

ELEMENT WASHINGTON DC LLC

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MEASUREMENT REPORT FCC PART 15.247 Bluetooth (Low Energy)

Applicant Name:

Sony Corporation 1-7-1 Konan Minato-ku Tokyo, 108-0075, Japan Date of Testing: 6/3/2022-7/25/2022 **Test Report Issue Date:** 7/28/2022 **Test Site/Location:** Element. Columbia, MD, USA **Test Report Serial No.:** 1M2205240063-11.PY7

FCC ID:

PY7-76056F

APPLICANT:

Sony Corporation

Application Type: EUT Type: Max. RF Output Power: **Frequency Range:** FCC Classification: FCC Rule Part(s): Test Procedure(s):

Certification Portable Handset 11.888 mW (10.75 dBm) Peak Conducted 2402 - 2480MHz Digital Transmission System (DTS) Part 15 Subpart C (15.247) ANSI C63.10-2013, KDB 558074 D01 v05r02

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.10-2013 and KDB 558074 D01 v05r02. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

RJ Ortanez Executive Vice President



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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 Element Test Location

These measurement tests were conducted at the Element laboratory located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at Element lab located in Columbia, MD 21046, U.S.A.

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Sony Portable Handset FCC ID: PY7-76056F**. The data found in this test report was taken with the EUT operating in Bluetooth low energy mode. While in low energy mode, the Bluetooth transmitter hops pseudo-randomly between 40 channels, three of which are "advertising channels". When the transmitter is hopping only between the three advertising channels, the EUT does not fall under the category of a "hopper" as defined in 15.247(a)(iii) which states that a "frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels." As operation on only the advertising channels does not qualify the EUT as a hopper, the EUT is certified as a DTS device in this mode. The data found in this report is representative of the device when it transmits on its advertising channels. Typical Bluetooth operation is covered under the DSS report found with this application.

Test Device Serial No.: 94922, 99823

Note: This device is capable of operating in hopping and non-hopping mode. The EUT can hop between 79 different channels in the 2400 – 2483.5MHz band.

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1700/1900, WCDMA/HSPA, Multi-band LTE, Multi-band 5G NR FR1, 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII (5 and 6 GHz), Bluetooth (1x, EDR, LE), NFC, Wireless Power Transfer

Ch.	Frequency (MHz)
0	2402
:	:
19	2440
:	
39	2480

 Table 2-1. Frequency / Channel Operations

2.3 Antenna Description

Following antenna was used for the testing. This device can operate in Bluetooth mode on either antenna 1 or antenna 2 but not both simultaneously.

Frequency [GHz]	Antenna 1 Gain (dBi)	Antenna 2 Gain (dBi)
2.4	-1.3	-8.7

Table 2-2. Antenna Peak Gain

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2.4 Test Configuration

The EUT was tested per the guidance of ANSI C63.10-2013 and KDB 558074 D01 v05r02. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing. See Sections 3.2 for AC line conducted emissions test setups, 3.3 for radiated emissions test setups, and 7.2, 7.3, 7.4, 7.5, and 7.6 for antenna port conducted emissions test setups.

2.5 Software and Firmware

The test was conducted with software/firmware version 3.103 installed on the EUT.

2.6 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) and the guidance provided in KDB 558074 D01 v05r02 were used in the measurement of the EUT.

Deviation from measurement procedure.....None

3.2 AC Line Conducted Emissions

The line-conducted facility is located inside a 10'x16'x9' shielded enclosure. The shielded enclosure is manufactured by ETS Lindgren RF The shielding effectiveness of the shielded room is in accordance with MIL-Std-285 or NSA 65-5. A 1m x 1.5m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, $50\Omega/50\mu$ H Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. The external power line filter is an ETS Lindgren Model LPRX-4X30 (100dB Attenuation, 14kHz-18GHz) and the two EMI/RFI filters are ETS Lindgren Model LRW-2030-S1 (100dB Minimum Insertion Loss, 14kHz – 10GHz). These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and this supply line(s) will be connected to the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference groundplane. Power cables for support equipment were routed down to the second LISN while ensuring that those cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The spectrum was scanned from 150kHz to 30MHz with a spectrum analyzer. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 10kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions is used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

Line conducted emissions test results are shown in Section 7.9. The EMI Receiver mode of the Agilent MXE was used to perform AC line conducted emissions testing.

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3.3 Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. An 80cm tall test table made of Styrodur is placed on top of the turn table. For measurements above 1GHz, an additional Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33 depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up was placed on top of the 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, mode of operation, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions.

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014. Additionally, radiated emissions below 30MHz are also validated on an Open Area Test Site to assert correlation with the chamber measurements per the requirements of KDB 414788 D01 v01r01.

3.4 Environmental Conditions

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

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4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- The antenna(s) of the EUT are permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT complies with the requirement of §15.203.

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5.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	1.13
Line Conducted Disturbance	3.09
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

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6.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	N9038A	MXE EMI Receiver	1/21/2022	Annual	1/21/2023	MY51210133
Agilent	N9030A	PXA Signal Analyzer (44GHz)	2/14/2022	Annual	2/14/2023	MY52350166
Emco	3115	Horn Antenna (1-18GHz)	7/20/2021	Biennial	7/20/2023	9704-5182
Emco	3116	Horn Antenna (18 - 40GHz)	7/9/2020	Biennial	9/26/2022	9203-2178
ETS-Lindgren	3816/2NM	Line Impedance Stabilization Network	7/9/2020	Biennial	9/26/2022	114451
Pasternack	NMLC-2	Line Conducted Emissions Cable (NM)	12/19/2021	Annual	12/19/2022	NMLC-2
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	8/3/2021	Annual	8/3/2022	100342
Solar Electronics	8012-50-R-24-BNC	Line Impedance Stabilization Network	9/21/2021	Annual	9/21/2022	310233
Sunol	DRH-118	Horn Antenna (1-18GHz)	2/14/2022	Biennial	2/14/2024	A050307
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	7/27/2020	Biennial	7/27/2022	A051107

Table 6-1. Annual Test Equipment Calibration Schedule

Note:

For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

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7.0 TEST RESULTS

7.1 Summary

Company Name:	Sony Corporation
FCC ID:	<u>PY7-76056F</u>
FCC Classification:	Digital Transmission System (DTS)
Number of Channels:	<u>40</u>

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.247(a)(2)	RSS-247 [5.2]	6dB Bandwidth	> 500kHz		PASS	Section 7.2
15.247(b)(3)	RSS-247 [5.4(4)]	Transmitter Output Power	< 1 Watt		PASS	Sections 7.3
15.247(e)	RSS-247 [5.2]	Transmitter Power Spectral Density	< 8dBm / 3kHz Band	CONDUCTED	PASS	Section 7.4
15.247(d)	RSS-247 [5.5]	Band Edge / Out-of-Band Emissions	≥ 20dBc		PASS	Sections 7.5, 7.6
15.205 15.209	RSS-Gen [8.9]	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209 (RSS-Gen [8.9])	RADIATED	PASS	Sections 7.7, 7.8
15.207	RSS-Gen [8.8]	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits (RSS-Gen[8.8])	LINE CONDUCTED	PASS	Section 7.9

Table 7-1. Summary of Test Results

Notes:

- 1. All modes of operation were investigated. The test results shown in the following sections represent the worst case emissions.
- 2. The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 3. All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.
- 4. For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "Bluetooth LE Automation," Version 3.6.
- 5. For radiated band edge, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "Chamber Automation," Version 1.3.1.

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7.2 6dB Bandwidth Measurement – Bluetooth (LE)

<u>§15.247(a.2); RSS-247 [5.2]</u>

Test Overview and Limit

The bandwidth at 6dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the transmitter antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible 6dB bandwidth is 500 kHz.

Test Procedure Used

ANSI C63.10-2013 – Section 11.8.2 Option 2 KDB 558074 D01 v05r02 – Section 8.2

Test Settings

- The signal analyzers' automatic bandwidth measurement capability of the spectrum analyzer was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = 100kHz
- 3. VBW \geq 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.





Test Notes

None

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Frequency [MHz]	Data Rate	Channel No.	Bluetooth Mode	Measured Bandwidth [kHz]	Minimum Bandwidth [kHz]	Pass / Fail
2402	125 kbps	0	LE	624.6	500	Pass
2440	125 kbps	19	LE	620.0	500	Pass
2480	125 kbps	39	LE	648.2	500	Pass
2402	500 kbps	0	LE	659.5	500	Pass
2440	500 kbps	19	LE	660.7	500	Pass
2480	500 kbps	39	LE	663.9	500	Pass
2402	1 Mbps	0	LE	667.0	500	Pass
2440	1 Mbps	19	LE	665.2	500	Pass
2480	1 Mbps	39	LE	665.0	500	Pass
2402	2 Mbps	0	LE	1140.7	500	Pass
2440	2 Mbps	19	LE	1137.8	500	Pass
2480	2 Mbps	39	LE	1144.9	500	Pass

Table 7-2. Conducted Bandwidth Measurements – ANT 1

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Plot 7-1. 6dB Bandwidth Plot (Bluetooth (LE), 125kbps - Ch. 0) - ANT 1



Plot 7-2. 6dB Bandwidth Plot (Bluetooth (LE), 125kbps – Ch. 19) – ANT 1

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Plot 7-4. 6dB Bandwidth Plot (Bluetooth (LE), 500kbps - Ch. 0) - ANT 1

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LX/ RL RF 50Ω D		SENSE:INT Center Freg: 2.440000000	ALIGN AUTO	04:42:53 PM Jul 13, 20 Radio Std: None	Frequency
	• • ••		g Hold: 100/100	Radio Device: BTS	
	#IFGain:Low	#Atten: 26 dB		Radio Device: B I S	-
10 dB/div Ref 15.00 d	IBm				
5.00					Center Freq
-5.00					2.440000000 GHz
-15.0					
-25.0					<mark></mark> -
-35.0					_
-45.0					
-55.0					_
-65.0					_
-75.0					_
Center 2.440000 GHz				Span 2.000 M	
#Res BW 100 kHz		#VBW 300 kHz		Sweep 1 r	
					Auto Man
Occupied Bandwi	idth	Total Powe	r 15.4	4 dBm	
	1.0339 MH	Z			Freq Offset
Transmit Freg Error	-501 H	z % of OBW I		9.00 %	0 Hz
x dB Bandwidth	660.7 kH	z xdB	-6.	.00 dB	
MSG			STATU	s	

Plot 7-5. 6dB Bandwidth Plot (Bluetooth (LE), 500kbps - Ch. 19) - ANT 1



Plot 7-6. 6dB Bandwidth Plot (Bluetooth (LE), 500kbps - Ch. 39) - ANT 1

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🔤 Keysight Spectrum Analyzer													
LXIRL RF 5	50Ω D	C CC	ORREC			ENSE:INT	00000 GHz	ALIGN A	UTO	04:46:24 P Radio Std	M Jul 13, 2022	Fr	equency
		#IF	-Gain:L	••• .ow		ee Run	Avg Hold	d: 100/1	00	Radio Dev			
10 dB/div Ref 1:	5.00 d	Bm							<u> </u>				
-5.00													Center Free 2000000 GH
-15.0													
-35.0													
-55.0													
-75.0													
Center 2.402000 G #Res BW 100 kHz	Hz				#V	BW 300	kHz				.000 MHz ep 1 ms		CF Stej 200.000 kH
Occupied Ba						Total	Power		15.6	dBm		<u>Auto</u>	Ма
	,	1.03	309	MF	Z								Freq Offse
Transmit Freq	Error			259	Hz	% of C	BW Pow	er	99	.00 %			0 H
x dB Bandwidt	h		66	i7.0 k	Hz	x dB			-6.(00 dB			
ISG								S	TATUS				

Plot 7-7. 6dB Bandwidth Plot (Bluetooth (LE), 1Mbps - Ch. 0) - ANT 1



Plot 7-8. 6dB Bandwidth Plot (Bluetooth (LE), 1Mbps - Ch. 19) - ANT 1

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<u>.</u>	•		V9.0 02/01/2019		









Plot 7-10. 6dB Bandwidth Plot (Bluetooth (LE), 2Mbps – Ch. 0) – ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dage 19 of 90		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 18 of 86		
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Plot 7-11. 6dB Bandwidth Plot (Bluetooth (LE), 2Mbps - Ch. 19) - ANT 1



