Backplane
STREAM PROTOCOLS	
Standard	ISO / IEC 13818-1 Systems
TS Packet Length	188 bytes
Sync Byte	0x47
Encoding Type	CBR / Capped VBR
Video Data Rates	DASH stream dependent
TS Supported	64 SPTS
Video Format	MPEG-2; H.264 (AVC); H.265 (HEVC) (Pass-through only)
Video Resolution	Pass-through only
Addressing	Unicast
AUDIO	
Output Formats	Pass-through only

ALARMS & MONITORING	
Front Panel	1x Status LED (Bicolor)

2.4 MODULE INSTALLATION

For general module installation instructions, please refer to the NXG Base Platform User Manual.

SECTION 3 – ACQUIRING A PROVIDER BUNDLE

3.1 BEFORE YOU BEGIN

There are various steps required to set up the Cryptolink TiVo Module, however the most important is contacting Blonder Tongue to coordinate application of the Provider Bundle. The Provider Bundle is required and includes proprietary, customer-specific information used by the module for communicating with remote servers. The module will not function without first obtaining the correct Provider Bundle.

3.2 LOADING A PROVIDER BUNDLE

Blonder Tongue’s agreements dictate that customers must not directly possess the Provider Bundle. Therefore, Blonder Tongue will need remote access to the unit so that it may be provisioned. A technician will provision the module(s) once remote access has been granted and established.

It is important to note that the Provider Bundle data will be erased when performing a “Default Unit Settings” operation on the module’s “System” page. It will be necessary to repeat the Provider Bundle provisioning process if defaults are applied.

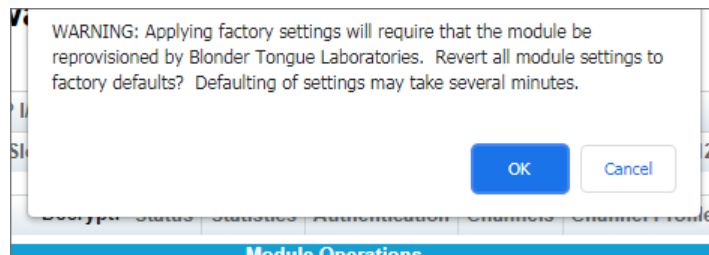


Figure 3.2a - Factory Settings Warning Prompt

Also, the Provider Bundle data will be omitted from the saving and loading of module Configuration Files. It will still be necessary to perform the Provider Bundle provisioning process even if a Configuration File from a provisioned module is loaded onto an un-provisioned module.

SECTION 4 – MODULE STATUS AND GENERAL MANAGEMENT

After the previous steps are complete, you can proceed with configuring the rest of the module. For this setup overview, we will briefly go over the tabbed sub-sections and settings under “IP TiVo Decrypt Module”.

4.1 “IP TIVO DECRYPT MODULE: STATUS” TAB

The “IP TiVo Decrypt Module: Status” tab (Figure 4.1) displays the general health and module information at a glance. The information is provided as a quick way to monitor the module or assist with troubleshooting issues that may arise.

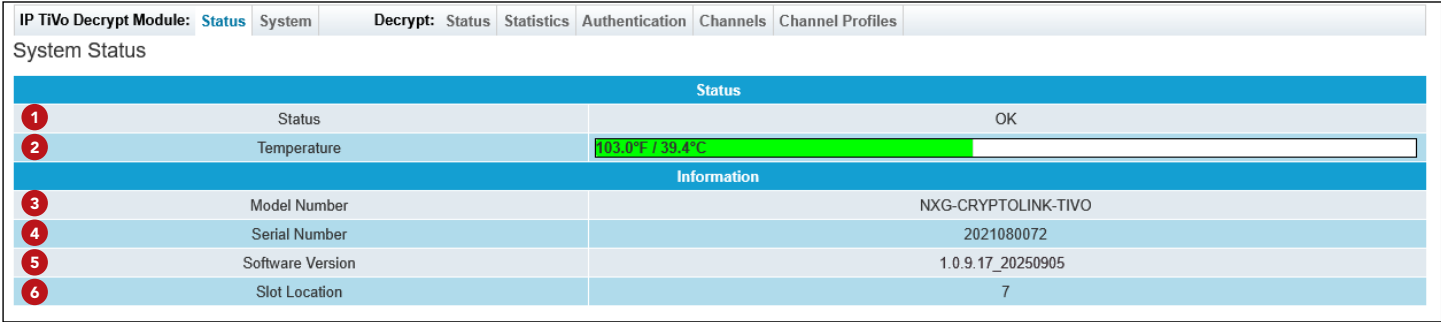


Figure 4.1 - “IP TiVo Decrypt Module: Status” Tab

In the section entitled “**Status**”, the following parameters about the module health are displayed:

- 1 **Status:** Indicates the current status of the module. Status Levels shown below:
 - **Ok** - No issues at the current time
 - **Updating** - an update is in-progress via the Master Controller's Firmware Update page.
 - **Error** - One or more errors have occurred. Check system log for more information on error(s).
 - **Warnings** - One or more warnings have been triggered. Check system log for more information.
- 2 **Temperature:** Indicates the temperature of the module.



