SPURIOUS CONDUCTED EMISSIONS

XMit 2022.02.07.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5182A	TIF	2020-08-29	2023-08-29
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2021-04-16	2022-04-16
Block - DC	Fairview Microwave	SD3379	AMI	2021-08-13	2022-08-13
Attenuator	Fairview Microwave	SA18S5W-20	RFX	2021-06-02	2022-06-02
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2021-09-12	2022-09-12

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the fundamental was measured with a 100 kHz resolution bandwidth and the highest value was recorded. The rest of the spectrum was then measured with a 100 kHz resolution bandwidth and the highest value was found. The difference between the value found on the fundamental and the rest of the spectrum was compared against the limit to determine compliance.

SPURIOUS CONDUCTED EMISSIONS

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	XB3C2			**Work Order:**	DGII0455
Serial Number:	350588280003609			**Date:**	5-Apr-22
Customer:	Digi International Inc			**Temperature:**	22.8 °C
Attendees:	None			**Humidity:**	28% RH
Project:	None			**Barometric Pres.:**	1004 mbar
Tested by:	Andrew Rogstad	**Power:**	5VDC	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 15.247:2022	ANSI C63.10:2013

COMMENTS

IMEI 350588280003609. Reference level offset accounts for measurement cable, attenuator, DC block, and patch cable.