Plot 7-12. 6dB Bandwidth Plot (Bluetooth (LE), 2Mbps – Ch. 39) – ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)		
Test Report S/N:	Test Dates:	EUT Type:	Dama 40 af 00	
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 19 of 86	
<u>1</u>	-		V9.0 02/01/2019	



Frequency [MHz]	Data Rate	Channel No.	Bluetooth Mode	Measured Bandwidth [kHz]	Minimum Bandwidth [kHz]	Pass / Fail
2402	125 kbps	0	LE	619.6	500	Pass
2440	125 kbps	19	LE	620.2	500	Pass
2480	125 kbps	39	LE	629.7	500	Pass
2402	500 kbps	0	LE	667.7	500	Pass
2440	500 kbps	19	LE	660.0	500	Pass
2480	500 kbps	39	LE	660.5	500	Pass
2402	1 Mbps	0	LE	660.2	500	Pass
2440	1 Mbps	19	LE	665.7	500	Pass
2480	1 Mbps	39	LE	664.8	500	Pass
2402	2 Mbps	0	LE	1143.2	500	Pass
2440	2 Mbps	19	LE	1141.3	500	Pass
2480	2 Mbps	39	LE	1138.7	500	Pass

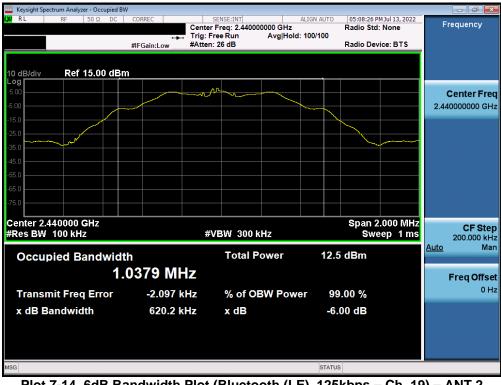
Table 7-3. C	onducted	Bandwidth	Measuremen	nts – ANT 2
--------------	----------	-----------	------------	-------------

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)		
Test Report S/N:	Test Dates:	EUT Type:	Dege 20 of 86	
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 20 of 86	
			\/0.0.02/01/2010	





Plot 7-13. 6dB Bandwidth Plot (Bluetooth (LE), 125kbps – Ch. 0) – ANT 2



Plot 7-14. 6dB Bandwidth Plot (Bluetooth (LE), 125kbps – Ch. 19) – ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)		
Test Report S/N:	Test Dates:	EUT Type:	Dama 04 at 00	
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 21 of 86	
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Plot 7-15. 6dB Bandwidth Plot (Bluetooth (LE), 125kbps – Ch. 39) – ANT 2



Plot 7-16. 6dB Bandwidth Plot (Bluetooth (LE), 500kbps - Ch. 0) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)		
Test Report S/N:	Test Dates:	EUT Type:	Dage 22 of 96	
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 22 of 86	
1	<u>.</u>		V9.0 02/01/2019	



Keysight Spectrum Analyzer - Occupied B					
LXIRL RF 50Ω DC	CORREC	SENSE:INT er Freg: 2.440000000 GHz	ALIGN AUTO	05:15:07 PM Jul 13, 2022 Radio Std: None	Frequency
	+++ Trig:	Free Run Avg Hold n: 26 dB		Radio Device: BTS	
	#IFGain:Low #Atte	n: 26 dB		Radio Device: B15	-
10 dB/div Ref 15.00 dBr Log	<u>n</u>				
5.00					Center Freq
-5.00					2.440000000 GHz
-15.0				<u> </u>	
-25.0				- warment	
-35.0					
-45.0					
-55.0					
-65.0					
-75.0					
				Onen 2 000 MU	
Center 2.440000 GHz #Res BW 100 kHz	#	≠VBW 300 kHz		Span 2.000 MH Sweep 1 ms	Crotep
				encep in	200.000 kHz Auto Man
Occupied Bandwidt	th	Total Power	15.8	dBm	
1	0331 MHz				Freq Offset
					0 Hz
Transmit Freq Error	-372 Hz	% of OBW Powe	er 99.(00 %	0 112
x dB Bandwidth	660.0 kHz	x dB	-6.0	0 dB	
MSG			STATUS		

Plot 7-17. 6dB Bandwidth Plot (Bluetooth (LE), 500kbps - Ch. 19) - ANT 2



Plot 7-18. 6dB Bandwidth Plot (Bluetooth (LE), 500kbps - Ch. 39) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)		
Test Report S/N:	Test Dates:	EUT Type:	Dama 02 at 00	
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 23 of 86	
			V9.0 02/01/2019	



Keysight Spectrum Analyzer - Occupied BV							×
LXU RL RF 50Ω DC	CORREC	SENSE:INT	ALIGN AU	TO 05:19:26 P Radio Std	M Jul 13, 2022	Frequency	
	T	Trig: Free Run Avg Hold: 100/100					
	#IFGain:Low #	Atten: 26 dB		Radio Dev	ice: BTS		
10 dB/div Ref 15.00 dBn	n						
5.00			\sim			Center F	rea
-5.00						2.402000000	
-15.0							
-25.0							
-35.0							
-45.0							
-55.0							
-65.0							
-75.0							
Center 2.402000 GHz					.000 MHz	CF S	ten
#Res BW 100 kHz		#VBW 300 k	Hz	Swe	ep 1 ms	200.000	
Occupied Rendwidt		Total Po	wer 1	5.6 dBm		Auto I	Man
Occupied Bandwidt				5.0 UBIII			
1.	0308 MHz					Freq Off	set
Transmit Freq Error	423 H	z % of OE	W Power	99.00 %		C) Hz
	660.2 kHz						
x dB Bandwidth	000.2 KH2	z xdB		-6.00 dB			
MSG			ST	TATUS			

Plot 7-19. 6dB Bandwidth Plot (Bluetooth (LE), 1Mbps - Ch. 0) - ANT 2



Plot 7-20. 6dB Bandwidth Plot (Bluetooth (LE), 1Mbps – Ch. 19) – ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dava 04 at 00		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 24 of 86		
			V9.0.02/01/2019		





Plot 7-21. 6dB Bandwidth Plot (Bluetooth (LE), 1Mbps – Ch. 39) – ANT 2



Plot 7-22. 6dB Bandwidth Plot (Bluetooth (LE), 2Mbps - Ch. 0) - ANT 2

FCC ID: PY7-76056F		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 25 of 90
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 25 of 86
<u> </u>			V9.0 02/01/2019





Plot 7-23. 6dB Bandwidth Plot (Bluetooth (LE), 2Mbps - Ch. 19) - ANT 2



Plot 7-24. 6dB Bandwidth Plot (Bluetooth (LE), 2Mbps - Ch. 39) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dava 00 at 00		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 26 of 86		
			V9.0 02/01/2019		



7.3 Output Power Measurement – Bluetooth (LE) §15.247(b.3); RSS-247 [5.4(4)]

Test Overview and Limits

The transmitter antenna terminal of the EUT is connected to the input of a spectrum analyzer. Measurements are made while the EUT is operating at maximum power and at the appropriate frequencies.

The maximum permissible conducted output power is 1 Watt.

Test Procedure Used

ANSI C63.10-2013 – Section 11.9.1.1 KDB 558074 D01 v05r02 – Section 8.3.1.1

Test Settings

- 1. RBW = 3MHz
- 2. VBW = 50MHz
- 3. Span \ge 3 x RBW
- 4. Sweep = auto couple
- 5. Detector = Peak
- 6. Trace mode = max hold
- 7. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dege 27 of 90		
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Frequency	Data Rate	Channel	Bluetooth	Peak Conducted Power			
[MHz]	[Mbps]	No.	Mode	[dBm]	[mW]		
2402	125 kbps	0	LE	9.32	8.557		
2440	125 kbps	19	LE	9.16	8.236		
2480	125 kbps	39	LE	10.65	11.620		
2402	500 kbps	0	LE	9.40	8.702		
2440	500 kbps	19	LE	9.25	8.410		
2480	500 kbps	39	LE	10.68	11.706		
2402	1 Mbps	0	LE	9.39	8.684		
2440	1 Mbps	19	LE	9.23	8.373		
2480	1 Mbps	39	LE	10.75	11.888		
2402	2 Mbps	0	LE	9.67	9.270		
2440	2 Mbps	19	LE	9.52	8.962		
2480	2 Mbps	39	LE	10.60	11.474		

Table 7-4. Conducted Output Power Measurements (Bluetooth (LE)) - ANT 1

FCC ID: PY7-76056F		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 28 of 96
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			10.0.00/04/0010



Keysight Spectrum Analyzer - Swept SA				
LXX RL RF 50Ω DC	CORREC SENSE:INT	ALIGN AUTO 04:3 #Avg Type: RMS	TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 15.00 dBm	PNO: Fast Trig: Free Run IFGain:Low Atten: 26 dB	Mkr1 2.	401 92 GHz 9.32 dBm	Auto Tune
				Center Freq 2.40200000 GHz
-5.00				Start Freq 2.397000000 GHz
-25.0				Stop Freq 2.407000000 GHz
-45.0				CF Step 1.000000 MHz Auto Man
-65.0				Freq Offset 0 Hz
75.0 Center 2.402000 GHz #Res BW 3.0 MHz	#\/B\\/ 50 MU-	Sp Success 1 000	an 10.00 win 12	Scale Type
#Res BW 3.0 WHZ	#VBW 50 MHz	Sweep 1.000		

Plot 7-25. Peak Power Plot (Bluetooth (LE), 125kbps - Ch. 0) - ANT 1

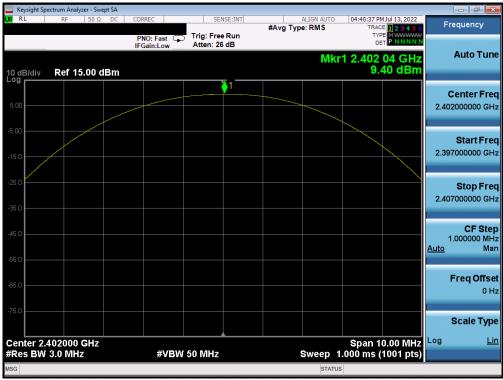


Plot 7-26. Peak Power Plot (Bluetooth (LE), 125kbps - Ch. 19) - ANT 1

FCC ID: PY7-76056F		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 90
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 29 of 86
			\/9.0.02/01/2019



Keysight Spectrum Analyzer - Swept SA				
M RL RF 50 Ω DC Center Freq 2.480000000	PNO: Fast 💭 Trig: Free Run		05 PM Jul 13, 2022 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N	Frequency
10 dB/div Ref 15.00 dBm	IFGain:Low Atten: 26 dB	Mkr1 2.4 1	80 03 GHz 0.65 dBm	Auto Tune
5.00				Center Fre 2.480000000 GH
5.00				Start Fre 2.475000000 G⊦
25.0				Stop Fre 2.485000000 GH
45.0				CF Ste 1.000000 Mi <u>Auto</u> Ma
35.0				Freq Offs 0 F
75.0				Scale Typ
Center 2.480000 GHz #Res BW 3.0 MHz	#VBW 50 MHz	Spa Sweep 1.000 m		Log <u>L</u> i
MSG		STATUS		



Plot 7-27. Peak Power Plot (Bluetooth (LE), 125kbps - Ch. 39) - ANT 1

Plot 7-28. Peak Power Plot (Bluetooth (LE), 500kbps - Ch. 0) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dega 20 of 90		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 30 of 86		
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	ectrum Analyzer - S										
LXI RL	RF 50	Ω DC	CORREC	SEN	ISE:INT	#Avg Typ	ALIGN AUTO e: RMS		4 Jul 13, 2022 E 1 2 3 4 5 6	F	requency
	_		PNO: Fast ⊂ IFGain:Low	Trig: Free Atten: 26		• //		TYF De			
10 dB/div Log	Ref 15.00	dBm					Mkr	1 2.440 9.1	03 GHz 25 dBm		Auto Tune
5.00					1						Center Freq 10000000 GHz
-5.00										2.43	Start Freq 5000000 GHz
-25.0										2.44	Stop Freq 5000000 GHz
-45.0										<u>Auto</u>	CF Step 1.000000 MHz Man
-65.0											Freq Offset 0 Hz
-75.0											Scale Type
Center 2. #Res BW	440000 GH: 3.0 MHz	z	#VB	N 50 MHz			Sweep 1	Span 1 .000 ms (0.00 MHz 1001 pts)	Log	Lin
MSG							STATUS	5			