Figure 5.1b - Temperature Status Color Range

In the section entitled “**Information**”, the following module-specific information is shown below:

- 3 **Model Number:** Indicates the model number of the module installed.
- 4 **Serial Number:** Indicates the serial number of the module installed.
- 5 **Software Version:** Indicates the software version of the module. To update software, please see “**Section 6 - Firmware Updates**”.
- 6 **Slot Location:** Indicates the slot location on the platform chassis where the module is currently installed into.

4.2 “IP TIVO DECRYPT MODULE: SYSTEM” TAB

The “**IP TiVo Decrypt Module: System**” Tab (Figure 4.2) allows the user to manage the module configuration through the following controls:

The screenshot shows the 'System' tab of the 'IP TiVo Decrypt Module'. At the top, there are tabs for 'Status', 'System', 'Decrypt', 'Statistics', 'Authentication', 'Channels', and 'Channel Profiles'. The 'System' tab is active. Below the tabs, there are several sections:

- Module Operations:** Contains a 'Reboot' button (callout 1).
- Settings Configuration:** Contains a 'Default Unit Settings' button (callout 2), a 'Download Configuration File' button (callout 3), a 'Browse...' button for 'Config File (2MB Maximum)' (callout 4), a 'Load & Apply Configuration File' button, a 'Browse...' button for 'Provider Bundle' (callout 5), and an 'Upload Provider Bundle' button. A warning message states: 'IMPORTANT: Content provider credentials will be cleared when uploading a configuration file.'
- External Ethernet Settings:** Contains input fields for 'Primary DNS' (callout 6) and 'Secondary DNS' (callout 7).
- Decrypter Ethernet Settings:** A table with columns for device name, IP Address, Subnet Mask, and Default Gateway. It lists four devices: DC1, DC2, DC3, and DC4.
- Time Settings:** Contains a 'Timezone' dropdown menu set to '(UTC-04:00) US/Eastern' and an 'Apply Settings' button.

Figure 4.2a - “IP TiVo Decrypt Module: System” Tab

The Module “**Operations**” section allows the user to reboot the module from this screen.

- 1** **Reboot** Click this button to reboot the module.

The Module “**Settings Configuration**” section allows the user to back-up and re-load the configuration settings.

- 2** **Default Unit Settings** Resets the module back to the Factory defaults. It is always recommended to save the existing configuration file before resetting to the default values.
- 3** **Download Configuration File** Downloads the current module configuration file.
- 4** **Browse...** No file selected. Browse and select a Configuration File (2 MB maximum file size)
- Load & Apply Configuration File** After choosing file, click this to load and apply the configuration file.

The “**Provider Bundle**” section allows the user to load in a file, provided by “TiVo” and obtained through Blonder Tongue that holds channel plan data for the customer. Blonder Tongue uses these controls to assist the customer in loading the file in while customer provides credentials (through the Authentication tab) to access their content:

- 5** **Browse...** No file selected. Browse and select a Provider Bundle file (Done by Blonder Tongue Technician using remote access, see Appendix A)
- Upload Provider Bundle** After choosing the file, the Blonder Tongue technician will click to upload the bundle into the NXG module.

The “**External Ethernet Settings**” section allows the user to configure the following global Ethernet settings that are applied to **DC1-DC4**:

- 6** **Primary DNS:** the primary Domain Name Server (DNS) hosts the controlling zone file, containing all the authoritative information for a domain. The same Primary DNS value is used for all devices within the module.
- 7** **Secondary DNS:** the secondary Domain Name Server (DNS) contains read-only copies of the zone file, and gets its info from a primary server in a communication known as a zone transfer. The same Secondary DNS value is used for all devices within the module.

