

# Unity 552

## Digital Media Receiver



# Unity 552

## Digital Media Receiver User's Manual

800089-01 Rev. C

A proven world leader in digital video, audio & broadcast data systems, **WEGENER's** management system is certified to **ISO 9001:2000**.

Data, drawings, and other material contained herein are proprietary to **Wegener Communications, Inc.**, and may not be reproduced or duplicated in any form without the prior written permission of **Wegener Communications, Inc.**

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

**WEGENER**<sup>®</sup>, **Compel Control**<sup>®</sup>, **MediaPlan**<sup>®</sup>, **ENVOY**, **UNITY**<sup>®</sup>, **UNITY-IP**<sup>®</sup>, and **iPUMP**<sup>®</sup> are trademarks of **Wegener Communications, Inc.** All other trademarks are the property of their respective owners.

© 2008 **Wegener Communications, Inc.** All rights reserved.

Correspondence regarding this publication,

**800089-01 Rev. C**  
**Third Edition: April 2008**

should be forwarded to:

**Wegener Communications, Inc.**  
Technology Park/Johns Creek  
11350 Technology Circle  
Duluth, GA 30097-1502

Phone: 770-814-4000  
Fax: 770-623-0698

The **WEGENER Unity 552** is approved under **FCC Part 15B Class A**, **UL/C-UL1950 3rd Edition**, and **CE [EN60950, EN55022(94), and EN55024(98)]**.



# TABLE OF CONTENTS

## CHAPTER 1 GENERAL INFORMATION

<b>1.1 Manual Overview</b> .....	<b>1</b>
<b>1.2 Product Overview</b> .....	<b>1</b>
Integrated Receiver-Decoder .....	1
Features and Options .....	2
Compel™ Network Control .....	2
<b>1.3 Unity 552 Product Specifications</b> .....	<b>2</b>
Rear Panel View .....	2
Rear Panel Connections .....	2
External Input/Output Interfaces .....	3
Technical Specifications .....	5
RF Characteristics .....	5
Video Decoder .....	6
Composite Video Output .....	7
Component Video Output .....	7
Unbalanced Audio Output .....	8
Audio Parameters .....	8
Serial Port .....	9
LNB DC Power (RF Port 1 ONLY) .....	9
AC Power .....	9
Physical Characteristics .....	9
<b>1.4 Safety Summary</b> .....	<b>10</b>

## CHAPTER 2 INSTALLATION

<b>2.1 Unpacking and Inspection</b> .....	<b>11</b>
<b>2.2 Location and Mounting</b> .....	<b>11</b>
Precautions .....	11
FCC-Mandated Suppression of Radio Frequency Emissions .....	11
Elevated Ambient Operating Temperatures in Rack-Mounted Units .....	11
Reduced Air Flow .....	11
Mechanical Loading .....	11
Circuit Overloading .....	12
Reliable Earthing .....	12
Rack Mounting .....	12
Desktop Installation .....	12

## CHAPTER 3 OPERATION

<b>3.1 Controlling and Monitoring</b> .....	<b>13</b>
Front Panel Controls And Indicators .....	13
LCD .....	13
OSD .....	13
Push-buttons .....	14
LED .....	14
Diagterm Terminal (Commands) .....	15
Compel™ System Control .....	16
<b>3.2 Normal Functions</b> .....	<b>16</b>
Tune to a carrier .....	17
Carrier Settings screen .....	17
Current Channel screen .....	17
Configure LNB options .....	18
LNB Setup screen .....	18
Monitor Signal Quality .....	19
Signal Quality Setup screen .....	19
Indicator Threshold screen .....	20
Signal Strength Meter screen .....	21
Set Subtitling options .....	21
Sub-titling Setup screen .....	21
Configure the unit for operation .....	22
Advanced Setup screen .....	22
Unit Setup screen .....	23
Set Decoder Options .....	24
Setup Audio .....	25
Set LAN-based Decode options .....	26
Set LAN IP Networking options .....	26
Set Terminal options .....	27
Set User Relay .....	28
Set Date and Time information .....	29
Set Unit Label .....	29
Switch Application (to different software version) .....	30
Monitor Status Information .....	30
Unit Status screen .....	30
Signal Quality screen .....	31
Current Quality screen .....	32
History This Setting screen .....	32
Elapsed Times screen .....	33
Query Network History .....	34
Display LAN IP Network information .....	34
Find Software Version information .....	35
Clear Statistics used for diagnosis .....	35
<b>3.3 View Alarms/Warnings</b> .....	<b>36</b>

## CHAPTER 4 SEARCH FUNCTIONS

4.1	Perms/Temps/Searching & Settings .....	39
4.2	Settings Table (or Search Table) .....	40
4.3	Signal Quality Monitoring .....	40
4.4	Frequency Tagging .....	41
	General Rules .....	41
<b>CHAPTER 5 CUSTOMER SERVICE</b>		
5.1	Warranty .....	43
5.2	Technical Support .....	43
<b>APPENDIX 1</b>	<b>TERMINAL DIAGTERM COMMANDS .....</b>	<b>45</b>
<b>APPENDIX 2</b>	<b>MENU TREE .....</b>	<b>49</b>
<b>APPENDIX 3</b>	<b>RMA REQUEST FORM .....</b>	<b>51</b>

This page intentionally left blank

# LIST OF TABLES

<b>Table 1.1:</b>	Unity 552 Interconnect Descriptions .....	3
<b>Table 1.2:</b>	Unity 552 External Input/Output Interfaces .....	3
<b>Table 1.3:</b>	Unity 552 RF Characteristics .....	5
<b>Table 1.4:</b>	Unity 552 Video Decoder .....	6
<b>Table 1.5:</b>	Unity 552 Composite Video Output .....	7
<b>Table 1.6:</b>	Unity 552 Component Video Output .....	8
<b>Table 1.7:</b>	Unity 552 Audio Decoder .....	8
<b>Table 1.8:</b>	Unity 552 Unbalanced Audio Output .....	8
<b>Table 1.9:</b>	Unity 552 Audio Parameters .....	8
<b>Table 1.10:</b>	Unity 552 Serial Port .....	9
<b>Table 1.11:</b>	Unity 552 LNB DC Power (RF Port 1 ONLY) .....	9
<b>Table 1.12:</b>	Unity 552 AC Power .....	9
<b>Table 1.13:</b>	Unity 552 Physical Characteristics .....	9
<b>Table 3.1:</b>	Menu Navigation using Push-buttons .....	14
<b>Table 3.2:</b>	Unity 552 Front Panel Status LED Alarm and Warning Indications .....	15
<b>Table 3.3:</b>	Channel Information Options .....	18
<b>Table 3.4:</b>	LNB configuration options .....	19
<b>Table 3.5:</b>	Indicator Threshold screen options .....	21
<b>Table 3.6:</b>	Subtitling Setup screen options .....	22
<b>Table 3.7:</b>	Video Decoder Options .....	24
<b>Table 3.8:</b>	Audio Output Options .....	25
<b>Table 3.9:</b>	LAN Decode Options .....	26
<b>Table 3.10:</b>	Networking Configuration Settings .....	27
<b>Table 3.11:</b>	Terminal Options .....	28
<b>Table 3.12:</b>	User Relay Setup Options .....	29
<b>Table 3.13:</b>	Date and Time Information Settings .....	29
<b>Table 4.1:</b>	Settings Parameters for the Unity 552 .....	39
<b>Table 4.2:</b>	Unity 552 Settings Groups .....	40
<b>Table 4.3:</b>	Signal Quality Information .....	41
<b>Table Apx 1.1:</b>	Diagterm Group Commands .....	45
<b>Table Apx 1.2:</b>	Diagterm Individual Commands .....	47

This page intentionally left blank



# LIST OF FIGURES

**Figure 1.1:** Unity 552 Rear Panel .....2

**Figure 3.1:** Unity 552 Front Panel .....13

**Figure 3.2:** OSD Main Menu .....14

**Figure 3.3:** Diagterm Terminal Help Screen .....15

**Figure 3.4:** Unity 552 OSD Carrier Settings Screen .....17

**Figure 3.5:** Unity 552 OSD Current Channel Screen .....18

**Figure 3.6:** Unity 552 OSD LNB Setup Screen .....19

**Figure 3.7:** Unity 552 OSD Signal Quality Setup Screen .....20

**Figure 3.8:** Unity 552 OSD Indicator Threshold Screen .....20

**Figure 3.9:** Unity 552 OSD Signal Strength Meter Screen .....21

**Figure 3.10:** Unity 552 OSD Subtitling Screen .....22

**Figure 3.11:** Unity 552 OSD Advanced Setup .....23

**Figure 3.12:** Unity 552 OSD Unit Setup .....23

**Figure 3.13:** Unity 552 OSD Decoder Setup .....24

**Figure 3.14:** Unity 552 OSD Audio Setup .....25

**Figure 3.15:** Unity 552 OSD Decoder Source .....26

**Figure 3.16:** Unity 552 OSD LAN IP Setup .....27

**Figure 3.17:** Unity 552 OSD Terminal Setup .....28

**Figure 3.18:** Unity 552 OSD User Relay Setup .....28

**Figure 3.19:** Unity 552 OSD Date/Time Setup .....29

**Figure 3.20:** Unity 552 OSD Application Switch .....30

**Figure 3.21:** Unity 552 OSD Unit Status .....31

**Figure 3.22:** Unity 552 OSD Signal Quality Status .....31

**Figure 3.23:** Unity 552 OSD Current Quality .....32

**Figure 3.24:** Unity 552 OSD History This Setting .....33

**Figure 3.25:** Unity 552 OSD Elapsed Times .....33

**Figure 3.26:** Unity 552 OSD Network History .....34

**Figure 3.27:** Unity 552 OSD LAN IP Info .....35

**Figure 3.28:** Unity 552 OSD Version Info .....35

**Figure 3.29:** Unity 552 OSD Clear Signal Counters .....36

**Figure 3.30:** Unity 552 OSD Main Menu .....37

**Figure 3.31:** Unity 552 OSD Alarms / Warnings .....37

**Figure 3.32:** Unity 552 OSD Display Current Warnings .....38

**Figure Apx 3.1:**RMA Request Form .....51

This page intentionally left blank

# CHAPTER 1 GENERAL INFORMATION

## 1.1 Manual Overview

This manual provides instructions and reference information for the proper installation and operation of the **WEGENER Unity 552**.

The manual is divided into the following chapters and appendices:

1. **General Information** - A description of the product, its functions and specifications, and a glossary of terms.
  2. **Installation** - Procedures and information for the correct and safe installation.
  3. **Operation** - Instructions on starting and operating the product.
  4. **Search Functions** - Information on settings, parameters, modes, and signal monitoring.
  5. **Customer Service** - Our warranty and information about obtaining help.
- Appendix 1** - Terminal Diagnostics Commands.
- Appendix 2** - Menu Tree of LCD navigation.
- Appendix 3** - RMA Request Form.

An **Index** of keywords is also provided to help you quickly locate needed information.

Please e-mail any suggestions or comments concerning this manual to [manuals@wegener.com](mailto:manuals@wegener.com). If you prefer to post through the mail, please send your comments to the address below. If you have substantial or complex changes to recommend, our preference is that you copy the page(s) in question, mark your changes on that copy, and fax or mail us the copy. We always appreciate constructive criticism.

**Address:**

Attn: Manuals

**Wegener Communications, Inc.**  
 Technology Park / Johns Creek  
 11350 Technology Circle  
 Duluth, GA 30097-1502

**Fax number:** (770) 497-0411

## 1.2 Product Overview

### Integrated Receiver-Decoder

The **Unity 552** Digital Media Receiver represents **WEGENER's** next generation of high performance satellite IRD targeted to meet the needs of dynamic private television networks for cost effective media distribution. Saves bandwidth by 40-70% by supporting MPEG-4/ H.264 video compression and DVB-S2 modulation. The extra bandwidth may be used to launch additional video and data services. An integrated **Compel** network control offers flexibility and power to manage a mixed network of **WEGENER** IRDs. It also facilitates global deployment by supporting both, PAL and NTSC video.

**Features and Options**

Some of the features and options of **Unity 552** are highlighted below.

- Optimize bandwidth utilization by decoding MPEG-2 and MPEG-4/H.264 compression
- Save bandwidth with compliance to DVB-S2 QPSK /8PSK & DBV-S modulations
- Deploy in global markets by employing PAL and NTSC video formats
- Provide viewing options for both, HD and SD audiences
- Broadcast in multiple language by configuring four audio ports as mono or stereo
- Provide Subtitling and Tele-text services
- Support Closed Captioning Line 21 with ATSC and Divicom formats
- Decode LAN-based MPEG-2 and H.264 transport stream
- Enhance control operations using two Relay outputs and one Contact Closure input
- Monitor using SNMP Protocol
- Digital audio/video output on HDMI with HDCP copy protection
- Digital audio output on S/PDIF (PCM and Dolby Digital)
- One HD component video and two composite video outputs
- Option for 4-RF ports and Universal or Standard LNB DC Power on RF Port 1
- Save footprint with 1RU rack-mount or desktop chassis and a universal power supply

The **Unity 552** has integral support for the following **Compel** features:

- **Compel** Satellite network control and **Compel/CA** Conditional Access
- Internal SIM smartcard accommodating **Compel** CA cipher
- Audio level controlled through **Compel** network
- Field-upgradeable software downloads over RF Network using **Compel**

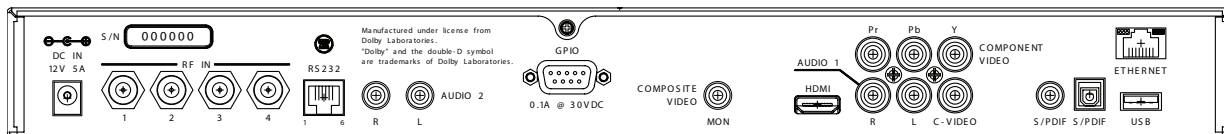
**Compel™ Network Control**

**Compel** gives you the power to manage a network of **Unity 552s** and other Unity IRDs with unparalleled functionality. With its unique network management features, such as grouping, receiver control and scheduling, the operator can command individual groups of receivers to switch, tune, or "output" video or data targeted specifically for that one receiver or group of receivers. This ability can be utilized for unequalled disaster recovery for business critical operations.