Plot 7-29. Peak Power Plot (Bluetooth (LE), 500kbps - Ch. 19) - ANT 1



Plot 7-30. Peak Power Plot (Bluetooth (LE), 500kbps - Ch. 39) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dege 24 of 90		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 31 of 86		
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	ectrum Analyzer -						
LX/IRL	RF 50	DΩ DC	CORREC	SENSE:INT	ALIGN / #Avg Type: RM		
			PNO: Fast 🕞	Trig: Free Run Atten: 26 dB	0 //	TYPE M WW DET P N N	N N N
10 dB/div Log	Ref 15.00	0 dBm				Mkr1 2.402 19 G 9.39 dl	Hz Auto Tune Sm
5.00			- and the second se	\ 1			Center Freq 2.402000000 GHz
-5.00							
-15.0							Start Freq 2.397000000 GHz
-25.0							Stop Freq 2.407000000 GHz
-35.0							CF Step
-45.0							1.000000 MH: <u>Auto</u> Mar
-65.0							Freq Offse
-75.0							Scale Type
Center 2. #Res BW	402000 GH 3.0 MHz	Iz	#VBW	50 MHz	Swee	Span 10.00 N ep 1.000 ms (1001	1Hz ^{Log <u>Lin</u>}
MSG						STATUS	

Plot 7-31. Peak Power Plot (Bluetooth (LE), 1Mbps - Ch. 0) - ANT 1



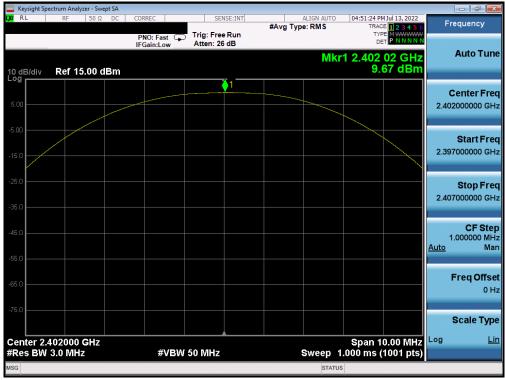
Plot 7-32. Peak Power Plot (Bluetooth (LE), 1Mbps - Ch. 19) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dage 22 of 96		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 32 of 86		
			V9.0 02/01/2019		



	Spectrum Analyzer									
LX/RL	RF	50Ω DC	CORREC	SENSE:INT	#Avg Type:	IGN AUTO RMS	TRAC	I Jul 13, 2022	F	equency
10 dB/div	Ref 15.0	00 dBm	PNO: Fast IFGain:Low	⊖ Trig: Free Run Atten: 26 dB		Mkr1	2.479	90 GHz		Auto Tune
5.00										Center Free 0000000 GH
-5.00									2.47	Start Fre 5000000 GH
-25.0									2.48	Stop Fre 5000000 G⊦
45.0									, <u>Auto</u>	CF Ste 1.000000 MH Ma
65.0										Freq Offs 0 I
75.0										Scale Typ
	2.480000 G W 3.0 MHz	Hz	#VBM	/ 50 MHz	S	weep 1.0	Span 1 000 ms (0.00 MHz 1001 pts)	Log	L
MSG						STATUS				

Plot 7-33. Peak Power Plot	(Bluetooth (LE),	1Mbps – Ch.	39) – ANT 1



Plot 7-34. Peak Power Plot (Bluetooth (LE), 2Mbps - Ch. 0) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dage 22 of 90		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 33 of 86		
	•		V9.0 02/01/2019		



	pectrum Analyzer - S								_	
L <mark>XI</mark> RL	RF 50	ΩDC	CORREC	SENSE:INT	#Avg Type	ALIGN AUTO	TRAC	1 Jul 13, 2022	Fr	equency
10 dB/div	Ref 15.00	dBm	PNO: Fast 🖵 IFGain:Low	Trig: Free Run Atten: 26 dB		Mkr	DE 1 2.440	23 GHz 52 dBm		Auto Tune
	Kei 15.00									Center Freq 0000000 GHz
-5.00									2.43	Start Freq 5000000 GHz
-25.0									2.44	Stop Freq 5000000 GHz
-45.0									1 <u>Auto</u>	CF Step .000000 MHz Man
-65.0										F req Offset 0 Hz
-75.0	.440000 GH	7					Snan-1	0.00 MHz		Scale Type Lin
#Res BW	/ 3.0 MHz		#VBW	50 MHz	\$.000 ms (1001 pts)		
MSG						STATUS				

Plot 7-35. Peak Power Plot (Bluetooth (LE), 2Mbps - Ch. 19) - ANT 1



Plot 7-36. Peak Power Plot (Bluetooth (LE), 2Mbps - Ch. 39) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dogo 24 of 96		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 34 of 86		
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Frequency	Data Rate	Channel	Bluetooth	Peak Conducted Power			
[MHz]	[Mbps]	No.	Mode	[dBm]	[mW]		
2402	125 kbps	0	LE	9.26	8.439		
2440	125 kbps	19	LE	9.49	8.896		
2480	125 kbps	39	LE	10.17	10.392		
2402	500 kbps	0	LE	9.39	8.684		
2440	500 kbps	19	LE	9.94	9.856		
2480	500 kbps	39	LE	9.71	9.354		
2402	1 Mbps	0	LE	9.35	8.616		
2440	1 Mbps	19	LE	9.60	9.126		
2480	1 Mbps	39	LE	9.72	9.384		
2402	2 Mbps	0	LE	9.70	9.328		
2440	2 Mbps	19	LE	9.85	9.654		
2480	2 Mbps	39	LE	10.04	10.090		

Table 7-5. Conducted Output Power Measurements (Bluetooth (LE)) – ANT 2

FCC ID: PY7-76056F		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 25 of 90
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 35 of 86
			1/0.0.02/01/2010



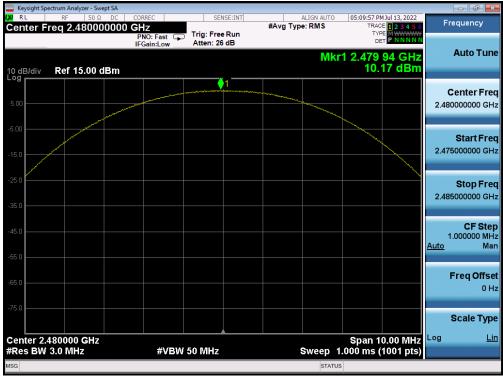
Keysight Spectrum Analyzer - Swept SA				
LX/RL RF 50Ω DC	CORREC SEN	SE:INT A #Avg Type	: RMS TRAC	MJul 13, 2022 ^{II} 2 3 4 5 6 Frequency
	PNO: Fast Free IFGain:Low Atten: 26		TYP	
10 dB/div Ref 15.00 dBm	ı		9.2	26 dBm
5.00		1		Center Fred 2.402000000 GHz
-5.00				
-15.0				2.397000000 GHz
-25.0				
-35.0				2.407000000 GHz
-45.0				CF Step 1.000000 MHz Auto Mar
-55.0				
-65.0				Freq Offset
-75.0				Scale Type
Center 2.402000 GHz #Res BW 3.0 MHz	#VBW 50 MHz		Span 1 Sweep 1.000 ms (0.00 MHz
MSG			STATUS	

Plot 7-37. Peak Power Plot (Bluetooth (LE), 125kbps - Ch. 0) - ANT 2

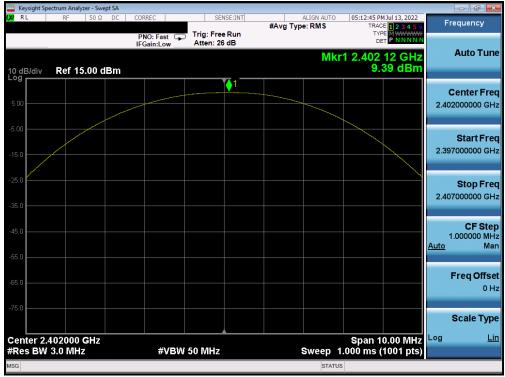


FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dege 26 of 96		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 36 of 86		
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Plot 7-39. Peak Power Plot (Bluetooth (LE), 125kbps - Ch. 39) - ANT 2



Plot 7-40. Peak Power Plot (Bluetooth (LE), 500kbps - Ch. 0) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dage 27 of 96		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 37 of 86		
		·	V9.0 02/01/2019		



	pectrum Analyzer - Swept						- ē -
Center I	RF 50 Ω Freq 2.440000		SENSE:INT	#Avg Type: RM	S TRAC	I Jul 13, 2022 E 1 2 3 4 5 6	Frequency
		PNO: Fast 😱 IFGain:Low	Trig: Free Run Atten: 26 dB				
					Mkr1 2.440	03 GHz	Auto Tune
10 dB/div Log	Ref 15.00 dB	m			9.9	94 dBm	
		and the second s					Center Freq
5.00							2.440000000 GHz
-5.00							
-5.00					and the second sec		Start Freq
-15.0							2.435000000 GHz
						a de la construcción de la const	
-25.0							Stop Freq
-35.0							2.445000000 GHz
-45.0							CF Step 1.000000 MHz
							<u>Auto</u> Man
-55.0							
-65.0							Freq Offset
							0 Hz
-75.0							Scale Type
	.440000 GHz	-41/014/	50 BALL-	0	Span 1	0.00 191112	Log <u>Lin</u>
#Res BW	/ 3.0 MHz	#VBW	50 MHz		ep 1.000 ms (1001 pts)	
mag					514105		

Plot 7-41. Peak Power Plot (Bluetooth (LE), 500kbps - Ch. 19) - ANT 2



Plot 7-42. Peak Power Plot (Bluetooth (LE), 500kbps - Ch. 39) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 00		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 38 of 86		
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	rum Analyzer - Swe										- 0 💌
L <mark>XI</mark> RL	RF 50 Ω	DC C	ORREC		ISE:INT	#Avg Type	ALIGN AUTO e: RMS	TRAC	1 Jul 13, 2022 E 1 2 3 4 5 6	Fre	quency
10 dB/div	Ref 15.00 d	I	PNO: Fast 🕞 FGain:Low	Trig: Free Atten: 26			Mkr	DE 1 2.402	22 GHz 35 dBm		Auto Tune
					1						enter Freq 000000 GHz
-5.00										2.397	Start Freq 000000 GHz
-25.0										2.407	Stop Freq 000000 GHz
-45.0										1. <u>Auto</u>	CF Step 000000 MHz Man
-65.0										F	f req Offset 0 Hz
-75.0 Center 2.40	2000 GHz							Span 1	0.00 191112	tog	Scale Type Lin
#Res BW 3			#VBW	/ 50 MHz			Sweep 1	.000 ms (1001 pts)		

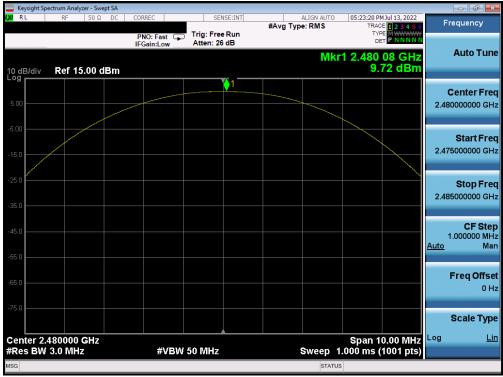
Plot 7-43. Peak Power Plot (Bluetooth (LE), 1Mbps - Ch. 0) - ANT 2



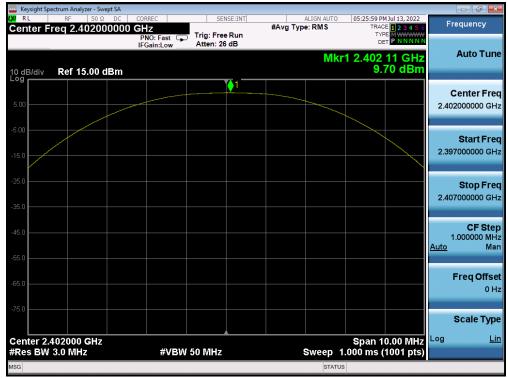
Plot 7-44. Peak Power Plot (Bluetooth (LE), 1Mbps - Ch. 19) - ANT 2

FCC ID: PY7-76056F		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 90
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 39 of 86
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Plot 7-45. Peak Power Plot (Bluetooth (LE), 1Mbps - Ch. 39) - ANT 2



Plot 7-46. Peak Power Plot (Bluetooth (LE), 2Mbps - Ch. 0) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dage 40 of 90		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 40 of 86		
1	•		V9.0 02/01/2019		



	pectrum Analyzer - Swe								
I,XI RL	RF 50 Ω	DC (CORREC	SENSE:II	#Avg Typ	ALIGN AUTO e: RMS	TRAC	1 Jul 13, 2022	Frequency
	_		PNO: Fast IFGain:Low	Trig: Free Run Atten: 26 dB	1	Mkr	DE 1 2.439	97 GHz	Auto Tune
10 dB/div Log	Ref 15.00 c	lBm					9.8	35 dBm	
5.00									Center Freq 2.440000000 GHz
-5.00									Start Freq 2.435000000 GHz
-25.0									Stop Freq 2.445000000 GHz
-45.0									CF Step 1.000000 MHz <u>Auto</u> Man
-55.0									Freq Offset 0 Hz
-75.0									Scale Type
	.440000 GHz / 3.0 MHz		#VBW	50 MHz		Sweep 1	Span 1 .000 ms (0.00 MHz 1001 pts)	Log <u>Lin</u>
MSG						STATUS			

Plot 7-47. Peak Power Plot (Bluetooth (LE), 2Mbps - Ch. 19) - ANT 2



Plot 7-48. Peak Power Plot (Bluetooth (LE), 2Mbps - Ch. 39) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dege 41 of 90		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 41 of 86		
L	•		V9.0 02/01/2019		



7.4 Power Spectral Density – Bluetooth (LE) §15.247(e); RSS-247 [5.2]

Test Overview and Limit

The peak power density is measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies.

