

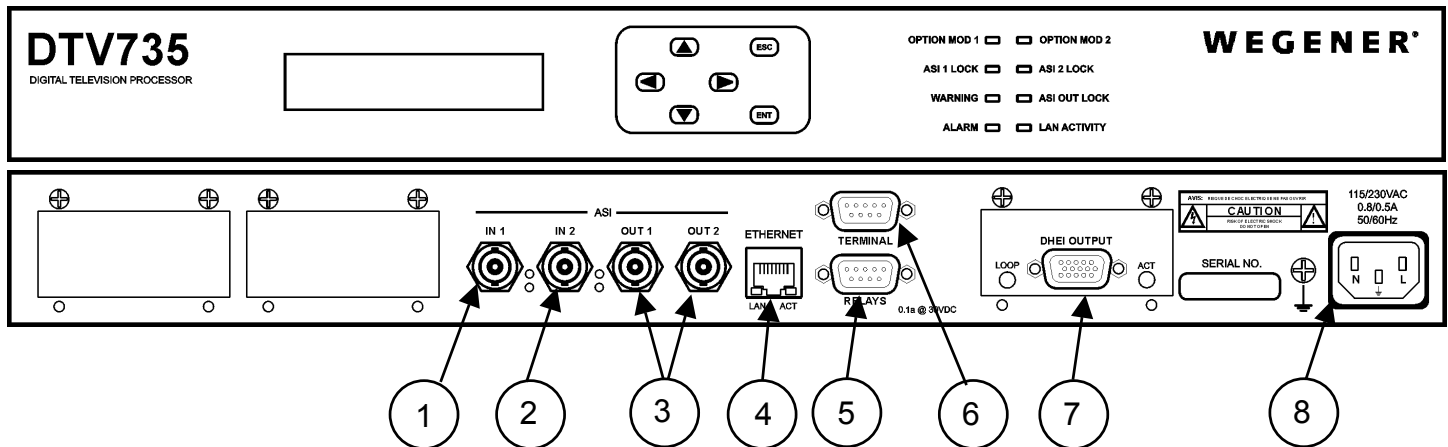
DTV735 Installation Quick Start Guide

The Wegener Model DTV735 Digital Television Processor receives an ASI transport stream and allows the user to select programs from that stream for output to a cable system QAM modulator or MUX. This guide provides information for setting up and operating the DTV735. Additional information may be found on the Wegener web site at www.wegener.com/

In addition to this guide, your box should include:

1. DTV735 Digital Television Processor
2. Power cord
3. UL safety sheet

Front and Rear Panel View



Connector/Pin-out Information

Rear Panel Connector Descriptions				
Ref	Connector Designation	Type	Signal Name	Description
1	ASI In 1	BNC	ASI In 1	ASI from IRD or other source.
2	ASI In 2	BNC	Not Used	Not Used
3	ASI Out 1 & 2	BNC	ASI Out 1 & ASI Out 2	To QAM Modulator or ASI Mux
4	Ethernet	RJ-45 jack	Ethernet_In & Out	To LAN – for WEB Control
5	Status Relays	DB-9	Alarm Contact Closure	To Alarm Monitoring
6	Serial I/O	DB-9	For Factory Use Only	For Factory Use Only
7	DHEI	DB-15	DHEI Output	To QAM Modulator or ASI Mux
8	115/230 VAC	IEC receptacle	AC Line In	To AC Power Outlet

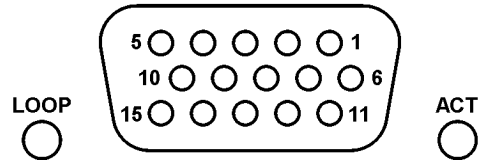
Status Relays Signals (Ref 4)	
Pin #	Signal Name
9	Alarm +
4	Alarm COM
8	Not used
3	Not used
6	Not used
1	Not used
7	Not used
2	Not used

LED Indicator Descriptions			
LED	Description	LED	Description
OPTION MOD 1	For Use with Optional Module 1	OPTION MOD 2	For Use with Optional Module 2
ASI 1 LOCK	ON - ATSC input sync present on ASI 1 OFF – Loss of ASI input, PAT, or PMT.	ASI 2 LOCK	Not used.
WARNING	Not used.	ASI OUT LOCK	ON - ASI output active OFF – No ASI output
ALARM	ON - Alarm conditions OFF – No alarms	LAN ACTIVITY	ON - Ethernet data to the unit.

