

Indicators

Eight light-emitting diodes (LEDs) provide status information about your U4650 and its processes:

Indicator	Color and State	Description
CARRIER	GREEN constant	Unit has demod and FEC lock on the RF carrier
	Off	Unit does not have demod and FEC lock on the RF carrier
TRANSPORT	GREEN constant	Unit recognizes a valid transport stream
	Off	Unit does not recognize a valid transport stream
COMPEL	GREEN constant	COMPEL control stream received within last two minutes (including keep-alives) while locked continuously on the current transport stream for >2 minutes
	GREEN flash	Unit has had a verified transport stream for >2 minutes and COMPEL is required but no valid COMPEL
	GREEN flutter	COMPEL has been addressed to unit within last 5 seconds (excluding keep-alives).
	Off	Otherwise. Note that this LED must be OFF when there is no valid Transport stream OR COMPEL
SERVICES	GREEN constant	Unit is processing services for delivery.
	Off	Unit is not processing services.
WARNING	YELLOW constant	One or more warning indications present - usually indicates a problem with the incoming signal, a minor unit fault, a possible impending failure, or that important information is available
	Off	No warning conditions.
CUE	GREEN constant	A user cue relay is closed (energized).
	GREEN flutter	During a user relay "pulse" activation on any relay.
	Off	All user cue relays are open (de-energized).
ALARM	RED constant	One or more current alarm indications.
	RED blink	An alarm event has occurred in the past and has not been acknowledged and cleared by the user. Note that the alarm LED may also blink while on.
	Off	No current alarm condition exists.
AUTH	GREEN constant	Unit has transport MPEG sync and the stream is not scrambled (in the clear). Streams that are "clear" are always presumed to be "authorized" -- OR -- Unit is authorized for current scrambled transport stream (or selected program) and has transport MPEG sync. When using Wegener CA ('97 Version), being "authorized" means being addressed with current and valid ciphered keystream messages. In a PIN system, if the transport stream is scrambled, and the unit has been programmed with any key other than the null '00000', then it presumes that it is "authorized".
	Off	Unit has transport sync, the transport stream is scrambled, and the unit is NOT authorized. Also OFF if no transport sync.

Technical Support

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

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WEGENER

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Unity 4650 Digital Media Receiver/Decoder

Quick Start Guide

Introduction

The Wegener Model Unity 4650 Digital Media Receiver/Decoder is a fully DVB-compliant satellite video IRD. If equipped with a receiver card, the U4650 receives an L-band RF carrier from an external LNB, demodulates the carrier, and then extracts the MPEG transport stream. If equipped with an ASI transport card, it decodes the ASI line code and extracts the resulting transport stream. In both cases, if conditional access has been applied, it then descrambles the transport stream (or individual programs) if authorized. The U4650 then decompresses a selected program to provide both analog audio/video outputs as well as (optional) serial digital video with two pairs of embedded digital audio. All audio/video outputs may be (optionally) genlocked - supplied synchronized to a station composite video reference.

This guide provides information for setup and initial operation of the U4650. Additional information may be found in the User's Manual (p/n 800034-01) on the Wegener web site at www.wegener.com (click Support and follow the hyperlinks to access the Unity 4650 Manual).

In addition to this guide, your box should include:

