Measurement of RF Emissions from a Model No. GLXD4R Transmitter

Shure Incorporated 5800 West Touhy Avenue Niles, IL 60714-4608

For

P.O. Number Date Tested Test Personnel Test Specification

4500348241 December 15 - 29, 2016 Tylar Jozefczyk FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.247 for Digital Modulation Intentional Radiators Operating within The bands 2400-2483.5MHz Industry Canada RSS-GEN Industry Canada RSS-247 ANSI C63.10 2013

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REVISION HISTORY

Revision	Date	Description
—	1 Mar 2017	Initial release



Measurement of RF Emissions from a TRx, Model No. GLXD4R Transmitter

1. INTRODUCTION

1.1. Scope of Tests

This report represents the results of the series of radio interference measurements performed on a Shure Incorporated TRx, Model No. GLXD4R, Serial No. 4162880360 95A30908 04, transmitter (hereinafter referred to as the EUT). The EUT is a digital modulation transmitter. The transmitter was designed to transmit in the 2400-2483.5 MHz band using an External Omnidirectional antenna. The EUT was manufactured and submitted for testing by Shure Incorporated located in Niles, IL.

1.2. Purpose

The test series was performed to determine if the EUT meets the conducted and radiated RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Sections 15.207 and 15.247 for Intentional Radiators. The test series was also performed to determine if the EUT meets the conducted RF emission requirements of the Industry Canada Radio Standards Specification, RSS-Gen, Section 7.2.4 and the radiated RF emission requirements of the Industry Canada Radio Standards Specification, RSS-210, Annex 8 for transmitters. Testing was performed in accordance with ANSI C63.4-2014.

1.3. Deviations, Additions and Exclusions

There were no deviations, additions to, or exclusions from the test specification during this test series.

1.4. EMC Laboratory Identification

This series of tests was performed by Elite Electronic Engineering Incorporated of Downers Grove, Illinois. The laboratory is accredited by The American Association for Laboratory Accreditation (A2LA). A2LA Certificate Number: 1786.01.

1.5. Laboratory Conditions

The temperature at the time of the test was 22.4°C and the relative humidity was 18%.

2. APPLICABLE DOCUMENTS

The following documents of the exact issue designated form part of this document to the extent specified herein:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 15, Subpart C, dated 1 October 2016
- ANSI C63.4-2014, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"
- ANSI C63.10-2013, " American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"
- Federal Communications Commission Office of Engineering and Technology Laboratory Division Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under Section 15.247, October 4, 2012
- Industry Canada Radio Standards Specification, RSS-Gen, "General Requirements for Compliance of Radio Apparatus", Issue 9, August 2016



 Industry Canada Radio Standards Specification, RSS-247, "Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices", Issue 1, May 2015

3. EUT SETUP AND OPERATION

3.1. General Description

The EUT is a Shure Incorporated, TRx, Model No. GLXD4R. A block diagram of the EUT setup is shown as Figure 1.

3.1.1.Power Input

The EUT obtained 15VDC power through 2 leads from a Shure power supply, Model No. PS43US. The power supply received 120V 60Hz power through low-pass powerline filters on the wall of the shielded enclosure. The 15VDC power from the power supply was provided to the EUT through a 2 wire, 2-meter long unshielded cord. Each primary lead was connected through a line impedance stabilization network (LISN) which was located on the ground plane. The network complies with the requirements of Paragraph 4.1.2 of ANSI C63.4-2014.

3.1.2. Peripheral Equipment

The following peripheral equipment was submitted with the EUT:

Item	Description
Laptop	Ran program changing transmit and receive frequencies and bandwidths.

3.1.3.Grounding

The EUT was grounded only through the third wire of its input power cord.

3.2. Operational Mode

For all tests the EUT and all peripheral equipment were placed on an 80cm high non-conductive stand. The EUT was energized.

For all tests, the EUT was placed on an 80cm high non-conductive stand. The EUT was energized. The unit was programmed to operate in one of the following modes:

- Transmit at 2404MHz
- Transmit at 2442MHHz
- Transmit at 2478MHHz

Mode 1 - Full Bandwidth: Transmitting at full bandwidth. Mode 2 - Half Bandwidth: Transmitting at half bandwidth.

3.3. EUT Modifications

No modifications were required for compliance.

4. TEST FACILITY AND TEST INSTRUMENTATION

4.1. Shielded Enclosure

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. With the exception of the floor, the reflective surfaces of the shielded chamber are lined with ferrite tiles on the walls and ceiling. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2014 for site attenuation.



4.2. Test Instrumentation

The test instrumentation and auxiliary equipment used during the tests are listed in Table 9-1.

Conducted and radiated emission measurements were performed with a spectrum analyzer. This receiver allows measurements with the bandwidths and detector functions specified in the requirements. The receiver bandwidth was 120kHz for the 30MHz to 1000MHz radiated emissions data and 1MHz for the 1000MHz to 5000MHz radiated emissions data.

4.3. Calibration Traceability

Test equipment is maintained and calibrated on a regular basis with a calibration interval not greater than two years. All calibrations are traceable to the National Institute of Standards and Technology (NIST).

4.4. Measurement Uncertainty

All measurements are an estimate of their true value. The measurement uncertainty characterizes, with a specified confidence level, the spread of values which may be possible for a given measurement system.

The measurement uncertainty for these tests is presented below:

Conducted Emissions Measurements				
Combined Standard Uncertainty	1.07	-1.07		
Expanded Uncertainty (95% confidence)	2.1	-2.1		

Radiated Emissions Measurements					
Combined Standard Uncertainty	2.26	-2.18			
Expanded Uncertainty (95% confidence)	4.5	-4.4			

5. TEST PROCEDURES

5.1. Powerline Conducted Emissions

No conducted emissions tests were performed

5.2. 6dB Bandwidth

5.2.1.Requirement

Per 15.247(a)(2), the minimum 6dB bandwidth shall be at least 500kHz for all systems using digital modulation techniques.

5.2.2.Procedures

The output of the EUT was connected to the spectrum analyzer through 20dB of attenuation.

The EUT was allowed to transmit continuously. The transmit channel was set separately to low, middle, and high channels in the Full Bandwidth mode. The resolution bandwidth (RBW) was set to 100kHz and the span was set to greater than the RBW.

The 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined. The analyzer's display was plotted using a 'screen dump' utility. This was then repeated for all channels in the Half Bandwidth mode.



5.2.3.Results

The plots on pages 20 through 25 show that the minimum 6 dB bandwidth was 2.06MHz for Full Bandwidth and 1.07MHz for Half Bandwidth, both of which are greater than minimum allowable 6dB bandwidth requirement of 500kHz for systems using digital modulation techniques. The 99% bandwidth was measured to be 4.3MHz for the Full Bandwidth and 3.69MHz for the Half Bandwidth.

5.3. Peak Output Power

5.3.1.Requirements

Per section 15.247(b)(3), for systems using digital modulation the maximum peak output conducted power shall not be greater than 1.0W (30dBm). Per section 15.247(b)(4), this limit is based on the use of antennas with directional gains that do not exceed 6dBi. Since the limit allows for a 6dBi antenna gain, the maximum EIRP can be increased by 6dB to 4 Watt (36dBm).

Per 15.247(b)(4)(i) Systems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, pointto-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

5.3.2.Procedures

The output of the EUT was connected to the spectrum analyzer through 20dB of attenuation. The maximum meter reading was recorded. The peak power output was calculated for the low, middle and high channels.

The output of the EUT was connected to the spectrum analyzer through 20dB of attenuation. The EUT was set to transmit separately at the low, middle, and high channels. The resolution bandwidth (RBW) was set to greater than the 6dB bandwidth. The 'Max-Hold' function was engaged. The maximum meter reading was recorded. The peak power output was calculated for the low, middle and high channels.

The EUT was placed on the non-conductive stand and set to transmit. A dipole antenna (double ridged waveguide antenna for all measurements above 1GHz) was placed at a test distance of 3 meters from the EUT. The resolution bandwidth (RBW) of the spectrum analyzer was set to greater than the 6dB bandwidth. The EUT was maximized for worst case emissions (or maximum output power) at the measuring antenna. The maximum meter reading was recorded. The peak power output was measured for the low, middle and high channels.

The equivalent power was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power, a second dipole antenna (double ridged waveguide antenna for all measurements above 1GHz) was then set in place of the EUT and connected to a calibrated signal generator. The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was then corrected to compensate for cable loss (and antenna gain for all measurements above 1GHz), as required. The peak power output was calculated for low, middle, and high hopping frequencies.

5.3.3.Results

For antenna conducted emissions method:

The results are presented on pages 26 and 31. The maximum peak conducted output power from the transmitter was 0.0027W (4.28dBm) which is below the 1 Watt limit.

For radiated emissions method:

The results are presented on pages 32 and 33. The maximum EIRP measured from the transmitter was 3.8dBm (0.0024W) which is below the 4 Watt limit.



5.4. Duty Cycle

5.4.1.Requirements

The duty cycle refers to the fraction of time over which the transmitter is on and is transmitting at its maximum power control level. The duty cycle is considered to be constant if variations are less than ± 2 percent, otherwise the duty cycle is considered to be non-constant. Preferably, the EUT shall be transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%). When continuous transmission cannot be achieved a duty cycle correction will be required.

5.4.2.Procedures

The antenna port of the EUT was connected to the spectrum analyzer through 39.6 dB of attenuation.

- 1) Set center frequency to the transmit frequency of the EUT.
- 2) Set span to 0Hz
- 3) Set $RBW \ge OBW$ if possible; otherwise, set RBW to the largest available value.
- 4) Set detector = peak or average.
- 5) Measure the fraction of time over which the transmitter is on and is transmitting at its maximum power control level

5.4.3.Results

Duty cycle plots are shown on pages 34 and 35. The EUT has an on time of 597µs in a 1msec period at Full Bandwidth and an on time of 1.20ms in a 1.50msec period at Half Bandwidth. The duty cycle results are 60% and 80% for each respective bandwidth. Since the duty cycle is less than 98%, a duty cycle correction factor based on these results will be added to the emission measurements where average detection is used to correct for the maximum power control level.

5.5. Antenna Conducted Spurious Emissions

5.5.1.Requirements

Per section 15.247(c), the spurious emissions in any 100 kHz BW outside the frequency band must be at least 20dB below the highest 100 kHz BW level measured within the band.

5.5.2. Procedures

The output of the EUT was connected to the spectrum analyzer through 20dB of attenuation. The resolution bandwidth (RBW) was set to 100kHz. The peak detector and 'Max-Hold' function were engaged. The emissions in the frequency range from 30MHz to 26.5GHz were observed and plotted separately with the EUT transmitting at low, middle and high channels.

5.5.3.Results

The results of the antenna conducted emissions levels were plotted. These plots are presented on pages 36 through 41. These plots show that the spurious emissions were at least 20 dB below the level of the fundamental.

5.6. Radiated Spurious Emissions Measurements

5.6.1.Requirements

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).

Paragraph 15.209(a) has the following radiated emission limits

Frequency	Field Strength	Measurement distance	
MHz	(microvolts/meter)	(meters)	
30.0-88.0	100	3	
88.0-216.0	150	3	
216.0-960.0	200	3	
Above 960	500	3	

5.6.2. Procedures

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4-2014 for site attenuation.

The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.

Preliminary radiated emissions tests were performed to determine the emission characteristics of the EUT. For the preliminary test, a broadband measuring antenna was positioned at a 3 meter distance from the EUT. The entire frequency range from 30MHz to 26.5GHz (26.5GHz used for 2400-2483.5MHz range) was investigated using a peak detector function.

The final open field emission tests were then manually performed over the frequency range of 30MHz to 26.5GHz.

- 1) For all emissions in the restricted bands, the following procedure was used:
 - a) The field strengths of all emissions below 1 GHz were measured using a bi-log antenna. The bi-log antenna was positioned at a 3 meter distance from the EUT. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
 - b) The field strengths of all emissions above 1 GHz were measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. A peak detector with a resolution bandwidth of 1 MHz was used on the spectrum analyzer.
 - c) To ensure that maximum or worst case emission levels were measured, the following steps were taken when taking all measurements:
 - i) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
 - ii) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
 - iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
 - iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer, the measuring antenna was not raised or lowered to ensure maximized readings. Instead the EUT was rotated through all axes to ensure the maximum readings were recorded for the EUT.
 - d) For all radiated emissions measurements below 1 GHz, if the peak reading is below the limits listed in 15.209(a), no further measurements are required. If however, the peak readings exceed the limits listed in 15.209(a), then the emissions are remeasured using a quasi-peak detector.
 - e) For all radiated emissions measurements above 1 GHz, the peak readings must comply with the 15.35(b) limits. 15.35(b) states that when average radiated emissions measurements are specified, there also is a limit on the peak level of the radiated emissions. The limit on the peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. Therefore, all peak readings above 1 GHz must be no greater than 20 dB above the limits specified in 15.209(a).
 - f) Next, for all radiated emissions measurements above 1GHz, the resolution bandwidth was set to 1MHz. The average detector was selected on the analyzer. An average reading was taken. If the duty cycle is less than 98%, a duty cycle correction factor of 20 log (1/x) where x is the duty cycle is added to the measurement results prior to comparing to the emissions limit in order to compute the emission



level that would have been measured had the test been performed at 100 percent duty cycle.