### 1.3 Unity 552 Product Specifications

**Rear Panel View**

**Figure 1.1: Unity 552 Rear Panel**



**Rear Panel Connections**

The **Unity 552** rear panel provides following connections:

**Table 1.1: Unity 552 Interconnect Descriptions**

Port / Signal	Connector Type	Description
<b>DC IN</b>	M Power Jack	+12 V DC 5 A
<b>RF Switch IN - Port 1</b>	F	950 to 2150 MHz signal accepted; Universal/Std Pwr
<b>RF Switch IN - Port 2, 3, 4</b>	F	950 to 2150 MHz signal accepted; No LNB power
<b>RS-232 Port</b>	RJ-12	Serial Asynchronous for terminal, printer or Aux Data
<b>Audio OUT 1 (R&amp;L)</b>	2 RCA Phone Jacks	Audio stereo
<b>Audio OUT 2 (R&amp;L)</b>	2 RCA Phone Jacks	Audio stereo
<b>Composite Video</b>	RCS Phone Jack	Composite Video Monitor NTSC or PAL at 1 Vp-p
<b>C-Video</b>	RCS Phone Jack	C-Video NTSC or PAL at 1 Vp-p
<b>Component Video</b>	3 RCS Phone Jacks	Component HD/SD Video YPbPr
<b>HDMI</b>	Type A receptable	High Definition Multimedia Interface (Digital A/V)
<b>S/PDIF</b>	RCA Phono Jack	S/PDIF Coax Digital Audio
<b>S/PDIF</b>	Optical TosLink	S/PDIF Fiber Digital Audio
<b>ETHERNET</b>	RJ-45	ETHERNET 10/100 BaseT
<b>USB</b>	USB	USB V2.0 port

### External Input/Output Interfaces

The details on each of the interfaces are described below:

**Table 1.2: Unity 552 External Input/Output Interfaces**

External Input/Output Interfaces		
<b>RF</b>		
Connector	Input/Output	Description
4 RF Inputs from LNB	Port 1 I/O; Port 2-4 Input	Port 1 Universal/ Standard LNB <b>Port 2-4 No LNB</b> Voltage
<b>Component Video</b>		
Connector	Input/Output	Description
Component Y	Output	Green RCA
Component Pb	Output	Blue RCA
Component Pr	Output	Red RCA
<b>Composite Video</b>		
Connector	Input/Output	Description
Composite Video MON	Output	Yellow RCA
C-Video	Output	Yellow RCA

External Input/Output Interfaces		
<b>Audio 1 and 2 (two analog audio ports)</b>		
Connector	Input/Output	Description
Right Audio	Output	Red RCA Unbalanced
Left Audio	Output	White RCA Unbalanced
<b>S/PDIF Digital Audio</b>		
Connector	Input/Output	Description
1	Output	Coax/Electrical
2	Output	TosLink/Optical
<b>HDMI Digital Audio/Video</b>		
Connector	Input/Output	Description
HDMI	I/O	Digital Audio/Video; HDCP Copy Protection; Display Data Channel
<b>USB</b>		
Connector	Input/Output	Description
1	I/O	USB V2.0 Port
<b>10/100 BaseT (RJ-49) Ethernet Auto Detect</b>		
Connector Pin	Input/Output	Description
1	Output	TXD +
2	Output	TXD -
3	Input	RXD +
4	NA	No Connection
5	NA	No Connection
6	Input	RXD -
7	NA	No Connection
8	NA	No Connection
<b>RS-232 Serial Port Phone Jack</b>		
Connector Pin	Input/Output	Description
1	NA	No Connection
2	Output	RXDB Data
3	Input	TXDB Data
4	NA	No Connection
5	NA	Ground
6	NA	+5V DC
<b>Contact Closure GPIO DB-9 Female</b>		

External Input/Output Interfaces		
Connector Pin	Input/Output	Description
1		Alarm Common
2		Alarm Normally Open
3		Contact Closure Common
4		No Connection
5	Input	Contact Closure GPIO Input (Factory use only)
6		Alarm Normally Closed
7		Contact Closure Normally Closed
8		Contact Closure Normally Open
9	NA	Ground
Power DC IN 12 V 5 A		
Connector	Input/Output	Description
Standard IEC	Input	115 or 230 V AC

## Technical Specifications

The following tables detail the technical specifications for the **Unity 552**.

### RF Characteristics

**Table 1.3: Unity 552 RF Characteristics**

RF Characteristics	
<b>RF Input</b>	Connector Type F
<b>Input Frequency Range</b>	950 - 2150 MHz
<b>Input Level Range</b>	-25 to -65dBm
<b>Maximum Aggregate Input Power</b>	-8 dBm at max input signal
<b>Input Impedance</b>	75 ohms
<b>Input VSWR</b>	< 2.5:1
<b>Input Noise Figure</b>	8 dB MAX at minimum input level
<b>L.O. Leakage at Input</b>	< -55 dBm
<b>Demodulator DVB-S QPSK DVB-S2 QPSK DVB-S2, 8PSK</b>	FEC Rate 1/2, 2/3, 3/4, 5/6, or 7/8 (1.0 to 45 MBaud) 1/2, 2/3, 3/4, 4/5, 5/6, 7/8, 9/10 (2 to 30 MBaud) 2/3, 3/4, 5/6, 8/9, 9/10 (3 to 30 MBaud) Convert Symbol Rate Fs to Transport Rate Ft by: $(2R * Fs) * (188/204) = Ft$ , where 'R' is inner FEC code ratio, either R=1/2, 2/3, 3/4, 5/6, or 7/8.
<b>Max Symbol-rate</b>	S2 = 30 Msps; S1 = 45 Mbps

RF Characteristics	
<b>Aggregate MPEG Transport Rate</b>	8PSK = 80.346; S1 QPSK = TBD 2.5 to 48.38 Mbps (limited by max symbol-rate and inner FEC chosen), defined for 188-byte MPEG transport packets
<b>Max/Min Eb/No @ Video Threshold</b>	S1QPSK: FEC: Eb/No (dB) 1/2: 4.5 2/3: 5.0 3/4: 5.5 5/6: 6.0 7/8: 6.4 S2QPSK: FEC: Eb/No (dB) 1/2: 1.5 3/5: 2.0 2/3: 2.4 3/4: 2.8 4/5: 3.2 5/6: 3.5 8/9: 4.2 9/10: 4.4 S28PSK: FEC: Eb/No (dB) 3/5: 3.5 2/3: 4.1 3/4: 4.9 5/6: 5.9 8/9: 6.9 9/10: 7.2

**Video Decoder**

**Table 1.4: Unity 552 Video Decoder**

Video Decoder	
<b>Compression System</b>	MPEG-2/MPEG-4 and H.264 - Standard and High Definition
<b>Analog (Composite) Output Formats</b>	NTSC or PAL



Video Decoder	
<b>Supported Digital Video Resolutions</b>	SD: 480I / 29.97 480P / 59.94 576I / 25 576P / 50 Horizontal: 720, 704, 640, 544, 528, 480 and 352  HD: 1080I / 29.97 Horizontal: 1920, 1440, 1280, and 960  1080I / 25 Horizontal: 1920, 1440, 1280, and 960  720P / 50 Horizontal: 1280, 960, and 640  720P / 59.94 Horizontal: 1280, 960, and 640
<b>Supported Color Space Sampling Scheme</b>	4:2:0 All Supported Formats 4:2:2 SD Formats

**Composite Video Output**

**Table 1.5: Unity 552 Composite Video Output**

Composite Video Output	
<b>Line 21 Closed captioning</b>	Divicom and ATSC EIA-608-B
<b>TELETEXT</b>	CCIR/ITU-R Broadcast Teletext System B
<b>Output Level</b>	1.0 Vp-p, < 5% Deviation
<b>Output Impedance</b>	75 Ohms
<b>Multi-burst Frequency Response</b>	NTSC: From 0.5 to 4.2 MHz: < +0/-3 dB PAL: From 0.5 to 4.2 / 5.8 MHz: < +0/-3
<b>Differential Gain</b>	< 3%
<b>Differential Phase</b>	< 3 Degrees
<b>Line Time W-form Distortion</b>	< 2% p-p
<b>Field Time W-form Distortion</b>	< 2% p-p

**Component Video Output**

All specs below are presumed for NTSC and PAL unless otherwise specified. Tested per RS250C. Tested at max resolution with ~6 Mbps PES rate.

**Table 1.6: Unity 552 Component Video Output**

Component Video Output	
Line 21 Closed captioning	Divicom and ATSC EIA-608-B
TELETEXT	CCIR/ITU-R Broadcast Teletext System B
Output Level	Y = 1 Vp-p, Pb/Pr = 700mVp-p
Output Impedance	75 Ohms
Multi-burst Frequency Response	NTSC: From 0.5 to 4.2 MHz: < +0/-3 dB PAL: From 0.5 to 4.2 / 5.8 MHz: < +0/-3
Differential Gain	< 3%
Differential Phase	< 3 Degrees
Line Time W-form Distortion	< 2% p-p
Field Time W-form Distortion	< 2% p-p

**Table 1.7: Unity 552 Audio Decoder**

Audio Decoder	
Compression System	MPEG-1 Layer 2, Dolby Digital ® (or AC-3)
Sample Rates Supported	44.1 and 48 kHz

**Unbalanced Audio Output**

Measured at 256 kbps audio PES rate, dual mono mode.

**Table 1.8: Unity 552 Unbalanced Audio Output**

Unbalanced Audio Output	
Output level adjust range	0 to -14 dB attenuation from Output Level shown above
Output Level-MAX PPL	+9.0 +/- 0.5 dBu, 0 dB level, RCA Phono Jack
Impedance	Unbalanced: < 1000 Ohms

**Audio Parameters**

**Table 1.9: Unity 552 Audio Parameters**

Audio Parameters	
Frequency Response	20Hz to 20 kHz, +0.5/-2.0 dB 50Hz to 15 kHz, +0.5/-1.0/-0.5 dB
Harmonic Distortion (1 kHz test-tone, 1 dB below PPL)	< 0.5%
S/N Ratio	> 68 dB (22 Hz to 20 KHz) unweighted
Dynamic Range	16 bits
A/V Sync	< +/- 50 mS error

## Serial Port

**Table 1.10: Unity 552 Serial Port**

Serial Port	
<b>RS232</b>	RJ11
<b>Selectable services</b>	Auxiliary character-based async output E-mail character-based async output Terminal monitoring and control
<b>Baud Rates</b>	2400 to 115200 baud
<b>Formatting</b>	8 data-bits, one start, one stop-bit, half-duplex, no parity

## LNB DC Power (RF Port 1 ONLY)

Universal and Standard LNB Supported. See Astra PTS403d.

**Table 1.11: Unity 552 LNB DC Power (RF Port 1 ONLY)**

LNB DC Power (RF Port 1 ONLY)	
<b>Voltage</b>	Standard: 18VDC Universal: 13 or 18 VDC, for LNB polarity selection
<b>22 KHz tone</b>	22 KHZ control tone, for LNB DRO baud selection, Universal mode
<b>Current</b>	350 mA max
<b>Short-circuit protection</b>	Thermal Fuse and Foldback Regulator

## AC Power

**Table 1.12: Unity 552 AC Power**

AC Power	
<b>Voltage</b>	External 100-240 auto-detect/selected
<b>Frequency</b>	50 or 60 Hz +/-2%
<b>Power consumption</b>	30 watts with full LNB DC load

## Physical Characteristics

**Table 1.13: Unity 552 Physical Characteristics**

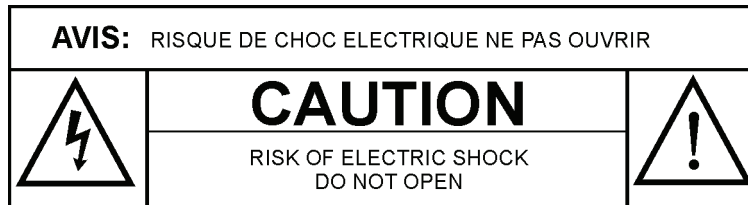
Physical Characteristics	
<b>Chassis Height</b>	1 RU for desktop - 1RU using supplied rack ears
<b>Chassis Width</b>	16.5 inches - with optional rack ears - 19 inches
<b>Chassis Depth</b>	11.5 inches
<b>Weight</b>	7.5 lbs.
<b>Front/Rear Panel Labeling</b>	

Physical Characteristics	
Chassis Finish	Silver powder-coat, fine texture
Rear-panel silk-screen color	Gray lettering per PMS-427C
Front Panel	Plastic snap-on bezel with 5 button switches embedded in label

## 1.4 Safety Summary

The **Unity 552** is designed for safe use with few special precautions required of the user. The following items are basic precautions to use when installing and working with the **Unity 552** unit:

Do not open the **Unity 552**'s chassis cover.



The **Unity 552** incorporates security labels over some of the screws. There are no user serviceable components within the IRD. Tampering with the security labels, or opening the unit, will void your warranty. If you have questions, contact the **WEGENER Customer Support Department** at the address or phone (fax) numbers listed in **Chapter 5 Customer Service**, of this manual.

## CHAPTER 2 INSTALLATION

This chapter provides instructions on unpacking, mounting, and connecting your **Unity 552** as well as connector information including detailed pinouts.

### 2.1 Unpacking and Inspection

Carefully unpack the unit and its ac power cord and inspect for obvious signs of physical damage that might have occurred during shipment. Any damage claims must be reported to the carrier immediately. Be sure to check the package contents carefully for important documents and materials.

**Note:** Please save the packing materials and original shipping containers in case you must later return the unit for repair. Packing these units in other containers in such a way that they are damaged will void your warranty.

### 2.2 Location and Mounting

The **Unity 552** may be mounted in a standard 19-inch equipment rack or set up for desktop operation. In either location, maintain a clean, dry environment for the **Unity 552**.

#### Precautions **FCC-Mandated Suppression of Radio Frequency Emissions**

**WARNING** This is a Class A product. In a domestic environment this product may cause radio interference for which the user may need to take mitigating action.

If the Ethernet port has a cable connected to it, that cable must be properly shielded and grounded to minimize RF emissions that could interfere with nearby equipment.

**DANGER** To avoid damage to the **Unity 552** unit and other equipment, or personal injury, the following items should be strictly observed.

#### **Elevated Ambient Operating Temperatures in Rack-Mounted Units**

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

#### **Reduced Air Flow**

Equipment should be installed such that the airflow required for safe operation of the equipment is not compromised. The **Unity 552** may be arranged in a rack without empty spaces between units, if heat buildup is prevented by ensuring that the side vents remain unblocked, and that there is adequate clearance around the vent holes.

#### **Mechanical Loading**

Rack-mounted equipment should be installed in such a way that a hazardous condition is not produced by uneven loading. The **Unity 552** unit is not very heavy, but total rack loading

must be considered. Also, do not rest any unsupported equipment on a rack-mounted **Unity 552** unit.

### 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

When connecting the **Unity 552** unit to the power supply, review the ratings of all equipment in the circuit to ensure that the branch circuit, as well as the power source, will not be overloaded. Also make sure that the unit is properly grounded and/or that a protected power strip is used to attach it to the power supply

### Rack Mounting

The **Unity 552** unit should be installed in such a way that a half-inch clearance is allowed on each side and a quarter-inch on the top to ensure adequate air flow. Ensure that a hazardous condition is not produced by uneven loading, or by resting any unsupported equipment on a rack-mounted **Unity 552** unit.

Parts for the **Unity 552** unit include 2 angle rack mount brackets and 4 rubber feet. For rack mounting, do not attach the rubber feet as they interfere with the rack mounting.

1. Remove the 2 screws from the left and right sides of the unit.
2. Insert the angle brackets into the left and right sides of the unit ensuring that the screw holes for the unit and brackets are aligned.
3. Secure the brackets by re-inserting the screws through the brackets and unit.
4. Install the unit onto the rack.

**Note:** The front brackets must be secured to the rack. If the front brackets are left unsecured, the unit may shift forward and fall from the rack, and may result in personal injury and/or damage to the equipment. The internal temperature of the rack should not exceed 40° C.

### Desktop Installation

Parts for the **Unity 552** unit include 2 angle rack mount brackets and 4 rubber feet. For desktop installation, do not attach the brackets.