1. Unity 4650 Digital Media Receiver/Decoder
2. Power cord
3. UL safety sheet

Front and Rear Panel Views

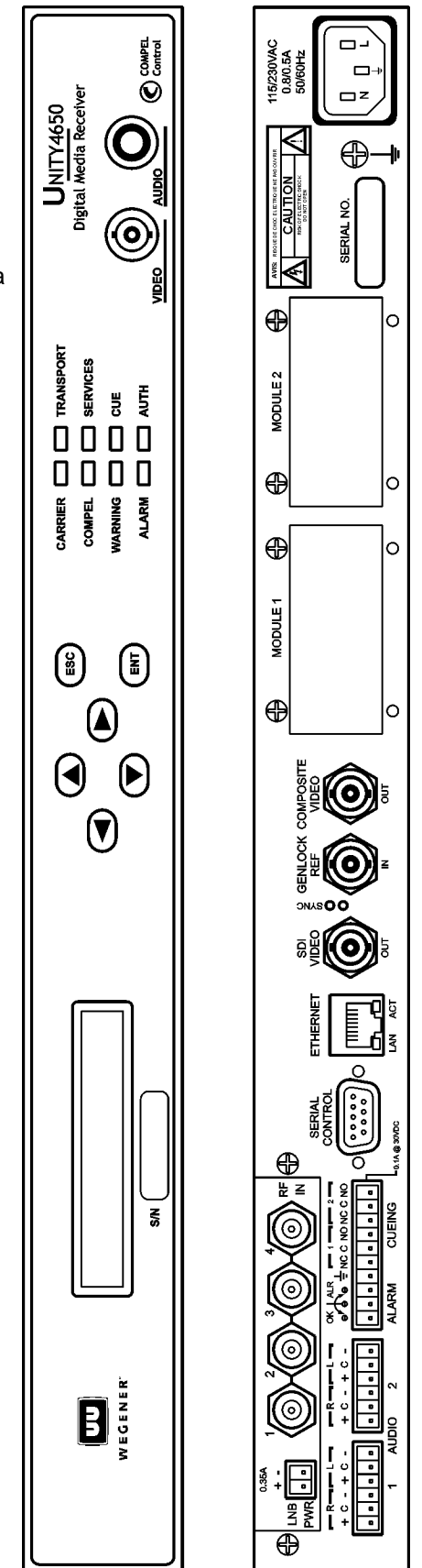
The front and rear (typical) panels of the Unity 4650 are shown in the illustration at right. The Transport Input and Option Module slots may be populated according to options ordered.

Environmental Conditions & Physical Specifications

Characteristic	Specification
Use	Indoor
Altitude	Up to 2000 meters
Temperature Range	10°C to 50°C
Relative Humidity (max.)	80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
Weight	10.5 pounds or 4.76 kilograms
Dimensions (H x W x D)	1.75" x 19" x 15" (44.5 mm x 483 mm x 381 mm)
Input Power Rating	90-132Vac or 175-264Vac, 45 Watt, 50/60 Hz

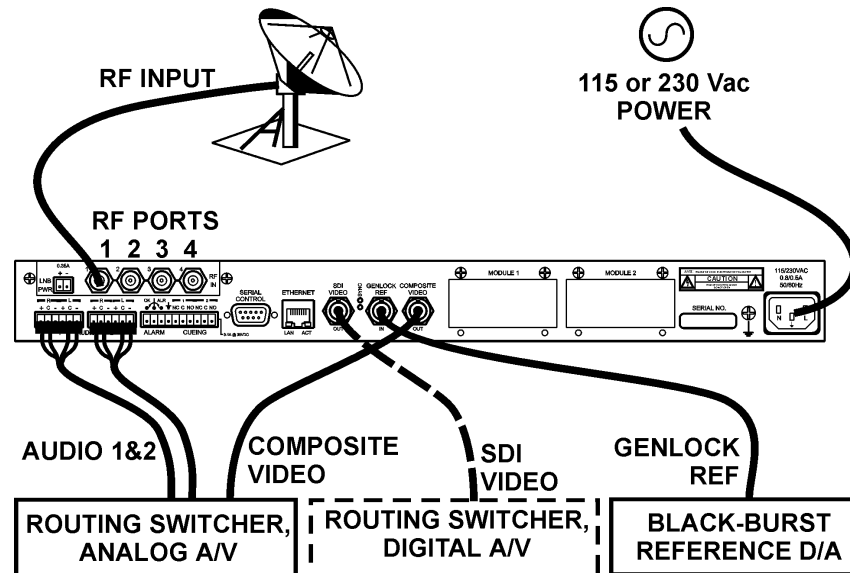
Warranty

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.



System Setup

The diagram at right illustrates possible system setups for either analog (solid lines) or digital (dashed lines) audio/video routing:



Connections

The following table lists connector types, pin numbers, and signal descriptions for each of the front- and rear-panel connectors.