The maximum permissible power spectral density is 8 dBm in any 3 kHz band.

Test Procedure Used

ANSI C63.10-2013 – Section 11.10.2 Method PKPSD KDB 558074 D01 v05r02 – Section 8.4 DTS Maximum Power Spectral Density level in the fundamental emission

Test Settings

- 1. Analyzer was set to the center frequency of the DTS channel under investigation
- 2. Span = 1.5 times the DTS channel bandwidth
- 3. RBW = 3kHz
- 4. VBW = 1MHz
- 5. Detector = peak
- 6. Sweep time = auto couple
- 7. Trace mode = max hold
- 8. Trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-3. Test Instrument & Measurement Setup

Test Notes

None

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dage 42 of 96		
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<u>.</u>	•		V9.0 02/01/2019		



Frequency [MHz]	Data Rate [Mbps]	Channel No.	Bluetooth Mode	Measured Power Spectral Density [dBm]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]
2402	125 kbps	0	LE	2.83	8.0	-5.17
2440	125 kbps	19	LE	2.67	8.0	-5.33
2480	125 kbps	39	LE	4.14	8.0	-3.86
2402	500 kbps	0	LE	2.63	8.0	-5.37
2440	500 kbps	19	LE	2.50	8.0	-5.50
2480	500 kbps	39	LE	3.98	8.0	-4.03
2402	1 Mbps	0	LE	-7.53	8.0	-15.53
2440	1 Mbps	19	LE	-7.82	8.0	-15.82
2480	1 Mbps	39	LE	-6.24	8.0	-14.24
2402	2 Mbps	0	LE	-9.83	8.0	-17.83
2440	2 Mbps	19	LE	-10.19	8.0	-18.19
2480	2 Mbps	39	LE	-9.01	8.0	-17.01

Table 7-6. Conducted Power Density M	Measurements – ANT 1
--------------------------------------	----------------------

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dage 42 of 96		
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 43 of 86		
			\/0.0.02/01/2010		



	pectrum Analyzer - S									_	
LXI RL	RF 50	Ω DC	CORREC		ISE:INT	#Avg Typ	ALIGN AUTO	TRAC	4 Jul 13, 2022 E 1 2 3 4 5 6	F	requency
10 dB/div	Ref 15.00	dBm	PNO: Wide 😱 IFGain:Low	Trig: Free Atten: 26			Mkr1 :	DE 2.402 24	9 2 GHz 83 dBm		Auto Tune
5.00		Å					1				Center Freq 02000000 GHz
-5.00 -15.0	MANNA LUNNIN		M.A. Manakara	wyywy w Th	MAN WAN	Michilly Diphyrolyn	m.	Mannand	L WWMWWWW	2.40	Start Fred 01531527 GHz
-25.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					``			2.40	Stop Fred 2468473 GH
-45.0										<u>Auto</u>	CF Stej 93.695 kH Mai
-65.0											Freq Offse 0 H
Center 2	.4020000 Gł / 3.0 kHz	Hz	#\/B\\	1.0 MHz			Swoon	Span 9	136.9 kHz	Log	Scale Type
#Res BW	7 3.0 KHZ		#VBW	T.U MHZ			Sweep	10.40 ms (TOUT PLS)		

Plot 7-49. Power Spectral Density Plot (Bluetooth (LE), 125kbps - Ch. 0) - ANT 1



Plot 7-50. Power Spectral Density Plot (Bluetooth (LE), 125kbps - Ch. 19) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 44 of 90
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			V9.0 02/01/2019







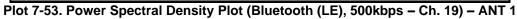
RL	RF	er - Swept 50 Ω	DC	CORREC		SEI	SE:INT		ALIGN AUTO		4 Jul 13, 2022	J	requency
				PNO: Wi		Trig: Free Atten: 26		#Avg Typ	e:RMS	TYP	E 1 2 3 4 5 6 E M WWWW T P N N N N		requeries
0 dB/div	Ref 15.	.00 dE	Зm	IFGain:Lo	DW	Atten: 20	dB		Mkr1 2	.401 74	8 7 GHz 63 dBm		Auto Tun
og			1						1				Center Fre
5.00	www.where	hullun		hullu	WWW	MMM	1 Minny	hhy ⁿ nyynhy	n nyn h	hard garage	MANANA	2.40	Start Fr 01505396 G
5.0												2.40	Stop Fr 02494604 G
5.0												<u>Auto</u>	CF St 98.921 k M
5.0													Freq Offs 0
5.0													Scale Ty
	2.4020000 W 3.0 kHz	GHz		#	VBW	I.0 MHz			Sweep 1		989.2 kHz 1001 pts)	Log	L
G									STATU	3			

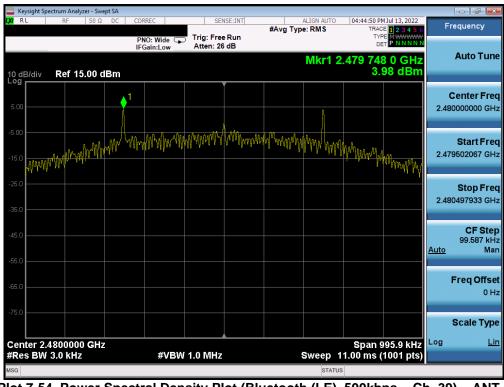
Plot 7-52. Power Spectral Density Plot (Bluetooth (LE), 500kbps - Ch. 0) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 45 of 90
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Keysight Spectrum Analyzer						
XIRL RF :	50 Ω DC CORRE			ALIGN AUTO	04:43:00 PM Jul 13, 2022 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 15.0	IFGai	: Wide 🖵 Trig: Fre in:Low Atten: 20		Mkr1 2	2.439 748 3 GHz 2.50 dBm	Auto Tune
5.00	1			1		Center Freq 2.440000000 GHz
-5.00 -15.0		hallmanilealanaan d	hann hann ha hann ha	purminal hours and	Man	Start Fred 2.439504487 GHz
-25.0						Stop Fred 2.440495513 GH;
-45.0						CF Step 99.103 kH <u>Auto</u> Mar
-65.0						Freq Offse 0 H
-75.0 Center 2.4400000 (GH7				Span 991.0 kHz	Scale Type
#Res BW 3.0 kHz		#VBW 1.0 MHz		Sweep 1	1.00 ms (1001 pts)	
MSG				STATU	5	





Plot 7-54. Power Spectral Density Plot (Bluetooth (LE), 500kbps - Ch. 39) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 46 of 96
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		n Analyzer - Sw									_	
L <mark>XI</mark> RL	F	RF 50 Ω	DC	CORREC		NSE:INT	#Avg Typ	ALIGN AUTO	TRAC	4 Jul 13, 2022 E 1 2 3 4 5 6	F	requency
10 dB/di Log	liv R	ef 15.00 (dBm	PNO: Wide C IFGain:Low	Trig: Fre Atten: 2			Mkr1 2	.402 02	1 0 GHz 53 dBm		Auto Tune
5.00						• 1						Center Freq 2000000 GHz
-5.00	w Junt	WWW WW	huh	1 Mann	n wan wooda	12 Marine Marie	ᠬᡎᠰᡙᢦᠰᢇᢏᠵ	vw-shipmadry	ᠰᠧᡨ᠁ᢧᡗᡡ᠓ᡪᡪᡀ	Withman	2.40	Start Freq 01499786 GHz
-25.0											2.40	Stop Freq 02500214 GHz
-45.0											<u>Auto</u>	CF Step 100.043 kHz Man
-65.0												Freq Offset 0 Hz
		0000 GH	z						Span 1	.000 MHz	Log	Scale Type Lin
#Res E	SW 3.0	KHZ		#VB	W 1.0 MHz			Sweep 1		1001 pts)		
Mag								STATUS				

Plot 7-55. Power Spectral Density Plot (Bluetooth (LE), 1Mbps – Ch. 0) – ANT 1

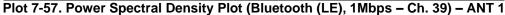
Keysight Spectrum Analyzer - Swe R L RF 50 Ω	pt SA	SENSE:INT	ALIGN AUTO	04:48:12 PM Jul 13, 2022	- 0
KL KF 20.75	PNO: Wide		#Avg Type: RMS	04:48:12 PMJdl 13, 2022 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNN	Frequency
dB/div Ref 15.00 d			Mkr1 2	.440 021 0 GHz -7.82 dBm	Auto Tui
00					Center Fr 2.440000000 G
.0	Mayna Mana	Walter Carlor Wardshart	un and a start a start and a start a start a start a start a st	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Start Fr 2.439501097 G
.0					Stop Fr 2.440498903 G
.0					CF St 99.781 k <u>Auto</u> M
.0					Freq Offs 0
i.o					Scale Ty
enter 2.4400000 GHz Res BW 3.0 kHz		1.0 MHz	Sweep 1	Span 997.8 kHz 1.07 ms (1001 pts)	Log <u>l</u>
3			STATUS		

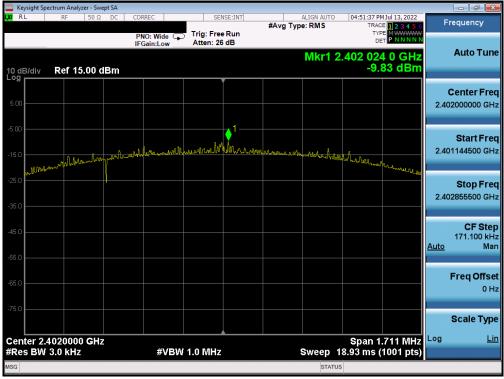
Plot 7-56. Power Spectral Density Plot (Bluetooth (LE), 1Mbps – Ch. 19) – ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 47 of 90
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 47 of 86
			1/0 0 02/01/2010



	pectrum Analyzer - Sw										
X/RL	RF 50 Ω	DC C	ORREC	SEN	SE:INT	#Avg Typ	ALIGN AUTO	TRAC	MJul 13, 2022	F	requency
	_		PNO: Wide 🕞 FGain:Low	Trig: Free Atten: 26				TYP			
10 dB/div Log	Ref 15.00	dBm					Mkr1 2	479 98. -6.	1 0 GHz 24 dBm		Auto Tun
5.00				1							Center Fre 0000000 GH
-5.00 -15.0	www.www.w.AM	mpm	Mann	WWW Marsh	Mannanna	UloryQuely~~	MAGMARN	ᠰᡔᢇᢇᡗᠰᡰᢘᡘᠮᡟᡊᡨᡗ	Mullipper	2.47	Start Fre 9501280 G⊦
35.0										2.48	Stop Fre 0498720 G⊦
45.0										<u>Auto</u>	CF Ste 99.744 kH Ma
65.0											Freq Offs 0 I
75.0											Scale Typ
	.4800000 GH / 3.0 kHz	z	#VBW	/ 1.0 MHz			Sweep 1	Span 9 1.07 m <u>s (</u>	997.4 kHz 1001 pts)	Log	L
ISG							STATUS				