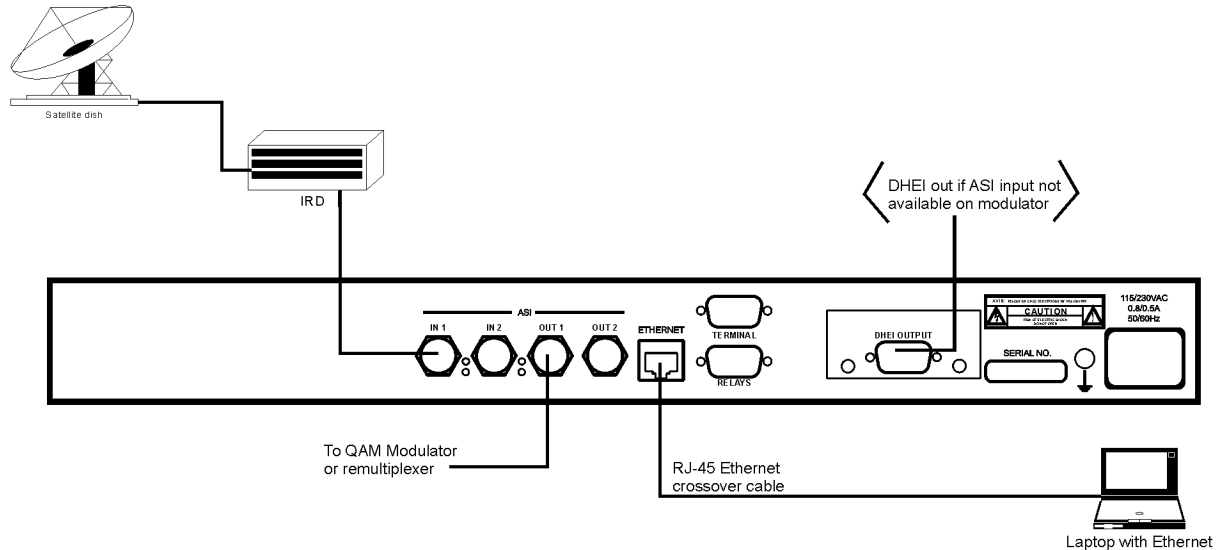
DHEI Connector Signals (Ref 7)					
Pin #	Signal Name	Pin #	Signal Name	Pin #	Signal Name
1	RSVD	6	SENSEOL	11	SENSEOR
2	RSVD	7	PSYNCO+	12	PSYNCO-
3	RSVD	8	PDATAO+	13	PDATAO-
4	RSVD	9	PCLKO+	14	PCLKO-
5	SIGND	10	REFCLKO+	15	REFCLKO-

DHEI Connector LED Indicators		
LED name	LOOP	DHEI cable is fully connected to modulator
Meaning	ACT	Always on except in catastrophic failure

DHEI connector and LEDs viewed from rear panel



Basic System Setup Diagram



Program and PID Mapping

Programs are selected and mapped by the user. A check box is provided on the Configuration folder of the web interface to select programs for the output. A box is provided for changing the program number, and a combo box allows the user to select AC-3, MPEG, or both types of audio for inclusion in the output transport stream. The front-panel Program Setup screen also provides this capability locally. PID assignments are passed to the output without change.