4.2 “IP TIVO DECRYPT MODULE: SYSTEM” TAB (CONTINUED)

crypt Module: Status System Decrypt: Status Statistics Authentication Channels Channel Profiles

Module Operations

Module Reboot Reboot

Settings Configuration

Default Unit Settings Download Configuration File

Config File (2MB Maximum) Browse... No file selected. Load & Apply Configuration File

IMPORTANT: Content provider credentials will be cleared when uploading a configuration file.

Provider Bundle Browse... No file selected. Upload Provider Bundle

External Ethernet Settings

Primary DNS 8.8.8.8

Secondary DNS 8.8.4.4

Decrypter Ethernet Settings

DC1	IP Address:	172.16.70.10	8	Subnet Mask:	255.255.255.0	9	Default Gateway:	172.16.70.254	10
DC2	IP Address:	172.16.70.11		Subnet Mask:	255.255.255.0		Default Gateway:	172.16.70.254	
DC3	IP Address:	172.16.70.12		Subnet Mask:	255.255.255.0		Default Gateway:	172.16.70.254	
DC4	IP Address:	172.16.70.13		Subnet Mask:	255.255.255.0		Default Gateway:	172.16.70.254	

Time Settings

11 Timezone: (UTC-04:00) US/Eastern

Apply Settings

Figure 4.2b - “IP TiVo Decrypt Module: System” Tab

The “**Decrypter Ethernet Settings**” section allows the user to configure the following Ethernet settings that are applied for each decrypter, **DC1-DC4**:

- 8 **IP Address:** the static IP address that is assigned to the unit, allowing the user to access it via the web interface. Pressing the IP reset button temporarily returns unit to factory default of 172.16.70.1.
- 9 **Subnet Mask:** the subnet mask allows the user to access the unit from another network via the web interface. Factory Default is 255.255.255.0 for local subnet.
- 10 **Default Gateway:** the gateway address of unit, allowing the user to access it from another network via the web interface. The gateway address should be in the same subnet as IP Address.

The “**Time Settings**” section allows the user to set the following parameter:

- 11 This control allows the user to choose the time zone, shown in UTC format.



REMEMBER: Click on the **[APPLY SETTINGS]** button to save and apply new values/configuration changes.

SECTION 5 – CONFIGURING THE DECRYPTERS

5.1 BEFORE YOU BEGIN

This configuration overview briefly goes over information and additional settings within the sub-tabs under “Decrypt:”.

5.2 “DECRYPT” > “STATUS” TAB

The “**Decrypt: Status**” Tab (Figure 5.2) is a “read-only” screen which indicates the status of each encoder. A visual status of the pipeline is also shown on the left side. When hovering over an encode block, the corresponding status table, to the right, will highlight. In addition, when an input is chosen, the corresponding image (below) will show a yellow highlight box behind it. Ensuring that for each encoder, the user can see at a glance what input is being used/selected.