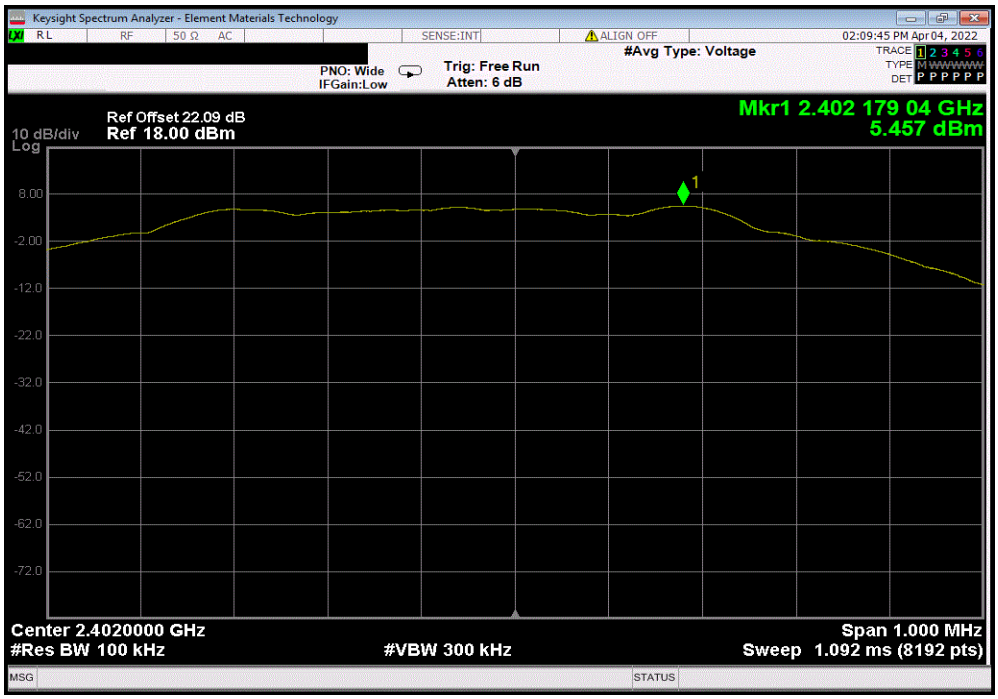
DEVIATIONS FROM TEST STANDARD

None

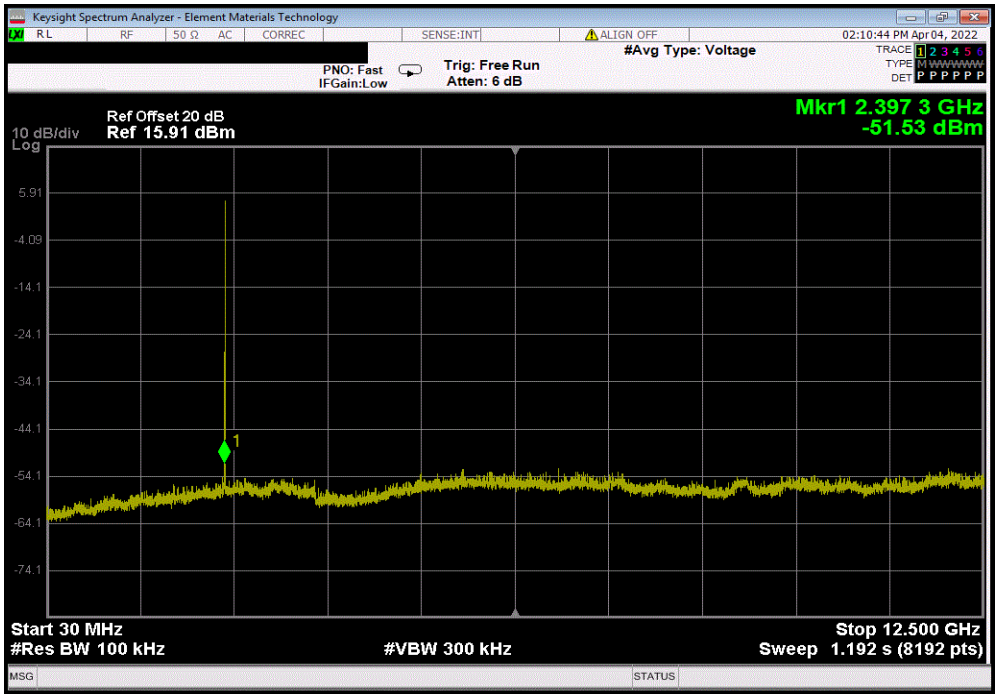
Configuration #	9	Signature

		Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
BLE/GFSK 1 Mbps						
	Low Channel, 2402 MHz	Fundamental	2402.18	N/A	N/A	N/A
	Low Channel, 2402 MHz	30 MHz - 12.5 GHz	2397.34	-56.98	-20	Pass
	Low Channel, 2402 MHz	12.5 GHz - 25 GHz	24650.53	-45.92	-20	Pass
	Mid Channel, 2440 MHz	Fundamental	2440.18	N/A	N/A	N/A
	Mid Channel, 2440 MHz	30 MHz - 12.5 GHz	6299.25	-58.41	-20	Pass
	Mid Channel, 2440 MHz	12.5 GHz - 25 GHz	24830.61	-46.23	-20	Pass
	High Channel, 2480 MHz	Fundamental	2480.18	N/A	N/A	N/A
	High Channel, 2480 MHz	30 MHz - 12.5 GHz	12079.82	-57.87	-20	Pass
	High Channel, 2480 MHz	12.5 GHz - 25 GHz	24873.34	-45.44	-20	Pass
BLE/GFSK 2 Mbps						
	Low Channel, 2404 MHz	Fundamental	2404.11	N/A	N/A	N/A
	Low Channel, 2404 MHz	30 MHz - 12.5 GHz	2395.81	-54.94	-20	Pass
	Low Channel, 2404 MHz	12.5 GHz - 25 GHz	24847.39	-43.6	-20	Pass
	Mid Channel, 2440 MHz	Fundamental	2440.1	N/A	N/A	N/A
	Mid Channel, 2440 MHz	30 MHz - 12.5 GHz	6224.66	-55.96	-20	Pass
	Mid Channel, 2440 MHz	12.5 GHz - 25 GHz	24694.79	-43.6	-20	Pass
	High Channel, 2478 MHz	Fundamental	2478.1	N/A	N/A	N/A
	High Channel, 2478 MHz	30 MHz - 12.5 GHz	11954.98	-56.52	-20	Pass
	High Channel, 2478 MHz	12.5 GHz - 25 GHz	24624.59	-43.35	-20	Pass