Plot 7-58. Power Spectral Density Plot (Bluetooth (LE), 2Mbps - Ch. 0) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 40 of 90
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 48 of 86
	•		V9.0 02/01/2019



	pectrum Analyze		: SA									_	
LXI RL	RF	50 Ω	DC	CORREC		SEI	ISE:INT	#Avg Typ	ALIGN AUTO e: RMS		M Jul 13, 2022	F	requency
10 dB/div	Ref 15.	00 dE	3m	PNO: W IFGain:L	/ide 🖵 Low	Trig: Free Atten: 26			Mkr1 :	ייז ס 2.440 02			Auto Tune
5.00													Center Freq 10000000 GHz
-5.00	and the second	, ellovin y	Mant	p.A.lartas	, and the	www.www.W	1 Murrun	Lstruin, p. a. offer	and the Areal with	Mulanhuman	Mahmalally	2.43	Start Freq 39146669 GHz
-25.0												2.44	Stop Freq 10853331 GHz
-45.0												<u>Auto</u>	CF Step 170.666 kHz Mar
-65.0													Freq Offset 0 Hz
Center 2	.4400000	GH7_								Spap_1	.707 MHz	Log	Scale Type Lin
#Res BW				;	#VBW	1.0 MHz			Sweep	18.87 ms (1001 pts)		
MSG									STATU	JS			

Plot 7-59. Power Spectral Density Plot (Bluetooth (LE), 2Mbps - Ch. 19) - ANT 1



Plot 7-60. Power Spectral Density Plot (Bluetooth (LE), 2Mbps - Ch. 39) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)						
Test Report S/N:	Test Dates:	EUT Type:	Dage 40 of 90					
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 49 of 86					
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Frequency [MHz]	Data Rate [Mbps]	Channel No.	Bluetooth Mode	Measured Power Spectral Density [dBm]	Maximum Permissible Power Density [dBm / 3kHz]	Margin [dB]
2402	125 kbps	0	LE	2.72	8.0	-5.28
2440	125 kbps	19	LE	3.00	8.0	-5.00
2480	125 kbps	39	LE	3.12	8.0	-4.88
2402	500 kbps	0	LE	2.60	8.0	-5.40
2440	500 kbps	19	LE	2.88	8.0	-5.12
2480	500 kbps	39	LE	2.99	8.0	-5.01
2402	1 Mbps	0	LE	-7.58	8.0	-15.58
2440	1 Mbps	19	LE	-7.37	8.0	-15.37
2480	1 Mbps	39	LE	-7.15	8.0	-15.15
2402	2 Mbps	0	LE	-10.30	8.0	-18.30
2440	2 Mbps	19	LE	-9.72	8.0	-17.72
2480	2 Mbps	39	LE	-9.59	8.0	-17.59

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)					
Test Report S/N:	Test Dates:	EUT Type:	Dogo 50 of 90				
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 50 of 86				
			\/9.0.02/01/2019				





Plot 7-61. Power Spectral Density Plot (Bluetooth (LE), 125kbps – Ch. 0) – ANT 2



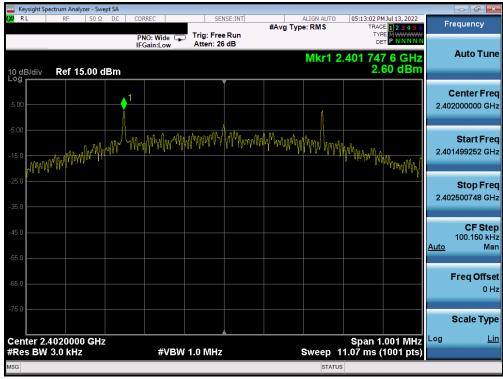
Plot 7-62. Power Spectral Density Plot (Bluetooth (LE), 125kbps – Ch. 19) – ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)						
Test Report S/N:	Test Dates:	EUT Type:	Daga E1 of 90					
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 51 of 86					
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Plot 7-63. Power Spectral Density Plot (Bluetooth (LE), 125kbps - Ch. 39) - ANT 2



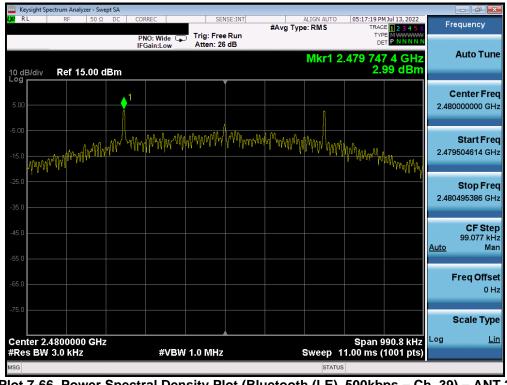
Plot 7-64. Power Spectral Density Plot (Bluetooth (LE), 500kbps - Ch. 0) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)						
Test Report S/N:	Test Dates:	EUT Type:	Daga 52 of 96					
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 52 of 86					
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Keysight Spectrum Analyzer - Swept SA					
LX RL RF 50Ω DC	CORREC SE	NSE:INT #Avg	ALIGN AUTO Type: RMS	05:15:15 PM Jul 13, 2022 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 15.00 dBm	PNO: Wide Trig: Fre IFGain:Low Atten: 20		Mkr1 2.4	139 747 6 GHz 2.88 dBm	Auto Tune
5.00 1					Center Freq 2.440000000 GHz
-5.00 -15.0 MANNA MANNA MANNA	Arthreader and an are	ann hurry hydryn ywy		Multiple of the second se	Start Freq 2.439505003 GHz
-25.0					Stop Freq 2.440494997 GHz
-45.0					CF Step 98.999 kHz <u>Auto</u> Man
-65.0					Freq Offset 0 Hz
-75.0				Shop 000 0 kHz	Scale Type
Center 2.4400000 GHz #Res BW 3.0 kHz	#VBW 1.0 MHz		Sweep 11.	Span 990.0 kHz .00 ms (1001 pts)	
MSG			STATUS		

Plot 7-65. Power Spectral Density Plot (Bluetooth (LE), 500kbps - Ch. 19) - ANT 2



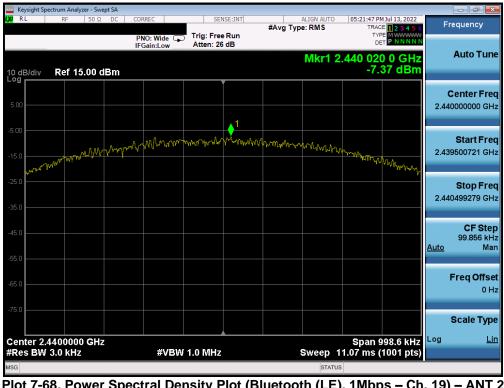
Plot 7-66. Power Spectral Density Plot (Bluetooth (LE), 500kbps – Ch. 39) – ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)						
Test Report S/N:	Test Dates:	EUT Type:	Dage 52 of 96					
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 53 of 86					
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		ectrum Analyzer - Sw										
l,XI R	L	RF 50 Ω	DC	CORREC	SEI	NSE:INT	#Avg Typ	ALIGN AUTO		1 Jul 13, 2022 E 1 2 3 4 5 6	Fr	requency
10 d Log	B/div	Ref 15.00 (PNO: Wide G	Trig: Free Atten: 20			Mkr1 2	TYF DE			Auto Tune
						▲1						Center Freq 2000000 GHz
-5.00 -15.0	www.rw	worn world w	mpm	WWW	WWW Marahad	YAAYAMMA	Vhranwhy yr	MANNA	Mr. Mary	WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	2.40	Start Freq 1504862 GHz
											2.40	Stop Freq 2495138 GHz
											<u>Auto</u>	CF Step 99.028 kHz Man
-65.0												Freq Offset 0 Hz
	nter 2.4	1020000 GH	z							90.3 kHz	Log	Scale Type Lin
#Re MSG	s BW	3.0 kHz		#VBV	/ 1.0 MHz			Sweep 1	1.00 ms (1001 pts)		
130								STATU				

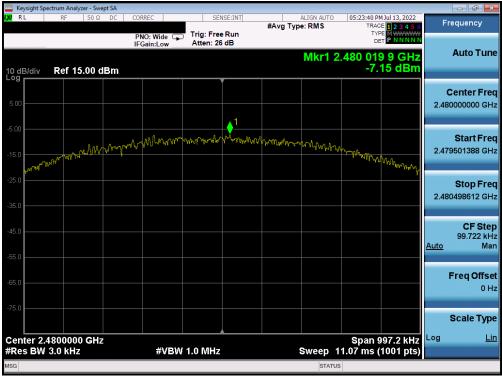
Plot 7-67. Power Spectral Density Plot (Bluetooth (LE), 1Mbps – Ch. 0) – ANT 2

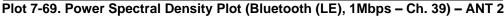


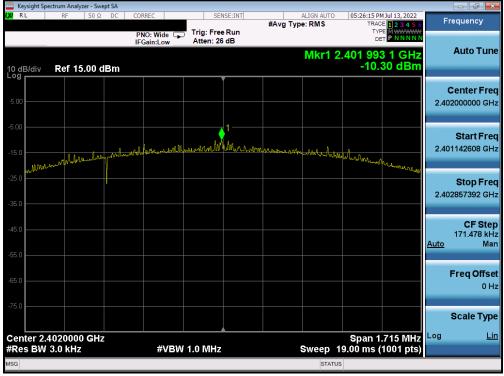
Plot 7-68. Power Spectral Density Plot (Bluetooth (LE), 1Mbps - Ch. 19) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)					
Test Report S/N:	Test Dates:	EUT Type:	Dogo 54 of 96				
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 54 of 86				
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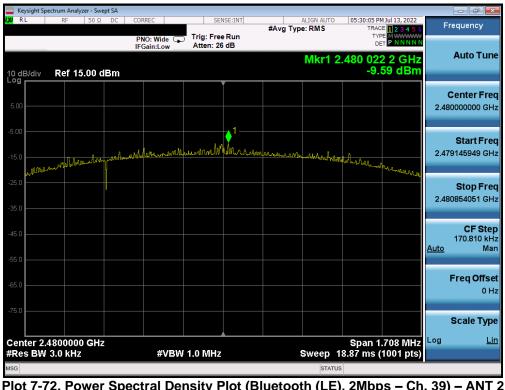
Plot 7-70. Power Spectral Density Plot (Bluetooth (LE), 2Mbps - Ch. 0) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)						
Test Report S/N:	Test Dates:	EUT Type:	Dege EE of 90					
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 55 of 86					
			V9.0 02/01/2019					



	ight Spec		nalyzer - Sw												
LXI RL		RF	50 Ω	DC	CORR	EC		SENSE:INT	#Avg	ALIGN g Type: RM			MJul 13, 2022	F	requency
10 dB/	'div	Ref	15.00 (dBm	PNO IFGa	:Wide 🕞 in:Low		Free Run n: 26 dB		Mk	r1 2 .4	DE 440 02	4 0 GHz 72 dBm		Auto Tune
5.00 —															Center Freq 10000000 GHz
-5.00	Manut	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	John Marine	and the second	nal.lu	mahil	Lunialla	Mumar	Mmanne	᠊ᠬᡄᡣᢧᢪᢦᡵᠼᢩᠰᢔᡕᢥᠶ	n winter	Muchard	M. Low M. Market	2.43	Start Freq 39144016 GHz
-25.0 -														2.44	Stop Fred 10855984 GHz
-45.0														<u>Auto</u>	CF Step 171.197 kHz Mar
-65.0 —															Freq Offse 0 H:
-75.0	or 24	4000	00 GH;	7								Snan 1	.712 MHz	Log	Scale Type
#Res						#VBV	V 1.0 M	Hz		Swe	ep 18	8.93 ms (1001 pts)		
MSG											STATUS				

Plot 7-71. Power Spectral Density Plot (Bluetooth (LE), 2Mbps – Ch. 19) – ANT 2



Plot 7-72. Power Spectral Density Plot (Bluetooth (LE), 2Mbps - Ch. 39) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dege EC of 90
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7.5 Conducted Emissions at the Band Edge §15.247(d); RSS-247 [5.5]

Test Overview and Limit

For the following out of band conducted spurious emissions plots at the band edge, the EUT was set to transmit at maximum power with the largest packet size available. These settings produced the worst-case emissions.

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth.