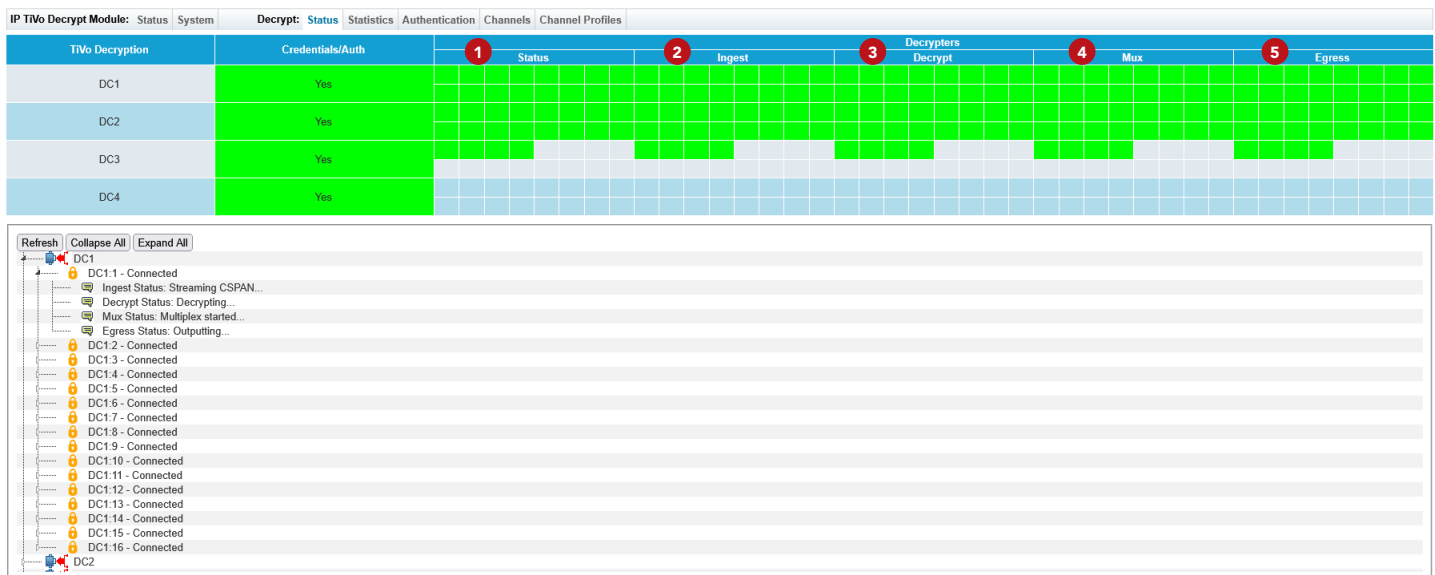


Figure 5.2 - “Decrypt: Status” Tab

Each of the 64 decryption pipelines have five indicators: “**Status**”, “**Ingest**”, “**Decrypt**”, “**Mux**”, and “**Egress**”.

- 1 Status:** Shows the overall status of the entire decryption pipeline.
- 2 Ingest:** Shows the current status of audio and video segment downloads.
- 3 Decrypt:** Shows the current status of decrypting each audio/video segment pair.
- 4 Mux:** Shows the current status of multiplexing audio/video segments together into a transport stream.
- 5 Egress:** Shows the current status of the transport stream output to the NXG platform.

Clicking on any square within the Status table will expand the corresponding decryption device (DC1-DC4) or decryption pipeline within the Status tree. The Status tree view contains additional status information for each stage of the decryption pipeline.

5.3 “DECRYPT” > “STATISTICS” TAB

The “**Decrypt > Statistics**” tab provides the following useful information. Each of the 4 decryption devices and their corresponding decryption pipelines have statistics available to assist in troubleshooting network issues or congestion.

Two classes of statistics information are gathered: **Pings** and **Download Times**:

IP Tivo Decrypt Module: Status System				Decrypt: Status Statistics		Authentication Channels		Channel Profiles											
Network Statistics																			
Item				DC1		DC2		DC3		DC4									
1	Last Ping Turn-around Time (ms)			-	-	-	-	-	-	-	-								
3	Min Ping Turn-around Time (ms)			-	-	-	-	-	-	-	-								
3	Max Ping Turn-around Time (ms)			-	-	-	-	-	-	-	-								
4	Average Ping Turn-around Time (ms)			-	-	-	-	-	-	-	-								
Download Statistics																			
Item				DC1:1		DC1:2		DC1:3		DC1:4		DC1:5		DC1:6		DC1:7		DC1:8	
5	Last Download (ms)			1157	1232	776	897	1241	1409	1698	1633								
	Max Download (ms)			8257	8419	6378	7150	8129	9163	6029	5151								
	Slow Download Events (> 6000ms)			2	3	2	2	2	1	1	0								
Item				DC1:9		DC1:10		DC1:11		DC1:12		DC1:13		DC1:14		DC1:15		DC1:16	
6	Last Download (ms)			1459	1621	2165	1333	1094	1529	996	1041								
	Max Download (ms)			5940	8127	6912	9009	5638	6760	6467	7307								
	Slow Download Events (> 6000ms)			0	2	1	1	0	1	2	4								
Item				DC2:1		DC2:2		DC2:3		DC2:4		DC2:5		DC2:6		DC2:7		DC2:8	
7	Last Download (ms)			1419	2252	2153	1674	1379	1758	1247	1475								
	Max Download (ms)			7586	7561	7706	7848	7554	7250	7259	6061								
	Slow Download Events (> 6000ms)			1	2	2	4	2	2	2	1								
Item				DC2:9		DC2:10		DC2:11		DC2:12		DC2:13		DC2:14		DC2:15		DC2:16	
	Last Download (ms)			1123	1543	1286	874	1246	1664	812	603								
	Max Download (ms)			7650	7718	5966	5199	5680	6694	5833	6523								
	Slow Download Events (> 6000ms)			1	2	0	0	0	1	0	1								
Item				DC3:1		DC3:2		DC3:3		DC3:4		DC3:5		DC3:6		DC3:7		DC3:8	
	Last Download (ms)			1321	1213	1152	1079	0	0	0	0								
	Max Download (ms)			7590	7321	6621	6911	0	0	0	0								
	Slow Download Events (> 6000ms)			3	4	1	4	0	0	0	0								
Item				DC3:9		DC3:10		DC3:11		DC3:12		DC3:13		DC3:14		DC3:15		DC3:16	
	Last Download (ms)			0	0	0	0	0	0	0	0								
	Max Download (ms)			0	0	0	0	0	0	0	0								
	Slow Download Events (> 6000ms)			0	0	0	0	0	0	0	0								
Item				DC4:1		DC4:2		DC4:3		DC4:4		DC4:5		DC4:6		DC4:7		DC4:8	
	Last Download (ms)			0	0	0	0	0	0	0	0								
	Max Download (ms)			0	0	0	0	0	0	0	0								
	Slow Download Events (> 6000ms)			0	0	0	0	0	0	0	0								
Item				DC4:9		DC4:10		DC4:11		DC4:12		DC4:13		DC4:14		DC4:15		DC4:16	
	Last Download (ms)			0	0	0	0	0	0	0	0								
	Max Download (ms)			0	0	0	0	0	0	0	0								
	Slow Download Events (> 6000ms)			0	0	0	0	0	0	0	0								