IRT Mode

With systems using the Motorola IRT product, certain additional elements must be included in the output transport stream. In such systems, be sure to enable the DTV 735's IRT Mode by selecting IRT Mode ON from the web browser interface or front panel. When the IRT Mode is on, the DTV735 performs the actions listed here.

- A CAT (Conditional Access Table) PID (0x0001) is included and a CA system descriptor is added in this packet pointing to a reserved location (PID 0x0ff9) for the EMM (Encryption Management Message).
- For each program in the stream, a CA descriptor pointing to itself is added in the PMT. This is a null ECM (Encryption Control Message).
- To the PAT, Program 0 (NIT) is added, pointing to PID 0x0ffe which carries the STT (System Time Table) clock information.
- The NIT (Network Information Table) must also be present in the transport stream. This PID (0x0ffe) is created at the uplink and is passed through.

Front-panel User Interface

Note that from any screen, pressing the ESC key twice will return you to the Home Screen.

Main-level Screens	Second-level Screens
<p>Home Screen (alternates between A and B screens every 4 seconds.)</p> <p>(A)</p> <div data-bbox="193 310 639 390" style="border: 1px solid black; padding: 5px; text-align: center;"> TSID:XXXX RATE:YY.YY Errored Sec:ZZZZ → </div> <p>Where XXXX is the hexadecimal transport stream identifier, YY.YY is the current output rate in Mbps, and ZZZZ is the number of errored seconds since the last reset of the counter or the last lock of ASI input.</p> <p>(B)</p> <div data-bbox="183 499 630 579" style="border: 1px solid black; padding: 5px; text-align: center;"> TSID:XXXX RATE:YY.YY Occupied BW: NN% → </div> <p>Where NN is the percentage of the unit's output bandwidth currently occupied by selected programs.</p> <p>Press the ▶ key to go to Alarms/Warnings.</p> <p>Press the ENT key to view the second-level Serial Number and Application Software Version Number screen.</p>	<p>Serial Number and Application Software Version Number Screen</p> <div data-bbox="930 310 1373 390" style="border: 1px solid black; padding: 5px; text-align: center;"> S/N:XXXXXX VER:YYY </div> <p>Where XXXXXX is the unit's six-digit serial number and YYY is the version number of the unit's currently installed application software.</p> <p>Press the ESC key to go to the Home Screen.</p>
<p>Alarms/Warnings</p> <div data-bbox="188 779 634 858" style="border: 1px solid black; padding: 5px; text-align: center;"> View Alarms/Warnings Select? Press<ENT> </div> <p>Press the ENT key to view any active alarms or warnings on the second-level Alarms/Warnings Message screen.</p> <p>Press the ▶ key to go to Clear Errored Seconds (if counter is non-zero) or Program Setup.</p> <p>Press the ESC key to go to the Home Screen.</p>	<p>Alarms/Warnings Message Screen</p> <div data-bbox="935 789 1382 869" style="border: 1px solid black; padding: 5px; text-align: center;"> No Alarms </div> <p>Any active alarms or warnings are described here.</p> <p>Press the ▶ key to view the next alarm or warning (if more than one).</p> <p>Press the ESC key to return to the Alarms/Warnings screen.</p>
<p>Clear Errored Seconds</p> <div data-bbox="198 1077 644 1157" style="border: 1px solid black; padding: 5px; text-align: center;"> Clear Errored Secs Press<ENT> </div> <p>This screen only appears if the errored seconds counter is non-zero. Otherwise the next screen, Program Setup is displayed.</p> <p>Press the ENT to clear the errored seconds counter.</p> <p>Press the ▶ key to go to the Program Setup screen.</p> <p>Press the ◀ key to go to Alarms/Warnings.</p> <p>Press the ESC key to go to the Home Screen.</p>	