1. Attach the 4 rubber feet onto the indented areas at the bottom of the unit.
2. Place the unit on a flat surface where it will not be subject to spills or impacts.
3. Route cables to the unit so that they will not be hit or pulled, causing damage to the connectors or to the unit itself. Ensure a sufficient flow of cool air so that the unit's operating ambient temperature range is not exceeded.

## CHAPTER 3 OPERATION

This chapter provides information and procedures for powering up, operating the unit, upgrading software and tracking alarm conditions. Information on four-port RF option and Universal LNB Power is also presented.

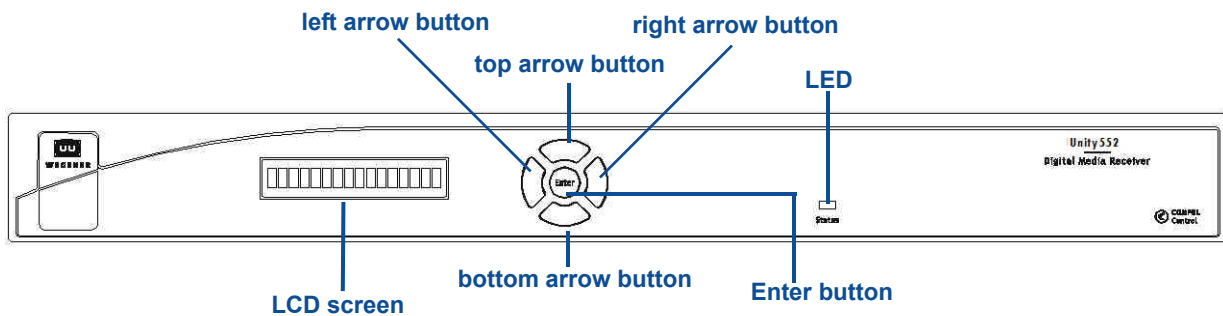
### 3.1 Controlling and Monitoring

The IRD can be controlled via **Compel** network, front-panel using push-buttons and OSD (On-Screen Display) or LCD menus or the diagterm terminal using commands. The **Compel** is generally the primary method of controlling an IR. See the **Compel** Manual for a complete explanation.

#### Front Panel Controls And Indicators

The **Unity 552** is set up at the factory. However, you can customize the settings to fit your system using the front-panel push-buttons and LCD screens or OSD menus. You may also view those settings and various status information using the front-panel LCD, LED or OSD screens.

Figure 3.1: Unity 552 Front Panel



#### LCD

Normally, the LCD on the front-panel displays Unit label and currently tuned channel parameters for information. Pressing **Enter** on the front-panel activates the LCD backlight. When the OSD menu is active, the LCD on the front-panel displays the OSD item currently selected. When certain status conditions, such as loss of signal occur, the LCD automatically gets activated with illuminated backlight and displays relevant information on the condition.

#### OSD

The On-Screen Display (OSD) menus are used to configure settings or monitor the status of the IRD. The OSD information displays white text on blue background overlying 80% of the video output viewed on a monitor connected to any of the video ports. The OSD screens are activated (displayed on video monitor) and the menus can be navigated using the push-buttons on the front-panel. On menus, a selected item is displayed with black text on white background. Following example represents one of the OSD menus available on **Unity 552**.

**Figure 3.2: OSD Main Menu**



**Push-buttons**

Use the arrow buttons and **Enter** on the front panel to navigate and edit the fields on LCD and OSD menus. Any of the push buttons activate OSD and LCD. The arrow buttons are used to navigate through menus and to either change or display items to set desired options for the IRD. The **Enter** button is generally used to select menu items on LCD and OSD menus. Selectable fields allow you to change the whole parameter from pre-determined options. Editable fields allow you to change each digit of the parameter. Once a field is updated, you must select Activate and Exit on the submenu and then press **Enter** to update the value of the field. Before pressing **Enter**, you may go back to any field and correct it prior to acceptance. The left arrow button usually steps back a menu.

**Table 3.1: Menu Navigation using Push-buttons**

Button	Actions		
	Main Menu	Submenu	Edit Mode
<b>Enter</b>	selects submenu or drop-down list	goes to editable field	accepts changes
<b>right arrow</b>	no action	no action	moves cursor to right
<b>left arrow</b>	exits <b>OSD</b>	goes to previous menu level	moves cursor to left or abandon changes
<b>up arrow</b>	goes to next or previous menu item	goes to next or previous menu item	increases value of selected item
<b>down arrow</b>	goes to next or previous menu item	goes to next or previous menu item	decreases value of selected item

**LED**

Upon power up, the IRD initializes all system components and supplies an operational status. A steady Green LED indicates that it is locked on a carrier and is capable of producing output (Audio/Video/Data).

In case of problems, the LED flashes Red for alarm conditions or Amber for warning conditions. In general, alarms indicate that the unit cannot produce output, while Warnings



indicate that, although output is being produced, there is a problem that could require attention. The most common conditions that produce alarms or warnings are listed in **Table 3.2**.

**Table 3.2: Unity 552 Front Panel Status LED Alarm and Warning Indications**

Mode	LED Status	Condition
<b>Alarm</b>	Red blink = 2	No carrier
	Red blink = 3	No RF signal
	Red blink = 4	In recovery
	Red blink = 5	Eb/No alarm
	Red blink = 11	Not authorized
<b>Warning</b>	Amber blink = 1	No response from SEC_MICRO
	Amber blink = 2	Marginal Eb/No
	Amber blink = 4	Selected audio not available
	Amber blink = 5	RF too low
	Amber blink = 6	RF too high
	Amber blink = 7	Application download failed
<b>Normal</b>	Green	Normal operation

**Diagterm Terminal (Commands)**

The Serial Port (RS-232) can be used to connect to a terminal console. After the IRD is powered on, a diagterm command-line interface (CLI) can be used to monitor and control the system. For more information on diagterm and syntax of the individual commands, please see an appendix. **Figure 3.3** illustrates the **Help** screen on the diagterm terminal.

**Figure 3.3: Diagterm Terminal Help Screen**

```

Welcome to UnifiedSoftware's serial terminal.
      Type "help" to list available commands.

OK>help

===== [ Groups ] =====
http      lan      output   rd
rp        r        sigma    snmp

===== [ Commands ] =====

abortrec  abort    adds     ap2
ap        audatten audroute contentaccess
dels      errors   ifconfig lnbpwr
lnbselect margin  movep    permch
perm      re       savep    service
setlnb    settimeout set       snr
spdif     sp       tempch   temp

Type "help [group]" "help [command]" or "help help" for more
info.

OK>
    
```

## Compel™ System Control

The **Unity 552** IRD is most often controlled via the **WEGENER Compel Control System**. This system is managed at the uplink site, sending a control stream with the usual audio and video data streams. The **Compel System** addresses units, and commands them to perform various functions.

Among its functions is the ability to enable or limit aspects of local control. Also, **Compel** has the ability to mute the audio and video of an IRD if it is inadvertently tuned to a frequency it is not authorized to receive.

If an RF Switch option module is installed, **Compel** controls which of the four RF feeds is being processed. For more information on this, see the **Compel Manual**, or contact your service provider.

There are four levels of control via **Compel**. These levels are:

- No Local Control - Push-buttons disabled
- Read Only - No changes permitted
- Limited - Changes may be made to Carrier Presets (pre-loaded values) only
- Full - Full Local Control

## 3.2 Normal Functions

The **Unity 552** allows several functions for basic operation and optimum performance.

- Tune to a carrier
- Configure LNB options
- Monitor Signal Quality
- Set Subtitling
- Configure operating options:
  - Set Decoder options
  - Setup Audio
  - Set LAN IP Networking options
  - Set Terminal options
  - Set User Relay
  - Set Date and Time information
  - Set Unit Label
  - Switch Application (to different software version)
- Monitor status information:
  - View Signal Quality
  - Query Networking History
  - Display LAN IP Network information
  - Find Software Version information
  - Clear Statistics used for diagnosis

Each of these functions is illustrated below with instructions, OSD screens and other relevant information.

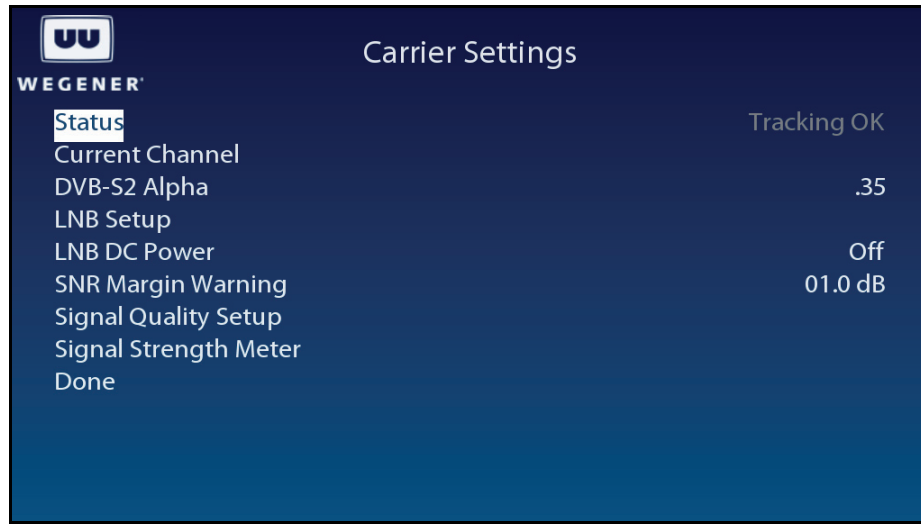
## Tune to a carrier

### Carrier Settings screen

Use following steps to display **Carrier Settings** screen on the OSD menu:

1. Press any push-button on the front-panel to display the **Main Menu**.
2. Press the down arrow button to select **Carrier Settings**.
3. Press **Enter**.
4. View the details as shown in **Figure 3.4**.

**Figure 3.4: Unity 552 OSD Carrier Settings Screen**



#### Notes:

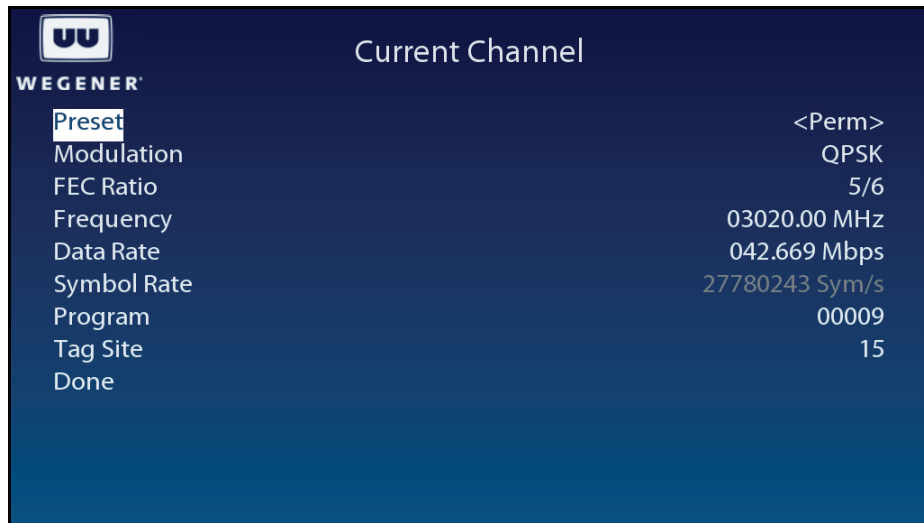
- The Status shall be displayed as Tracking OK if the unit is tuned to a carrier.
- Valid values for DVB-S2 are 0.35, 0.25 and 0.20.
- The LNB DC Power may be turned on or off.
- The SNR Margin Warning may be set with a desired threshold value in dB.

### Current Channel screen

Use following steps to display **Current Channel** screen on the OSD menu:

1. From the Carrier Settings screen, press the down arrow button to select **Current Channel**.
2. Press **Enter** to display the Current Channel screen shown in **Figure 3.5**.
3. To navigate the screen, use the down arrow and **Enter** buttons to select an option. When the corresponding value of that option on the left is selected, use up or down buttons to set to the desired setting. Press **Enter** when done. Move to the next option using up or down button or left arrow to exit to the previous menu level.

**Figure 3.5: Unity 552 OSD Current Channel Screen**



Use the **Current Channel** screen to set or display the channel information.

**Table 3.3: Channel Information Options**

Option	Possible values	Comments
<b>Preset</b>	Perm, Command, Last Success or Current	Only Perm option allows other options to be set. The channel set using the <b>Compel</b> Command.
<b>Modulation</b>	QPSK/S2QPSK/S28PSK	-
<b>FEC Ratio</b>	1/2, 2/3, 3/4, 5/6, 7/8	-
<b>Frequency</b>		
<b>Data Rate</b>		
<b>Symbol Rate</b>		Automatically calculated and displayed only
<b>Program</b>		Set to the desired program # in the carrier
<b>Tag Site</b>		The tag #15 is a special value

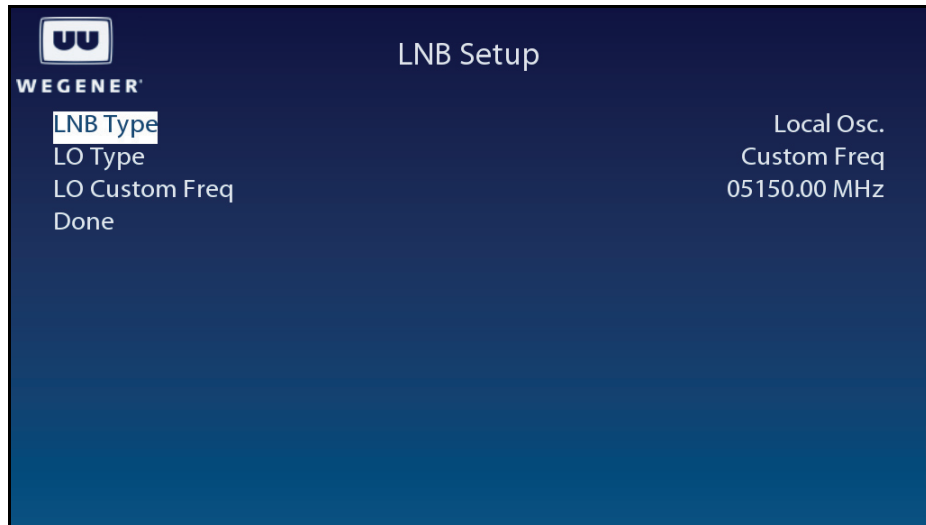
**Configure LNB options**

**LNB Setup screen**

Use following steps to display **LNB Setup** screen on the OSD menu:

1. Press any push-button on the front-panel to display the **Main Menu**.
2. Press the down arrow button to select **Carrier Settings**.
3. Press **Enter**.
4. Press the down arrow button to select **LNB Setup**.
5. Press **Enter**. **Figure 3.6** details the **LNB Setup** screen.
6. To navigate the screen, use down arrow and **Enter** to select an option. When the corresponding value of that option on the left is selected, use up or down buttons to set to the desired setting. Press **Enter** when done. Move to the next option using up or down button or left arrow to exit to the previous menu level.

Figure 3.6: Unity 552 OSD LNB Setup Screen



Use the **LNB Setup** screen to set and display the LNB configuration.