5.6.3.Results

Preliminary radiated emissions plots with the EUT transmitting at Low Frequency, Middle Frequency, and High Frequency are shown on pages 42 through 91. Final radiated emissions data are presented on data pages 92 through 109. As can be seen from the data, all emissions measured from the EUT were within the specification limits. Photographs of the test configuration which yielded the highest, or worst case, radiated emission levels are shown on Figures 3 through 6.

5.7. Band Edge Compliance

5.7.1.Requirement

Per section 15.247(d), the emissions at the band-edges must be at least 20dB below the highest level measured within the band but attenuation below the general limits listed in 15.209(a) is not required.

5.7.2.Procedures

5.4.2.1 Low Band Edge

- 1) The output of the EUT was connected to the spectrum analyzer through 20dB of attenuation.
- 2) The EUT was set to transmit continuously at the channel closest to the low band-edge.
- 3) To determine the band edge compliance, the following spectrum analyzer settings were used:
 - a. Center frequency = low band-edge frequency.
 - b. Span = Wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation.
 - c. Resolution bandwidth (RBW) \ge 1% of the span.
 - d. The 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined.
 - e. The marker was set on the peak of the in-band emissions. A display line was placed 20dB down from the peak of the in-band emissions. All emissions which fall outside of the authorized band of operation must be below the 20dB down display line. (All emissions to the left of the center frequency (band-edge) must be below the display line.)
 - f. The analyzer's display was plotted using a 'screen dump' utility.

5.4.2.2 High Band Edge

- 1) The EUT was setup inside the test chamber on a non-conductive stand.
- 2) A broadband measuring antenna was placed at a test distance of 3 meters from the EUT.
- 3) The EUT was maximized for worst case emissions at the measuring antenna. A peak reading was taken with a resolution bandwidth of 1MHz and a video bandwidth of 1MHz or greater. An average reading was then taken with a resolution bandwidth of 1MHz and a video bandwidth of 10Hz. The maximum peak and average meter readings were recorded.
- 4) To determine the band edge compliance, the following spectrum analyzer settings were used:
 - a. Center frequency = high band-edge frequency.
 - b. Span = Wide enough to capture both the peak level of the fundamental emission and the band-edge emission under investigation.
 - c. Resolution bandwidth (RBW) = 1% of the span (but never less than 30kHz).
 - d. The 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined.
 - e. The marker was set on the peak of the in-band emissions. This level corresponds to the maximized peak (or average) reading previously taken. The "marker-delta" method described in Public Notice DA 00-705 was then used to determine band edge compliance. The delta between the marker and the general limit (74dBuV/m or 54dBuV/m) was calculated by subtracting the general limit (74dBuV/m or 54dBuV/m)



from the maximum reading taken with a 1MHz bandwidth. This delta represents how far below the marker the emissions outside of the authorized band of operation must be. A display line was placed at this level. All emissions which fall outside of the authorized band of operation must be below the display line. (All emissions to the right of the center frequency (band-edge) must be below the display line.)

f. The analyzer's display was plotted using a 'screen dump' utility.

In accordance with paragraph 15.247(c), all emissions within 20dB of the peak amplitude level of the center frequency are required to be within a band less than 0.25% of the center frequency wide.

5.7.3.Results

Pages 110 through 112 show the band-edge compliance results. As can be seen from these plots, the conducted emissions at the low end band edge are within the 20 dB down limits. The radiated emissions at the high end band edge are within the general limits.

5.8. Power Spectral Density

5.8.1.Requirements

Per section 15.247(d), the peak power spectral density from the intentional radiator shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

5.8.2. Procedures

- 1) The output of the EUT was connected to the spectrum analyzer through 20dB of attenuation.
- 2) The EUT was set to transmit at a mid-channel.
- 3) To determine the power spectral density, the following spectrum analyzer settings were used:
 - a. Center frequency = transmit frequency
 - b. Resolution bandwidth (RBW) greater than the 20dB bandwidth.
 - c. Sweep time = auto
 - d. The peak detector and 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined.e. The analyzer's display was plotted using a 'screen dump' utility.
- 4) This reading corresponds to the peak EIRP measured for the mid channel.
- 5) Turn on Display Line 1 and place it at the peak of the measured level. Turn on Display Line 2 and place it at the corresponding +8dBm level (e.g. if the peak output power is +18dBm then the +8dBm level will be 10dB down from the radiated level and if the peak output power is +6dBm then the +8dBm level will be 2dB above the radiated level.)
- 6) The EUT was then placed in the normal operation mode (for DTS devices)
- 7) To determine the power spectral density, the following spectrum analyzer settings were used:
 - a. Center frequency = transmit frequency
 - b. Span =1.5times the channel bandwidth
 - c. Resolution bandwidth (RBW) ≥3kHz
 - d. Video bandwidth (VBW) $\ge 3 \times RBW$
 - e. Sweep time = auto couple
 - f. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined. The peak detector and 'Max-Hold' function was engaged.
 - g. The analyzer's display was plotted using a 'screen dump' utility.
 - h. If the measured value exceeds the +8dBm limit, reduce the RBW (no less than 3kHz) and repeat step 7.

5.8.3.Results

Pages 114 through 119 show the power spectral density results. As can be seen from the plots, the peak power density is less than 8dBm in a 100kHz band during any time interval of continuous transmission.



6. OTHER TEST CONDITIONS

6.1. Test Personnel and Witnesses

All tests were performed by qualified personnel from Elite Electronic Engineering Incorporated.

6.2. Disposition of the EUT

The EUT and all associated equipment were returned to Shure Incorporated upon completion of the tests.

7. CONCLUSIONS

It was determined that the Shure Incorporated TRx, Model No. GLXD4R, digital modulation transmitter, Serial No. 4162880360 95A30908 04, did fully meet the conducted and radiated emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Sections 15.207 and 15.247 for Intentional Radiators Operating within the 2400-2483.5 MHz band, when tested per ANSI C63.4-2014.

It was also determined that the Shure Incorporated TRx, Model No. GLXD4R, digital modulation transmitter, Serial No. 4162880360 95A30908 04, did fully meet the conducted and radiated RF emission requirements of the Industry Canada Radio Standards Specification, RSS-Gen Section 7.2.4 and RSS-210 Annex 8, for transmitters, when tested per ANSI C63.4-2014.

8. CERTIFICATION

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specifications.

The data presented in this test report pertains to the EUT at the test date. Any electrical or mechanical modification made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification.

This report must not be used to claim product certification, approval, or endorsement by any agency of the Federal Government.



9. EQUIPMENT LIST

Table 9-1 Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW0	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-30-20G20R6G	PL2926/0646	20GHZ-26.5GHZ	3/2/2016	3/2/2017
APW11	PREAMPLIFIER	PMI	PE2-35-120-5R0-10- 12-SFF	PL11685/1241	1GHZ-20GHZ	4/18/2016	4/18/2017
CDU4	LAPTOP COMPUTER						
CDY0	WORKSTATION	ELITE	WORKSTATION		WINDOWS 7	N/A	
NHG0	STANDARD GAIN HORN ANTENNA	NARDA	638		18-26.5GHZ	NOTE 1	
NTA3	BILOG ANTENNA	TESEQ	6112D	32853	25-1000MHz	3/23/2016	3/23/2017
NWQ1	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS-LINDGREN	3117	66655	1GHZ-18GHZ	4/4/2016	4/4/2018
RBB0	EMI TEST RECEIVER 20HZ TO 40 GHZ.	ROHDE & SCHWARZ	ESIB40	100250	20 HZ TO 40GHZ	2/16/2016	2/16/2017
RBG1	EMI ANALYZER	ROHDE & SCHWARZ	ESW500	101532	10HZ-44GHZ	11/16/2016	11/16/2017
SES1	24VDC POWER SUPPLY	P TRANS	FS-32024-1M	002	18-27VDC	NOTE 1	
T2D2	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-43	AV5815	DC-18GHZ	5/26/2016	5/26/2018
WKA1	SOFTWARE, UNIVERSAL RCV EMI	ELITE	UNIV_RCV_EMI	1		I/O	
XPR0	HIGH PASS FILTER	K&L MICROWAVE	11SH10-4800/X20000	001	4.8-20GHZ	9/14/2016	9/14/2017

I/O: Initial Only

N/A: Not Applicable

Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.













Test Setup for Radiated Emissions, 30MHz to 1GHz – Vertical Polarization





Test Setup for Radiated Emissions, 30MHz to 18GHz – Vertical Polarization





Test Setup for Radiated Emissions, 18 to 26.5GHz – Vertical Polarization



MultiViev	v 🕀 Spec	trum							
Ref Level Att Input	0.00 dBm 10 dB S 1 AC P	WT 41.84 µs (~6.9 ms	RBW 100 kl = VBW 300 kl ff Notch	Hz Hz Mode Aut Off	o FFT		Fn	equency 2.	4040000 GHz
1 Frequence	y Sweep								2Pk Max
								M1[2]	-19.28 dBm 2.40499900 GHz
-10 dBm						n			
-20 dBm			1	y ~~~	m	12 1			
-30 dBm						1			
-40 dBm			m_{1}			$ \longrightarrow $	~		
-50 dBm			V						\sim
-60 dBm	An								\rightarrow
70 dBm-		✓ V							
-80 d8m	_								
-90 dBm									
CF 2.404 G	Hz		1001 pts		1	.0 MHz/			Span 10.0 MHz
2 Marker T	able								
Type	Ref Trc	X-Value		Y-Value	Euno	ction	Fu	nction Resul	t
M1	2	2.404999 GI	1Z -1	9.28 dBM	ndB	0.11	-	6.0 dB	
T2	2	2.403031 G 2.405089 G	Hz Hz	-25.21 0BM	O Eactor	DVV	-	1168.6	
	DŪ	2.100007.0		2010 0011	Measurin	ng 🔳 💷 💷	63.01.2 11:30	017 Ref Le	vel RBW

6dB BANDWIDTH

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	Low Channel - Full Bandwidth



MultiView 🗄 Spe	ctrum				
Ref Level 0.00 dBm Att 10 dB Input 1 AS	SWT 41.84µs (~6.9 ms) • PS Off	RBW 100 kHz VBW 300 kHz Mode Autol Notch Off	F°T.	Frequency 2.4040	000 GH2
1 Frequency Sweep					22k Max
				M1[2] 2,404	10.69 dBm 28000 GHz
-10 dBm-			10000		
-21 dim		y	12 V		
-30 dBm					
-4) dîm		\sim	h		
50 dBm					-
-00 dBm	,^	~			-
Junter					
SD dBm		25			
-91 dim					
CF 2.404 GHz		1001 pts	1.0 MHz/	Span	10.0 MHz
2 Marker Table	a	7.5 87.0024.0025			
Type Ref Trc	X-Value	Y-Value	Function	Function Result	
M1 2 T1 2	2.40428 GHz 2.403481 GHz	-18.69 dBm -24.93 dBm -24.93 dBm	ndB ndB clown BW O Featur	5.0 dB 1.09 MHz	
	2.404009-3112	-24 10 dam	Measuring	03.01.2017 RefLevel	RBW

6dB BANDWIDTH

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	Low Channel - Half Bandwidth