Main-level Screens	Second-level Screens
<p>Program Setup</p> <div data-bbox="198 310 643 386" style="border: 1px solid black; padding: 5px; text-align: center;"> Program Setup... Select? Press<ENT> </div> <p>Press the ENT key to bring up the second-level Program Input screen.</p> <p>Press the ▶ key to go to Program Status.</p> <p>Press the ◀ key to go to Clear Errored Seconds (if counter is non-zero) or Alarms/Warnings.</p> <p>Press the ESC key to go to the Home Screen.</p>	<p>Program Input</p> <div data-bbox="937 296 1378 371" style="border: 1px solid black; padding: 5px; text-align: center;"> ProgIn XXXXX ABCDEF </div> <p>Where XXXXX is the program number and ABCDEF is the service descriptor for that program.</p> <p>Press ENT and use the ▲ or ▼ keys to select <ON> or <OFF>, adding or removing this program to/from the output stream. Press ENT again to confirm.</p> <p>Press the ▶ key to go to the Output Remap screen.</p> <p>Press the ESC key to return to the main-level Program Setup screen.</p> <hr/> <p>Output Remap</p> <div data-bbox="937 604 1378 680" style="border: 1px solid black; padding: 5px; text-align: center;"> Output Remap: XX </div> <p>Where XX is the output program number.</p> <p>Press the ENT key to edit the output program number.</p> <p>Press the ▶ key to go to the Audio Stream Selection screen.</p> <p>Press the ◀ key to go to the Program Input screen.</p> <p>Press the ESC key to return to the main-level Program Setup screen.</p> <hr/> <p>Audio Stream Selection</p> <div data-bbox="937 913 1378 989" style="border: 1px solid black; padding: 5px; text-align: center;"> Audio Stream: XXX </div> <p>Where XXX is the currently selected audio stream.</p> <p>Press ENT and use the ▲ or ▼ keys to select <AC-3>, <MPEG>, or <MPG/AC-3>. Press ENT again to confirm.</p> <p>Press the ◀ key to go to the Output Remap screen.</p> <p>Press the ESC key to return to the main-level Program Setup screen.</p>
<p>Program Status</p> <div data-bbox="172 1213 613 1289" style="border: 1px solid black; padding: 5px; text-align: center;"> Program Status... Select? Press<ENT> </div> <p>Press the ENT key to view the second-level program status screens.</p> <p>Press the ▶ key to go to Output Rate Selection.</p> <p>Press the ◀ key to go to Program Setup.</p> <p>Press the ESC key to go to the Home Screen.</p>	<p>2nd -level Program Status</p> <div data-bbox="937 1207 1378 1283" style="border: 1px solid black; padding: 5px; text-align: center;"> ProgIn XXXXX AAAAAAA ProgOutYYYY BBB </div> <p>where XXXXX is the program number at input, AAAAAAA is the service descriptor for the program, YYYY is the hexadecimal program number at output, and BBB is the available audio for the program (AC-3, MPEG, or MPG/AC-3).</p> <p>Press the ▶ key to view the status of the next program (all programs may be viewed though only programs 1 through 16 may be used).</p> <p>Press the ESC key to return to the main-level Program Status screen.</p>
<p>Output Rate Selection</p> <div data-bbox="172 1522 613 1598" style="border: 1px solid black; padding: 5px; text-align: center;"> Output Rate... 38.81 Mbps </div> <p>Press the ENT key and then the ▲ or ▼ key to select 26.97 Mbps (64QAM) or 38.81 Mbps (256QAM). Press the ENT key to confirm the selection.</p> <p>Press the ▶ key to go to IRT Mode Selection.</p> <p>Press the ◀ key to go to Program Status.</p> <p>Press the ESC key to go to the Home Screen.</p>	