Test Procedure Used

ANSI C63.10-2013 – Section 11.11.3 KDB 558074 D01 v05r02 – Section 8.7.2

Test Settings

- 1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
- 2. Span was set large enough so as to capture all out of band emissions near the band edge
- 3. RBW = 100kHz
- 4. VBW = 300kHz
- 5. Detector = Peak
- 6. Number of sweep points $\geq 2 \times \text{Span/RBW}$
- 7. Trace mode = max hold
- 8. Sweep time = auto couple
- 9. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-4. Test Instrument & Measurement Setup

Test Notes

None

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 57 of 90
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www.www.com.com.com.com.com.com.com.com.com.com					
LXI RL RF 50 !	Ω DC CORREC	SENSE:INT	ALIGN AUTO #Avg Type: RMS	04:34:32 PM Jul 13, 2022 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 15.00	PNO: Wide IFGain:Low dIBm			Mkr1 2.060 MHz 59.37 dB	Auto Tune
5.00				2	Center Freq 2.400000000 GHz
-15.0					Start Freq 2.396000000 GHz
-35.0					Stop Freq 2.404000000 GHz
-45.0	ad	teres alord a bill when you the top alor	W		CF Step 800.000 kHz <u>Auto</u> Man
-65.0	Mineret II Contractor of Contractor				Freq Offset 0 Hz
-75.0					Scale Type
Center 2.400000 GHz		BW 300 kHz	Swoon	Span 8.000 MHz	Log <u>Lin</u>
#Res BW 100 kHz	#V	500 KH2	Sweep	4.000 ms (2001 pts)	
MOG			STAT		

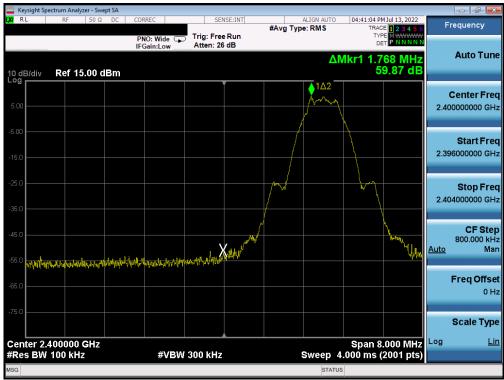
Plot 7-73. Band Edge Plot (Bluetooth (LE), 125kbps - Ch. 0) - ANT 1



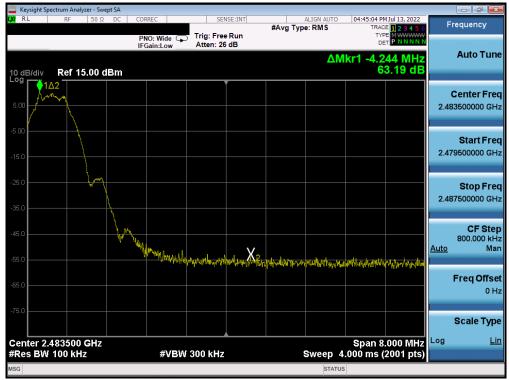
Plot 7-74. Band Edge Plot (Bluetooth (LE), 125kbps - Ch. 39) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 50 of 90
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 58 of 86
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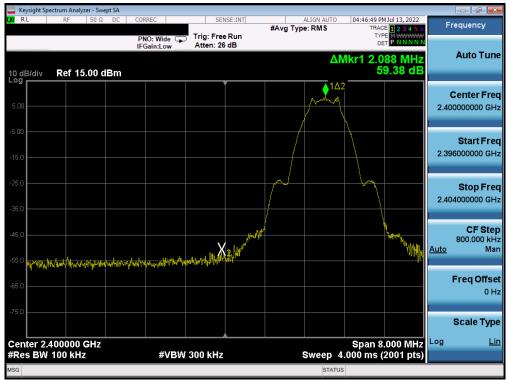




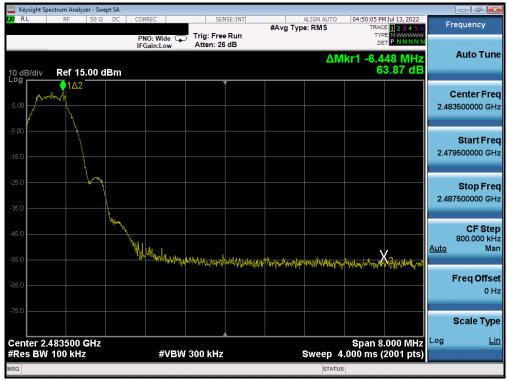
Plot 7-76. Band Edge Plot (Bluetooth (LE), 500kbps - Ch. 39) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 50 of 96
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 59 of 86
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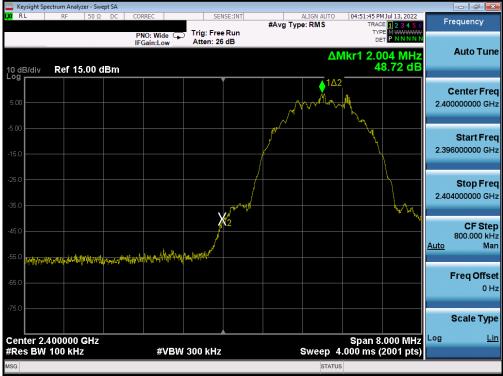




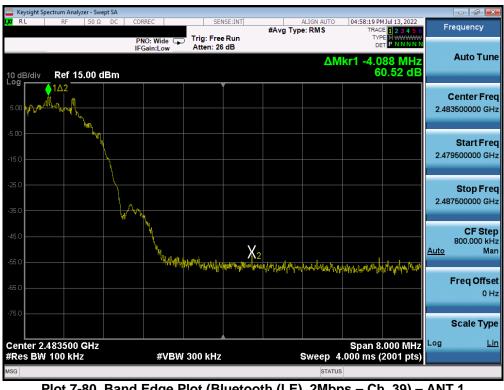
Plot 7-78. Band Edge Plot (Bluetooth (LE), 1Mbps - Ch. 39) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 60 of 86
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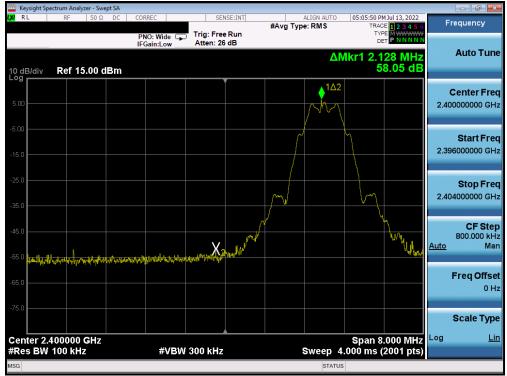
Plot 7-79. Band Edge Plot (Bluetooth (LE), 2Mbps - Ch. 0) - ANT 1



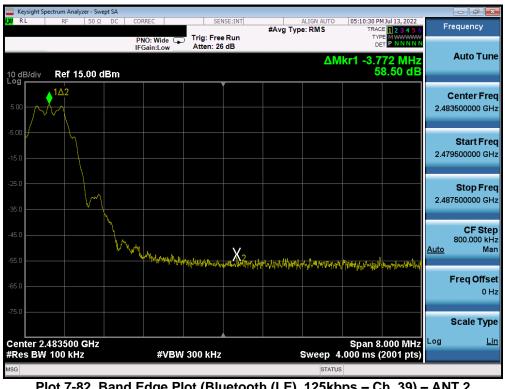
Plot 7-80. Band Edge Plot (Bluetooth (LE), 2Mbps - Ch. 39) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dege 61 of 96
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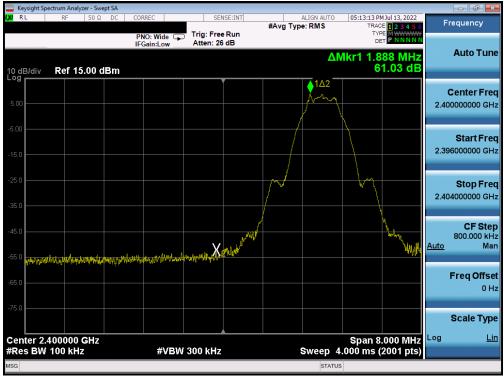
Plot 7-81. Band Edge Plot (Bluetooth (LE), 125kbps - Ch. 0) - ANT 2



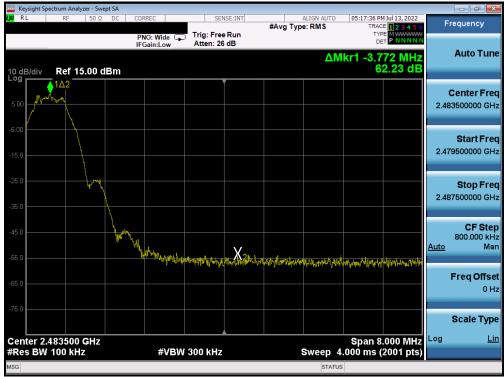
Plot 7-82. Band Edge Plot (Bluetooth (LE), 125kbps - Ch. 39) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dege 62 of 96
1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 62 of 86
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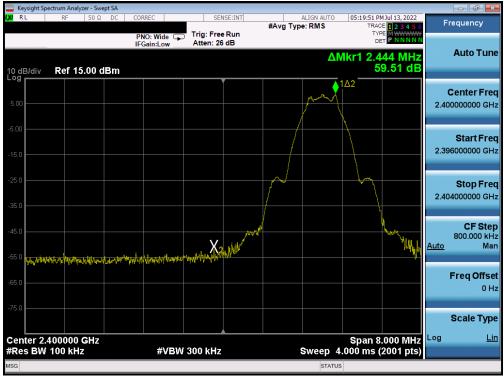
Plot 7-83. Band Edge Plot (Bluetooth (LE), 500kbps - Ch. 0) - ANT 2



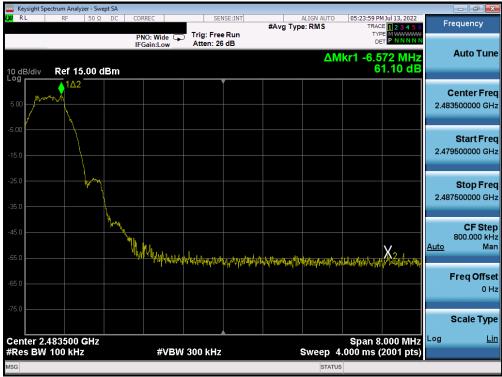
Plot 7-84. Band Edge Plot (Bluetooth (LE), 500kbps - Ch. 39) - ANT 2

FCC ID: PY7-76056F	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 62 of 96
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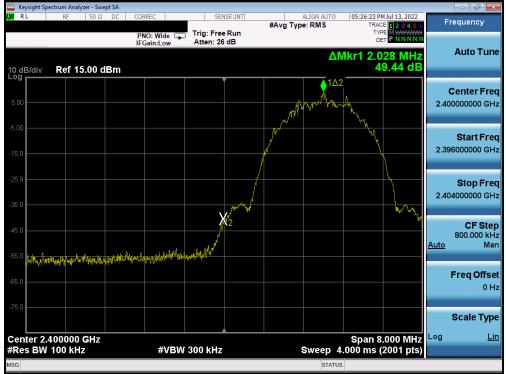
Plot 7-85. Band Edge Plot (Bluetooth (LE), 1Mbps - Ch. 0) - ANT 2



Plot 7-86. Band Edge Plot (Bluetooth (LE), 1Mbps - Ch. 39) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dage 64 of 96
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Plot 7-87. Band Edge Plot (Bluetooth (LE), 2Mbps - Ch. 0) - ANT 2



Plot 7-88. Band Edge Plot (Bluetooth (LE), 2Mbps - Ch. 39) - ANT 2

FCC ID: PY7-76056F	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage CE of 90
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7.6 Conducted Spurious Emissions §15.247(d); RSS-247 [5.5]

Test Overview and Limit

For the following out of band conducted spurious emissions plots, the EUT was set to transmit at maximum power with the largest packet size available. The worst case spurious emissions were found in this configuration.

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the procedure in Section 8.5 of KDB 558074 D01 v05r02 and Section 11.11.3 of ANSI C63.10-2013.