MultiView 8	Spec	trum								□ ▽
Ref Level 0.00 Att Input) dBm 10 dB S 1 AC P	 wt 41.84 µs (~ s	6.9 ms) = RBW Off Notch	100 kHz 300 kHz N	Node Auto i	FFT		Fre	equency	2.4420000 GH
1 Frequency Sy	weep									2Pk Max
									M1[2] -19.78 dBn 2.44134100 GH;
-10 dBm										
-20 dBm				M1	2		12			
-30 d8m				X	~ '''		Y			
		\rightarrow		$\left \right $			$\langle $			
-40 dBm							1 m	~		
-50 dBm	/							~		
~~~										
-60 dBm									$\sim$	~~~~~
-70 dBm										
-80 d8m										
-90 dBm										
CF 2.442 GHz			10	01 pts		1	.0 MHz/			Span 10.0 MHz
2 Marker Table	5									
Type Ref	Trc	X-Va	alue	Y-Va	alue	Func	tion	Fur	nction Res	sult
M1	2	2.44134	11 GHz	-19.78	dBm	ndB		_	6.0 d	В
T1	2	2.441	011 GHz	-25.5	54 dBm	ndB down B	3W	2	.07 MH	z
T2	2	2.443	079 GHz	-25.3	30 dBm	Q Factor			1180.	6
	J					Measurin	g (	<b>99 03.01.2</b> 11:42	017 Ref	RBW

# 6dB BANDWIDTH

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	Mid Channel - Full Bandwidth



MultiView	Spectru	m							
Ref Level 0.00 Att 1 Input	dBm 10 dB SWT 1 AC PS	41.84 µs (~6.9 m: 0	RBW 100 <b>VBW</b> 300 ff Notch	kHz kHz Mode Aut Off	xo FFT		Fre	equency 2	.4420000 GHz
1 Frequency Sv	veep								<ul> <li>2Pk Max</li> </ul>
								M1[2]	-18.51 dBm 2.44166000 GHz
-10 dBm									
-20 dBm				M1 X					
				4					
-30 dBm									
-40 dBm			· · · · ·	$\sim$		<u> </u>			
		$\parallel$ $\sim$				$\left  \right\rangle$			
-50 dBm									
						$ $ $\sim$	h		
-60 dBm-		VN .							j j
-70 d8m								$\sim \sim \sim$	man
-yo dan									v.
-80 d8m									
-90 dBm									
05.0.440.001			1001		L	0.141-7			0.000 10 0 MHz
CF 2.44Z GHZ			1001 pt	5	1	.0 MHZ/			span 10.0 MHz
Z Marker Table	Trc	X-Value		V-Value	Euro	tion	Eur	oction Resu	t I
M1	2	2.44166 G	1z -:	18.51 dBm	ndB		T UI	6.0 dB	
T1	2	2.441481 G	Hz	-24.67 dBm	ndB down I	BW	1	.08 MHz	
T2	2	2.442559 G	Hz	-24.49 dBm	Q Factor			2263.1	
					Measurin	a	03.01.20	017 Ref Le	vel RBW

### 6dB BANDWIDTH

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Mid Channel - Half Bandwidth



MultiView	Spect	rum							♥
Ref Level 0.00 Att Input	0 dBm 10 dB SW 1 AC PS	/T 41.84 µs (~6.9 ms	RBW 100   = VBW 300   ff Notch	Hz Hz Mode Aut Off	to FFT		Fre	equency	2.4780000 GHz
1 Frequency S	weep								2Pk Max
								M1[:	2] -21.00 dBm 2.47734100 GHz
-10 dBm									
-20 dBm				M1		to			
-30 dBm			Ż	r ~~~		F			
-40 d8m			$\sim$			$\square$			
-50 dām						$  \sim $	m		
-30 dBill									
-60 dBm								$\sim$	~~~~
-70 dBm									
-80 d8m									
-90 dBm									
CE 0 470 CH-			1001.01		L,	0.14457			Coop 10 0 MHz
CF 2.478 GHZ			1001 pe	>	1	.0 MHZ/			apan 10.0 MHz
2 Marker Table	e Tuo I	V Value		V Value	Euro	ation	Erm	action Dec	u de
M1	2	2.477341 GH	17 -3	21.00 dBm	ndB.		Fui	6.0.49	2
T1	5	2.477001 G		-27.28 dBm	ndB down i	BW	2	.08 MH	z
T2	2	2.479079 G	Hz	-27.13 dBm	Q Factor		-	1192.2	2
	)[]				Measurin	ng (	<b>63.01.2</b> 11:46	017 Ref	RBW

# 6dB BANDWIDTH

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	High Channel - Full Bandwidth



MultiView	Spectru	m						▽
Ref Level 0.00 Att 1 Input	dBm 10 dB SWT 1 AC PS	41.84 µs (~6.9 ms	RBW 100   • VBW 300   • Notch	Hz Hz Mode Aut Off	o FFT		Freque	ency 2.4780000 GHz
1 Frequency Sy	veep							2Pk Max
								M1[2] -19.84 dBm 2.47767000 GHz
-10 dBm								
-20 dBm				T1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
-30 d8m					T T			
-40 dBm				$\sim$				
		$\parallel$ $\sim$	$\sim \sim$	Ť				
-50 dBm						1	~	
-60 dBm-		M .						
-70 dBm-								~~~~~
-80 dBm								
-90 dBm								
05.0.470.011-			1001			0141-7		
CF 2.478 GHZ			1001 pt	5	1	.u MHZ/		span 10.0 MHz
2 Marker Table	I Tur I	M. Halan		M Halan	1 5	al	E	- Decell
Type Ref	Inc	2 47767 CH		Y-Value	Fund	non	Functio	on result
M1 T1		2.4//0/00	-1	-25 57 dPm	nas nas	Diar	1.07	MH7
T2	2	2.4778559 GF	1z	-25.90 dBm	O Factor		1.07	2317.9
		2	-	20100 00000	Measurin	ig <b>(1</b> 11111)	<b>#</b> 03.01.2017 11:48:52	Ref Level RBW

# 6dB BANDWIDTH

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	High Channel - Half Bandwidth



MultiView 🗄 Spectru	m		
Ref Level 20.00 d5m Offs Att 10.58 SW Input 1.47 PS	iet 20.00 B ● RBW 10 MHz E L01 ns ● VBW 10 MHz Mode Auto Swezp CF Notch OF		Frequency 2.4040000 GHz
1 Erenuency Sweep			29k Max
Thequency office,			M1[2] 1.28 dBm 2.4051090 GHz
10 dBm		ML	
C cBm			-
-13 dBm			
20 dBm-			
-30 dBm-			
-4J dum			
-\$1.49m			
-63 dBm			
-70 d8m			
CE 2 404 GHz	IO01 ots	3.0 MHz7	Spap 30.0 MUz
C. LINTON	1001 pta	Measuring	1.2017 (Ref Level) (RBW)

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	Low Channel - Full Bandwidth



Reflevel 2000 din Offset 2000 die 9 RBW 10 Mrz Mode 2016 Swerp       Frequency 2.4040000 GHz         Input 10 die 2016 die 9 KBW 10 Mrz Mode 2016 Swerp       Frequency 2.4040000 GHz         Input 1.40 PS       Off Noteh 0 PF         Input 1.40 PS       Off Noteh 1.40 PS         Input 1.40 PS       Off Noteh 1.40 PS         Input 1.40 PS       Off Noteh 1.40 PS         Input 1.40 PS       Off Noteh 1.4	MultiView 🖽	Spectrum			
1 Frequency Sweep       01 Mile       0224 Mage         11 recuency Sweep       11 and	Ref Level 20.00 Att 1 Input	i5n Offset 20.00 cB ● 0 cB SWI 1.01 ns ● 14C PS CŤ	RBW 10 MHz VBW 10 MHz Mode Auto Swi Notch Of	νp	Frequency 2.4040000 GHz
11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     12 ubm     13 ubm       10 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm       10 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm       10 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm       10 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm       10 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm       11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm       11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm       11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm     11 ubm	1 Frequency Swo	ep	indean of		• 29k Max
11 dbm					M1[2] 1.19 dBm 2.4062780 GHz
C CEM	1C dBm			MI	
-1) 18m -1) 18m -2) 18m -3) 18m -4) Jun -5) Jun -5) Jun -5) Jun -5) Jun -6) Jun -7)	C cPm				
-13 fBm -27 fBm -30 fBm -4) Jun -51 Jun -5 -5 Jun -5 Jun -5 -5 Jun -5 -5 -5 Jun -5 -5 Jun -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5 -					
23 f8m	-10 d8m				
30 dam	-21 dam				
30 dam					
	-30 dBm				
-53 dim -53 dim -53 dim -73 di	-4.1 d0m				
-53 dim -53 dim -53 dim -73 dim -74 dim -74 dim -75 dim -75 dim -75 dim -75 dim -75 dim -75 dim -75 dim -76 dim -77 dim -77 dim -77 dim -77 dim -77 dim -78 dim -78 dim -78 dim -78 dim -78 dim -78 dim -78 dim -78 dim -79 di					
-50 d8m -20 d8	-53 d8m				
-73 dam CF 2.404 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz I 001 pts 3.0 MHz/ Span 30.0 MHz	-60 d8m				
-23 dBm CF 2.404 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz I 001 pts 3.0 MHz/ Span 30.0 MHz					
CF 2-404 GHz 1001 pts 3.0 MHz/ Span 30.0 MHz Bit 12 Span 30.0 MHz	-70 d8m				
apari 30.0 mitz/ apari 30.0 mitz/ apari 30.0 mitz	CE 2 404 GU/		1001 ptr	2.0 MUz/	Sowo 20.0 MU c
	GF 2.404 GHZ		1001 pts	3.0 Mil2/	13 D1 2017 ( RotLovel ) ( RBW )

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	Low Channel - Half Bandwidth



MultiView 🔠	Spectrum					
Ref Level 20.00 Att 1 Input	d5m Offset 20.00 0.c8 SWI 1.01 1.40 PS	:B ● RBW 10 MHz ns ● VBW 10 MHz M Off Notch Off	Aode Auto Swezp		Frequency 2.44	20000 GHz
1 Frequency Swo	200	01 110Curl 01				29k Max
					M1[2]	0.05 dBm 4411910 GHz
10 dBm			ML			
C cBm-				0.00		
-10 dBm						
-20 dBm						~
-30 dBm			-			
-4.1 d8m						
-53 d8m						
-50 d8m						
22 dBm						
-23 000						
CF 2.442 GHz		1001 p	ts	3.0 MHz/	S	pan 30.0 MHz
				Measuring	03.01.2017 Ref Level	RBW

MANUFACTURER	Shure Incorporated
MODEL NUMBER	GLXD4R
SERIAL NUMBER	4162880360 95A30908 04
TEST MODE :	Mid Channel - Full Bandwidth



MultiView 🖽	Spectrum					
Ref Level 20.00 Att 1 Input	d5m Offset 20.00 0.c8 SWI 1.01 1.40 PS	cB ● RBW 10 MHz ns ● VBW 10 MHz Off Notch Off	Mode Auto Sweep		Frequency	2.4420000 GHz
1 Frequency Swo	eep	of Hotali of				● 22k Max
					MI	2   0.63 dBm 2.4416400 GHz
10 dBm			MI			
		1000				
C cBm						
-13 dBm						-
-23 dBm						
-30 dBm						
-4J d0m						
-53 d8m						
-60 dBm						
-73 dBm						
CF 2.442 GHz		1001	pts	3.0 MHz/		Span 30.0 MHz
				Measuring	03.01.2017 Re	Level RBW

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	Mid Channel - Half Bandwidth



MultiView 88	Spectrum				~
Ref Level 20.00 Att Input	d5m Offset 20.00 ± 10 cB SWI 1.01 m 1.40 PS Of	<ul> <li>RBW 10 MHz</li> <li>VBW 10 MHz</li> <li>Notch Off</li> </ul>	Mode Auto Sweep		Frequency 2.4780000 GHz
1 Frequency Sw	eep	1100011 01			© 29k Max
					M1[2] 2.58 dBm 2.4769810 GHz
11. dBor					
		10000	MI		
C CBM-					/
-13 dBm-	-				
-20 d8m					
30 d8m					
-4J d0m					
-53 d8m					
-50 d8m					
-20 dBm					
CF 2.478 GHz	· · · ·	1001 (	ots	3.0 MHz/	Span 30.0 MHz
T T				Measuring	03.01.2017 RefLevel RBW

MANUFACTURER :	S	Shure Incorporated
MODEL NUMBER :	(	GLXD4R
SERIAL NUMBER :	4	162880360 95A30908 04
TEST MODE :	H	ligh Channel - Full Bandwidth



MultiView \cdots Spectrum		
Ref Level 20.00 d5m         Offset 20.00 d5m         E RBW         10           Att         10 d8         SWI         1.01 ms         VBW         10           Input         1.42         PS         C7         Notch	0 Mitz D Mitz — Mode Auto Sweep - Of	Frequency 2.4780000 GHz
1 Frequency Sweep		
		M1[2] 2.56 dBm 2.4758120 GHz
11. dBm		
	MI	
C cem		/
-13 dBm		
-23 dBm		
30 dBm		
-6.) dum		
-53 d8m		
-63 dBm		
-73 d8m		
CE 2.478 GHz	1001 pts 3.0 MHz/	Span 20.0 MHz
	Masuring.	03.01.2017 RefLevel RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: High Channel - Half Bandwidth