Main-level Screens	Second-level Screens
<p>IRT Mode Selection</p> <div data-bbox="175 184 618 262" style="border: 1px solid black; padding: 5px; text-align: center;"> IRT Mode OFF </div> <p>Press the ENT key and then the ▲ or ▼ key to select ON or OFF. Press the ENT key to confirm the selection.</p> <p>Press the ▶ key to go to IP Setup.</p> <p>Press the ◀ key to go to Program Status.</p> <p>Press the ESC key to go to the Home Screen.</p>	
<p>IP Setup</p> <div data-bbox="164 493 607 571" style="border: 1px solid black; padding: 5px; text-align: center;"> IP Setup . . . </div> <p>Press the ENT key to go to IP Address Selection.</p> <p>Press the ◀ key to go to IRT Mode Selection.</p> <p>Press the ESC key to go to the Home Screen.</p>	<p>IP Address Selection</p> <div data-bbox="857 493 1300 571" style="border: 1px solid black; padding: 5px; text-align: center;"> IP Address : 000.000.000.000 </div> <p>Press the ENT key and then press the arrow keys to change the IP address. Press the ENT key to confirm the selection.</p> <p>Press the ▶ key to go to the Netmask Selection.</p> <p>Press the ESC key to go to IP Setup.</p>
	<p>Netmask Selection</p> <div data-bbox="857 793 1300 871" style="border: 1px solid black; padding: 5px; text-align: center;"> Netmask : 255.255.0.0 </div> <p>Press the ENT key and then press the arrow keys to change the Netmask. Press the ENT key to confirm the selection.</p> <p>Press the ▶ key to go to Gateway Selection.</p> <p>Press the ◀ key to go to IP Address Select.</p> <p>Press the ESC key to go to IP Setup.</p>
	<p>Gateway Selection</p> <div data-bbox="857 1119 1300 1197" style="border: 1px solid black; padding: 5px; text-align: center;"> Gateway : 0.0.0.0 </div> <p>Press the ENT key and then press the arrow keys to change the Gateway. Press the ENT key to confirm the selection.</p> <p>Press the ◀ key to go to Netmask Selection.</p> <p>Press the ESC key to go to IP Setup.</p>

Web Browser User Interface

In addition to the front panel, the user may control and monitor the unit using the rear-panel Ethernet connection. Before using the Ethernet connection, the appropriate IP address, netmask, and gateway must be selected via the front-panel interface. There are two basic methods of using the Ethernet connection – with a directly connected PC or with a LAN connection.

Locally connected PC –

Connect the DTV735 Ethernet connection to the Ethernet network connector on the PC using a crossover RJ-45 cable (8 pins).
Set the DTV735 IP Setup as follows: IP Address: 172.016.100.020 Netmask: 255.255.000.000 Gateway: 000.000.000.000
Set the PC IP address as follows:¹ IP Address: 172.016.100.001 Subnet Mask: 255.255.000.000
Connect to the DTV735 using the web browser instructions below.

LAN Connection –

Connect the DTV735 Ethernet connection to the LAN using a normal RJ-45 cable (8 pins). Set the DTV735 IP Address, Netmask, and Gateway as directed by your network administrator. Use any PC on the LAN to connect to the DTV735 using the web browser instructions below.

¹ To change the PC IP address, go to the Settings, Control Panel and double click on the Network icon. Select Configuration, TCP/IP protocol, and click on the Properties box. Click on Specify IP Address and set the IP Address and Subnet Mask as indicated. Click OK to restart the PC with the new values.

Using the Web Browser –

Using the web browser of your choice, set the Address to http://nnn.nnn.nnn.nnn where nnn.nnn.nnn.nnn is the IP address of the unit to be controlled. Each unit on the network must have its unique address. You should see the screens below when connected to the unit. You may select the screen viewed by clicking on the Control and Status, Stream Information, Configuration, and Q&A/Help tabs.

The **Control and Status** tab (shown below) allows you to select the ASI Output rate and IRT Mode on the Control side. On the Status side, you may view the ASI input lock state, errored seconds since last ASI input lock or counter reset, the output rate, and the percent utilization of output bandwidth. An oversubscription alarm will occur if this number exceeds 100%. This tab is regularly refreshed automatically to keep the status information current.