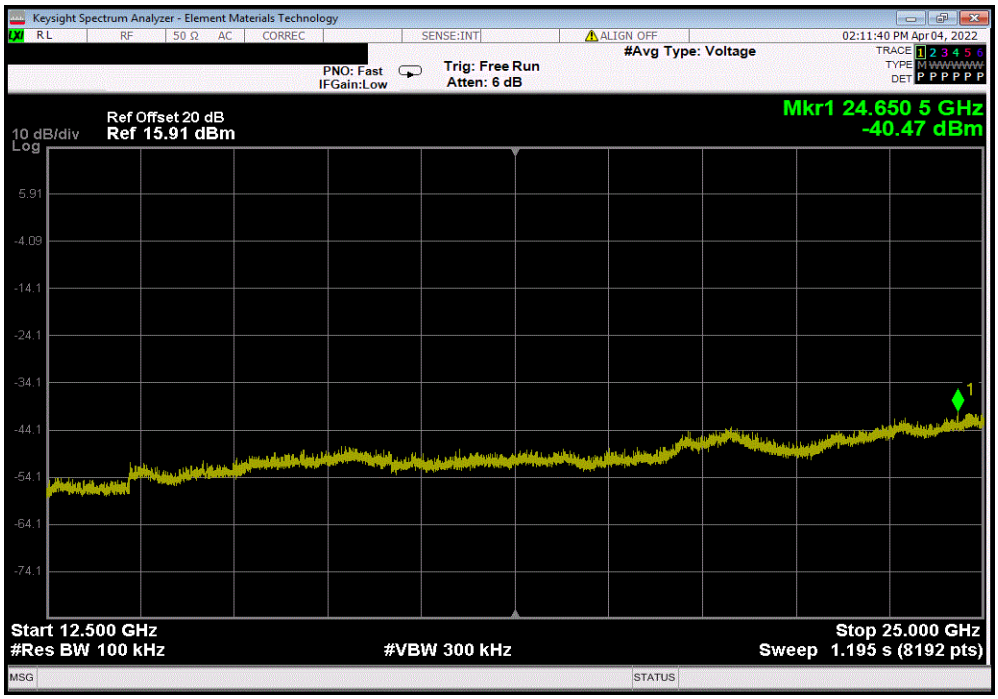
BLE/GFSK 1 Mbps, Low Channel, 2402 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2402.18	N/A	N/A	N/A



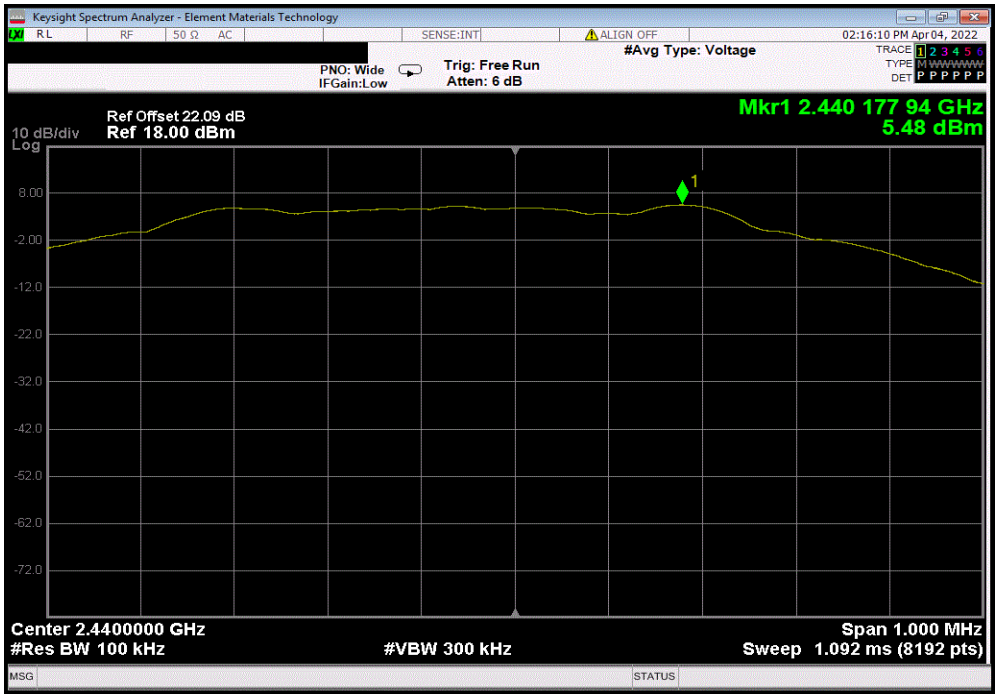
BLE/GFSK 1 Mbps, Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2397.34	-56.98	-20	Pass