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RMode: Full BandwidthTest Specification: FCC-15.247, RSS-247 Peak Output PowerDate: December 21, 2016

Freq. (MHz)	Ant Pol	Matched Sig. Gen. Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	EIRP (dBm)
2404.00	Н	-3.6	5.9	2.7	-0.5
2404.00	V	3.1	5.9	2.7	6.2
2442.00	Н	-3.6	5.9	2.8	-0.5
2442.00	V	3.8	5.9	2.8	6.9
2478.00	Н	-6.7	5.9	2.8	-4.2
2478.00	V	1.8	5.9	2.8	4.1



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RMode: Half BandwidthTest Specification: FCC-15.247, RSS-247 Peak Output PowerDate: December 21, 2016

Freq. (MHz)	Ant Pol	Matched Sig. Gen. Reading (dBm)	Equivalent Antenna Gain (dB)	Cable Loss (dB)	EIRP (dBm)
2404.00	Н	-5.0	5.9	2.7	-2.6
2404.00	V	3.5	5.9	2.7	5.6
2442.00	Н	-4.8	5.9	2.8	-2.3
2442.00	V	3.8	5.9	2.8	6.0
2478.00	Н	-7.3	5.9	2.8	-4.8
2478.00	V	1.1	5.9	2.8	3.3



MultiVi	ew 🗄	Spectrum	n									v
Ref Lev Att Input TRG:VID	el 20.00	0 dBm Offs 10 dB = SW1 1 AC PS	et 20.00 dB 1.05 ms Off	RBW 10 M VBW 10 M Notch	Hz Hz Off			Fr	equency	2.44	20000	) GHz
1 Zero S	pan										2AP	Clrw
									(	)2[2]	0	.05 dB
10.00-			1								1.000	)65 ms
10 d8m									N 1	41[2]	2.8	7 dBm
i and		RG 2.000 dBm									0.0000	nónó z
0 dBm												
										- 1		
-10 dBm			+									
-20 dBm												
-30 dBm												
										- 1		
-10 dBm			-									
20220-004-01-0						10.00	الديوان فكاللغان	تقر الأبر بالتزييطة فأو	وفيدادينان تأر	de la della de la della del	ALC: N	
-50 dBm							an the second				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
-60 dBm											1 I.	
						1	References (Inc.)	this stablic ora	ili i lini	notifie	di Jandar	1
-70 dBm-										1 1 1 1		
							1. 1.1.1.	a strande	L DOL 1	10000	. 1	1
			-23	20	12	151		S2	3.620			
CF 2.442	GHz				100	1 pts					105	.0 µs/
2 Marker	' Table	0										
Туре	Ref	Trc	X-Valu	e	Y-Value	Fun	ction	FL	Inction Re	sult		
M1		2	0	.0 s	2.87 dBm							
D1	M1	2	1 00065	ν μs	0.21 dB							
02	MI	- 2	1.00005	1115	0.05 06				0.043			
						Measurin	ng	<b>40</b> 03.01.1	2017 Ref 7:53	Level		Was
		-										

# DUTY CYCLE

MANUFACTURER :	Shure Incorporated
MODEL NUMBER :	GLXD4R
SERIAL NUMBER :	4162880360 95A30908 04
TEST MODE :	Mid Channel - Full Bandwidth

NOTES – On-time = 597.4uS, Period = 1.0mS. Duty Cycle = 0.60



MultiVie	w a	Spectrum	·									-
Ref Leve Att Input TRG:VID	20.0	0 dBm Offs 10 dB = SWT 1 AC PS	et 20.00 dB • R 1.55 ms V Off N	BW 10 MHz BW 10 MHz otch Off					Frequency	2.442	20000 GI	łz
1 Zero Sp	an										2AP CInv	
										D2[2]	-0.10	dB
											1.49975 r	ns
10 dBm										м1[2]	3.03 dE	im.
1								D	1	'	0.0000000000000000000000000000000000000	15
0 dBm		rkg 2.000 dBm-									- 1	—
-10 dBm												_
-20 dBm												
-30 dBm									_			-
-40 dBm												_
									مرجاه وإفتأنهماء	feciality of the	a doara d	
-50 dBm												
-30 0011												
-60 dBm							+		بالمت ألمانا			-
									a da ser a se		a da alta da	
-70 dBm							+		1.50,050,0	1111	r H K	_
									1.0		1.11	
CF 2.442	GHz				100	1 pts					155.0 µ	\$/
2 Marker	Table											
Type	Ref	Trc	X-Value		Y-Value	Fur	nction		Function Re	esult		
M1		2	0.0	5	3.03 dBm							
D1	M1	Z	1.19575 m	5	-0.13 dB							
02	MT	2	1.49973 11	,	-0.10 0.0			63	01 2017			
		l				Measur	ring 💵	<b>440</b> 03	14:01:09	• Level	RBW	

# DUTY CYCLE

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	Mid Channel - Half Bandwidth

NOTES – On-time = 1.2mS, Period = 1.5mS. Duty Cycle = 0.80



MultiView 🕀 Spectrum	n				▽
Ref Level 0.00 dBm Offse	t 20.00 dB	Mode Auto Sweep		-	
Input i AC PS LN Amplifier	On Note	h On		Frequen	cy 12.5150000 GHz
1 Spurious Emissions					1 Max
Limit Check		PASS			
-10 dbm	_ABS_002	PASS			
-10 dbm					
-20 dBm					
SPURIOUS_LINE_ABS_002					
-30 dBm					
-40 dBm-					
-50 dBm					
-60 dBm					
- Ture		and the second second second second	and the Market and a second	مراحيا المتأنية المراجع ويتعاد	
and the second s	No. of Concession, Name				
-80 d8m					
-90 dBm					
30.0 MHz		64002 pts	2.5 GHz/		25.0 GHz
2 Result Summary		2 1006 150	2.5 6(12)		LOID OT L
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	100.000 kHz	419.39736 MHz	-63.85 dBm	-38.25 dB
1.000 GHz	25.000 GHz	100.000 kHz	22.05597 GHz	-60.56 dBm	-34.96 dB
1 1	Measuring Measuring Ref Level RBW				

## ANTENNA CONDUCTED SPURIOUS EMISSIONS

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Low Channel - Full Bandwidth


MultiView 🖽 Spectrun	·					♥
Ref Level 0.00 dBm Offset	20.00 dB	Mode Auto Sv	veep		-	
Input 1 AC PS LN Amplifier	On Note	h On			Fred	juency 12.5150000 GHz
1 Spurious Emissions						• 1 Max
Limit Check		PASS				
-10 dbm	AB5_002	PASS				
-10 000						
-20 dBm						
_SPURIOUS_LINE_ABS_002						
-30 dBm						
-40 dBm						
-50 dBm					-	
1						
-60 dBm						
and the second s		ويعر ومختطبين ويرو		and the second second	بالجافية المطارفاني وارد	
		addition and the first of the first of the				
and the second sec						
-00 dBm						
-90 dBm						
30.0 MHz		64002 pts		2.5 GHz/		25.0 GHz
2 Result Summary						
Range Low	Range Up	RBW	Fred	uency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	100.000 kH	z 524.24	502 MHZ 797 GH7	-65.03 dBn -61.28 dBn	n -39.43 dB n -35.68 dB
1.000 312	20.000 002	100.000 KH			03.01.2	017 Ref Level RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Low Channel - Half Bandwidth



MultiView 🖽 Spectrum	n )				
Ref Level 0.00 dBm Offset	20.00 dB	Mode Auto Sweep		-	
Input 1 AC PS LN Amplifier	On Note	h On		Frequency	12.5150000 GHz
1 Spurious Emissions					1 Max
Limit Check		PASS			
Line_SHORIOUS_LINE	ABS_002	PASS			
-10 dbm					
-20 dBm					
SPURIOUS LINE ABS 002	-				
-30 dBm					
-40 dBm					
-50 dBm					
-60 dBm					
					الاستبقاد ريتي بالمكافية
	L. L. Marken	in the second state of the second state			
The second second second second	Contraction of the local division of the loc				
20 dBm					
-00 0011					
-90 dBm					
CF 12.515 GHz		64002 pts	2.5 GHz/		Span 24.97 GHz
2 Result Summary					
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	100.000 kHz	415.94185 MHz	-64.31 dBm	-38.71 dB
1.000 GHz	25.000 GHZ	100.000 kHz	22.02147 GHZ	-00.01 08m	-35.21 08
			Measuring	03.01.2017	Ref Level RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Mid Channel - Full Bandwidth



MultiView 🗄 Spectrum	n							v
Ref Level 0.00 dBm Offset	20.00 dB	Mode Auto	Sweep			-		
Input 1 AC PS	On Note	h On				Fred	quency 12.5	150000 GHz
LN Amplifier								
1 Spurious Emissions								1 Max
Limit Check	486.000	PASS						
-10 dbm	_465_002	PASS						
-10 000								
-20 dBm								
SPURIOUS LINE ABS 002	-							
-30 dBm								
-40 dBm								
-50 dBm								
H								
-60 d8m								
							and the second second	and the second
MALIN .		أنكر مسائده بالأخريب وقري	والتعاقد ورجاره	and a state state	الذور التركيبات	والمراجع الجالي		
and the second statistic description	State of the local division of the local div	a second s						
	-							
-80 dBm								
-90 dBm								
		6 4000			E CH= (			D1070U-
CF 12.315 GHZ		64002 pts		2	.5 GHZ/		5	pan 24.97 GHz
2 Result Summary	Dange Lin	DBW		Frequen		Dower Abr		Al imit
30.000 MHz	1.000 GHz	100.000 k	Hz	667.22462	MHz	-64.63 dBr	n -3	9.03 dB
1.000 GHz	25.000 GHz	100.000 k	Hz	24.96588	GHz	-60.45 dBr	n -3	4.85 dB
T T				Measurin	<b></b>	<b>63.01.2</b>	017 Ref Level	RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Mid Channel - Half Bandwidth



MultiView 🕀 Spectru	m					♥
Ref Level 0.00 dBm Offse	t 20.00 dB	Mode Auto S	weep		-	
Input 1 AC PS LN Amplifier	On Note	h On			Freq	uency 12.5150000 GHz
1 Spurious Emissions						1 Max
Limit Check		PASS				
Line _SPURIOUS_LINE	_ABS_002	PASS				
-10 dBm						
-20 dBm						
SPURIOUS LINE ABS 002						
-30 dBm					++	
-40 dBm						
50 dbm						
-50 0011						
-60 dBm						استرابا والمحمر
		A STATE OF A STATE OF A STATE	والمتحافظ والمتحافظ والمحافظ والمراجع	and the second second second second	والمعافر والتردا المأولين ومر	and the second se
n and a state of the second second	Concession of the local division of the loca		the second s		1	
	Constant of the					
-80 d8m				_		
-90 dBm						
CF 12.515 GHz		64002 pts		2.5 GHz/		Span 24.97 GHz
2 Result Summary						
Range Low	Range Up	RBW	Freq	uency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	100.000 kH	2 420.397	64 MHZ	-63.97 dBn	1 -38.37 dB
1.000 GH2	20.000 6H2	100.000 KH	22.100		-01.70 001	
			Meas	suring	14:05	1.01 1.0 4 01

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: High Channel - Full Bandwidth



MultiView 🗄 Spectrum	n				V
Ref Level 0.00 dBm Offset	: 20.00 dB	Mode Auto Sweep		-	
Input 1 AC PS LN Amplifier	On Notch	On		Frequency	12.5150000 GHz
1 Spurious Emissions					○1 Max
Limit Chick		PASS			
Line_SHORIOUS_LINE	ABS_002	PASS			
-10 000					
-20 dBm					
SPURIOUS_LINE_ABS_002					
-30 dBm					
-40 dBm					
-50 dBm					
-60 dBm					
and is all		. and an and a class	والمتعادية والمتعادية والمتعادية والمتعادية والمتعادية	فتحالب فالمراجعة وفصيب فالمرجعين فاعربهم والمرا	الفقائق والمتاجا الجالية
n - Line Line Line Line Line Line Line Line	Charles and Charle	No. of Concession, Name		and a strategic	
The state of the s	and the second se				
-80 d8m	++				
-90 dBm					
CE 12 515 CH2		64002 ptc	2.5 (1)+/		Spap 24 07 CHz
2 Result Summary		04002.pts	2.5 GHZ/		apari 24.97 GHz
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	100.000 kHz	36.19871 MHz	-64.59 dBm	-38.99 dB
1.000 GHz	25.000 GHz	100.000 kHz	21.98322 GHz	-61.72 dBm	-36.12 dB
M			Measuring	03.01.2017	Ref Level RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: High Channel - Half Bandwidth



















