Connector Designation	Type	Pin	Signal Description
LNB PWR *	2-pin male header (mates to removable terminal-strip)	1	LNB DC Output positive leg
		2	LNB DC Output return leg
RF IN -1 through 4	Type F coax jacks		4-way RF Switch Inputs
AUDIO (same for both ports 1 and 2)	6-pin male header (mates to removable terminal strip)	1	Right '+'
		2	Right GND
		3	Right '-'
		4	Left '+'
		5	Left GND
		6	Left '-'
ALARM/ CUEING	10-pin male header (mates to removable terminal strip)	1	OK (COM closes here when OK)
		2	COM:
		3	Alarm (COM closes here on alarm or if power is off)
		4	GND
		5	Cue Relay #1: N.C. contact
		6	Cue Relay #1: Common contact
		7	Cue Relay #1: N.O. contact
		8	Cue Relay #2: N.C. contact
		9	Cue Relay #2: Common contact
		10	Cue Relay #2: N.O. contact
SERIAL CONTROL	RS232, 9-pin D female jacks	1	DCD (internally pulled to +5V)
		2	RxD (data output)
		3	TxD (data input)
		4	DTR (not connected)
		5	GND
		6	DSR (internally pulled to +5V)
		7	RTS (internally pulled to +5V, may be upgraded for handshaking)
		8	CTS (not used presently, may be upgraded for handshaking)
		9	RI (internally pulled to +5V, with weak current limiting)
ETHERNET	RJ45 Jack	1	TXDO +
		2	TXDO -
		3	RXDI +
		4	Shorted together, then terminated into an AC ground.
		5	
		6	RXDI -
		7	Shorted together, then terminated into an AC ground.
		8	

Connector Designation	Type	Pin	Signal Description
SDI VIDEO OUT	BNC Jack		Serial 270 Mbaud component Digital Video out with two embedded AES3 digital audios (optional)
GENLOCK REF IN	BNC Jack		Genlock Reference external timing input (optional)
COMPOSITE VIDEO OUT	BNC Jack		Composite Video Output
115/230 VAC	Std. IEC Receptacle		AC line in
Front-panel monitor option AUDIO **	¼" stereo phone jack		Stereo audio headphone monitor, selectable between audio ports 1 or 2
Front-panel monitor option VIDEO	BNC Jack		Composite Video monitor

* Where LNB DC is supplied on RF center pins this header is not included. When four RF inputs are supplied without this header, LNB DC is supplied on center pin of Port 4. Note that Compel network can lock LNB DC to OFF.
 ** After plugging in headphones, the unit immediately displays a screen prompting the user to select the Audio Port to be monitored.

Danger

To avoid damage to this and other equipment, or personal injury, the following items should be strictly observed.

Elevated Operating Ambient

When equipment is installed in a closed or multi-unit rack assembly, the operating ambient of the rack environment may be greater than the room ambient. Therefore, consideration should be given to the ambient air temperature within the rack, and not just inside the room, when deciding if the maximum recommended ambient operating temperature (T_{MRA}) is being met.

Reduced Air Flow

Equipment should be installed such that airflow required for safe operation of the equipment is not compromised. The U4650 may be arranged in a rack without empty space between units if heat rise is prevented by ensuring its side vents remain unblocked with adequate clearance around the vent holes.

Mechanical Loading

Mounting of the equipment in a rack should be such that a hazardous condition is not produced by uneven loading. This unit is not very heavy, but total rack loading must be considered. Also, do not rest any unsupported equipment on your U4650.

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 overcurrent protection and supply wiring. Ensure that the total rack or breaker power consumption does not exceed the limits of the AC branch circuit. Appropriate consideration of equipment ratings should be used when addressing this concern.

Reliable Earthing

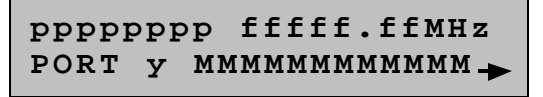
Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (use of power strips, chassis ground lugs, etc.).

Rack Installation

When installed in an equipment rack, it is best that the U4650 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 four holes in the front brackets which are designed to accept anchoring screws. It is 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.

User Interface

In operation, the U4650 Home screen appears on the LCD as shown here (valid if using an L-band receiver card with 4-way RF switching input – consult the online User's Manual if using an ASI input option):



Where **pp...pp** is either, in order of priority (and as available): (1) the first eight characters of the user-supplied Channel Label; or (2) the first eight characters of the Program's Service Descriptor; or (3) Progr xx (for Program # 'xx'), or PID xxxx (for video PID 'xxxx', where 'xxxx' is in hexadecimal notation). **ffff.ff** is the downlink frequency in MHz. **y** is the selected RF feed port number and the **MM...MM** field is a marquee. The **MM...MM** marquee alternates between messages indicating RF signal level (0 to 100 where 100 is max power and 0 is min), **Eb/No** (if locked on a carrier), or others indicating unit state or the presence of faults. Note that the flashing arrow at the lower right of the display is a prompt indicating that the user may find other menu screens by pressing the right or left arrow buttons on the front panel.