Test Procedure Used

ANSI C63.10-2013 – Section 11.11.3 KDB 558074 D01 v05r02 – Section 8.5

Test Settings

- 1. Start frequency was set to 30MHz and stop frequency was set to 25GHz (separated into two plots per channel)
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep time = auto couple
- 7. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-5. Test Instrument & Measurement Setup

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)	
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1M2205240063-11.PY7	6/3/2022-7/25/2022	Portable Handset	Page 66 of 86
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Test Notes

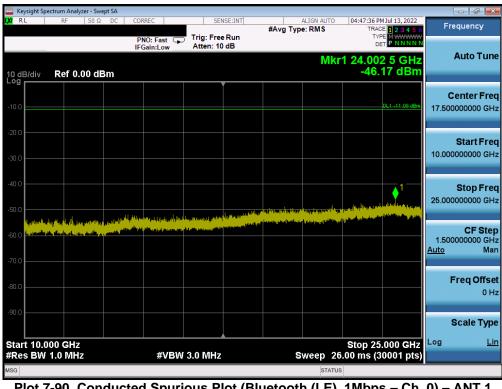
- 1. RBW was set to 1MHz rather than 100kHz in order to increase the measurement speed.
- 2. The display line shown in the following plots denotes the limit at 20dB below the fundamental emission level measured in a 100kHz bandwidth. However, since the traces in the following plots are measured with a 1MHz RBW, the display line may not necessarily appear to be 20dB below the level of the fundamental in a 1MHz bandwidth.
- 3. For plots showing conducted spurious emissions near the limit, the frequencies were investigated with a reduced RBW to ensure that no emissions were present.

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Test Report S/N:	Test Dates:	EUT Type:	Page 67 of 86		
1M2205240063-11.PY7	6/3/2022-7/25/2022	6/3/2022-7/25/2022 Portable Handset			
			\/9.0.02/01/2019		



	ectrum Analyzer - S											
IXI RL	RF 50	Ω DC	COR	REC	SEI	NSE:INT	#Avg Typ	ALIGN AUTO e: RMS		M Jul 13, 2022	Fr	equency
10 dB/div	Ref 15.00	dBm	IFG	IO: Fast ⊊ ain:Low	Trig: Free Atten: 26				TY	PE MWWWWWW ET PNNNNN		Auto Tune
5.00												Center Freq 5000000 GHz
-5.00										DL1 -11.08 dBm	30	Start Freq .000000 MHz
-25.0										1	10.000	Stop Freq
-45.0		an a	operation and a	adial falgar da di da. Nalion yang da di da				i konstransfer 1 seden se den se de	eng ^{all} an (1) ^{all} (1) a den an di un c. ^{blin} t a Miller, a distance d	ta piera por tugo di por La posicio de la posicio a	997 <u>Auto</u>	CF Step .000000 MHz Man
-65.0												Freq Offset 0 Hz
-75.0 Start 30 M	1Hz									0.000 GHz	Log	Scale Type <u>Lin</u>
#Res BW					/ 3.0 MHz		s		· · ·	30001 pts)		
мsg 🌙 Poin	ts changed; a	II traces	s cleare	ed				STAT	US			

Plot 7-89. Conducted Spurious Plot (Bluetooth (LE), 1Mbps - Ch. 0) - ANT 1



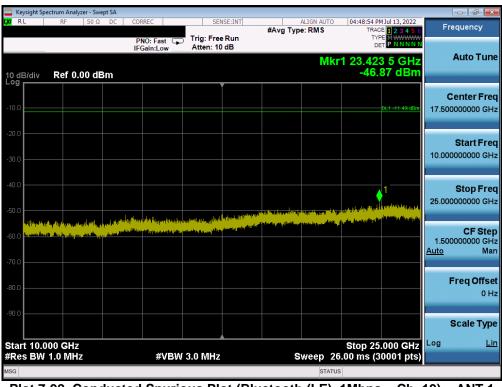
Plot 7-90. Conducted Spurious Plot (Bluetooth (LE), 1Mbps - Ch. 0) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)				
Test Report S/N:	Test Dates:	EUT Type:	Daga 69 of 96			
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	ectrum Analyzer											
LXI RL	RF 5	50Ω DC	CORREC		SEI	NSE:INT	#Avg Typ	ALIGN AUTO e: RMS		M Jul 13, 2022	Fre	quency
	_		PNO: IFGair	Fast 🖵 n:Low	Trig: Free Atten: 26				רז נ			
10 dB/div Log	Ref 15.0	0 dBm						N	lkr1 9.81 -36	3 2 GHz 53 dBm	,	Auto Tune
												enter Freq
5.00											5.0150	000000 GHz
-5.00										DL1 -11.49 dBm		Start Freq
-15.0											30.0	00000 MHz
-25.0												Stop Freq
-35.0											10.000	000000 GHz
-45.0	The second second second second	inter interesting	Chyddia yn 1406 Chyddia yn 1406	No. of the second s	¹⁰ Jacobi (Jacobi (J	and a star where the	APhysics and the product of the second s	۲۰۱۲ میں ۲۰۱۲ میں در ۲۰۱۲ میں د مرد دیکھر در مطالب د		re og han gester neget i frege Angenetike gesterer sinderer	997 (CF Step
-55.0											<u>Auto</u>	Man
-65.0											F	req Offset
												0 Hz
-75.0											S	cale Type
Start 30 I #Res BW				#\/B\M	3.0 MHz			ween_	Stop 10).000 GHz 30001 pts)	Log	Lin
	nts changed;	all traces	s cleared	#VDVV	5.0 WIHZ			STAT		booor pisj		

Plot 7-91. Conducted Spurious Plot (Bluetooth (LE), 1Mbps - Ch. 19) - ANT 1



Plot 7-92. Conducted Spurious Plot (Bluetooth (LE), 1Mbps - Ch. 19) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
Test Report S/N:	Test Dates:	EUT Type:	Dogo 60 of 96		
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🔤 Keysight Sp			•									_	
L <mark>XI</mark> RL	RF	50 Ω	DC	CORRI	EC	SEI	NSE:INT	#Avg Typ	ALIGN AUTO e: RMS		M Jul 13, 2022	Fr	equency
10 dB/div	Ref 1	15.00 d	Bm): Fast ⊊ iin:Low	Trig: Free Atten: 20			М	۳ • kr1 9.85	PE MWWWWW ET P NNNNN		Auto Tune
5.00													Center Freq 5000000 GHz
-5.00											DL1 -9.76 dBm	30	Start Freq 0.000000 MHz
-25.0												10.00	Stop Freq 0000000 GHz
-45.0	akat katat k	in the second second		antoinet. Det <mark>inten</mark> t					n gy shi i ya pini ka gashi 1 ga bili ya pini ka sa sa bi			997 <u>Auto</u>	CF Step 2.000000 MHz Mar
-65.0													Freq Offse 0 H:
-75.0 Start 30 f	MHz									Stop 10	.000 GHz	Log	Scale Type <u>Lir</u>
#Res BW		Hz			#VBV	V 3.0 MHz		s	weep 1	8.00 ms (3			
MSG									STATU	JS			

Plot 7-93. Conducted Spurious Plot (Bluetooth (LE), 1Mbps – Ch. 39) – ANT 1



Plot 7-94. Conducted Spurious Plot (Bluetooth (LE), 1Mbps - Ch. 39) - ANT 1

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)				
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	ectrum Analyzer - Sw										- 6 🗙
LXI RL	RF 50 S	DC	CORREC	SE	NSE:INT	#Avg Typ	ALIGN AUTO		MJul 13, 2022	Fre	quency
10 dB/div	Ref 15.00	dBm	PNO: Fast G	Trig: Free Atten: 26				TYF DE kr1 9.780			Auto Tune
5.00											enter Freq 000000 GHz
-5.00									DL1 -11.12 dBm		Start Freq 000000 MHz
-25.0										10.000	Stop Freq 000000 GHz
-45.0 (Upp)(b) -55.0					digitati yan dagi yati ya 1996 - Angelan ya Kata	a and a star and a star and a star and a star a Star a star a			n an	997. <u>Auto</u>	CF Step 000000 MHz Man
-65.0										F	req Offset 0 Hz
-75.0 Start 30 M	л <u>ы</u> -							Stop 10	.000 GHz	S Log	cale Type
#Res BW			#VBV	V 3.0 MHz		s	weep 1	8.00 ms (3	0001 pts)	_	
мsg 🗼 Poin	ts changed; all	traces c	leared				STATU				

Plot 7-95. Conducted Spurious Plot (Bluetooth (LE), 1Mbps – Ch. 0) – ANT 2



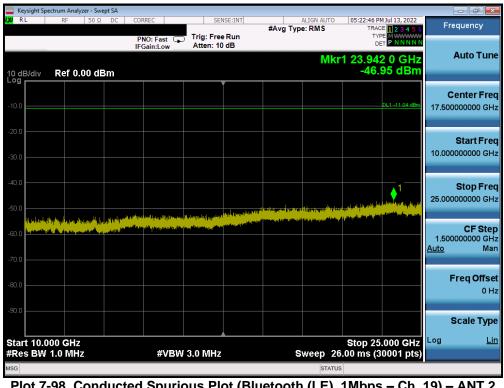
Plot 7-96. Conducted Spurious Plot (Bluetooth (LE), 1Mbps - Ch. 0) - ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)			
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🔤 Keysight Spectrum Analyzer - Swept SA 🚽				
LX/ RL RF 50Ω DC	CORREC SE	INSE:INT #Avg Typ		MJul 13, 2022 ^{II} 2 3 4 5 6 Frequency
10 dB/div Ref 15.00 dBm	PNO: Fast Trig: Fre IFGain:Low Atten: 2		Mkr1 9.77	
5.00				Center Freq 5.015000000 GHz
-5.0				011-11-04-08n 30.000000 MHz
-25.0				Stop Freq 10.000000000 GHz
-45.0 -55.0		Millen frequenties a transmission and the second second second second second second second second second second Millen and Second se		CF Step 997.000000 MHz <u>Auto</u> Man
-65.0				Freq Offset 0 Hz
-75.0Start 30 MHz			Stop 10	.000 GHz
#Res BW 1.0 MHz	#VBW 3.0 MHz	z S	weep 18.00 ms (3	0001 pts)

Plot 7-97. Conducted Spurious Plot (Bluetooth (LE), 1Mbps – Ch. 19) – ANT 2



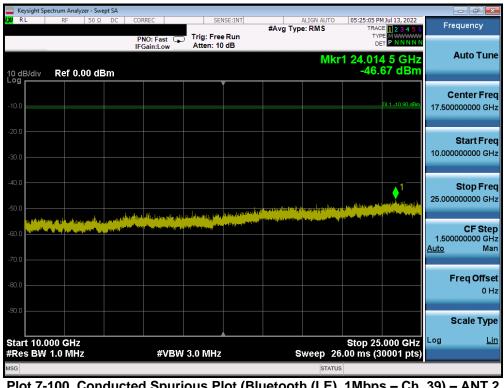
Plot 7-98. Conducted Spurious Plot (Bluetooth (LE), 1Mbps – Ch. 19) – ANT 2

FCC ID: PY7-76056F		MEASUREMENT REPORT (CERTIFICATION)				
Test Report S/N:	Test Dates:	EUT Type:	Dage 72 of 96			
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	ectrum Analyzer - Sw										
I,XI RL	RF 50 Ω	DC	CORREC	SE	NSE:INT	#Avg Typ	ALIGN AUTO		M Jul 13, 2022 DE 1 2 3 4 5 6	Free	quency
10 dB/div	Ref 15.00 (dBm	PNO: Fast G	Trig: Free Atten: 26				TYF DE kr1 9.81		A	luto Tune
5.00											e nter Freq 000000 GHz
-5.00									DL1 -10.90 dBm		Start Freq 00000 MHz
-25.0											Stop Freq 000000 GHz
-45.0	n i pai (1. a bread la china anna Istinatur pinana a chana a bra							and part in some dage of the source of the source of the source of the		997.0 <u>Auto</u>	CF Step 00000 MHz Man
-65.0										Fi	r eq Offset 0 Hz
-75.0 Start 30 M								Stop 10	.000 GHz	S Log	cale Type _{Lin}
#Res BW			#VBI	V 3.0 MHz		s	weep 1	8.00 ms (3	0001 pts)		
мsg 칮 Poin	ts changed; all	traces c	leared				STATU	IS			

Plot 7-99. Conducted Spurious Plot (Bluetooth (LE), 1Mbps – Ch. 39) – ANT 2



Plot 7-100. Conducted Spurious Plot (Bluetooth (LE), 1Mbps – Ch. 39) – ANT 2

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Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 6 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-8 per Section 15.209 and RSS-Gen (8.9).