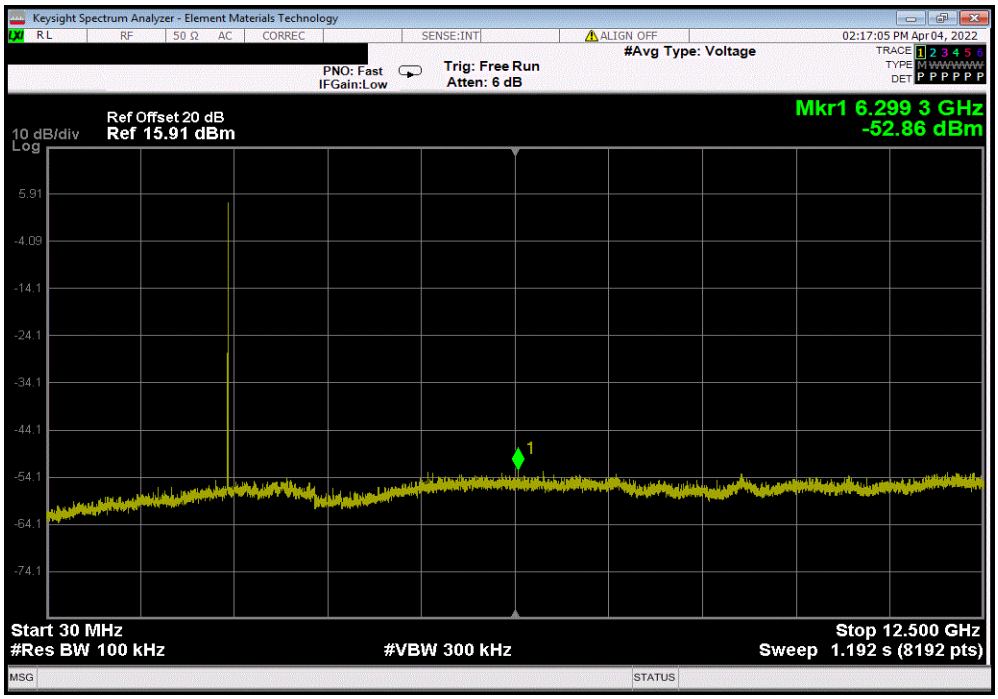
BLE/GFSK 1 Mbps, Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24650.53	-45.92	-20	Pass



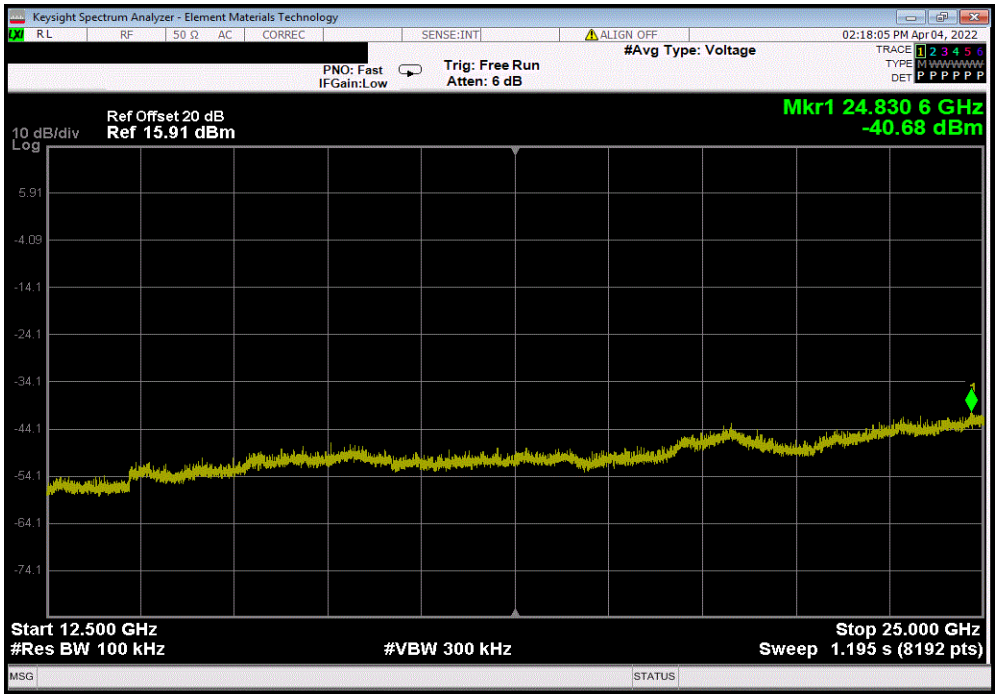
BLE/GFSK 1 Mbps, Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2440.18	N/A	N/A	N/A