Table 3.4: LNB configuration options

Option	Possible values	Comments
<b>LNB Type</b>	Local Oscillator or Universal/ASTRA	Only Local Osc option allows other options to be set.
<b>LO Type</b>	Custom Freq., Std C-band, US Ku-band, Euro Low Ku-band or Euro Hi Ku-band	Only Custom Freq. option allows other options to be set.
<b>LO Custom Freq.</b>		

**Monitor  
Signal  
Quality**

**Signal Quality Setup screen**

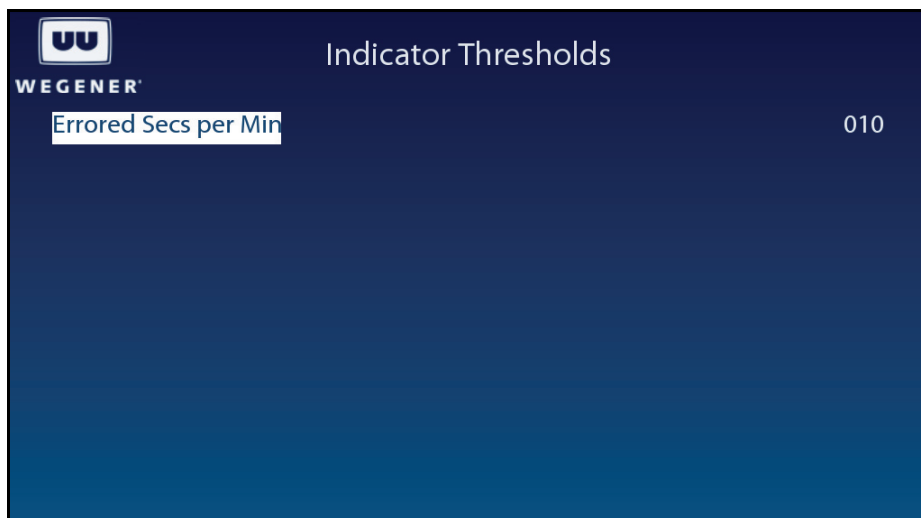
Use following steps to display **Signal Quality Setup** screen on the OSD menu:

1. Press any push-button on the front-panel to display the **Main Menu**.
2. Press the down arrow button to select **Carrier Settings**.
3. Press **Enter**.
4. Press the down arrow button to select **Signal Quality Setup**.
5. Press **Enter** to display the **Signal Quality Setup** screen shown in **Figure 3.7**.

**Figure 3.7: Unity 552 OSD Signal Quality Setup Screen****Indicator Threshold screen**

Use following steps to display the **Indicator Threshold** screen on the OSD menu:

1. From the **Signal Quality Setup** screen, ensure that **Indicator Thresholds** is selected.
2. Press **Enter** to display the **Indicator Threshold** screen shown in **Figure 3.5**.
3. To navigate the screen, press **Enter** to highlight the value. Use up or down buttons to set to the desired setting. Press **Enter** when done. Use left arrow to exit to the previous menu level.

**Figure 3.8: Unity 552 OSD Indicator Threshold Screen**

Use the **Indicator Threshold** screen to set and display the warning condition.

**Table 3.5: Indicator Threshold screen options**

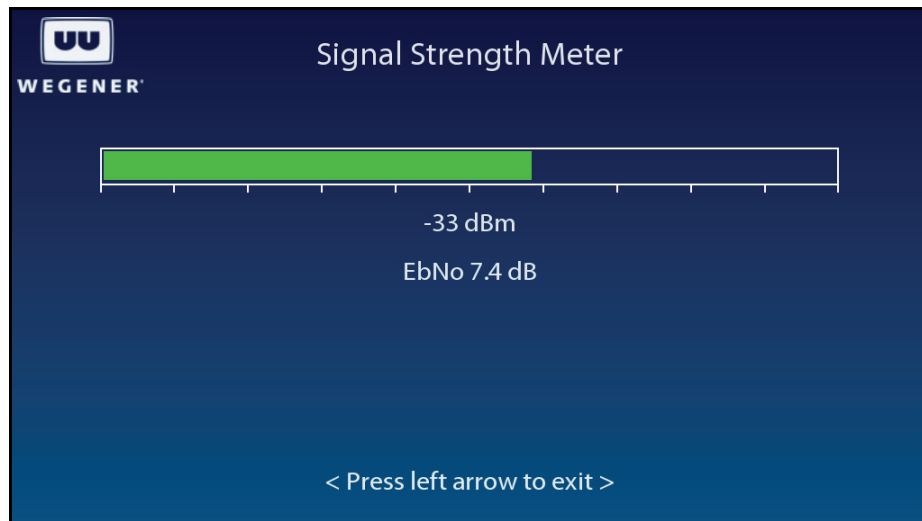
Option	Possible values	Comments
Errored Secs per Min	10 to 19	Set the threshold for how many errors per minutes before raising a warning condition.

**Signal Strength Meter screen**

Use following steps to display **Signal Strength Meter** screen on the OSD menu:

1. Press any push-button on the front-panel to display the **Main Menu**.
2. Press the down arrow button to select **Carrier Settings**.
3. Press **Enter**.
4. Press the down arrow button to select **Signal Strength Meter**.
5. Press **Enter** to view the screen as shown in **Figure 3.9**.

**Figure 3.9: Unity 552 OSD Signal Strength Meter Screen**

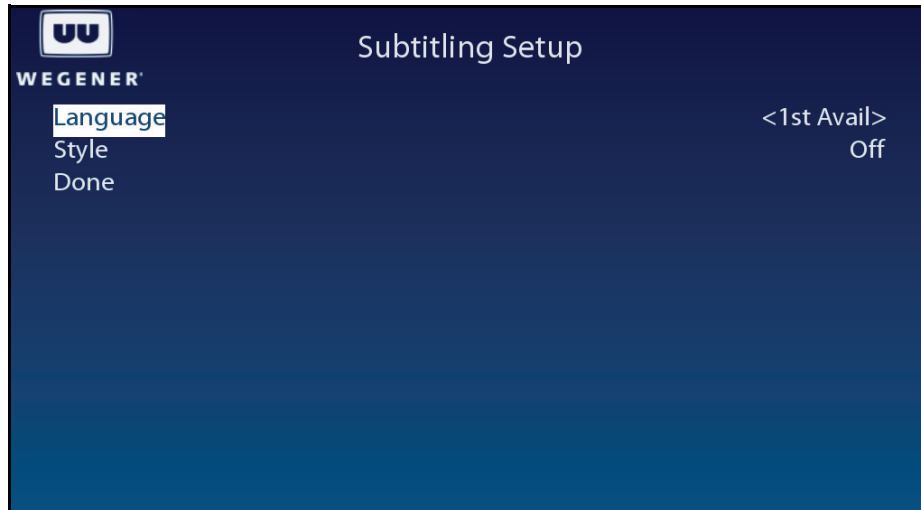


**Set Subtitling options Sub-titling Setup screen**

Use following steps to display **Sub-titling Setup** screen on the OSD menu:

1. Press any push-button on the front-panel to display the **Main Menu**.
2. Press the down arrow button to select **Subtitling Setup**.
3. Press **Enter**.
4. View the details as shown in **Figure 3.10**.

**Figure 3.10: Unity 552 OSD Subtitling Screen**



Use the **Subtitling Setup** screen to set and display the Subtitling information.

**Table 3.6: Subtitling Setup screen options**

Option	Possible values
Language	English, French, Spanish or 1st Available
Style	Normal, Normal + Captioning or Off

**Configure the unit for operation**

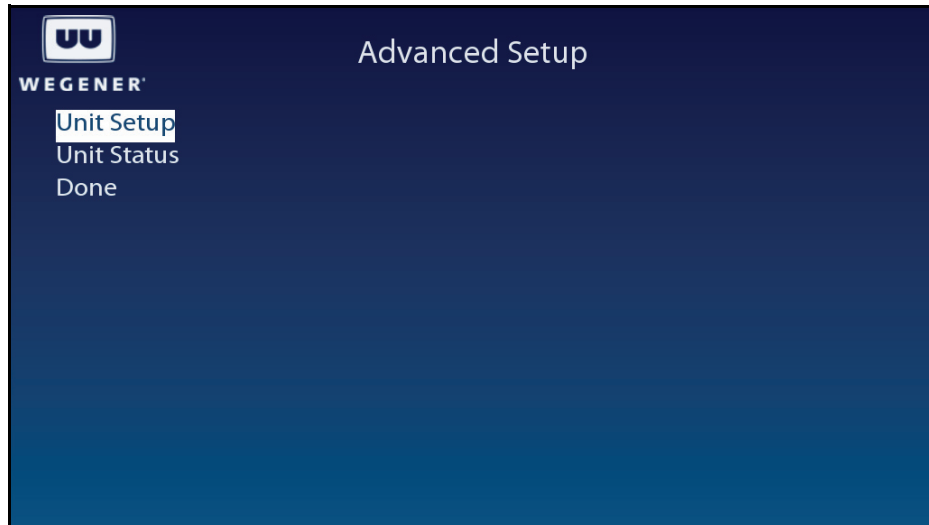
**Advanced Setup screen**

Use following steps to display **Advanced Setup** screen on the OSD menu:

1. Press any push-button on the front-panel to display the **Main Menu**.
2. Press the down arrow button to select **Advanced Setup**.
3. Press **Enter**.
4. View the details as shown in **Figure 3.11**.



Figure 3.11: Unity 552 OSD Advanced Setup

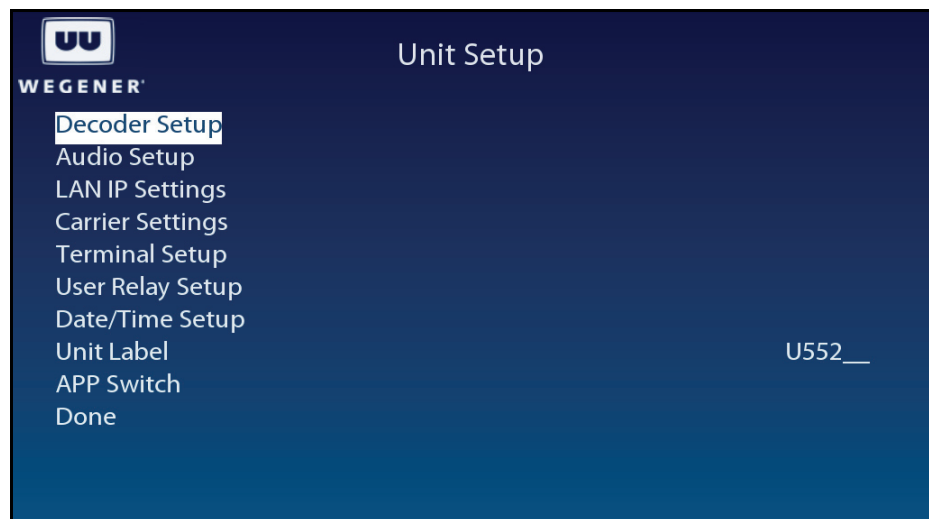


### Unit Setup screen

Use following steps to display **Unit Setup** screen on the OSD menu:

1. Press any push-button on the front-panel to display the **Main Menu**.
2. Press the down arrow button to select **Advanced Setup**.
3. Press **Enter**.
4. Press the down arrow button to select **Unit Setup**.
5. Press **Enter**.
6. View the details as shown in the **Figure 3.12**.

Figure 3.12: Unity 552 OSD Unit Setup



The following options are available for setting the unit for operation:

- Decoder Setup
- Audio Setup

- LAN IP Networking
- Carrier Settings
- Terminal options
- User Relay
- Date and Time information
- Unit Label settings
- Switch Application
- Set Video Decoder options

### Set Decoder Options

Use following steps to display **Decoder Setup** screen on the OSD menu:

1. Navigate to the Unit Setup screen, see **Unit Setup screen on page 23**.
2. Press the down arrow button to select **Decoder Setup**.
3. View the details as shown in **Figure 3.13**.

**Figure 3.13: Unity 552 OSD Decoder Setup**



Use the **Decoder Setup** screen to set and display the decoder options.

**Table 3.7: Video Decoder Options**

Option	Possible values	Comments
<b>Decoder Source</b>	Follow Tune (currently selected RF source and program #) or Off (no A/V output)	Controls source of input transport stream for the primary A/V decoder to play. The source can be either Multicast UDP from Satellite/RF or Multi/Unicast UDP from LAN/ETHERNET
<b>TV Aspect Ratio</b>	4x3 (Traditional TV) 16x9 (Wide screen TV) 14x9 (CiniView II)	Allows the receiver to automatically correct a mismatch in the aspect ratio of the TV to the content being displayed.
<b>Output Scaling</b>	Letterbox (black bars either at top/bottom or at sides), Pan/Scan (display may be off screen)	Optimizes viewing quality if the content does not match the TV Aspect Ratio. In Pan/Scan mode, improvement in viewing experience depends on the source content.
<b>Closed Captioning</b>	PASSTHRU (ntsc/pal) or CC1:4 (EIA-608) orDTV (EIA-708-B)	Sets the option to render subtitling information in different formats including Divicom.

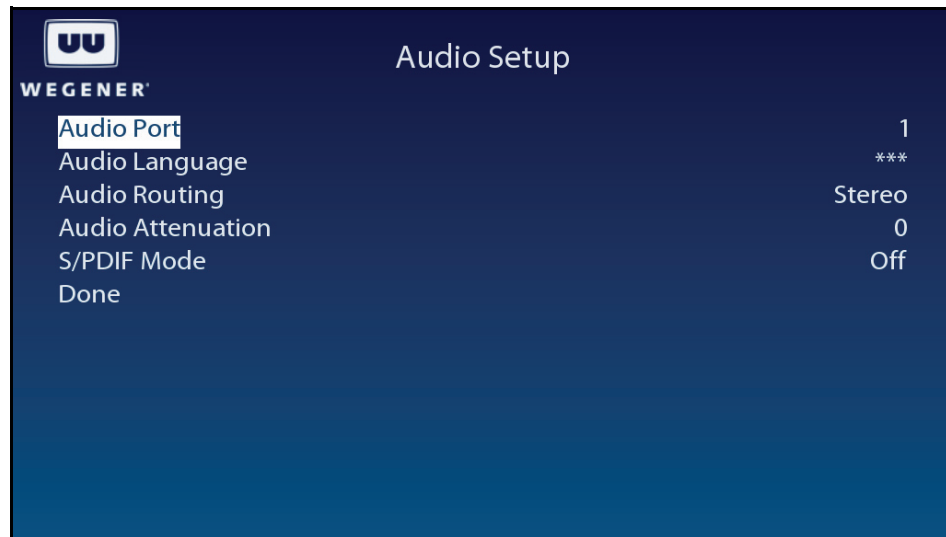
Option	Possible values	Comments
Composite Out	NTSC_M, NTSC_J, PAL/50 or PAL/60	Selects video output format
Component Out	480i, 480p, 576i, 576p, 720p or 1080i	Selects video output format. When a DVI/HDMI device is connected, the mode shall be automatically set to Slave.
Component V-Refresh	50 or 60 or 59.94	Configures the video/vertical refresh rate
HDMI Out	-	Displays current display mode of the DVI/HDMI device after EDID negotiation.