Frequency	Field Strength [μV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-8. Radiated Limits

Test Procedures Used

ANSI C63.10-2013 – Section 6.6.4.3

KDB 558074 D01 v05r02 - Section 8.6, 8.7

Test Settings

Average Field Strength Measurements

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3kHz > 1/T
- 4. Averaging type was set to RMS to ensure that video filtering was applied in the power domain
- 5. Detector = peak
- 6. Sweep time = auto
- 7. Trace mode = max hold
- 8. Trace was allowed to run for at least 50 times (1/duty cycle) traces

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Peak Field Strength Measurements

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW is set depending on measurement frequency, as specified in Table 7-9 below
- 3. VBW = 3MHz
- 4. Detector = peak
- 5. Sweep time = auto couple
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize

Frequency	RBW
9 – 150kHz	200 – 300Hz
0.15 – 30MHz	9 – 10kHz
30 – 1000MHz	100 – 120kHz
> 1000MHz	1MHz

Table 7-9. RBW as a Function of Frequency

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

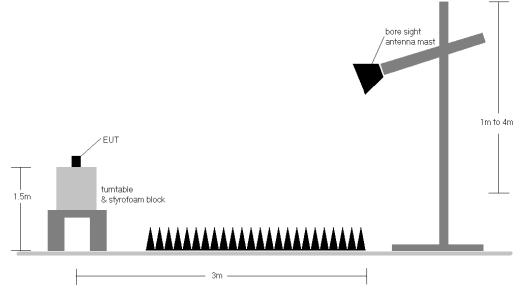


Figure 7-6. Radiated Test Setup >1GHz

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Test Notes

- The optional test procedures for antenna port conducted measurements of unwanted emissions per the guidance of KDB 558074 D01 v05r02 were not used to evaluate this device for compliance to radiated limits. All radiated spurious emissions levels were measured in a radiated test setup.
- 2. All emissions lying in restricted bands specified in §15.205 and Section 8.10 of RSS-Gen are below the limit shown in Table 7-8.
- 3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- 4. This unit was tested with its standard battery.
- 5. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
- Average measurements were recorded using a VBW of 3kHz, per Section 4.1.4.2.3 of ANSI C63.10-2013, since 1/T is equal to just under 3kHz. This method was used because the EUT could not be configured to operate with a duty cycle > 98%. Both average and peak measurements were made using a peak detector
- 7. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 8. No significant radiated band edge emissions were found in the 2310 2390MHz restricted band.
- 9. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Sample Calculations

Determining Spurious Emissions Levels

- Field Strength Level $[dB_{\mu}V/m]$ = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB]
- $\circ \quad \text{Margin}_{[dB]} = \text{Field Strength Level}_{[dB\mu V/m]} \text{Limit}_{[dB\mu V/m]}$

Radiated Band Edge Measurement Offset

• The amplitude offset shown in the radiated restricted band edge plots in Section 7.8 was calculated using the formula:

Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

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Bluetooth Mode:	LE
Distance of Measurements:	3 Meters
Operating Frequency:	2402MHz
Channel:	0

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4804.00	Avg	V	-	-	-78.66	4.11	32.45	53.98	-21.52
4804.00	Peak	V	-	-	-66.20	4.11	44.91	73.98	-29.06
12010.00	Avg	V	-	-	-80.68	13.65	39.97	53.98	-14.01
12010.00	Peak	V	-	-	-68.39	13.65	52.26	73.98	-21.72

Table 7-10. Radiated Measurements @ 3 meters – ANT 1

Bluetooth Mode:LEDistance of Measurements:3 MetersOperating Frequency:2440MHzChannel:19

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4880.00	Avg	V	-	-	-78.47	4.39	32.92	53.98	-21.05
4880.00	Peak	V	-	-	-66.76	4.39	44.63	73.98	-29.34
7320.00	Avg	V	-	-	-79.36	7.34	34.98	53.98	-19.00
7320.00	Peak	V	-	-	-67.15	7.34	47.19	73.98	-26.79
12200.00	Avg	V	-	-	-80.37	13.49	40.12	53.98	-13.86
12200.00	Peak	V	-	-	-68.64	13.49	51.85	73.98	-22.13

Table 7-11. Radiated Measurements @ 3 meters- ANT 1

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Bluetooth Mode:	LE
Distance of Measurements:	3 Meters
Operating Frequency:	2480MHz
Channel:	39

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4960.00	Avg	V	-	-	-79.14	4.41	32.27	53.98	-21.71
4960.00	Peak	V	-	-	-67.14	4.41	44.27	73.98	-29.71
7440.00	Avg	V	-	-	-79.34	7.04	34.70	53.98	-19.28
7440.00	Peak	V	-	-	-66.94	7.04	47.10	73.98	-26.88
12400.00	Avg	V	-	-	-80.91	13.68	39.77	53.98	-14.21
12400.00	Peak	V	-	-	-68.90	13.68	51.78	73.98	-22.20

Table 7-12. Radiated Measurements @ 3 meters – ANT 1

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Bluetooth Mode:	LE
Distance of Measurements:	3 Meters
Operating Frequency:	2402MHz
Channel:	0

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4804.00	Avg	V	-	-	-78.54	4.11	32.57	53.98	-21.40
4804.00	Peak	V	-	-	-64.85	4.11	46.26	73.98	-27.71
12010.00	Avg	V	-	-	-80.59	13.65	40.06	53.98	-13.92
12010.00	Peak	V	-	-	-68.70	13.65	51.95	73.98	-22.03

Table 7-13. Radiated Measurements @ 3 meters – ANT 2

Bluetooth Mode:	LE
Distance of Measurements:	3 Meters
Operating Frequency:	2440MHz
Channel:	19

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4880.00	Avg	V	-	-	-78.41	4.39	32.98	53.98	-20.99
4880.00	Peak	V	-	-	-66.52	4.39	44.87	73.98	-29.10
7320.00	Avg	V	-	-	-79.19	7.34	35.15	53.98	-18.83
7320.00	Peak	V	-	-	-67.23	7.34	47.11	73.98	-26.87
12200.00	Avg	V	-	-	-80.58	13.49	39.91	53.98	-14.07
12200.00	Peak	V	-	-	-68.63	13.49	51.86	73.98	-22.12

Table 7-14. Radiated Measurements @ 3 meters – ANT 2

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Bluetooth Mode:	LE
Distance of Measurements:	3 Meters
Operating Frequency:	2480MHz
Channel:	39

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4960.00	Avg	V	-	-	-79.00	4.41	32.41	53.98	-21.57
4960.00	Peak	V	-	-	-66.97	4.41	44.44	73.98	-29.54
7440.00	Avg	V	-	-	-79.34	7.04	34.70	53.98	-19.28
7440.00	Peak	V	-	-	-67.50	7.04	46.54	73.98	-27.44
12400.00	Avg	V	-	-	-80.83	13.68	39.85	53.98	-14.13
12400.00	Peak	V	-	-	-68.85	13.68	51.83	73.98	-22.15

Table 7-15. Radiated Measurements @ 3 meters – ANT 2

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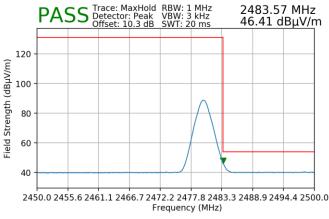
7.8 Radiated Restricted Band Edge Measurements §15.209; RSS-Gen [8.9]

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

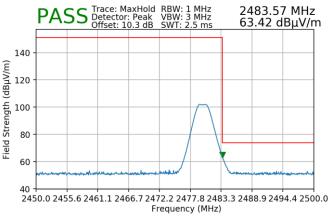
The amplitude offset shown in the following plots for average measurements was calculated using the formula:

Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

Bluetooth Mode:	LE
Measurement Distance:	3 Meters
Operating Frequency:	2480MHz
Channel:	39



Plot 7-101. Radiated Restricted Upper Band Edge Measurement (Average) – ANT 1

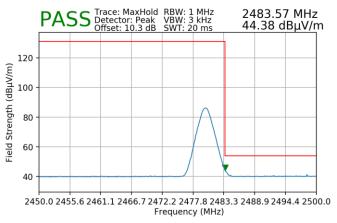


Plot 7-102. Radiated Restricted Upper Band Edge Measurement (Peak) – ANT 1

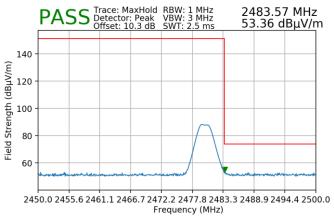
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Bluetooth Mode:	LE
Measurement Distance:	3 Meters
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Plot 7-103. Radiated Restricted Upper Band Edge Measurement (Average) – ANT 2



Plot 7-104. Radiated Restricted Upper Band Edge Measurement (Peak) – ANT 2

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7.9 Line-Conducted Test Data

§15.207; RSS-Gen [8.8]

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207 and RSS-Gen (8.8).

Frequency of emission	n Conducted Limit (dBμV)	
(MHz)	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-16. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10-2013, Section 6.2

Test Settings

Quasi-Peak Field Strength Measurements

- 1. Analyzer center frequency was set to the frequency of the spurious emission of interest
- 2. RBW = 9kHz (for emissions from 150kHz 30MHz)
- 3. Detector = quasi-peak
- 4. Sweep time = auto couple
- 5. Trace mode = max hold
- 6. Trace was allowed to stabilize

Average Field Strength Measurements

- 1. Analyzer center frequency was set to the frequency of the spurious emission of interest
- 2. RBW = 9kHz (for emissions from 150kHz 30MHz)
- 3. Detector = RMS
- 4. Sweep time = auto couple
- 5. Trace mode = max hold
- 6. Trace was allowed to stabilize

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Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

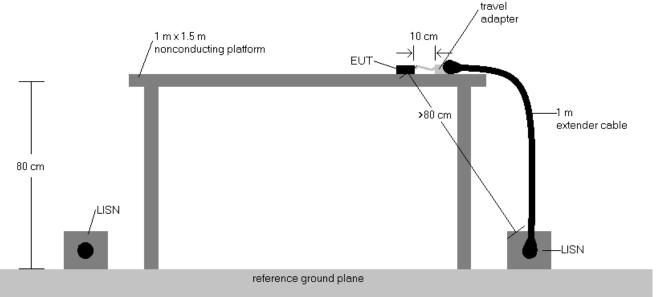


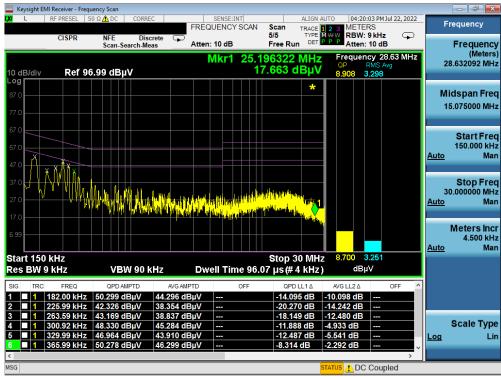
Figure 7-7. Test Instrument & Measurement Setup

Test Notes

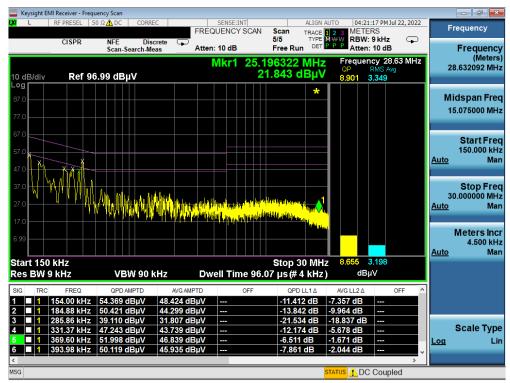
- 1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
- 2. The limit for an intentional radiator from 150kHz to 30MHz are specified in Part 15.207 and RSS-Gen (8.8).
- 3. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- 4. QP/AV Level (dB μ V) = QP/AV Analyzer/Receiver Level (dB μ V) + Corr. (dB)
- 5. Margin (dB) = QP/AV Limit (dB μ V) QP/AV Level (dB μ V)
- 6. Traces shown in plot are made using a peak detector.
- 7. Deviations to the Specifications: None.

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Plot 7-105. Line Conducted Plot with Bluetooth LE (L1)





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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Sony Portable Handset FCC ID: PY7-76056F** is in compliance with Part 15 Subpart C (15.247) of the FCC Rules.

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