			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 2
	120	SPEC / TEST : PRELIMINARY RADIATED Manufacturer : Shure Model No. : Glxdar Serial No. : 4162888368 95A38988 1 Mode : Lon Channel TX; Full	ehissions 14 Bandwidth	Peak detector trace
	105	SURNS/BAND : 1 Notes : Test date : 29 Dec 2016 09:01:03 Ant. Polariz. : Horizontal	M. LONGINOTTI	
	90			
m//m	75			
EVEL d	60			
Ľ				
	45			
		وملاحظه والمعالية والمنافع ومناقله ومناقلته والمتعاول والمنافعة والمعار والمعالية والمتعدي	مترول من خاصيصا ما ها، خاصل خاصة في المانية المناطقة المناطقة المن الاستعمالية في ومن ما محمد عامين إلى من المال على من	ومأده مادهه أفاه مذاه فراغ مسادهم والمرعي والمحافظ ورابي والمحافظ مراراتي ومحالة فأخف أربي المحاف
	30		المرجعة وأراك والمراجع والالتعادية والمعمد وأسترهم ومحاولا أنفار وأرار والمحافظ والمراح المراجع وتراحه والماحا والمراجع	hine and and the first states to a second state of the states and states and states for a first states to a second states
	15	n		
	9 1			
start :	= 18000	0	FREQUENCY MHz	STOP = 26500

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			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCU EMI RUN 3
	120 105	SPEC / TEST : PRELIMINARY RADIATED MANUFACTURER : SHURE MODEL No. : GLXD4R SERIAL No. : 4162888.368 95A.38988 MODE : LON CHANNEL TX; FULL SCANS/BAND : 1 NOTES : TEST DATE : 29 Dec 2016 89:15:08	EMISSIONS 34 Bandwidth M. Longtnottt	Peak detector trace
	90	ant. Polariz. : vertical		
BuU/m	75			
LEVEL d	60			
	45			
	30	an da na dan da yaka na Jama, na Jarin na da na na na na na da da da wana. In na	ar Mally on All a flog og stjer fordel gan den an læret greget forsværterer. Den sol eget for det geder sol er Af Den forderer for ander sol er sol er sol er sol er sol er sol fræget forsværterer i Den sol er sol er sol er	alan de sin de la lance de la de secondaria, en el a se a la general de la de la de la de la de la de secondar Y ^{en a} la de la Y ^{en a} la de la
	15			
	0			
Start	= 1800	0	FREQUENCY MHz	stop = 26500

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			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KAI 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 5
	120 105	SPEC / TEST : PRELIMINARY RADIATED MANUFACTURER : SHURE MODEL No. : GLXD4R SERIAL No. : 4162888368 95A38988 6 MODE : LOW CHANNEL TX; HALF SCANS/BAND : 1	emissions 4 Bandwidth	Peak detector trace
	6	NOTES : TEST DATE : 29 Dec 2016 09:33:37 Ant. Polariz. : Horizontal	M. LONGINOTTI	
	90			
BuU/m	75			
LEVEL df	60			
	45			
	30	, a shella a filiha ka waldara a shafka si a katika a da fili tika ɗa alish ka alay ka sa ya 1997 ya 1997 ya	$u_{\rm p} = (1+1)(1+1)(1+1)(1+1)(1+1)(1+1)(1+1)(1+1$	lakta na huda ataul ka _{ala} jana ka katau ang katau ka katau katau katau katau katau katau katau katau katau ka
	15			
	a			
start :	= 1800	0	FREQUENCY MHz	STOP = 26500



			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 4
	120	SPEC / TEST : PRELIMINARY RADIATED Manufacturer : Shure Model No. : Glxdar Serial No. : 416288368 95A38988 Mode : Low Channel TX; Half Sconsgrand : 1	ekissions 4 Bandwidth	Peak detector trace
	162	NOTES : TEST DATE : 29 Dec 2016 09:25:24 ANT POLARTZ : LERTICAL	M. LONGINOTTI	
	90			
m∕∪n	75			
Ē	60			
LEU	45			
	10	والمراجع والمحافظ والمتعارية والمتلف والمنافق والمحاف والمتعار والمتعار والمتعار والمتعار والمتعار والمتعار وال	المريبية فالمستقدمين وكالتقويسية والمستعمر والمعتر والمترج والمستعملية والمعادي والمعادي والمستعد	and a set of the second s
	30	والمالي والمراجع المراجع والمناط وتحمد وتحمد والمناطع والمناطع والمراجع	ورجمه فالمالية المربعة المنبأ وماز يشعبه فالمروك فالمنفي والمرافق ومراجعته والمقاف والمراجع والمالي والاعرب	( ¹ ) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1
	15			
	βl			
start :	= 18000	0	FREQUENCY MHz	stop = 26500

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			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 6
	120	SPEC / TEST : PRELIMINARY RADIATED Manufacturer : Shure Model No. : Glxdar Serial No. : 4162888368 95A38988 Mode : HID Channel TX; Full control Radio	enissions 14 Bandwidth	Peak detector trace
	105	MOTES : TEST DATE : 29 Dec 2016 10:05:05 Ant. Polariz. : Horizontal	M. LONGINOTTI	
	90		<u> </u>	
m//m	75			
LEVEL d	60			
	45			
	30	l de an hele, de sen de served de ben de served de ben de serve ander de ben de ben de ben de ben de ben de ben Name de serve personne de serve	l y fernin 10 km y territ frei het het frei het ferste ste frei het er frei het het frei het frei het frei het Het ferste het frei het frei het het frei het fre	an fra glann a ffra an an 1979 an ffra an hair a gall an an da fra an fra fra an fra fra an an fra fra an an da An gall a transformation a star fra an fra an fra an fra fra fra fra fra fra an fra fra fra an fra fra an fra a
	15			
	0			
start :	= 1800	0	FREQUENCY MHz	STOP = 26500

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			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 7
	120	SPEC / TEST : PRELIMINARY RADIATED MANUFACTURER : SHURE MODEL No. : GLXD4R SERIAL No. : 4162888368 95A38988 MODE : MID CHANNEL TX; FULL SCANS/BAND : 1	enissions 84 Bandwidth	Perk detector trace
	105	NOTES : TEST DATE : 29 Dec 2016 10:13:44 ANT. POLARIZ. : VERTICAL	M. LONGINOTTI	
	90			
m/Un	75			
LEVEL a	60			
	45		t team ( a sui suiste suis	
	30	y Bulancelli an mbala an shi ka na bi ka shi ka shi ka shi a s A shi a sh	ih on had anna di anna di ana aka maka maka perintahan dan perintahan karang dari perintahan dan karang dara m Mang perintahan 1 Mana dari Perintahan yan nyan nyan nyan karang menerikan dependan ang menerika perintahan dari Mang perintahan	and and a second second and a second and beer bold as a particular second and a second second second second sec A second secon
	15 0			
start :	- 18000	0	FREQUENCY MHz	stop = 26500



			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 9
	120	SPEC / TEST : PRELIMINARY RADIATED Manufacturer : Shure Model No. : Glxdar Serial No. : 41628868 95A38988 B Model Tr. Into.	EMISSIONS 4	Peak detector trace
	105	NUCE : NU CHANKEL IX; NHLF Scans/Band : 1 NOTES : TEST DATE : 29 Dec 2016 10:34:44	M. LONGINOTTI	
	90	ani. pulariz. : Horizontal		
aBu∪√m	75			
Ē	60			
ΓE	45			
		فالمحر وأسمع مطارحه والمالية والملامين وملكا لالتلأ ومرزجا والملاحل وإدرت المقللا للمن	i yan mataka dan pantika di kanya ana pantipa kana kana kana kana kana kana kana ka	المارين فاستهده المتلومين المستعمل ومعارية والمستعمل والمراجع والمتعاقبة والمتعارية والمتلحم والمتعارية والمتعا
	30	a di Nara na sa kata da ka na ka na ka	ى 1 دىڭ وغىداغان، يەزەمۇلەيلار بەركىلەترى <u>غار ۋەتەرە يە^{رىكىت}ىن</u> كۆكۈمەرىمەرمەر ₁ مارىي ( دىغارلىيە 1 دەرلار يەتلەك مە	an palanan ina ang kangka kananan ang kangka kanan kang dalama kang kang kang kang kang kang kang makana
	15	r · · · · ·		
	0			
start	= 1800	0	FREQUENCY MHz	STOP = 26500


			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 8
	120 105	SPEC / TEST : PRELIMINARY RADIATED MANUFACTURER : SHURE MODEL No. : GLXD4R SERIAL No. : 4162889369 95A39988 / MODE : MID CHANNEL TX; HALF SCANS/BAND : 1 NOTES : TEST DATE : 29 Dec 2016 10:23:58	ekissions 4 Bandwidth M. Longinotti	Peak detector trace
	90	ANI. PULARIZ. : VERTICAL		
Bu∪∕m	75			
LEVEL 0	60			
	45		. որուն, վերուս, է, երկայոննենն անվեն, անացնորացնություն է մեր	
	30	¹ a tur alla alla dia ta da la dia ka ang a ka ang a ka ang ang ang ang ang ang ang ang ang an	an fa ha ann an tha far far a part of th An tha ann an tha an that an that an that	a the parent curf of first traffic for a second start of the second to the second start of the second start of
	15			
CTADT	0			CTOD - 27570
214KI :	= 1998	0	FKEQUENUT MHZ	510F = 26588



			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 6
	120	SPEC / TEST : PRELIMINARY RADIATED Manufacturer : Shure Model No. : Glxdar Serial No. : 4162888368 95A38988 Mode : HID Channel TX; Full control Radio	enissions 14 Bandwidth	Peak detector trace
	105	MOTES : TEST DATE : 29 Dec 2016 10:05:05 Ant. Polariz. : Horizontal	M. LONGINOTTI	
	90		<u> </u>	
BuU/m	75			
LEVEL d	60			
	45			
	30	l de an hele, de sen de served de ben de served de ben de serve ander de ben de ben de ben de ben de ben de ben Name de serve personne de serve	l y fernin 10 hann an an fallan a landa an ar an a Magair a falan ar an ar an ar an ar an ar an ar an ar	an fra glann a ffra an an 1979 an ffra an hair a gall an an da ffra an fra fra an fra fra an an fra fra an an a An gall ann an 1979 an an an fra an gall an an gall an an da fra an fra an fra an an fra fra gall an an fra an a
	15			
	0			
start :	= 1800	0	FREQUENCY MHz	STOP = 26500



			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 7
	120 105	SPEC / TEST : PRELIMINARY RADIATED MANUFACTURER : SHURE MODEL No. : GLXD4R SERIAL No. : 4162888368 95A38988 MODE : MID CHANNEL TX; FULL SCANS/BAND : 1	enissions 14 Bandwidth	Peak detector trace
	90	Notes : Test date : 29 dec 2016 10:13:44 Ant. Polariz. : vertical	M. LONGINOTTI	
m/Ur	75			
LEVEL dBu	60			
	45	n	h	Management of the second state of the second s
	30	a generation and the second	la she da barar 1.181.1411na ila aktor dan ar ganara ganara she an shika i a sa shika i a sa a Ina she	e a regel de se francé la present a la capacita de la presenta de la filo esta per la presenta de la presenta p En en regel de se francé la presenta de la presenta de la filo esta per la presenta de la presenta de la present
	15			
07487	0			
START	= 1800	И	FREQUENCY MHz	stop = 26500



			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 9