The **Stream Info** tab (shown below) shows input and output stream content. View this tab to validate selections made from the Configuration tab and the content of the output stream. The left (input) shows all programs in the input stream and uses checkboxes to indicate which of those have been enabled (from this tab, a box may be checked by clicking on it only if that program has first been enabled from the Configuration tab). The available video and audio are bulleted below the program number. (AC-3 audio is listed as such - other audio is MPG format.)

The right side (output) shows all programs included in the output stream (available at both ASI Out ports and the DHEI port). Below the service descriptor is the output program number (editable from the Configuration tab), PMT, PCR, and input source (by port and program number at input). Bulleted below that information is the list of video and audio (selected from the Configuration tab) included in the output stream for that program.

The **Configuration** tab (shown below) lists the first 16 programs in the input stream and includes an Enabled checkbox for each. The output program number is editable and the desired audio may be selected from the choices in the Audio drop-down box. Use this tab to select the program content for the output stream. All three audio types (AC-3 Only, MPEG, and AC-3/MPG) are listed regardless of the input stream audio content. Check the Stream Info tab to verify which audio is available for a particular program. After making your selections, click the Submit button to configure the unit. Go back to the Stream Info tab after submitting your changes to verify that the output stream contains the desired programs.

DTV735

DIGITAL TELEVISION PROCESSOR

Advanced Digital Technologies

Control & Status
Stream Info
Configuration
Q & A / Help

Program Remap

Enabled	Input	Prog. Output	Audio
<input checked="" type="checkbox"/>	Program 1 (FX West) ==>	<input type="text" value="7"/>	<input type="text" value="MPEG Only"/>
<input checked="" type="checkbox"/>	Program 2 (FX East) ==>	<input type="text" value="17"/>	<input type="text" value="MPEG Only"/>
<input checked="" type="checkbox"/>	Program 3 (ALT 1) ==>	<input type="text" value="41"/>	<input type="text" value="MPEG Only"/>
<input checked="" type="checkbox"/>	Program 4 (ALT 2) ==>	<input type="text" value="1"/>	<input type="text" value="MPEG Only"/>
<input checked="" type="checkbox"/>	Program 5 (PPV) ==>	<input type="text" value="13"/>	<input type="text" value="MPEG Only"/>
<input checked="" type="checkbox"/>	Program 6 (TVG) ==>	<input type="text" value="44"/>	<input type="text" value="AC-3 Only"/>
<input checked="" type="checkbox"/>	Program 7 (Fuel) ==>	<input type="text" value="9"/>	<input type="text" value="AC-3 Only"/>
<input type="checkbox"/>	Program 8 (ALT 3) ==>	<input type="text" value="30"/>	<input type="text" value="MPEG Only"/>
<input type="checkbox"/>	Program 9 ==>	<input type="text" value="60"/>	<input type="text" value="AC-3 Only"/>
<input type="checkbox"/>	Program 10 ==>	<input type="text" value="5"/>	<input type="text" value="AC-3 Only"/>
<input type="checkbox"/>	Program 11 ==>	<input type="text" value="2"/>	<input type="text" value="AC-3 Only"/>
<input type="checkbox"/>	Program 12 ==>	<input type="text" value="61"/>	<input type="text" value="AC-3 Only"/>
<input type="checkbox"/>	Program 13 ==>	<input type="text" value="100"/>	<input type="text" value="AC-3 Only"/>
<input type="checkbox"/>	Program 14 ==>	<input type="text" value="14"/>	<input type="text" value="AC-3 Only"/>
<input type="checkbox"/>	Program 15 ==>	<input type="text" value="15"/>	<input type="text" value="AC-3 Only"/>
<input type="checkbox"/>	Program 16 ==>	<input type="text" value="16"/>	<input type="text" value="AC-3 Only"/>

The **Q&A/Help** tab (shown below) provides answers to commonly asked questions about the DTV735.