Figure 5.3 - “Decrypt: Statistics” Tab

PINGS – DECRYPTION DEVICES

In the context of the TiVo Module, pings are intended to indicate the time it takes for a typical ping packet to traverse a network to the server being used for authentication/content origination and back to the module.

- 1 Last Ping Turn-around Time (ms):** Shows the most recent turn-around time in milliseconds for a ping packet.
- 2 Min Ping Turn-around Time (ms):** Shows the minimum turn-around time in milliseconds for all ping packets sent/received since the module was powered.
- 3 Max Ping Turn-around Time (ms):** Shows the maximum turn-around time in milliseconds for all ping packets sent/received since the module was powered.
- 4 Average Ping Turn-around Time (ms):** Shows the average turn-around time in milliseconds for ping packets sent/received during an 8-hour sliding window.

DOWNLOAD TIMES – DECRYPTION PIPELINES

Statistics are gathered for each active decryption pipeline.

- 5 Last Download (ms):** Shows the most recent download time in milliseconds for an audio/video segment.
- 6 Max Download (ms):** Shows the maximum download time in milliseconds for an audio/video segment since the module was powered.
- 7 Slow Download Events (> Nms):** Shows the number of occurrences where the download time of an audio/video segment exceeded the real-time playback length of the segment itself (in milliseconds). Such events will result in service interruptions as audio/video data will not be downloaded in time for content to be forwarded to the specified destination. This count is maintained for a particular pipeline while the pipeline is active.

5.4 “DECRYPT” > “AUTHENTICATION” TAB

The “**Decrypt > Authentication**” tab provides the following useful information and configuration. In addition to the **Provider Bundle**, credentials are also required to access TiVo content. A username and password must be entered in the corresponding fields under the “**Authorization Configuration**” pane (right side, Figure 5.4). The status of the underlying operations can be viewed and is made available within the “**Backend Status**” pane (left side, Figure 5.4).

All following steps **must** be completed successfully prior to content being downloaded, decrypted, and output to the NXG platform.

Backend Status - TiVo - Idle...		Authorization Configuration	
Attribute	Setting	Attribute	Setting
1	Loaded Provider Bundle	Yes	
3	Acquired Credentials	Yes	
	Authenticated	Yes	
4	Downloaded Channel List	Purged after processing	
5	Extracted Channel List	Purged after processing	
6	Parsed Channel List	Yes	
7	Normalized Channel List	Yes	
8	Channels Selected	Yes	
9	Downloaded Media Description Files	Purged after processing	
10	Extracted Media Description Files	Purged after processing	
11	Parsed Media Description Files	Yes	
12	Normalized Media Description Files	Yes	
13	Channel Profiles Selected	Yes	

Figure 5.4 - “Decrypt: Authentication” Tab

BACKEND STATUS

- 1 **Loaded Provider Bundle:** Shows whether or not the Provider Bundle has been saved/recalled correctly.
- 2 **Acquired Credentials:** Shows whether or not credentials have been stored.
- 3 **Authenticated:** Show success/failure when using the Provider Bundle and credentials when connecting to the authentication/content server.
- 4 **Downloaded Channel List:** Indicates download status of the channel list associated with the account user’s account.
- 5 **Extracted Channel List:** Indicates whether or not the downloaded channel list has been extracted.
- 6 **Parsed Channel List:** Indicates status of ingesting the channel list data.
- 7 **Normalized Channel List:** Indicates status of channel list conversion to a format used internally.
- 8 **Channels Selected:** Indicates whether or not a user has selected channels on the “Channels” page.
- 9 **Downloaded Media Description Files:** Indicates status of downloading the files used to describe available profiles associated with each selected channel.
- 10 **Extracted Media Description Files:** Indicates whether or not the downloaded media description files have been extracted.
- 11 **Parsed Media Description Files:** Indicates status of ingesting the media description data. Note: This process may take several minutes to complete.
- 12 **Normalized Media Description Files:** Indicates status of converting the media description files to a format used internally.
- 13 **Channel Profiles Selected:** Indicates whether or not audio and video profiles have been selected for selected channels.