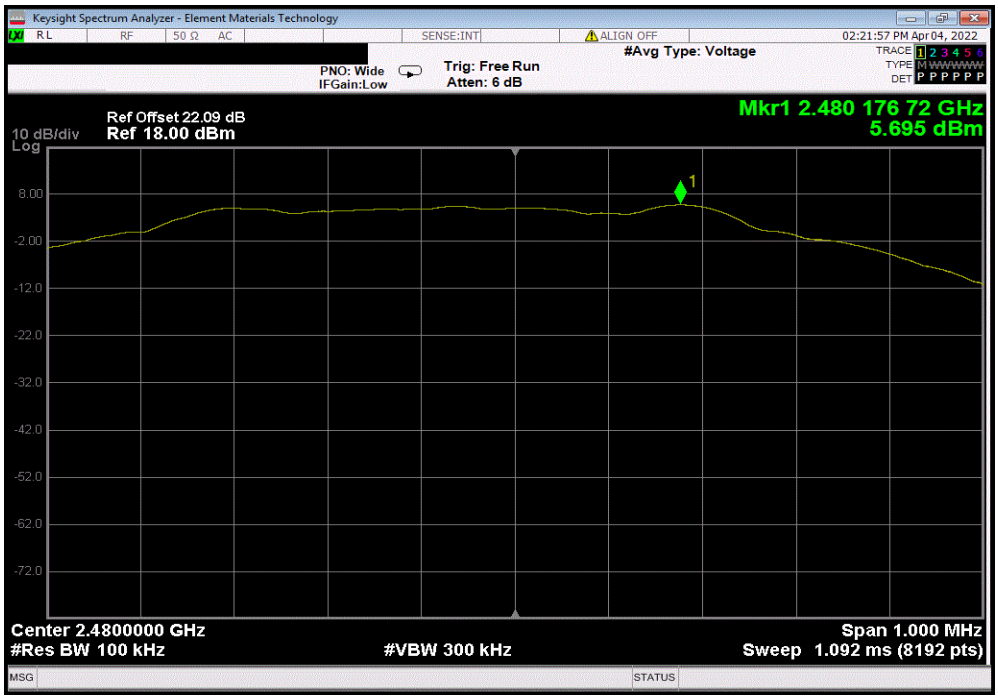
BLE/GFSK 1 Mbps, Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	6299.25	-58.41	-20	Pass



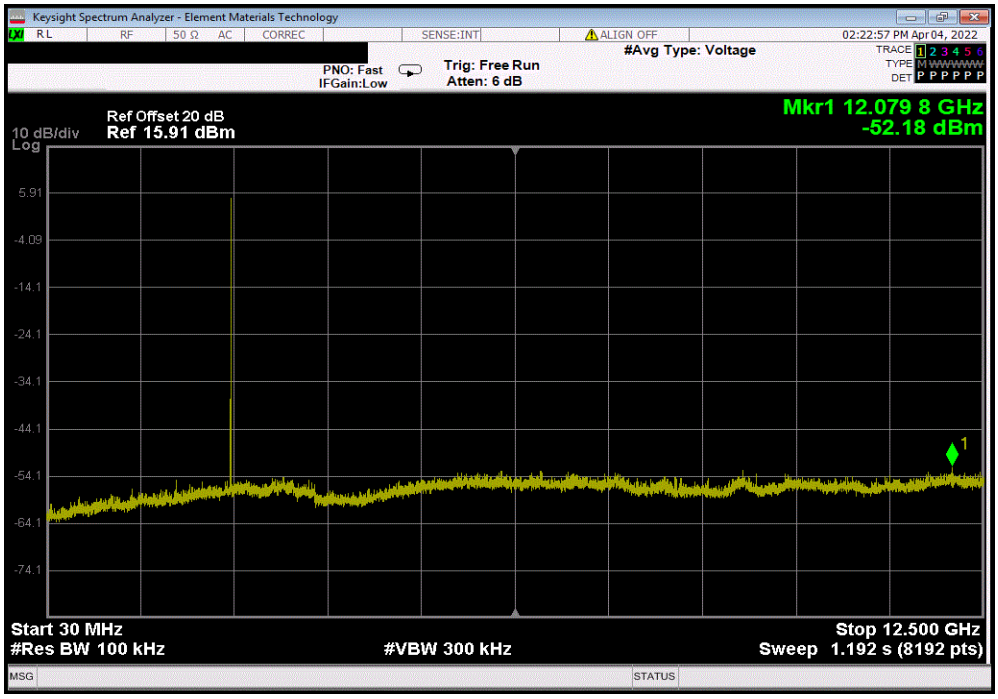
BLE/GFSK 1 Mbps, Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24830.61	-46.23	-20	Pass