DTV735

DIGITAL TELEVISION PROCESSOR

Advanced Digital Technologies

Control & Status
Stream Info
Configuration
Q & A / Help

Q & A / Help

Q: How do I set up a DTV735 to process an ASI input?
A: First connect the ASI signal from the Unity 4600 ASI output BNC to the ASI 1 input connector. Connect the DHEI output connector to the Q&M modulator DHEI input. Set the output rate to <26.97 Mbps> or <38.31 Mbps> depending on whether you have a 64QAM or a 256QAM modulator. Use either the front panel control or the web interface to select the programs desired to pass through to the cable system. Set the output program number for each program as desired. Set the audio for each program passed through to AC-3, MPEG, or both as desired.

Q: If I have problems setting up the DTV735, what do I do?
A: First check the Quick Start instructions to find any obvious errors, and then check the Wegener web site, www.wegener.com for DTV735 help. If more help is needed, call Wegener Service at 770.814.4057.

Environmental Operating Conditions & Physical Specifications

Use	Indoor
Altitude	Up to 2000 meters
Temperature Range	10° C to 40° C
Relative Humidity (max.)	80% for temperatures up to 31° C decreasing linearly to 50% relative humidity as 40° C.
Weight	10.6 pounds or 4.81 kilograms
Dimensions (H x W x D)	3.5"x 19"x 10.5" or 88.9 mm x 482.6 mm x 266.7 mm
Input Power Rating	90-132Vac & 175-264Vac, 43 Watt, 50/60 Hz

Elevated Operating Ambient

If equipment is installed in a closed or multi-unit rack assembly, the operating ambient of the rack may be greater than the room ambient. Therefore, considerations should be given to the TMRA, or Temperature inside the Mounting Rack, and not just inside the room.

Reduced Air Flow

Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

Mechanical Loading

Mounting of equipment in a rack should be such that a hazardous condition is not achieved due to uneven loading. This unit is not very heavy, but total rack loading should be considered.

Circuit Overloading

Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits could have on over-current 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 connection to the Branch (use of power strips).

Desktop Installation

To set up the DTV735 in a desktop environment, place it on a flat surface where it will not be subject to being hit or pushed, and will not have anything spilled or dropped on it. Also, the cables connected to the unit should be routed so they are not hit or pulled, which might cause damage to the connectors or to the unit itself. Additionally, there should be sufficient flow of cool air so the unit stays within its operating parameters.

Rack Installation

When installed in an equipment rack, it is best that the DTV735 be supported by angle brackets or cross supports. These should be screwed or bolted securely to the equipment rack, and be capable of supporting the unit and its connecting cables. Do NOT install the unit if you have doubts about the unit being safely supported. There are also 4 holes in the front brackets, which are designed to accept screws for further anchoring. It is also essential that these brackets be used so the unit cannot be moved forward and fall from the rack. It is **always** best to install the angle brackets or cross-members before setting the unit in place. Then, prior to installing cables, put anchored screws or bolts-and-nuts into place on the front brackets. Failure to do this can lead to pushing the unit out the front of the rack in later steps.

Warranty

The following warranty applies to all Wegener Communications products. All Wegener Communications products are warranted against defective materials and workmanship for a period of one year after shipment to customer. Wegener Communications' obligation under this warranty is limited to repairing or, at Wegener Communications' option, replacing parts, subassemblies, or entire assemblies. Wegener Communications shall not be liable for any special, indirect, or consequential damages. This warranty does not cover parts or equipment, which have been subject to misuse, negligence, or accident by the customer during use. All shipping costs for warranty repairs shall be prepaid by the customer. There are no other warranties, express or implied, except as stated herein.

Technical Support

In the event the unit fails to perform as described, contact Wegener Communications Customer Service at (770) 814-4057, FAX (678) 624-0294, or E-mail "service@wegener.com".

Corporate Office
Wegener
11350 Technology Circle
Duluth, GA 30097

Service Department
Wegener
359 Curie Drive
Alpharetta, GA 30005