5.5 “DECRYPT” > “CHANNELS” TAB

The “**Decrypt > Channels**” (Figure 6.4) tab allows the user to select channels for use in the NXG Gateway system.

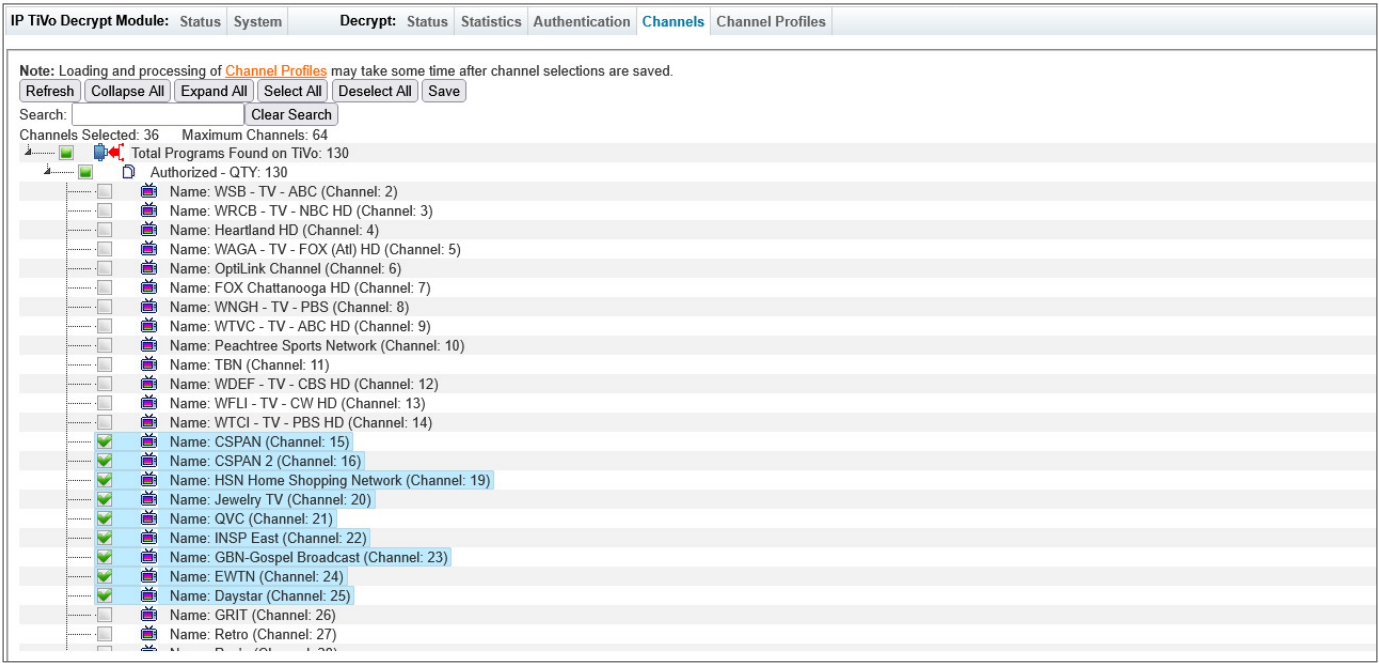


Figure 5.5 - “Decrypt: Channels” Tab

Channel selections are made by selection the checkbox next to the desired channel. Up to 64 channels may be selected per module. Once the desired channels are selected, choose “Save” from the control buttons.

A number of convenience features are made available to aid in finding the desired channels from the list. The “Search” field allows free-form entry of search terms. Searches are performed in real-time on all available channel metadata to allow quick paring of unwanted channels. The other buttons available will assist with refreshing the channel list tree, collapsing/expanding the tree, and selecting all/none of the available channels.

5.6 “DECRYPT > CHANNEL PROFILES” TAB

The “Decrypt > Channel Profiles” (Figure 5.6) tab allows the user to select channel profiles for channels previously selected on the “**Channels**” page.