	120	SPEC / TEST : PRELIMINARY RADIATED Manufacturer : Shure Model No. : Glxdar Serial No. : 416288360 95A30988   Mode : Mid Channel TX; Half Scans Reado : 1	ekissions 14 Bandwidth	Peak detector trace
	CBI	NOTES : TEST DATE : 29 Dec 2016 10:34:44 ANT. POLARIZ. : HORIZONTAL	M. LONGINOTTI	
	90			
BuU/m	75			
LEVEL d	60			
	45			
	70	ي من الله عالم منه الله عالية (10 العالم من الله عالم من الم عالم عليه من الم عالم عليه من الله عالم	مار و مراجع الماري و محاليا الماري من محاليا المحاليا المحاليا المحاليا المحاليا و المحالية و المحالية و محالي و المحالي المحالية و المحالية و المحالية المحالية المحالية المحالية المحالية و المحالية المحالية و المحالية و م	الالمتحاص المطب المطالبين المستعاقات متعور والمعار المور المعالية المحتم الألبان محمد بالل
	JU	יין גער אין אייראע אראע אירע אין אין אין איין אין איין אין אייעאיע אייעראין איינאר איין איין איין איין איין איי איין אין איין אי	a na ana ang ang ang ang ang ang ang ang	ал раман на марители (рак вара на развителни развителни развителни развителни развителни развителни развителни
	15			
	0			
start :	- 1800	8	FREQUENCY MHz	stop = 26500



			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 8
	120 105	SPEC / TEST : PRELIMINARY RADIATED Manifacturer : Shure Model No. : Glxdar Serial No. : 4162889369 95A39988 I Mode : Mid Channel TX; Half Scans/Band : 1 Notes :	ekissions 4 Bandwidth	Peak detector trace
		TEST DATE : 29 Dec 2016 10:23:58 ANT. POLARIZ. : VERTICAL	M. LONGINOTTI	
	90			
aBu∪∕m	75			
EL o	60			
LEU	45			
	45			
		الانتصابات استعطاني فالكامل مدراتهما ها فتصفح بالصالا فاتنى وتطلباته وليسي	ويحترك فالمتحاد رعال والمتلاف في المحافظ في المحافظ المتحافظ المحاوي مريد عاصر المحافظ والمحافظ المحافظ المحافظ	in a final state when being a first the strength of the strength os
	30	a freibun fel bis verschieben die stel bie geben nie eine die stel bie die stel bie die stel bie die stel bie s	المكافرة والمرابع والمرابع المرابع المراجع المتحدين ويتماع المرابع المرابع فالمالم والمرابع ومنابعا محافظ ومحمد والمرابع	د الاستان المراجع المرا المراجع المراجع
	15	<b>.</b>		
	0 I			
start :	= 18000	8	FREQUENCY MHz	STOP = 26500











































			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KAI 11/25/13	Downers Grove, III. 60515	UNIV RCV ENI RUN 10
	120	SPEC / TEST : PRELIMINARY RADIATED Manufacturer : Shure Model No. : GlxD4r Serial No. : 4162889369 95A39988 ( Mode : High Channel TV : Enu	EMISSIONS A	Peak detector trace
	105	SCANS/BAND : 1 NOTES : TEST DATE : 29 Dec 2016 10:47:23 ANT. POLARIZ. : HORIZONTAL	M. LONGINOTTI	
	90			
aBuU∕m	75			
CUEL	60			
Ë	45		tekken dir is kristat	
		فأنفاهم متحولا ملي أنظامتهم وأخفظهم فأمر الاستقصاف فالقواص	da manana ang kalaka ka panaka ka panaka panala ang kalaka na kalaka na kanang kanang kanang kanang kanang kan Ing mang kanang kana	in the definition of a line of a line of the second state of the second state of the second state of the second
	30	a li yan yang nga katala katala kana kana kana katala na katala na katala na katala na katala na katala na kata	ر سالمان المراجع المحمل المحمل المحمل المحمد المحمل المحمل معالم والمحمل مراح مدين المحمل من العمال من العم	الروعة ومرواية والإلجام فالكف فمتحموه والعالم المحملة المحملية والمتحدية وتوايين ويتعربهم والمحمد ويروي
	15			
	₀			
Start	= 18006	9	FREQUENCY MHz	stop = 26580



			ELITE ELECTRONIC ENGINEERING	Inc.
	u	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCU EMI RUN II
	120	SPEC / TEST : PRELIMINARY RADIATED Manufacturer : Shure Model No. : Glxdar Serial No. : 4162080360 95A30980 & Mode :: H162 channel TX: Full	emissions 4 Bandwildth	Peak detector trace
	105	SCANS/BAND : 1 NOTES : TEST DATE : 29 Dec 2016 10:57:54	M. LONGINOTTI	
	90	HNI. PULHKIZ. : VEKIICHL		
dBu∪∕m	75			
ц	60			
ΓĒ	45			
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	15	anna dalman a construction de la		
	₀ l			
Start	= 18000	9	FREQUENCY MHz	stop = 26500

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			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 13
	120 105	SPEC / TEST : PRELIMINARY RADIATED Manufacturer : Shure Model No. : Glxdar Serial No. : 4162889360 95A38988 6 Mode : High Channel TX; Half Scans/Band : 1 Notes :	EMISSIONS 4 Bandniidth	PEAK DETECTOR TRACE
		TEST DATE : 29 Dec 2016 11:21:12 ANT. POLARIZ. : HORIZONTAL	M. LONGINOTTI	
	90			
lBu∪∕m	75			
Б	60			
LEU	45			
	45		I subtract and state	
	30	y Jih Tana Anany ya and Line ^I Atta ma Milan ya Jihan ana ya nana mbu da katili kika da Mana ana ang ang ang ang ang ang ang ang	fen stafen hit wert en het en het gezen lande die ner helle skaarden se kenter van die het het fer fer fer fer Generalijk ¹⁹ Perf ferster Ferens gezegen stafen twee sterritiers in stats dat wit te enter die gesprime of gezeg	ai Ulah dalamatan dan kenangan sebahan dari kan pada dari kan pada dari kan Ulah kenangkan pada dari kenangka Pang dari kan menangkan pengan sebahan dari kan pada dari kenangkan pendan mengin menangkan pendan sebahan kena Pang dari kan menangkan pengan sebahan dari pada pengan pendan mengin menangkan pendan sebahan kenangkan pengan
	15			
CTART	0 0			
STARE	= 18006	8	F KEQUENCY MHz	STUP = 26500

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			ELITE ELECTRONIC ENGINEERING	Inc.
	U	KA1 11/25/13	Downers Grove, III. 60515	UNIV RCV EMI RUN 12
	120	SPEC / TEST : PRELIMINARY RADIATED Monufacturer : Shure Model No. : Glx04r Serial No. : 4162808269 95A30908 Mode : High Channel Ty. Hai	EMISSIONS 24 E Romoutoth	Peak detector trace
	105	SCANS/BAND : 1 NOTES : TEST DATE : 29 Dec 2016 11:09:41	M. LONGINOTTI	
	90	ani. Polariz. : Vertical	I	
dBuU∕m	75			
UEL	60			
Щ	45		and the sector of the sector conference of the the description of the sector of the se	
		والمتحد والمتحد والمقاربة ويتعطس المتحلم والمتحاول والمعادة والمتحد والمرابع	in an	and the destination of the second second second second sector as the second second second second second second
	30	ى الېرىل بورىم يەرىم يەرىم يەرىپى بەرىم بەرىم يەرىم يەرم	ենսներություն Ձեն է է ել են հեղեն է ուսեն է գունչ է գուցեն է գուցեն է գուցեն աներաներին է են հեղեն է են հեղեն է Անություն հեղեն է են հետ են հեղեն է են հետ են հետ	n ti la se popular en la contra la popular la pola de en en prove por especial de la contra de la contra contra
	₀			
start :	= 18006	0	FREQUENCY MHz	stop = 26500



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: Transmit at 2404MHz - Full BandwidthTest Specification: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2404.00	Н	57.6	3.4	32.0	0.0	93.1	44949.5		
2404.00	V	64.1	3.4	32.0	0.0	99.5	94346.2		
7212.00	Н	47.9	6.1	35.7	-39.4	50.3	326.8	9434.6	-29.2
7212.00	V	48.6	6.1	35.7	-39.4	51.0	353.0	9434.6	-28.5
9616.00	Н	48.7	6.8	36.6	-39.3	52.9	441.0	9434.6	-26.6
9616.00	V	49.4	6.8	36.6	-39.3	53.6	479.7	9434.6	-25.9
14424.00	Н	49.2	8.7	39.6	-38.3	59.2	911.2	9434.6	-20.3
14424.00	V	49.3	8.7	39.6	-38.3	59.3	920.7	9434.6	-20.2
16828.00	Н	47.9	9.4	41.7	-37.5	61.5	1190.0	9434.6	-18.0
16828.00	V	47.4	9.4	41.7	-37.5	61.0	1127.3	9434.6	-18.5
21636.00	Н	37.5	2.2	40.6	-28.6	51.7	382.9	9434.6	-27.8
21636.00	V	36.9	2.2	40.6	-28.6	51.1	357.8	9434.6	-28.4
24040.00	Н	37.6	2.2	40.6	-30.0	50.4	332.4	9434.6	-29.1
24040.00	V	36.5	2.2	40.6	-30.0	49.3	291.8	9434.6	-30.2



Manufacturer	: Shure Incorporated
Test Item	: TRx
Model No.	: GLXD4R
Serial No.	: 4162880360 95A30908 04
Mode	: Transmit at 2404MHz - Full Bandwidth
Test Specification	: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
4808.00	Н	49.3	4.8	34.6	-39.3	49.4	294.5	5000.0	-24.6
4808.00	V	52.0	4.8	34.6	-39.3	52.1	400.9	5000.0	-21.9
12020.00	н	48.8	8.0	38.7	-39.2	56.4	657.3	5000.0	-17.6
12020.00	V	48.6	8.0	38.7	-39.2	56.2	644.6	5000.0	-17.8
19232.00	н	40.4	2.2	40.4	-28.5	54.4	526.9	5000.0	-19.5
19232.00	V	35.0	2.2	40.4	-28.5	49.1	284.6	5000.0	-24.9



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: Transmit at 2404MHz - Full BandwidthTest Specification: FCC-15.247, RSS-247 Radiated Spurious Emissions – Restricted Band Averages

							Average	Average	Average	
		Meter	CBL	Ant	Pre	Duty	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	Cycle	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
4808.00	Н	36.8	4.8	34.6	-39.3	4.4	41.3	116.4	500.0	-12.7
4808.00	V	41.9	4.8	34.6	-39.3	4.4	46.5	210.1	500.0	-7.5
12020.00	Н	36.2	8.0	38.7	-39.2	4.4	48.1	255.4	500.0	-5.8
12020.00	V	36.2	8.0	38.7	-39.2	4.4	48.2	256.9	500.0	-5.8
19232.00	Н	28.7	2.2	40.4	-28.5	4.4	47.2	229.5	500.0	-6.8
19232.00	V	22.3	2.2	40.4	-28.5	4.4	40.8	110.0	500.0	-13.2

Manufacturer	: Shure Incorporated
Test Item	: TRx
Model No.	: GLXD4R
Serial No.	: 4162880360 95A30908 04
Mode	: Transmit at 2404MHz - Half Bandwidth
Test Specification	: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

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						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2404.00	Н	55.8	3.4	32.0	0.0	91.2	36410.3		
2404.00	V	64.7	3.4	32.0	0.0	100.1	101443.5		
7212.00	н	48.3	6.1	35.7	-39.4	50.6	340.2	10144.4	-29.5
7212.00	V	48.9	6.1	35.7	-39.4	51.2	364.5	10144.4	-28.9
9616.00	Н	49.5	6.8	36.6	-39.3	53.7	481.9	10144.4	-26.5
9616.00	V	48.6	6.8	36.6	-39.3	52.8	435.5	10144.4	-27.3
14424.00	Н	48.7	8.7	39.6	-38.3	58.7	864.2	10144.4	-21.4
14424.00	V	49.0	8.7	39.6	-38.3	59.1	897.7	10144.4	-21.1
16828.00	Н	48.2	9.4	41.7	-37.5	61.9	1238.9	10144.4	-18.3
16828.00	V	48.1	9.4	41.7	-37.5	61.8	1230.4	10144.4	-18.3
21636.00	Н	37.3	2.2	40.6	-28.6	51.4	372.1	10144.4	-28.7
21636.00	V	37.2	2.2	40.6	-28.6	51.3	369.1	10144.4	-28.8
24040.00	Н	36.5	2.2	40.6	-30.0	49.3	293.2	10144.4	-30.8
24040.00	V	36.8	2.2	40.6	-30.0	49.7	304.2	10144.4	-30.5



Manufacturer	: Shure Incorporated
Test Item	: TRx