### Setup Audio

Use following steps to display **Audio Setup** screen on the OSD menu:

1. Navigate to the **Unit Setup** screen, see **Unit Setup screen on page 23**.
2. Press the down arrow button to select **Audio Setup**.
3. View the details as shown in **Figure 3.15**.

**Figure 3.14: Unity 552 OSD Audio Setup**



Use the **Audio Setup** screen to set and display the audio output options.

**Table 3.8: Audio Output Options**

Option	Possible values	Comments
Audio Port	1 or 2	
Audio Language	A01 or ***	
Audio Routing	Stereo or Left/Right on both	May be used for two languages
Audio Attenuation	0 through 20	
S/PDIF Mode	Passthru, Linear PCM or Off	

### Set LAN-based Decode options

Use following steps to display **Decoder Source** screen on the OSD menu:

1. Navigate to the **Decoder Setup** screen
2. Press the up or down arrow buttons to select **Decoder Source**.
3. Press **Enter**.
4. Press the up or down arrow buttons to select either **LAN-Multicast** or **LAN-Unicast**.
5. Press **Enter**.
6. Select **Activate Settings**.
7. Press **Enter**.

**Figure 3.15: Unity 552 OSD Decoder Source**



Use the **Decoder Source** screen to set and display the LAN Decode options.

**Table 3.9: LAN Decode Options**

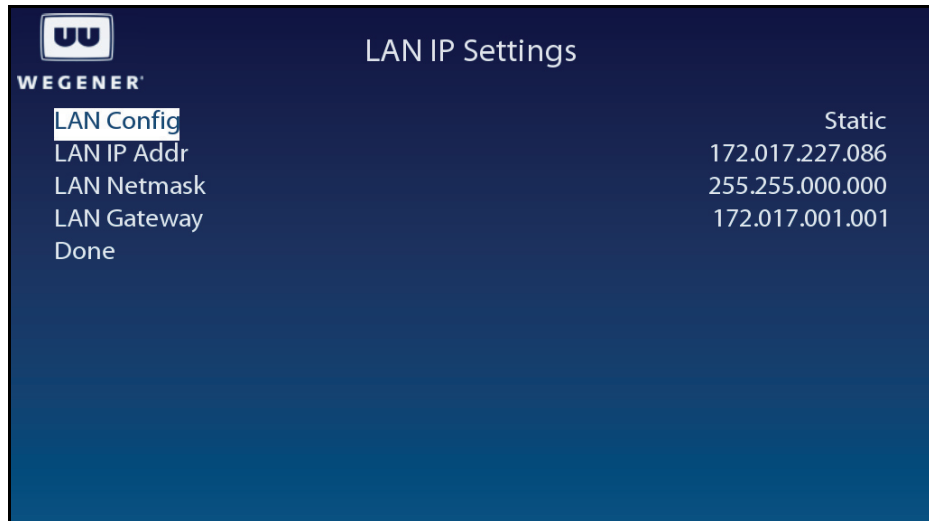
Option	Possible values
<b>IP-Address</b>	Multicast or Unicast IP Address
<b>IP-Port Number</b>	The corresponding IP Port number
<b>Audio Routing</b>	Stereo or Left/Right on both
<b>Audio Attenuation</b>	0 through 20
<b>S/PDIF Mode</b>	Passthru, Linear PCM or Off

### Set LAN IP Networking options

Use following steps to display **LAN IP Setup** screen on the OSD menu:

1. Navigate to the **Unit Setup** screen, see [Unit Setup screen on page 23](#).
2. Press the down arrow button to select **LAN IP Setup**.
3. View the details as shown in **Figure 3.16**.

Figure 3.16: Unity 552 OSD LAN IP Setup



Use the **LAN IP Setup** screen to set and display the networking configuration.

Table 3.10: Networking Configuration Settings

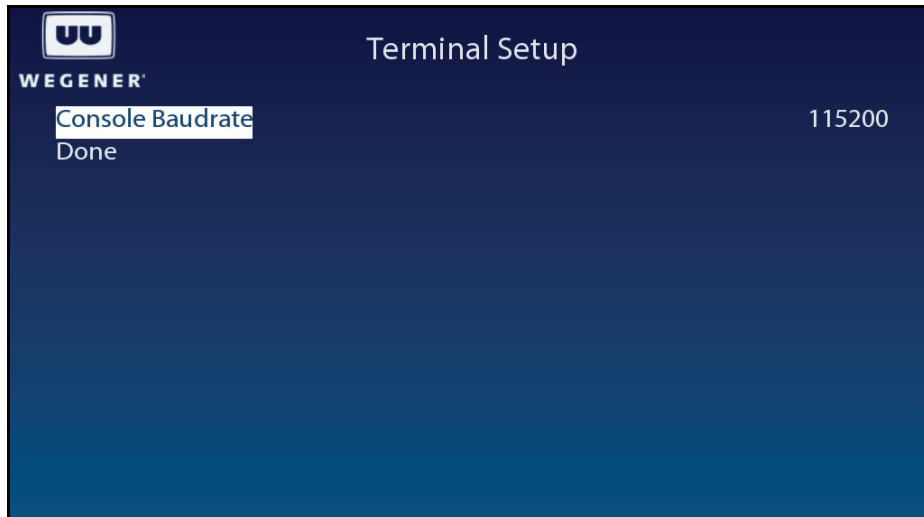
Option	Possible values	Comments
LAN Configuration	Static or DHCP	
LAN IP Address	-	IP Address
LAN Netmask	-	IP Net-mask
LAN Gateway	-	IP Gateway Address

**Set Terminal options**

Use following steps to display **Terminal Setup** screen on the OSD menu:

1. Navigate to the **Unit Setup** screen, see **Unit Setup screen on page 23**.
2. Press the down arrow button to select **Terminal Setup**.
3. View the details as shown in **Figure 3.17**.

**Figure 3.17: Unity 552 OSD Terminal Setup**



Use the **Terminal Setup** screen to set and display the terminal options.

**Table 3.11: Terminal Options**

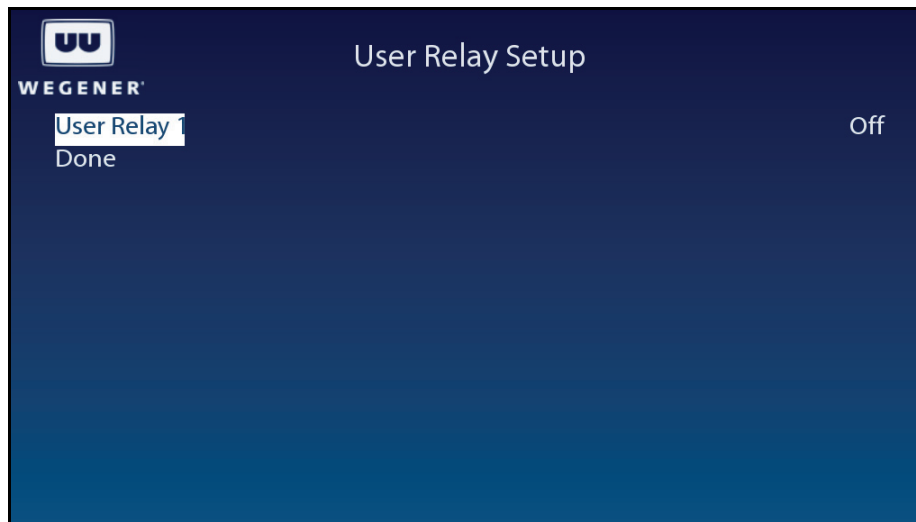
Option	Possible values
Console Baud-rate	2400, 9600, 19200, 38400, 57600, 115200

**Set User Relay**

Use following steps to display **User Relay Setup** screen on the OSD menu:

1. Navigate to the **Unit Setup** screen.
2. Press the down arrow button to select **User Relay Setup**.
3. View the details as shown in **Figure 3.18**

**Figure 3.18: Unity 552 OSD User Relay Setup**



Use the **User Relay Setup** screen to set the User Relay Setup options.

**Table 3.12: User Relay Setup Options**

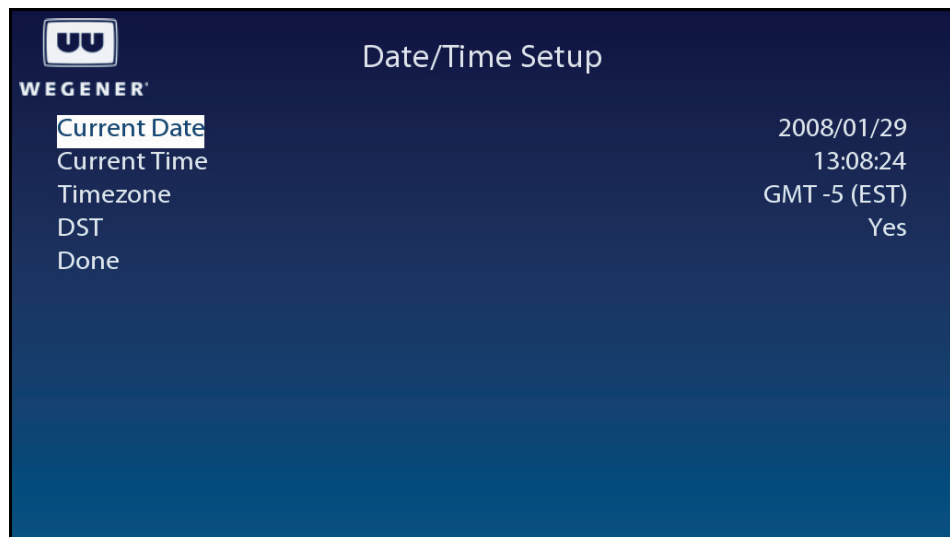
Option	Possible values
User Relay 1	On/Off

**Set Date and Time information**

Use following steps to display **Date/Time Setup** screen on the OSD menu:

1. Navigate to the **Unit Setup** screen, see **Unit Setup screen on page 23**.
2. Press the down arrow button to select **Date/Time Setup**.
3. View the details as shown in **Figure 3.18**

**Figure 3.19: Unity 552 OSD Date/Time Setup**



Use the **Date/Time Setup** screen to set and display the date and time information.

**Table 3.13: Date and Time Information Settings**

Option	Possible values
Current Date	Yyyy/mm/dd
Current Time	Hh:mm:ss
Time zone	All available...
DST	Yes / No

**Set Unit Label**

Use following steps to display **Unit Label Setup** screen on the OSD menu:

1. Navigate to the **Unit Setup** screen, see **Unit Setup screen on page 23**.
2. Press the down arrow button to select **Unit Label**.
3. Press **Enter**.

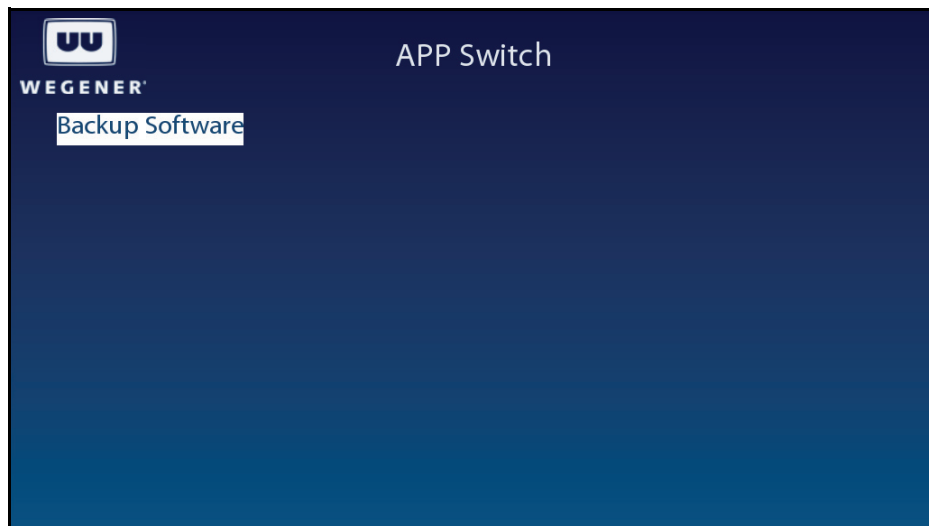
4. When the six-character label is selected, use the up/down and left/right buttons to set to a desired label. Press **Enter** to save the change. Use the left arrow button to go to the previous menu level.

### Switch Application (to different software version)

Use following steps to display **Application Switch** screen on the OSD menu:

1. Navigate to the **Unit Setup** screen, see **Unit Setup screen on page 23**.
2. Press the down arrow button to select **Switch Application**.
3. View the details as shown in **Figure 3.20**.
4. Use the **Application Switch** to run a backup version of the software on the unit. Upon selecting the Backup Software by pressing **Enter**, the system restarts with the different software which is labeled as current. The previously run software is labeled backup. Use the **Version Information** screen to find out about the software versions installed in the system.

**Figure 3.20: Unity 552 OSD Application Switch**



### Monitor Status Information

The following types of status information are available for viewing:

- Signal Quality
- Current Quality
- History This Setting
- Elapsed Times

### Unit Status screen

Use following steps to display the **Unit Status** screen on the OSD menu:

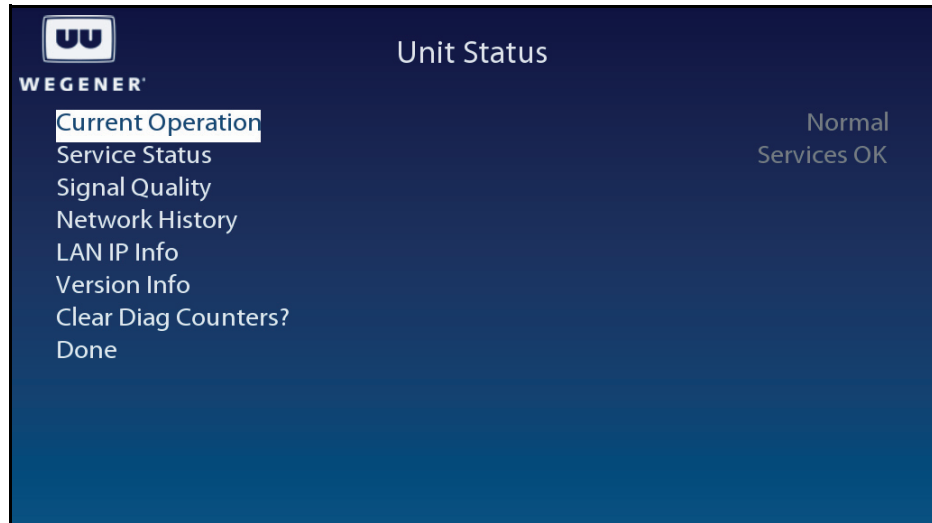
1. Press any push-button on the front-panel to display the **Main Menu**.
2. Press the down arrow button to select **Advanced Setup**.
3. Press **Enter**.
4. Press the down arrow button to select **Unit Status**.
5. Press **Enter**.



6. View the details as shown in **Figure 3.21**.

**Note:** When the unit is locked to a carrier and playing video/audio, the Current Operation is Normal and Service Status is OK.  
If carrier is not locked, Service Status can be **Acquiring Transport**.