IP TiVo Decrypt Module: Status System Decrypt: Status Statistics Authentication Channels Channel Profiles			
Backend Status - TiVo - Idle...			
Channel	Description	Video Profile	Audio Profile
A&E East	A&E East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Freeform East	Freeform East	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
History East	History East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
FX East	FX East	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Hallmark Channel East	Hallmark Channel East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
TLC	TLC	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
SEC Network	SEC Network	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
FOX Sports 1	FOX Sports 1	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
FOX Business Network	FOX Business Network	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Disney Channel East	Disney Channel East	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
National Geographic East	National Geographic East	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Food Network East	Food Network East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Travel Channel East	Travel Channel East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
HGTV East	HGTV East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Lifetime East	Lifetime East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Bravo East	Bravo East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
CSPAN 2	CSPAN 2	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Discovery Channel East	Discovery Channel East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Disney XD East	Disney XD East	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Golf Channel	Golf Channel	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
INSP East	INSP East	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Jewelry TV	Jewelry TV	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
GBN-Gospel Broadcast	GBN-Gospel Broadcast	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Daystar	Daystar	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
EWTN	EWTN	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
HSN Home Shopping Network	HSN Home Shopping Network	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
QVC	QVC	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
CSPAN	CSPAN	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
CNN	CNN	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Cartoon Network East	Cartoon Network	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
ACC Network	ACC Network	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Newsmax	Newsmax	1920x1080 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
ESPN2	ESPN2	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
FanDuel Sports Southeast	FanDuel Sports Southeast	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
FanDuel Sports South	FanDuel Sports South	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
ESPN	ESPN	1280x720 AVC1 @ 5.00Mbps	ENG (MAIN) - AC-3 @ 375Kbps
Apply			

Figure 5.6 - “Decrypt > Channel Profiles” Tab

Once channels have been selected and the associated media description files have been downloaded and processed, the audio and video profiles will become available for assignment. The profiles available are populated from the data included in the media description files for each channel. Therefore, each channel may have a different set of options available. The TiVo module does not support ABR (Adaptive Bitrate) streaming, but instead uses the bitrates chosen by the user.

Important: Users must be aware of their Internet connection’s speed and overall quality of service available to them. A poor Internet connection, insufficient available bandwidth, and/or unreliable links may contribute to an undesirable end-user experience.



REMINDER: Click on the “Apply” button to apply any new values and/or configurations.

SECTION 6 – FIRMWARE UPDATES

The “**Firmware Update**” tab (Figures 6a, 6b, 6c, and 6d) is part of the Master Controller Module interface, and is used for all installed modules. It is located on the right side of the main menu allowing the user to review currently installed firmware versions and quickly update installed module(s).

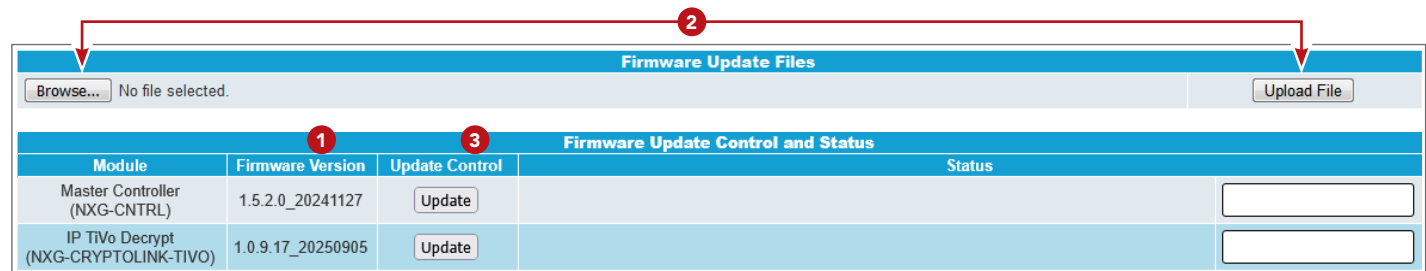


Figure 6a - “Firmware Update” Tab

- 1 Check “**Firmware Version**” to ensure you have the latest firmware. To determine if a new firmware update has been released, please go to our website at: (www.blondertongue.com/support/firmware-updates/)

Click the “**Firmware Download Site**” linked button and then click through the following folders to view the list of NXG modules: “**BLONDER TONGUE**” > “**N**” > “**NEXGEN GATEWAY**”

NOTE: There is a check of the file name versus module ID to eliminate a user inadvertently updating any modules with incorrect files. Multiple module updates can be performed simultaneously after uploading the files.