Model No.	: GLXD4R
Serial No.	: 4162880360 95A30908 04
Mode	: Transmit at 2404MHz - Half Bandwidth
Test Specification	: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

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						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
4808.00	Н	48.7	4.8	34.6	-39.3	48.8	276.4	5000.0	-25.1
4808.00	V	51.7	4.8	34.6	-39.3	51.8	388.6	5000.0	-22.2
12020.00	Н	48.5	8.0	38.7	-39.2	56.1	636.5	5000.0	-17.9
12020.00	V	48.9	8.0	38.7	-39.2	56.5	664.9	5000.0	-17.5
19232.00	Н	34.6	2.2	40.4	-28.5	48.7	271.8	5000.0	-25.3
19232.00	V	35.7	2.2	40.4	-28.5	49.8	308.5	5000.0	-24.2



Manufacturer	: Shure Incorporated
Test Item	: TRx
Model No.	: GLXD4R
Serial No.	: 4162880360 95A30908 04
Mode	: Transmit at 2404MHz - Half Bandwidth
Test Specification	: FCC-15.247, RSS-247 Radiated Spurious Emissions – Restricted Band

							Average	Average	Average	
		Meter	CBL	Ant	Pre	Duty	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	Cycle	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
4808.00	Н	36.9	4.8	34.6	-39.3	2.0	38.9	88.4	500.0	-15.0
4808.00	V	39.1	4.8	34.6	-39.3	2.0	41.2	114.8	500.0	-12.8
12020.00	Н	36.2	8.0	38.7	-39.2	2.0	45.7	192.9	500.0	-8.3
12020.00	V	36.2	8.0	38.7	-39.2	2.0	45.7	192.9	500.0	-8.3
19232.00	Н	22.4	2.2	40.4	-28.5	2.0	38.5	83.9	500.0	-15.5
19232.00	V	22.5	2.2	40.4	-28.5	2.0	38.5	84.2	500.0	-15.5



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: Transmit at 2442MHz - Full BandwidthTest Specification: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2442.00	Н	57.5	3.5	32.1	0.0	93.0	44594.1		
2442.00	V	65.1	3.5	32.1	0.0	100.6	107220.4		
9768.00	Н	49.2	6.9	36.9	-39.3	53.7	484.9	10722.0	-26.9
9768.00	V	49.2	6.9	36.9	-39.3	53.7	483.7	10722.0	-26.9
14652.00	Н	48.8	8.8	39.6	-38.2	59.0	895.9	10722.0	-21.6
14652.00	V	48.8	8.8	39.6	-38.2	59.0	891.8	10722.0	-21.6
17094.00	Н	48.7	9.5	41.6	-37.6	62.3	1300.1	10722.0	-18.3
17094.00	V	48.4	9.5	41.6	-37.6	62.0	1261.7	10722.0	-18.6
21978.00	Н	37.4	2.2	40.6	-29.2	51.0	353.6	10722.0	-29.6
21978.00	V	37.4	2.2	40.6	-29.2	51.0	355.6	10722.0	-29.6
24420.00	Н	37.0	2.2	40.6	-30.2	49.6	302.6	10722.0	-31.0
24420.00	V	36.9	2.2	40.6	-30.2	49.5	300.2	10722.0	-31.1



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: Transmit at 2442MHz - Full BandwidthTest Specification: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
4884.00	Н	48.5	4.9	34.5	-39.3	48.5	267.3	5000.0	-25.4
4884.00	V	49.1	4.9	34.5	-39.3	49.2	287.1	5000.0	-24.8
7326.00	Н	48.9	6.2	35.7	-39.4	51.3	367.9	5000.0	-22.7
7326.00	V	49.6	6.2	35.7	-39.4	52.0	397.9	5000.0	-22.0
12210.00	Н	48.4	8.0	38.8	-39.1	56.1	640.7	5000.0	-17.8
12210.00	V	48.8	8.0	38.8	-39.1	56.5	670.9	5000.0	-17.4
19536.00	н	35.1	2.2	40.4	-28.5	49.3	291.1	5000.0	-24.7
19536.00	V	35.0	2.2	40.4	-28.5	49.1	285.5	5000.0	-24.9



Manufacturer	: Shure Incorporated
Test Item	: TRx
Model No.	: GLXD4R
Serial No.	: 4162880360 95A30908 04
Mode	: Transmit at 2442MHz - Full Bandwidth
Test Specification	: FCC-15.247, RSS-247 Radiated Spurious Emissions – Restricted Band

							Average	Average	Average	
		Meter	CBL	Ant	Pre	Duty	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	Cycle	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
4884.00	Н	36.8	4.9	34.5	-39.3	4.4	41.4	117.0	500.0	-12.6
4884.00	V	36.8	4.9	34.5	-39.3	4.4	41.4	116.8	500.0	-12.6
7326.00	Н	36.86	6.2	35.7	-39.4	4.4	43.7	153.4	500.0	-10.3
7326.00	V	36.9	6.2	35.7	-39.4	4.4	43.8	154.1	500.0	-10.2
12210.00	Н	36.6	8.0	38.8	-39.1	4.4	48.7	273.3	500.0	-5.2
12210.00	V	36.5	8.0	38.8	-39.1	4.4	48.7	271.7	500.0	-5.3
19536.00	Н	22.9	2.2	40.4	-28.5	4.4	41.5	118.2	500.0	-12.5
19536.00	V	22.7	2.2	40.4	-28.5	4.4	41.3	116.2	500.0	-12.7



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30Mode: Transmit at 2442MHTest Specification: FCC-15.247, RSS-2

: TRx : GLXD4R : 4162880360 95A30908 04 : Transmit at 2442MHz - Half Bandwidth

: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2442.00	Н	56.2	3.5	32.1	0.0	91.7	38439.5		
2442.00	V	64.5	3.5	32.1	0.0	100.1	100641.6		
9768.00	Н	49.0	6.9	36.9	-39.3	53.5	473.3	10064.2	-26.6
9768.00	V	49.2	6.9	36.9	-39.3	53.7	485.4	10064.2	-26.3
12210.00	Н	48.7	8.0	38.8	-39.1	56.4	657.8	5000.0	-17.6
12210.00	V	49.6	8.0	38.8	-39.1	57.3	729.7	5000.0	-16.7
14652.00	Н	48.3	8.8	39.6	-38.2	58.5	842.9	10064.2	-21.5
14652.00	V	48.6	8.8	39.6	-38.2	58.8	875.5	10064.2	-21.2
17094.00	Н	48.1	9.5	41.6	-37.6	61.7	1220.3	10064.2	-18.3
17094.00	V	48.7	9.5	41.6	-37.6	62.3	1304.6	10064.2	-17.7
21978.00	Н	37.2	2.2	40.6	-29.2	50.8	345.9	10064.2	-29.3
21978.00	V	37.6	2.2	40.6	-29.2	51.2	363.1	10064.2	-28.9
24420.00	Н	37.0	2.2	40.6	-30.2	49.6	303.3	10064.2	-30.4
24420.00	V	36.6	2.2	40.6	-30.2	49.2	289.3	10064.2	-30.8



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: Transmit at 2442MHz - Half BandwidthTest Specification: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
4884.00	Н	48.7	4.9	34.5	-39.3	48.8	274.2	5000.0	-25.2
4884.00	V	50.6	4.9	34.5	-39.3	50.7	342.0	5000.0	-23.3
7326.00	Н	49.0	6.2	35.7	-39.4	51.4	373.0	5000.0	-22.5
7326.00	V	49.4	6.2	35.7	-39.4	51.8	389.3	5000.0	-22.2
12210.00	Н	48.7	8.0	38.8	-39.1	56.4	657.8	5000.0	-17.6
12210.00	V	49.6	8.0	38.8	-39.1	57.3	729.7	5000.0	-16.7
19536.00	Н	35.3	2.2	40.4	-28.5	49.5	298.2	5000.0	-24.5
19536.00	V	35.9	2.2	40.4	-28.5	50.1	318.8	5000.0	-23.9



Manufacturer	: Shure Incorporated
Test Item	: TRx
Model No.	: GLXD4R
Serial No.	: 4162880360 95A30908 04
Mode	: Transmit at 2442MHz - Half Bandwidth
Test Specification	: FCC-15.247, RSS-247 Radiated Spurious Emissions – Restricted Band

							Average	Average	Average	
		Meter	CBL	Ant	Pre	Duty	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	Cycle	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
4884.00	Н	36.8	4.9	34.5	-39.3	2.0	38.9	87.7	500.0	-15.1
4884.00	V	36.9	4.9	34.5	-39.3	2.0	38.9	88.5	500.0	-15.0
7326.00	Н	36.85	6.2	35.7	-39.4	2.0	41.2	115.1	500.0	-12.8
7326.00	V	36.9	6.2	35.7	-39.4	2.0	41.2	115.1	500.0	-12.8
12210.00	Н	36.5	8.0	38.8	-39.1	2.0	46.2	203.8	500.0	-7.8
12210.00	V	36.5	8.0	38.8	-39.1	2.0	46.2	203.5	500.0	-7.8
19536.00	н	22.8	2.2	40.4	-28.5	2.0	38.9	87.9	500.0	-15.1
19536.00	V	22.6	2.2	40.4	-28.5	2.0	38.7	85.8	500.0	-15.3



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: Transmit at 2478MHz - Full BandwidthTest Specification: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

Peak Peak Peak CBL Total Meter Ant Pre Total Limit Freq. Ant Reading Fac Fac Amp dBuV/m uV/m uV/m Margin MHz Pol (dBuV) (dB) (dB) (dB) at 3m at 3 m at 3 m (dB) 2478.00 Н 50.1 3.5 32.1 0.0 85.7 19294.2 58671.3 2478.00 V 59.7 3.5 32.1 0.0 95.4 9912.00 н 49.6 7.0 37.0 -39.2 54.3 516.6 5867.1 -21.1 9912.00 V 49.0 7.0 37.0 -39.2 53.7 483.8 5867.1 -21.7 14868.00 Н 48.7 8.9 39.6 -38.2 59.2 908.2 5867.1 -16.2 14868.00 V 48.5 39.6 -38.2 58.9 883.5 5867.1 -16.4 8.9 17346.00 Н 48.5 9.7 41.4 -37.7 61.8 1231.6 5867.1 -13.6 17346.00 41.4 1244.4 V 48.6 9.7 -37.7 61.9 5867.1 -13.5 2.2 24780.00 Н 36.8 40.6 -30.8 48.8 277.0 5867.1 -26.5 24780.00 V 36.9 2.2 40.6 -30.8 48.9 277.3 5867.1 -26.5



Manufacturer Test Item Model No. Serial No. Mode Test Specification

: Shure Incorporated : TRx : GLXD4R : 4162880360 95A30908 04 : Transmit at 2478MHz - Full Bandwidth

: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2490.60	Н	25.0	3.5	32.2	0.0	60.6	1076.2	5000.0	-13.3
2492.90	V	37.2	3.5	32.2	0.0	72.9	4402.9	5000.0	-1.1
4956.00	Н	49.0	4.9	34.5	-39.3	49.0	282.9	5000.0	-24.9
4956.00	V	48.2	4.9	34.5	-39.3	48.3	258.9	5000.0	-25.7
7434.00	Н	53.4	6.2	35.6	-39.4	55.8	614.7	5000.0	-18.2
7434.00	V	48.7	6.2	35.6	-39.4	51.2	361.6	5000.0	-22.8
12390.00	Н	49.4	8.0	38.8	-39.0	57.2	721.5	5000.0	-16.8
12390.00	V	48.7	8.0	38.8	-39.0	56.5	667.2	5000.0	-17.5
19824.00	Н	34.9	2.2	40.4	-28.1	49.4	294.8	5000.0	-24.6
19824.00	V	35.0	2.2	40.4	-28.1	49.5	299.6	5000.0	-24.4
22302.00	Н	37.5	2.2	40.6	-29.0	51.3	367.9	5000.0	-22.7
22302.00	V	37.3	2.2	40.6	-29.0	51.1	358.3	5000.0	-22.9



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: Transmit at 2478MHz - Full BandwidthTest Specification: FCC-15.247, RSS-247 Radiated Spurious Emissions – Restricted Band

							Average	Average	Average	
		Meter	CBL	Ant	Pre	Duty	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	Cycle	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2490.60	Н	13.4	3.5	32.2	0.0	4.4	41.2	115.0	500.0	-12.8
2492.90	V	16.1	3.5	32.2	0.0	4.4	41.1	113.9	500.0	-12.8
4956.00	Н	36.7	4.9	34.5	-39.3	4.4	43.2	144.6	500.0	-10.8
4956.00	V	36.6	4.9	34.5	-39.3	4.4	43.4	147.1	500.0	-10.6
7434.00	Н	36.34	6.2	35.6	-39.4	4.4	48.8	276.8	500.0	-5.1
7434.00	V	36.5	6.2	35.6	-39.4	4.4	48.8	275.2	500.0	-5.2
12390.00	Н	36.6	8.0	38.8	-39.0	4.4	41.5	119.3	500.0	-12.4
12390.00	V	36.6	8.0	38.8	-39.0	4.4	41.5	119.1	500.0	-12.5
19824.00	Н	22.6	2.2	40.4	-28.1	4.4	43.0	140.9	500.0	-11.0
19824.00	V	22.6	2.2	40.4	-28.1	4.4	43.0	141.0	500.0	-11.0
22302.00	Н	24.7	2.2	40.6	-29.0	4.4	41.5	119.3	500.0	-12.4
22302.00	V	24.8	2.2	40.6	-29.0	4.4	41.5	119.1	500.0	-12.5



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: Transmit at 2478MHz - Half BandwidthTest Specification: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2478.00	Н	50.8	3.5	32.1	0.0	86.5	21082.7		
2478.00	V	61.2	3.5	32.1	0.0	96.9	69650.8		
9912.00	Н	52.7	7.0	37.0	-39.2	57.4	741.6	6965.1	-19.5
9912.00	V	53.0	7.0	37.0	-39.2	57.7	765.9	6965.1	-19.2
14868.00	Н	52.5	8.9	39.6	-38.2	62.9	1398.6	6965.1	-13.9
14868.00	V	52.7	8.9	39.6	-38.2	63.1	1427.9	6965.1	-13.8
17346.00	Н	52.7	9.7	41.4	-37.7	66.1	2009.0	6965.1	-10.8
17346.00	V	47.9	9.7	41.4	-37.7	61.2	1150.7	6965.1	-15.6