**Figure 3.21: Unity 552 OSD Unit Status**

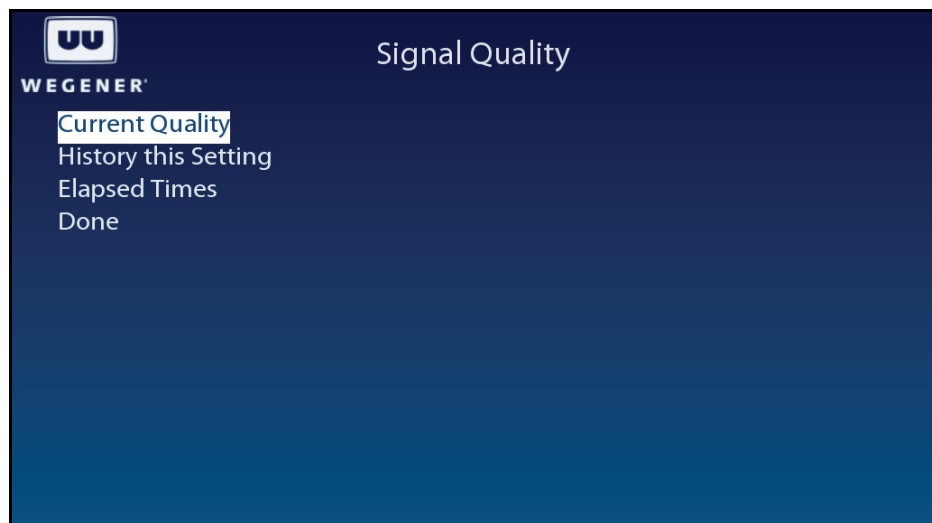


**Signal Quality screen**

Use following steps to display the **Signal Quality** screen on the OSD menu:

1. Navigate to the **Unit Status** screen, see **Unit Status screen** on page 30.
2. Press the down arrow button to select **Signal Quality Status**.
3. View the details as shown in **Figure 3.22**.

**Figure 3.22: Unity 552 OSD Signal Quality Status**



### Current Quality screen

Use following steps to display the **Current Quality** screen on the OSD menu:

1. Navigate to the **Signal Quality** screen, see **Signal Quality screen** on page 31.
2. Press the down arrow button to select **Current Quality**.
3. View the details as shown in **Figure 3.23**.

**Figure 3.23: Unity 552 OSD Current Quality**

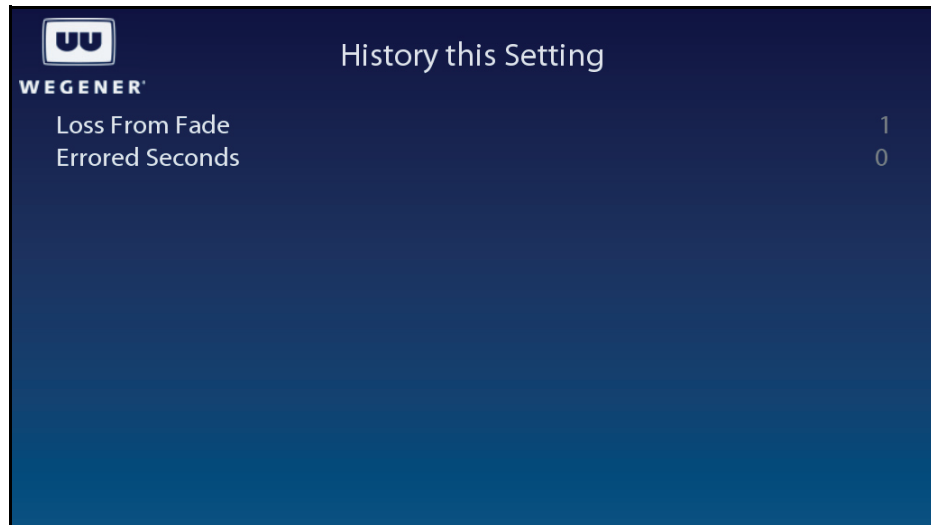


### History This Setting screen

Use following steps to display the **History This Setting** screen on the OSD menu:

1. Navigate to the **Signal Quality** screen. See **Signal Quality screen** on page 31  
**OR** from a **Signal Quality** sub-screen, press the left arrow button to go back to the **Signal Quality** screen.
2. Press the down arrow button to select **History This Setting**.
3. Press **Enter**.
4. View the details as shown in **Figure 3.24**.

Figure 3.24: Unity 552 OSD History This Setting



### Elapsed Times screen

Use following steps to display the **Elapsed Times** screen on the OSD menu:

1. Navigate to the **Signal Quality** screen. See **Signal Quality screen** on page 31 **OR** from a **Signal Quality** sub-screen, press the left arrow button to go back to the **Signal Quality** screen.
2. Press the down arrow button to select **Elapsed Times**.
3. Press **Enter**.
4. View the details as shown in **Figure 3.25**.

Figure 3.25: Unity 552 OSD Elapsed Times

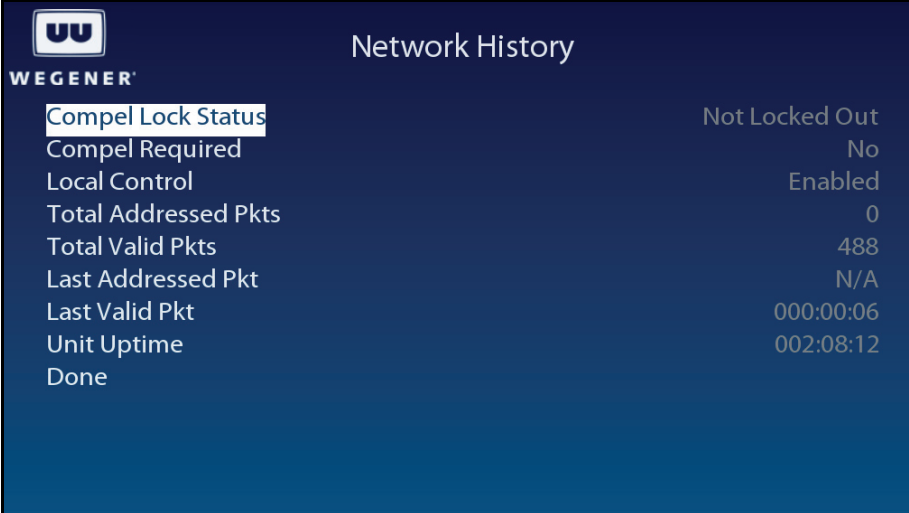



### Query Network History

Use following steps to display the **Network History** screen on the OSD menu:

1. Navigate to the **Unit Status** screen, see **Unit Status screen** on page 30.
2. Press the down arrow button to select **Network History**.
3. Press **Enter**.
4. View the details as shown in **Figure 3.26**.

**Figure 3.26: Unity 552 OSD Network History**



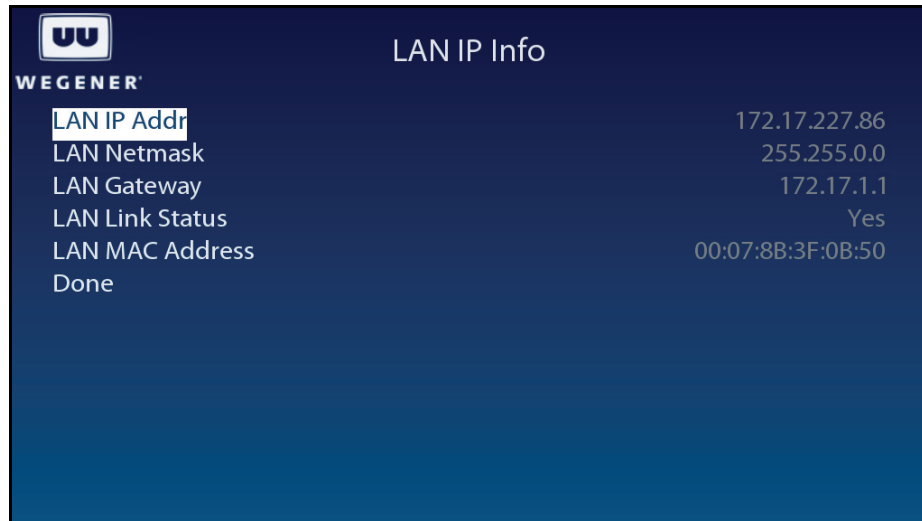
	Network History
WEGENER®	
Compel Lock Status	Not Locked Out
Compel Required	No
Local Control	Enabled
Total Addressed Pkts	0
Total Valid Pkts	488
Last Addressed Pkt	N/A
Last Valid Pkt	000:00:06
Unit Uptime	002:08:12
Done	

### Display LAN IP Network information

Use following steps to display **LAN IP Info** screen on the OSD menu:

1. Navigate to the **Unit Status** screen, see **Unit Status screen** on page 30.
2. Press the down arrow button to select **LAN IP Info**.
3. Press **Enter**.
4. View the details as shown in **Figure 3.27**.

Figure 3.27: Unity 552 OSD LAN IP Info

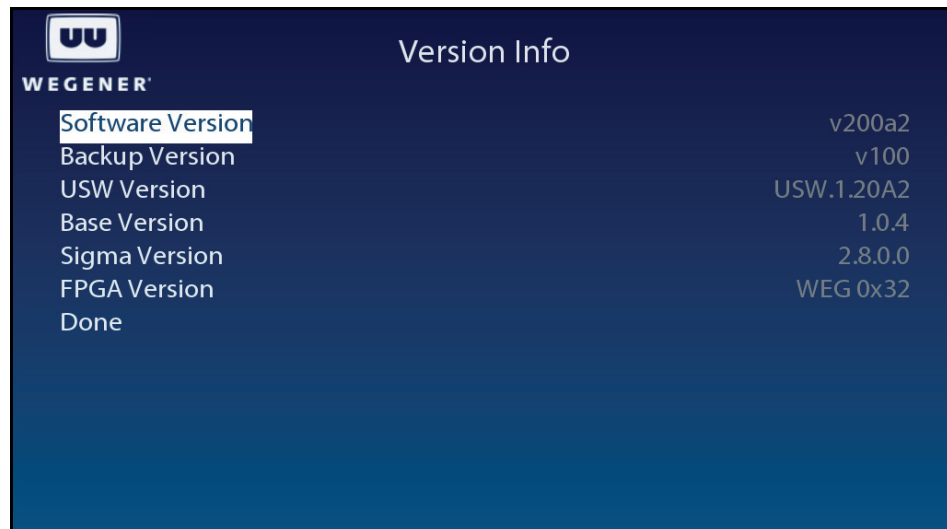


**Find Software Version information**

Use following steps to display **Version Info** screen on the OSD menu:

1. Navigate to the **Unit Status** screen, see **Unit Status screen** on page 30.
2. Press the down arrow button to select **Version Info**.
3. Press **Enter**.
4. View the details as shown in **Figure 3.28**.

Figure 3.28: Unity 552 OSD Version Info



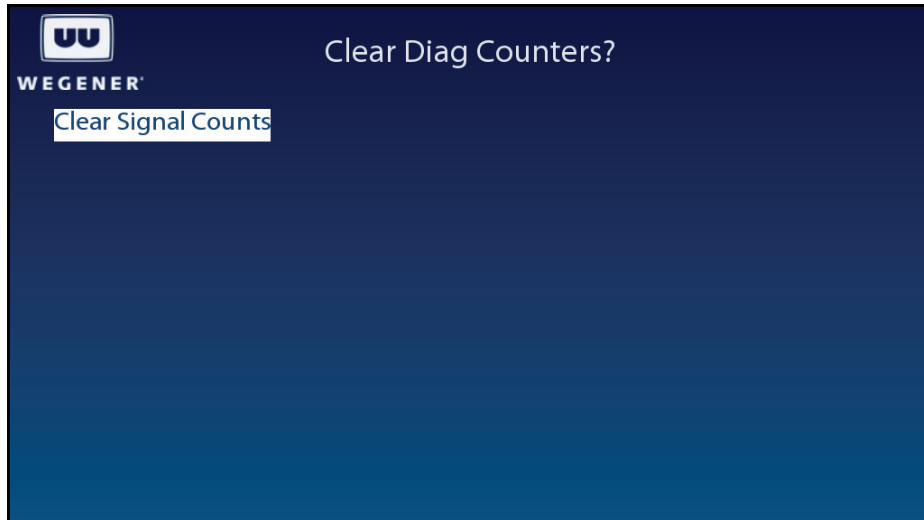
**Clear Statistics used for diagnosis**

Use following steps to display **Clear Signal Counters** screen on the OSD menu:

1. Navigate to the **Unit Status** screen, see **Unit Status screen** on page 30.
2. Press the down arrow button to select **Clear Signal Counters**.

3. To reset the statistical information for diagnosis, press **Enter**.
4. View the details as shown in **Figure 3.29**.

**Figure 3.29: Unity 552 OSD Clear Signal Counters**



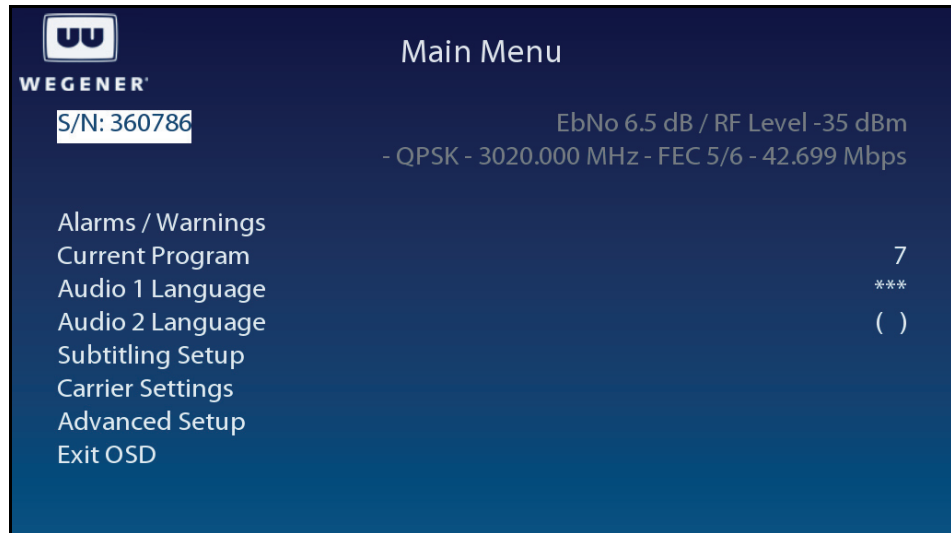
### 3.3 View Alarms/Warnings

Generally, the IRD functions by producing an Audio/Video/Data output. In some cases, such as sudden loss of carrier, attempting to view an unauthorized program or RF level is too low, an Alarm or Warning shall be generated. Usually, user intervention is necessary to resolve an Alarm or a Warning. In addition to flashing the front-panel LED, more information can be found using the OSD screens. A list of Alarms and Warnings can be found in **Section 3.1 Controlling and Monitoring**.

When an Alarm or a Warning condition arises, the **Main Menu** OSD screen shall have an entry to display Alarms/Warnings.