- 2 Under the “**Firmware Update Files**” section, the user can use **Browse...** and **Upload File** to select and send the module update file(s) into the NXG Platform. See a view of the file when uploaded to the platform as shown below on Figure 6b.



Figure 6b - File when uploaded

- 3 Update the Firmware version by clicking the **Update** button. The update status and progress will show under the “**Status**” columns. Below are the firmware updates as they appear while in-progress (Figure 6c) and upon completion (Figure 6d).

NOTE: After clicking the “Update” button, please allow a few seconds for the file to load.



Figure 6c - Update In Progress

- 4 Once the update progress is complete, the user **MUST** reboot the unit. The most convenient method for this process is by clicking the **Reboot** button (Figure 6d) to apply and finalize the update(s).



Figure 6d - Completed Update

PLEASE NOTE: An update can be applied and finalized by using the reboot control through the module system page, the master controller system page, or by power-cycling a module (ie. pulling the module out of a NXG system).



When firmware updates are complete, the user can remove the loaded file by clicking the **X** button shown on **Figure 6b** next to the “Upload File” button under “Firmware Update Files”.

SECTION 7 – TROUBLESHOOTING

For any additional technical support issues, please send more information to us about your issue via our website at www.blondertongue.com/support/ or call us toll-free at 1-800-523-6049 between the hours of 9:00 AM and 5:00 PM (EST, UTC -5).

For best service on calls, please leave a voice message with a brief summary of your problems including the Product Model Name(s) which are having issues. We will have someone use this information to prepare, in advance, to assist you in advance and contact you as soon as possible during business hours.

LIMITED WARRANTY

Seller will at its sole option, either repair or replace (with a new or factory reconditioned product, as Seller may determine) any product manufactured or sold (or in the case of software, licensed) by Seller which is defective in materials or workmanship or fails to meet the applicable specifications that 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 (and for all BIDA products a period of eight (8) years) from the date of original purchase for all stock hardware products (ii) 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 from Seller) with respect to all software products licensed from Seller (other than Core Product Software) that is (a) developed for a specific function or application, (b) complimentary to and does not function without the Core Product Software, and (c) listed with a specific model number and stock number in Seller's Price List ("Non-Core Software"); (iii) for a period of ninety (90) days from the date of original purchase, with respect to non-serialized products and accessories, such as parts, sub-assemblies, splitters and all other products sold by Seller (other than Core Product Software and Refurbished/Closeout Products) not otherwise referred to in clauses (i) through (ii) above. The warranty period for computer programs in machine-readable form included in a hardware product, which are essential for the functionality thereof as specifically stated in the published product specifications ("**Core Product Software**") will be coincident with the warranty period of the applicable hardware product within which such Core Product Software is installed.

Software patches, bug fixes, updates or workarounds do not extend the original warranty period of any Core Product Software or Non-Core Software. Notwithstanding anything herein to the contrary,

(i) Seller's sole obligation for software that when properly installed and used does not substantially conform to the published specifications in effect when the software is first shipped by Seller, is to use commercially reasonable efforts to correct any reproducible material non-conformity (as determined by Seller in its sole discretion) by providing the customer with: (a) telephone or e-mail access to report non-conformance so that Seller can verify reproducibility, (b) a software patch or bug fix, if available or a workaround to bypass the issue if available, and (c) where applicable, replacement or damaged or defective external media.

(ii) Seller does not warrant that the use of any software will be uninterrupted, error-free, free of security vulnerabilities or that the software will meet the customer's particular requirements; and the customer's sole and exclusive remedy for breach of this warranty is, at Seller's option, to receive (a) suitably modified software, or part thereof, or (b) comparable replacement software or part thereof;

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(iv) in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller's products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller, will be of shorter duration or otherwise more limited than the standard Seller limited warranty. In such cases, Seller's warranty with respect to such third-party proprietary sub-assembly modules, third-party software and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, certain products, that are not manufactured by Seller, but are resold by Seller, may carry the original OEM warranty for such products, if any. The limited warranty set forth above does not apply to any product sold by Seller, which at the time of sale constituted a Refurbished/Closeout Product, the limited warranty for which is provided in the following paragraph.

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

To obtain service under this warranty, the defective product, together with a copy of the sales receipt, serial number if applicable, or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to Seller at the following address: One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover failure of performance or 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) exposure to unusual physical or electrical stress, abuse or accident or forces or exposure beyond normal use within specified operational or environmental parameters set forth in applicable product specifications, (vi) lack of reasonable care or (vii) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

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