24780.00	Н	37.6	2.2	40.6	-30.8	49.6	302.3	6965.1	-27.2
24780.00	V	36.6	2.2	40.6	-30.8	48.6	268.8	6965.1	-28.3



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30Mode: Transmit at 2478MHTest Specification: FCC-15.247, RSS-2

: TRx : GLXD4R : 4162880360 95A30908 04 : Transmit at 2478MHz - Half Bandwidth

: FCC-15.247, RSS-247 Radiated Spurious Emissions - Harmonics

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2490.33	Н	29.1	3.5	32.2	0.0	64.8	1735.2	5000.0	-9.2
2483.50	V	30.0	3.5	32.2	0.0	65.7	1919.9	5000.0	-8.3
4956.00	Н	53.3	4.9	34.5	-39.3	53.4	465.1	5000.0	-20.6
4956.00	V	53.4	4.9	34.5	-39.3	53.5	472.7	5000.0	-20.5
7434.00	Н	53.0	6.2	35.6	-39.4	55.4	587.1	5000.0	-18.6
7434.00	V	52.8	6.2	35.6	-39.4	55.2	576.4	5000.0	-18.8
12390.00	Н	52.9	8.0	38.8	-39.0	60.7	1085.7	5000.0	-13.3
12390.00	V	52.7	8.0	38.8	-39.0	60.5	1058.6	5000.0	-13.5
19824.00	Н	36.3	2.2	40.4	-28.1	50.8	346.4	5000.0	-23.2
19824.00	V	35.3	2.2	40.4	-28.1	49.8	308.4	5000.0	-24.2
22302.00	Н	37.6	2.2	40.6	-29.0	51.4	370.5	5000.0	-22.6
22302.00	V	37.4	2.2	40.6	-29.0	51.2	364.1	5000.0	-22.8


Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: Transmit at 2478MHz - Half BandwidthTest Specification: FCC-15.247, RSS-247 Radiated Spurious Emissions – Restricted Band

							Average	Average	Average	
		Meter	CBL	Ant	Pre	Duty	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	Cycle	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2490.33	Н	14.9	3.5	32.2	0.0	2.0	42.9	140.3	500.0	-11.0
2483.50	V	17.3	3.5	32.2	0.0	2.0	43.0	140.5	500.0	-11.0
4956.00	Н	40.9	4.9	34.5	-39.3	2.0	44.4	166.2	500.0	-9.6
4956.00	V	40.9	4.9	34.5	-39.3	2.0	44.4	165.8	500.0	-9.6
7434.00	Н	40.03	6.2	35.6	-39.4	2.0	49.4	296.0	500.0	-4.6
7434.00	V	40.0	6.2	35.6	-39.4	2.0	49.5	297.7	500.0	-4.5
12390.00	Н	39.7	8.0	38.8	-39.0	2.0	39.1	90.4	500.0	-14.9
12390.00	V	39.7	8.0	38.8	-39.0	2.0	39.1	90.3	500.0	-14.9
19824.00	Н	22.7	2.2	40.4	-28.1	2.0	40.5	106.5	500.0	-13.4
19824.00	V	22.6	2.2	40.4	-28.1	2.0	40.5	106.5	500.0	-13.4
22302.00	Н	24.8	2.2	40.6	-29.0	2.0	39.1	90.4	500.0	-14.9
22302.00	V	24.8	2.2	40.6	-29.0	2.0	39.1	90.3	500.0	-14.9

MultiView 🕀	Spectrum						~
Ref Level 20.00 Att Input	d5m Offset 10.cB SWI 1.4C PS	20 00 dB ● R #1.84s (~6.9 ms) ● V 0ff N	BW 100 kHz BW 300 kHz Mode otch Of	: Auto FET		Freque	acy 2.4000000 GHz
1 Frequency Sw	reep	01 1	otan				
							M1[2] 30.46 dBm 2.40000000 GHz
11. dBm							
C cBm							· · · · · · · · · · · · · · · · · · ·
							multiple of
-1J 38m						1	
-20-dBm	1 -20.550 cBm			_	N	m	
-30 dBm					N	V	
-4.1 dum				* ~	$\Delta I$		
			a free	m	V		
-53 d8m	han	man	Nº N				
-63 dBm							
-7.1 dBm				V1			
CF 2.4 GHz			001 pts		L0 MHz7		Span 10.0 MHz
1 T				Measur	ing	03.01.2017	Ref Level RBW

#### BAND EDGE COMPLIANCE

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Low Channel - Full Bandwidth



MultiView 8	Spectrum					▼
Ref Level 20.00 Att Input	d5m Offset 10.5B SWT 1.AC PS	20 00 dB ● RBW 100 kHz 1.84s (~6.9 ms) ● VBW 300 kHz Off Notch Off	Mode Auto FET	Fr	equency 2.	4000000 GHz
1 Frequency Sw	eep					<ul> <li>2Pk Max</li> </ul>
					M1[2]	2,4000000 GHz
11 dBm						
C CBM-						1
-13 dBm						
-20 d8m	1 -13.960 cPm			^°	m/	
20 dBm				7	~	
55 3511				h		
-4J d0m		Λ.)		m		
-53 d8m		m me w	terr			
Statim matter	when					
-70 dBm						
			vi			
CF 2.4 GHz		1001 pts	1.0 M	Hz/		Span 10.0 MHz
			Measuring	03.01.2	017 RefLe	RBW

# BAND EDGE COMPLIANCE

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	Low Channel Half Bandwidth



Manufacturer	: Shure Incorporated
Test Item	: TRx
Model No.	: GLXD4R
Serial No.	: 4162880360 95A30908 04
Mode	: High Channel - Full Bandwidth & Half Bandwidth
Notes	:

					Peak	Peak	Peak	
	Meter	CBL	Ant	Pre	Total	Total	Limit	
Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
Н	25.0	3.5	32.2	0.0	60.6	1076.2	5000.0	-13.3
V	37.2	3.5	32.2	0.0	72.9	4402.9	5000.0	-1.1
F	λnt ² ol Η V	Ant Reading Pol (dBuV) H 25.0 V 37.2	Meter CBL Reading Fac Ol (dBuV) (dB) H 25.0 3.5 V 37.2 3.5	MeterCBLAntAntReadingFacFacPol(dBuV)(dB)(dB)H25.03.532.2V37.23.542.2	MeterCBLAntPreAntReadingFacFacAmpPol(dBuV)(dB)(dB)(dB)H25.03.532.20.0V37.23.532.20.0	MeterCBLAntPreTotalAntReadingFacFacAmpdBuV/mPol(dBuV)(dB)(dB)(dB)at 3mH25.03.532.20.060.6V37.23.532.20.072.9	MeterCBLAntPreTotalTotalAntReadingFacFacAmpdBuV/muV/mPol(dBuV)(dB)(dB)(dB)at 3mat 3 mH25.03.532.20.060.61076.2V37.23.532.20.072.94402.9	MeterCBLAntPreTotalTotalLimitAntReadingFacFacAmpdBuV/muV/muV/mPol(dBuV)(dB)(dB)(dB)at 3mat 3 mat 3 mH25.03.532.20.060.61076.25000.0V37.23.532.20.072.94402.95000.0

Table 1 - Full Bandwidth

						Peak	Peak	Peak	
		Meter	CBL	Ant	Pre	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2490.33	Н	29.1	3.5	32.2	0.0	64.8	1735.2	5000.0	-9.2
2483.50	V	30.0	3.5	32.2	0.0	65.7	1919.9	5000.0	-8.3

Table 2 - Half Bandwidth



Manufacturer: Shure IncorporatedTest Item: TRxModel No.: GLXD4RSerial No.: 4162880360 95A30908 04Mode: High Channel - Full Bandwidth & Half Bandwidth - AveragesNotes:

							Average	Average	Average	
		Meter	CBL	Ant	Pre	Duty	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	Cycle	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2490.60	Н	13.4	3.5	32.2	0.0	0.0	49.0	283.1	500.0	-4.9
2492.90	V	16.1	3.5	32.2	0.0	0.0	51.8	388.8	500.0	-2.2

Table 1 - Full Bandwidth

							Average	Average	Average	
		Meter	CBL	Ant	Pre	Duty	Total	Total	Limit	
Freq.	Ant	Reading	Fac	Fac	Amp	Cycle	dBuV/m	uV/m	uV/m	Margin
MHz	Pol	(dBuV)	(dB)	(dB)	(dB)	(dB)	at 3m	at 3 m	at 3 m	(dB)
2490.33	Н	14.9	3.5	32.2	0.0	0.0	50.6	339.5	500.0	-3.4
2483.50	V	17.3	3.5	32.2	0.0	0.0	52.9	443.9	500.0	-1.0

Table 2 - Half Bandwidth



MultiView 88	Spectrum								2
Ref Level 20.00 Att	d5m Offset 10 cB SWI 4 1 AC PS	20.00 41.9 µs (~7.7 n	dB = RBW 100 (a) = VBW 300	kHz kHz Mode Auto Off	FFT		Frequ	ency 2.4	040000 GHz
1 Frequency Sw	eep		on Noten	01					<ul> <li>22k Max</li> </ul>
								M1[2] 2	0.64 dBm 40500350 GHz
tt dBm H	1 8 000 db-								
C cBm			$\sim$			~~~			
-10 dBm									
	1								-
- <u>22 dBm</u>	1								$\sim$
-30 dBm						_			
-4J dam									
-53 d8m									
-63 dBm									
-70 dBm									
CF 2.404 GHz			1001 pts		350	0.0 kHz/		101	Span 3.5 MHz
					Measuring	<b>(</b>	03.01.2017	RefLeve	RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Low Channel - Full Bandwidth



MultiView 🔠	Spectrum					~
Ref Level 20.00 Att Input	d5m Offset 10.cB SWT 41 1.4C PS	20.00 d5 ● RBW 1 1.73s (~10 ms) ● VBW 3 Off Notch	00 kHz 00 kHz – Mode Auto Off	FT :	Frequency	2.4040000 GHz
1 Frequency Sw	eep					● 22k Max
					MI	[2] 0.97 dBm 2.40431590 GHz
tt uBm H	1 8 000 dbm					
				ML		
C CBM-						
-13 dBm						V
23 dBm						
-30 dBm						
-4J dum						
-53 d8m						
-60 d8m						
-73 dBm						
CF 2.404 GHz		1001 p	Is	160.5 kHz/		Span 1.605 MHz
	22			Measuring	03.01.2017 Re	fLevel RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Low Channel - Half Bandwidth

MultiView 🕀 Spectrum	·		
Ref Level 20.00 d5m Offse Att 10 c8 SWT Insut 1.40 PS	t 20 00 dB ● RBW 100 kHz 41.77 us (~2.8 ms) ● VBW 300 kHz Mode Auto F	ŦT	Frequency 2.4420000 GHz
1 Frequency Sweep	01 10001 01		• 29k Max
			M1[2] 0.18 dBm 2.44133740 GHz
11 oBm H1 8 000 dST			
C cBm			-
			$\sim$
-13 88m			$\sim$
-mab cs-			<u>\</u>
30 dBm-			
-4.1 dum			
-53 d8m			
-60 dBm			
-73 dBm			
CE 2.4.12 GUz	1001 pts	330.0 kHz/	Suap 3.3 MUz
OF LETTIE OF R	1001 pta	Source and the B	LD1.2017 (Reflevel) (RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Mid Channel - Full Bandwidth



MultiView 🕀	Spectrum							
Ref Level 20.00 Att	d5m Offset 10 dB SWT 1 40 PS	20.0 41.73 Ls (~10	0 d5 ● RBW 10 ms) ● VBW 30 Off Notch	0 kHz 0 kHz Mode Au 11#	m, FFT		Freque	ency 2.4420000 GHz
1 Frequency Sw	eep		of Hotal	0.1				• 22k Max
								M1[2] 1.36 dBm 2.44166810 GHz
10 uBm HD	1 8 CCO d5-							
C cBm		<u>`</u>						~
-10 dBm	/							
~21 dam								1
-30 dBm								
-4J d0m								
-53 d8m								
-60 d8m								
-70 dBm								
CF 2.442 GHz			1001 pt:	,	11	50.5 kHz/		Span 1.605 MHz
					Measuri	ng •	03.01.2017	Ref Level RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: Mid Channel - Half Bandwidth

MultiView 8	Spectrum										
Ref Level 20.00 Att 1 Input	d5m Offset 0.cB SWI 4 1.AC PS	41.77	20.00 dB (~7.8 ms) Off	<ul> <li>RBW 1</li> <li>VBW 3</li> <li>Notch</li> </ul>	CO kHz CO kHz Off	Mode Aut	to FFT		5	Frequency	2.4780000 GHz
1 Frequency Swo	ep		01	1101011	01						29k Max
										MI	2] 1.50 dBm 2.47734730 GHz
tt albin H1	8 000 d5-										
C cBm			MI	51							
-12 dBm		~~		~~~~		$\sim$	~~~			$\square$	
										1	
-20 dBm											
											Y-
-30 dBm											
-6J d0m											
-53 dBm											
-60 d8m											
-70 dBm											
CF 2.478 GHz				1001 pt	s		33	10.0 kHz/			Span 3.3 MHz
							Measurin	I	03.03	L2017 Re	fLevel RBW

MANUFACTURER: Shure IncorporatedMODEL NUMBER: GLXD4RSERIAL NUMBER: 4162880360 95A30908 04TEST MODE: High Channel - Full Bandwidth



MultiView 🙃	Spectrum							▼
Ref Level 20.00 Att Input	d5m Offset 10.5B SWT 1.AC PS	20.00 41.73 La (~10 r	d5 = RBW 100 k hs) = VBW 300 k Of Notch	tHz Hz Mode Aut Off	N FET		Frequency	2.4780000 GHz
1 Frequency Sw	еер							2Pk Max
							MI	[2] 0.07 dBm 2.47766810 GHz
11. dBm H	1 8 COO d5							
C cBm		91 1						
-13 dBm								
-20 dBm-								
20 d8m								
55 3511								
-4J d0m								
-53 d8m								
-60 dBm				8				
-70 dBm								
CF 2.478 GHz	28		1001 pts		160.5	kHz/		Span 1.605 MHz
	2				Measuring	11	03.01.2017 Re	fLevel RBW

MANUFACTURER	: Shure Incorporated
MODEL NUMBER	: GLXD4R
SERIAL NUMBER	: 4162880360 95A30908 04
TEST MODE :	High Channel - Half Bandwidth