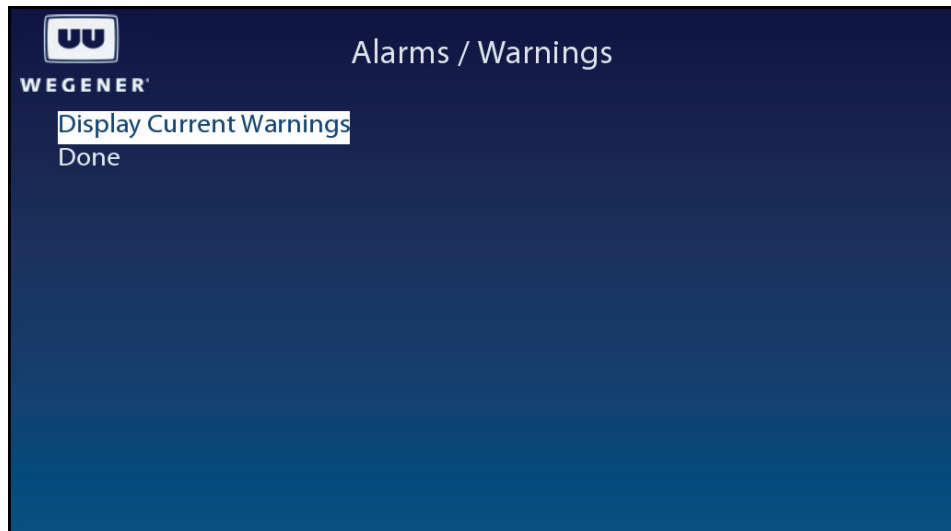
1. Press any push-button on the front-panel to display the **Main Menu**.

Figure 3.30: Unity 552 OSD Main Menu



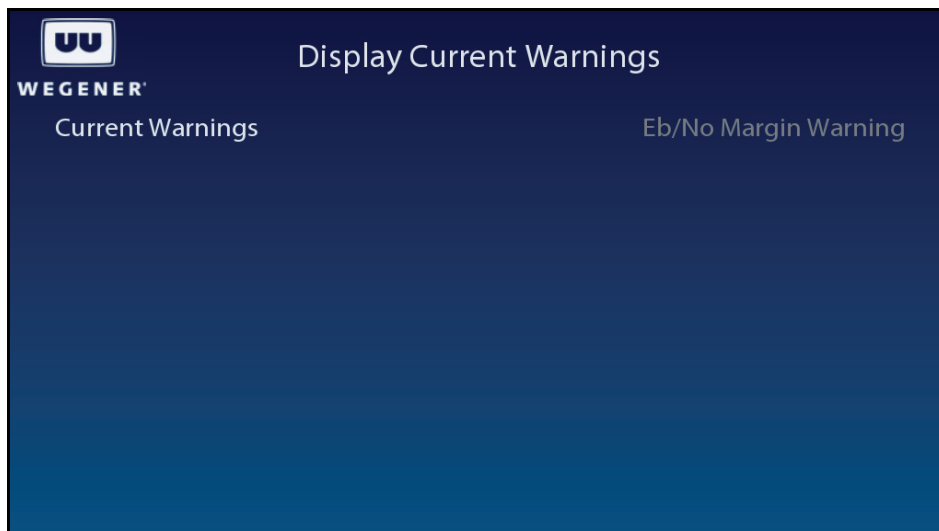
2. Press the down arrow button to select **Alarms/Warnings**.
3. Press **Enter**.

Figure 3.31: Unity 552 OSD Alarms / Warnings



4. Select **Display Current Warnings**.
5. Press **Enter**.

Figure 3.32: Unity 552 OSD Display Current Warnings





## CHAPTER 4 SEARCH FUNCTIONS

### 4.1 Perms/Temps/Searching & Settings

The term "settings" is used throughout this document and includes the following set of parameters:

**Table 4.1: Settings Parameters for the Unity 552**

Setting	Description
<b>Modulation</b>	S28PSK/S2QPSK/QPSK
<b>RF Switch/Pol</b>	If IRD is configured for Universal LNB, H or V are valid. Specify RF port 1-4 for four-port RF configuration.
<b>Carrier</b>	The downlink frequency specified in MHz with up to two decimal places. This value's absolute difference with the LNB LO frequency is used as specified in the technical specifications. (e.g. 3720.00 MHz).
<b>Data_rate</b>	Data rate is specified in Mbps with up to three decimal places. See the technical specifications for the applicable range. (e.g. 41.470 Mbps).
<b>Fec_rate</b>	The inner FEC code ratio and can have one of the values specified in the technical specifications. (e.g. 3/4).
<b>Tag_site</b>	Value of 0-14 (15 is a special NO Tag case) specifying the location of this carrier's tag frequency.
<b>[program]</b>	The program number from the MPEG Program Association Table. This must be number from 1 to 65535. If omitted or an '*' is entered, the unit will select the first available program stream. Note that this number points to the PID for the Program Map Table for what we might call a "service" (a single video channel and associated audio signals).
<b>Label</b>	A string of characters for identification.

The IRD is acting on one of three groups of settings at any given time, each of which is described in **Table 4.2**

Table 4.2: Unity 552 Settings Groups

Settings Group	Description
<b>Temp</b>	<p>These settings are entered via <b>Compel</b> or the TEMP / TEMPCH terminal commands. The unit is said to be inserting when it is configured to the temp settings. The maximum length of an insert is approximately 18 hours (65535 seconds). An insert terminates when:</p> <ol style="list-style-type: none"> <li>1. it times out,</li> <li>2. an ABORT command is received,</li> <li>3. power is cycled, or</li> <li>4. an invalid header is seen.</li> </ol> <p>Any Temp commands received while the receiver is currently inserting are ignored. If a Perm command is received while inserting, the perm settings are updated but not acted on until the insert is terminated.</p>
<b>Perm</b>	<p>The perm settings are entered via <b>Compel</b>, the PERM / PERMCH terminal, or OSD Carrier Select screen, or automatically from within a search mode. (See below.) The perm settings are the only settings group that are stored in NVRAM.</p>
<b>Search</b>	<p>The search settings are active while in Carrier Search or Header Search. When the unit finds what it is looking for in the search mode, it copies the search settings to the perm settings. These are then considered to be the active settings.</p>

## 4.2 Settings Table (or Search Table)

This is an internal database retained in non-volatile memory (unaffected by loss of power). It contains a list of alternate carrier settings. Each valid entry is a complete description of a carrier/program setting (as used in a Perm command). This list is entered at customer request at the factory, and may be edited using **Compel** commands or ADDS and DELS terminal commands. The entries are referred to as "Table Entries" or "Search Settings Entries", etc.

The Settings Table is typically used for one of two possible operations. The first is for local users to quickly pre-program carrier/program combinations and tune the IRD to one of them. The second is as a source of alternate fallback carriers for times when the "normal" carrier is lost or has a failure in its **Compel** stream.

## 4.3 Signal Quality Monitoring

The **Unity 552** provides monitoring of different parameters of RF signal quality while tracking a carrier.

**Note:** Beyond 15 dB, Eb/No readings are not accurate. For the following inner FEC ratios, display any Eb/No values above the limits shown as >xx dB: R=1/2, Eb/No >14.0 dB; R=2/3, Eb/No >13.5 dB; R=3/4, Eb/No >13.0 dB; R=5/6, Eb/No >12.5 dB; R=7/8, Eb/No >12.0 dB. Note that margin may also "top out" as a >yy dB value also.

**Table 4.3: Signal Quality Information**

Parameter	Description
<b>Modulation</b>	8PSK/QPSK/S1
<b>RF Switch/Pol</b>	If IRD is configured for Universal LNB, H or V are valid. Specify RF port 1-4 for four-port RF configuration.
<b>Carrier</b>	The downlink frequency specified in MHz with up to two decimal places. This value's absolute difference with the LNB LO frequency is used as specified in the technical specifications.
<b>Data_rate</b>	Data rate is specified in Mbps with up to three decimal places. See the technical specifications for the applicable range.
<b>Fec_rate</b>	The inner FEC code ratio and can have one of the values specified in the technical specifications.
<b>Tag_site</b>	Value of 0-14 (15 is a special NO Tag case) specifying the location of this carrier's tag frequency
<b>[program]</b>	The program number from the MPEG Program Association Table. This must be number from 1 to 65535. If omitted or an '*' is entered, the unit will select the first available program stream. Note that this number points to the PID for the Program Map Table for what we might call a "service" (a single video channel and associated audio signals).
<b>Label</b>	A string of characters for identification.

## 4.4 Frequency Tagging

### General Rules

Frequency Tagging is a mechanism that is used to ensure that an IRD is locked to desired carrier settings. Sometimes, due to minor offsets in LNB and frequency errors, tuning may be off by a couple of MHz. To prevent locking to some other near by (adjacent) carrier while looking for an intended carrier, the acquired carrier contains "frequency tags." These tags are inserted in **Compel** control stream at the uplink to identify the intended carrier frequency. Traditionally, the tags have been sent at a rate of every 100 or 125 ms.

The **Unity 552** supports both single and multiple tags. A carrier settings with "Tag Site" number, specifies which of the possible tags the IRD need to use. The **Unity 552** allows for Tag Site designations from 0 to 15, inclusive. The tag '15' is reserved for an exception. If the Carrier Setting shows Tag Site '15', the Carrier Tags are not required.

The SCPC Frequency Tag Protocol Functional Specification (WCI #16803) gives more details.

This page intentionally left blank

## CHAPTER 5 CUSTOMER SERVICE

### 5.1 Warranty

The following warranty applies to all **Wegener Communications** products including the **Unity 552**:

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 will be prepaid by the customer. There are no other warranties, express or implied, except as stated herein.

### 5.2 Technical Support

If the unit should fail to perform as described, if you need help resolving problems with your **Unity 552**, or for questions about obtaining service for your **Unity 552**, please contact **Wegener Communications Customer Service** at (770) 814-4057, Fax (678) 624-0294, or e-mail [service@wegener.com](mailto:service@wegener.com).

To return a product for service:

1. Obtain a **Return Material Authorization (RMA)** number by completing and faxing a copy of the **RMA Request Form** to (678) 624-0294. Or you may e-mail the same information to: [service@wegener.com](mailto:service@wegener.com).
2. To help us identify and control returned units, plainly write the RMA number on the outside of the product-shipping container. This will help us return your unit to you as quickly as possible.
3. Return the product, freight prepaid, to the address below:

**Service Department RMA#** \_\_\_\_\_  
**Wegener Communications, Inc.**  
**359 Curie Drive**  
**Alpharetta, GA 30005**

**Note:** All returned material must be shipped freight prepaid. C.O.D. shipments will not be accepted.

This page intentionally left blank

# APPENDIX 1 TERMINAL DIAGTERM COMMANDS

The Unity 552 provides command-line interface, Diagterm. The diagterm can be accessed either using a RS-232 serial port or logging through LAN IP interface using Linux. The diagterm commands are used to control or monitor the IRD operations. This method may be used in conjunction other ways to control or monitor, namely, **Compel** and OSD.

## Apx 1.1 Diagterm Group Commands

Some of the Diagterm terminal commands are grouped under common group name. The commands belonging to a group perform related functions. Following is a list of groups and their commands along with synopsis for each. A general syntax for the group command is:

```
OK> <group> <command> [arguments]
```

Use Help to find more information on the command, its options, etc. For example:

```
OK> help rp
Help for group [ rp ]:
===== [ Commands ] =====
ca      :   Conditional Access
rec     :   Report Auto Recovery status
rf      :   Report RF Parameters

OK> rp rf
....
```

**Table Apx 1.1: Diagterm Group Commands**

Group Name: rp	
Command	Synopsis
ca	Report Conditional Access Information
rec	Report Recovery Status
rf	Report RF Parameters
Group Name: r	
Command	Synopsis
c	Report Carrier Status
st	Report Preset Table
s	Report Settings Status
p	Report Configuration Information
ns	Report Network Services Status
http	Report HTTP Information
g	Report <b>Compel</b> Group Table
r	Report Relays Status

<b>groups</b>	Report List of Groups
<b>Group Name: rd</b>	
<b>Command</b>	<b>Synopsis</b>
<b>ca</b>	Report Conditional Access diagnostics
<b>asi</b>	Report ASI diagnostics
<b>rf</b>	Report Carrier Acquisition/Tracking diagnostics
<b>Group Name: lan</b>	
<b>Command</b>	<b>Synopsis</b>
<b>ip</b>	Set Static LAN IP Address of the Unit
<b>gateway</b>	Set Network Gateway for LAN Interface
<b>mode</b>	Set LAN Addressing Mode (DHCP, STATIC,WEG)
<b>setup</b>	Set IP Address and Subnet mask for the LAN port
<b>subnet</b>	Set static LAN subnet mask
<b>Group Name: output</b>	
<b>Command</b>	<b>Synopsis</b>
<b>aspect</b>	Set output aspect ratio of the display device 4x3;16x9;14x9
<b>cc</b>	Set closed captioning mode [tv cc1 cc2 cc3 cc4 dtv]
<b>scaling</b>	Set output display scaling mode [letterbox panscan]
<b>Group Name: sigma</b>	
<b>Command</b>	<b>Synopsis</b>
<b>ver</b>	Print version information
<b>Group Name: http</b>	
<b>Command</b>	<b>Synopsis</b>
<b>proxy</b>	Set the proxy server for http
<b>Group Name: snmp</b>	
<b>Command</b>	<b>Synopsis</b>
<b>community</b>	Set SNMPV2 Community Access String

## Apx 1.2 Diagterm Individual Commands

The diagterm individual commands are not grouped together under common groups. These commands perform functions such as setting audio attenuation or turning on LNB power.



Following is a list of commands along with synopsis. A general syntax for the group command is:

OK> <command> [arguments]

Use Help to find more information on a specific command, its options, etc. For example:

```
OK> help snr
Snr: margin_offset – Set SNR margin offset
Margin_offset: 1.0 – 10.5
```

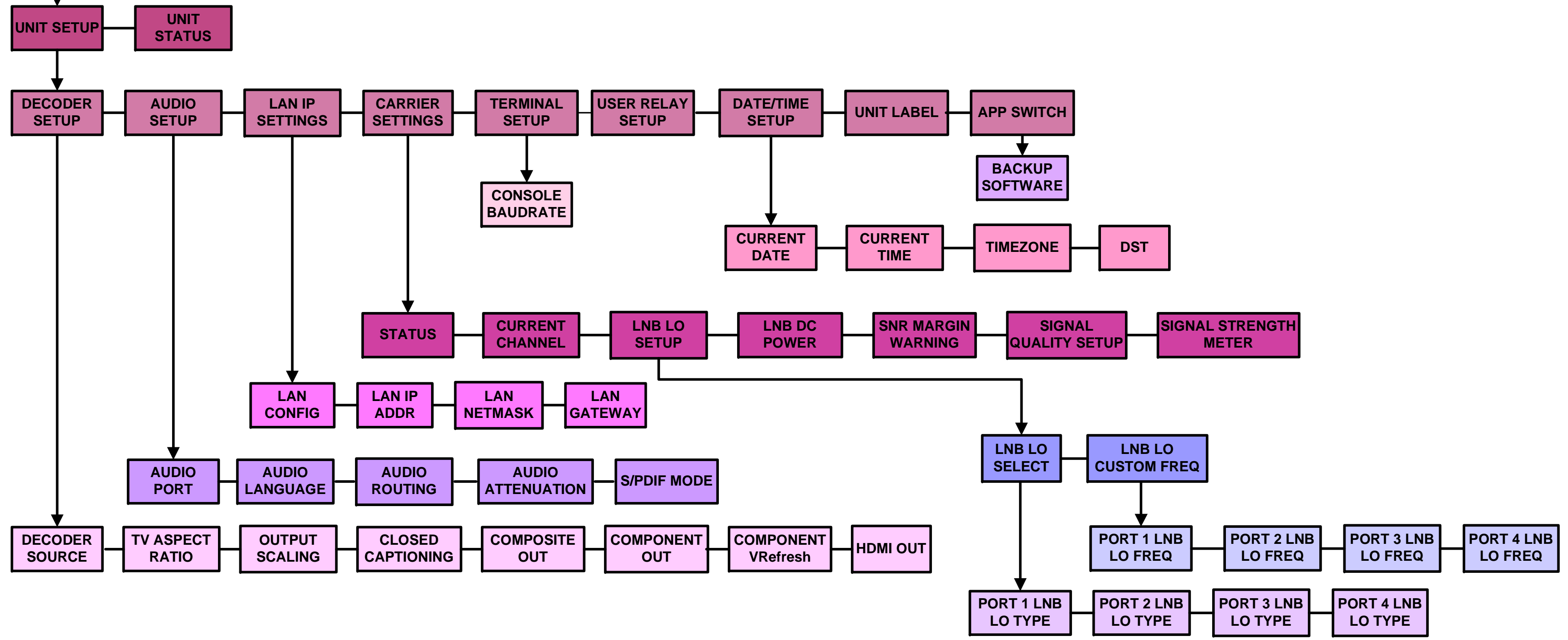
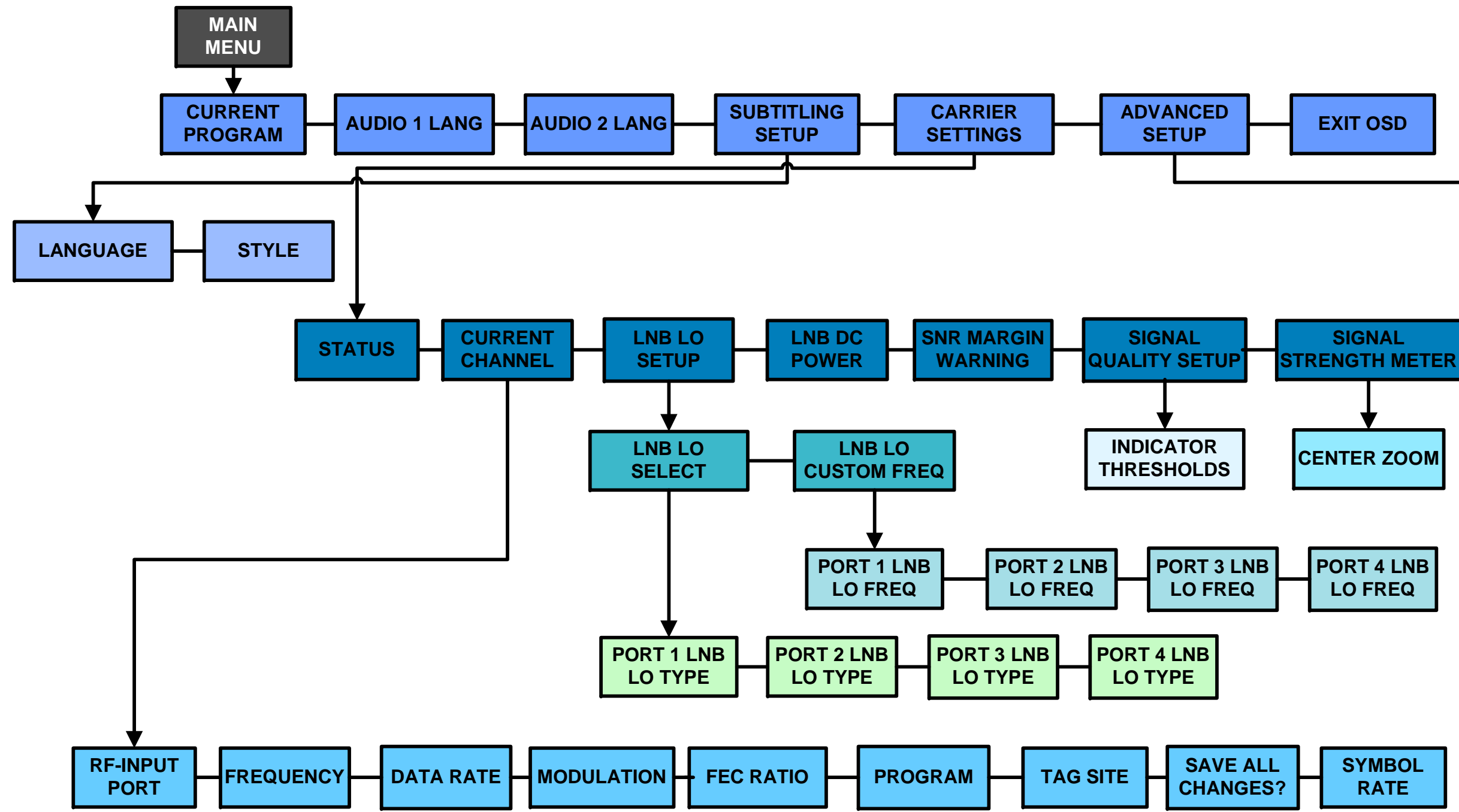
**Table Apx 1.2: Diagterm Individual Commands**

Command	Synopsis
<b>abortrec</b>	Tune to Last Successful (S) or Last commanded (C)
<b>abort</b>	Abort Temporary Insert
<b>adds</b>	Add Location Settings
<b>ap</b>	Audio Program
<b>ap2</b>	Audio Program 2
<b>audatten</b>	Audio Attenuation
<b>audroute</b>	Set Audio Routing (S-Stereo; 1 or 2 Left/Right; R-Reverse Stereo)
<b>contentaccess</b>	Set access level for content on HDD (Read-only or Full)
<b>dels</b>	Delete Location Settings
<b>errors</b>	Set Alarm Threshold
<b>ifconfig</b>	Display current ETHERNET device(s) configuration
<b>lnbpwr</b>	Turn LNB Power ON/OFF
<b>lnbselect</b>	Set LNB Mode UNIV/ASTRA or STD/LO
<b>margin</b>	Set margin offset (Range: 1.0 - 10.5 dB)
<b>movep</b>	Move Preset entry (source and destination entry #'s)
<b>permch</b>	Set perm settings from search table (Position: 1-48)
<b>perm</b>	Set Perm Settings
<b>re</b>	Turn solid-state Relays On or Off
<b>savep</b>	Save current Settings to a Preset entry
<b>Service</b>	Enable or Disable named service
<b>setlnb</b>	Set LNB LO Frequency
<b>settimeout</b>	Set Timeout (Source #2-5 and time)
<b>set</b>	Set Individual Carrier Parameters
<b>snr</b>	Set SNR margin offset
<b>spdif</b>	Set SPDIF Mode

Command	Synopsis
<b>sp</b>	Select default program for carrier (program #)
<b>tempch</b>	Set temp settings from settings table
<b>temp</b>	Set temp settings

## APPENDIX 2 MENU TREE

The following page shows the LCD navigation for the **Unity 552**.



# APPENDIX 3 RMA REQUEST FORM

## Apx 3.1 Return Materials Authorization Request Form

<http://www.wegener.com/custservrma.htm>

Figure Apx 3.1: RMA Request Form

E-mail: <a href="mailto:service@wegener.com">service@wegener.com</a>		Fax: (678) 624-0294	
Company Name:	_____		
Bill-To Address:	_____ _____ _____		
Ship-To Address:	_____ _____ _____		
Contact Name:	_____		
Phone #	( ) - _____	Fax #:	( ) - _____
Complete Model #:	_____		
Serial #:	_____		
In Warranty:	Yes <input type="checkbox"/>	No	<input type="checkbox"/>
Problem:	_____ _____ _____		
Additional Comments:	_____ _____ _____ _____		

This page intentionally left blank

# INDEX

## Numerics

22 KHz tone . . . . . 9

## A

address  
     customer service . . . . . 43  
     manual comments . . . . . 1  
     return materials . . . . . 43  
     Wegener Communications . . . . . ii  
 Advanced Setup . . . . . 22  
 airflow . . . . . 11  
 alarms . . . . . 5, 14, 15  
 ambient operating temperature . . . . . 11  
 Application Switch . . . . . 30  
 arrows . . . . . 14  
 Audio 1 & 2 . . . . . 4  
 audio decoder . . . . . 8  
 Audio Out. . . . . 3  
 audio output. . . . . 8, 25  
 audio parameters. . . . . 8  
 audio ports. . . . . 4  
 Audio Setup. . . . . 25

## B

baud rates . . . . . 9

## C

Carrier . . . . . 39, 41  
 Carrier Settings . . . . . 17  
 chassis. . . . . 9, 10  
 circuit overload . . . . . 12  
 Clear Signal Counters . . . . . 35  
 closed captioning. . . . . 7, 8, 24, 46  
 COMPEL . . . . . 2, 13, 16, 18, 40, 41  
     CA cipher . . . . . 2  
     CA Conditional Access. . . . . 2  
     features . . . . . 2  
     field-upgradeable . . . . . 2  
     network. . . . . 2  
     network control. . . . . 2  
     satellite network control . . . . . 2  
 Component Out. . . . . 25  
 component video . . . . . 3  
 component video output . . . . . 8  
 Component V-Refresh. . . . . 25  
 Composite Out. . . . . 25  
 composite video. . . . . 3  
 composite video output . . . . . 7  
 connections . . . . . 2  
 connectors . . . . . 3

copyright . . . . . ii  
 current . . . . . 9  
 Current Channel . . . . . 17  
 Current Quality . . . . . 32  
 customer service . . . . . 51  
     phone number . . . . . 43  
 C-Video . . . . . 3

## D

Data\_rate. . . . . 39, 41  
 Date/Time Setup . . . . . 29  
 DB-9 female . . . . . 4  
 DC IN. . . . . 5  
 decoder . . . . . 6  
     integrated receiver . . . . . 1  
     video. . . . . 6  
 Decoder Setup . . . . . 24, 26  
 desktop installation . . . . . 12  
 DHCP . . . . . 27, 46  
 diagterm commands . . . . . 45

## E

Eb/No readings . . . . . 40  
 Elapsed Times. . . . . 33  
 e-mail

    customer service . . . . . 43  
     return materials . . . . . 43

ethernet. . . . . 4  
 external input/output . . . . . 3

## F

fax number  
     customer service . . . . . 43  
     manuals . . . . . 1  
     return materials . . . . . 43  
     Wegener Communications. . . . . ii  
 features . . . . . 2  
 Fec\_rate . . . . . 39, 41  
 frequency. . . . . 9  
 frequency tagging . . . . . 41  
 front panel  
     buttons . . . . . 14  
     controls. . . . . 13

## G

general information . . . . . 1  
 GPIO . . . . . 4  
 grounded . . . . . 12

## H

HDMI . . . . . 3, 4

HDMI Out . . . . . 25  
 History This Setting. . . . . 32

## I

impedance. . . . . 8  
 Indicator Threshold . . . . . 20  
 indicators. . . . . 13  
 Input/Output . . . . . 4  
 inspection . . . . . 11  
 integrated receiver-decoder . . . . . 1  
 interfaces. . . . . 3  
 IRD . . . . . 39

## L

label. . . . . 39, 41  
 LAN . . . . . 27  
 LAN Decode options . . . . . 26  
 LAN IP Info . . . . . 34  
 LAN IP Setup . . . . . 26  
 LCD  
     navigation. . . . . 49  
 LNB DC Power . . . . . 9  
 LNB Setup. . . . . 18  
 location . . . . . 11

## M

manual overview . . . . . 1  
 menu tree . . . . . 49  
 modulation. . . . . 39, 41  
 mounting . . . . . 11

## N

Network History. . . . . 34  
 networking options . . . . . 26

## O

operation . . . . . 13  
 options. . . . . 2  
 OSD screens  
     Advanced Setup. . . . . 22  
     Application Switch . . . . . 30  
     Audio Setup . . . . . 25  
     Carrier Settings . . . . . 17  
     Clear Signal Counters . . . . . 35  
     Current Channel. . . . . 17  
     Current Quality. . . . . 32  
     Date/Time Setup . . . . . 29  
     Decoder Setup. . . . . 24, 26  
     Elapsed Times . . . . . 33  
     History This Setting . . . . . 32

Indicator Threshold . . . . .	20	<b>R</b>	rack mounting . . . . .	11, 12	Signal Quality . . . . .	31
LAN IP Info . . . . .	34		RCA Phono Jack . . . . .	3	information . . . . .	41
LAN IP Setup . . . . .	26		RCS Phone Jack . . . . .	3	monitoring . . . . .	40
LNB Setup . . . . .	18		rear panel connections . . . . .	2	Signal Quality Setup . . . . .	19
Network History . . . . .	34		reliable earthing . . . . .	12	Signal Strength Meter . . . . .	21
Signal Quality . . . . .	31		Return Material Authorization . .	43	Static . . . . .	27
Signal Quality Setup . . . . .	19		Return Materials Authorization .	51	Sub-titling Setup . . . . .	21
Signal Strength Meter . . . . .	21		RF . . . . .	3, 40	<b>T</b>	
Sub-titling Setup . . . . .	21		Switch/Pol . . . . .	39	Tag_site . . . . .	39, 41
Terminal Setup . . . . .	27		RF characteristics . . . . .	5	Temp . . . . .	40
Unit Label Setup . . . . .	29		RF input . . . . .	5	terminal diagterm commands . .	45
Unit Setup . . . . .	23		RF Switch/Pol . . . . .	41	Terminal Setup . . . . .	27
Unit Status . . . . .	30		RMA . . . . .	43	<b>U</b>	
User Relay Setup . . . . .	28		RMA request form . . . . .	51	Unit Label Setup . . . . .	29
Version Info . . . . .	35		RS-232 . . . . .	4	Unit Setup . . . . .	23
<b>P</b>			RS232 . . . . .	9	Unit Status . . . . .	30
Perm . . . . .	40		RS-232 Port . . . . .	3	unpacking . . . . .	11
phone jack . . . . .	4	<b>S</b>			USB . . . . .	4
phone number			S/PDIF . . . . .	3, 4	User Relay Setup . . . . .	28
customer service . . . . .	43		search		<b>V</b>	
Wegener Communications . . . .	ii		functions . . . . .	39	Version Information . . . . .	35
port . . . . .	4		settings . . . . .	40	video decoder . . . . .	6
power consumption . . . . .	9, 12		table . . . . .	40	voltage	
precautions . . . . .	10, 11		selectable services . . . . .	9	AC . . . . .	9
product overview . . . . .	1		serial port . . . . .	4, 9	DC . . . . .	9
product specifications . . . . .	2		settings		<b>W</b>	
program . . . . .	39, 41		groups . . . . .	40	warranty . . . . .	43
<b>Q</b>			parameters . . . . .	39	weight . . . . .	9
QPSK . . . . .	2		table . . . . .	40		





© 2008 Wegener Communications, Inc. All rights reserved.

800089-01 Rev. C  
Third Edition: April 2008

**Wegener Communications, Inc.**  
**Technology Park/Johns Creek**  
**11350 Technology Circle**  
**Duluth, GA 30097-1502**

**Phone: 770-814-4000**  
**Fax: 770-623-0698**