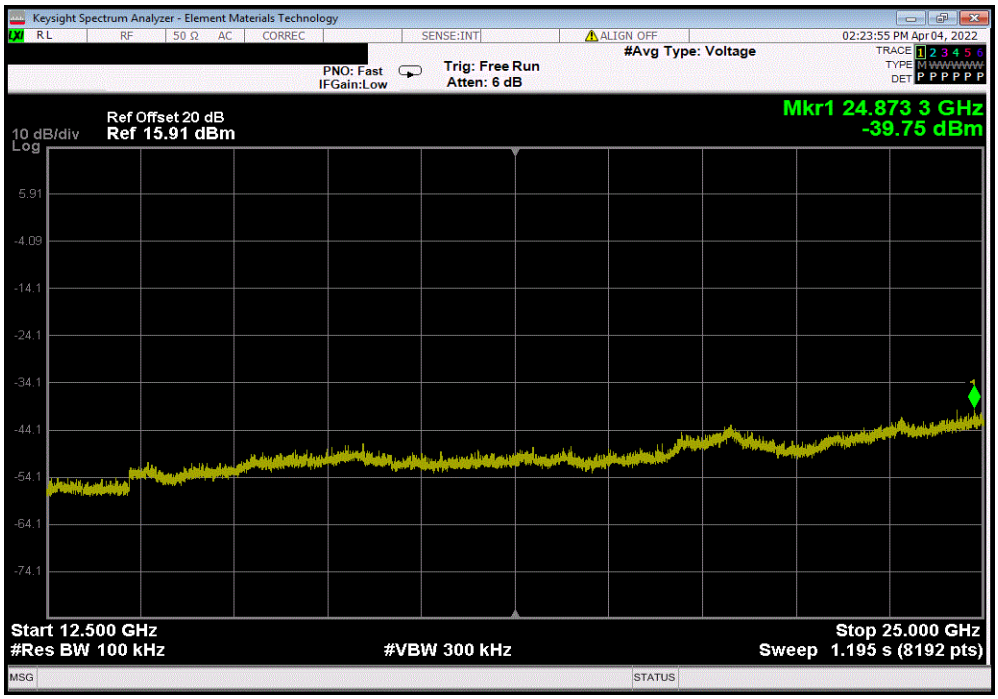
BLE/GFSK 1 Mbps, High Channel, 2480 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2480.18	N/A	N/A	N/A



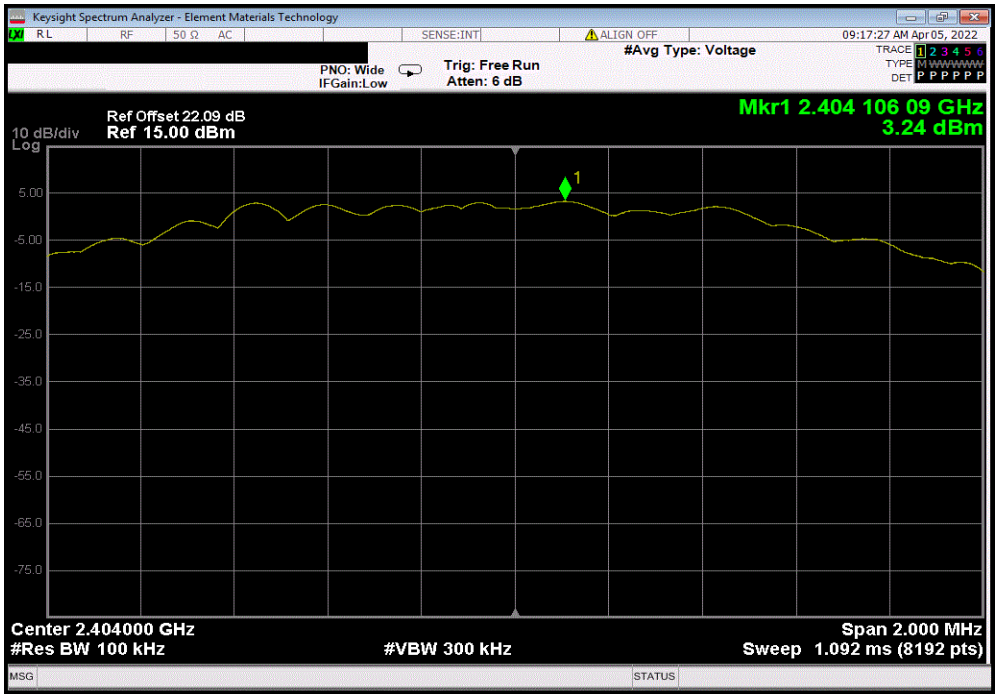
BLE/GFSK 1 Mbps, High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	12079.82	-57.87	-20	Pass



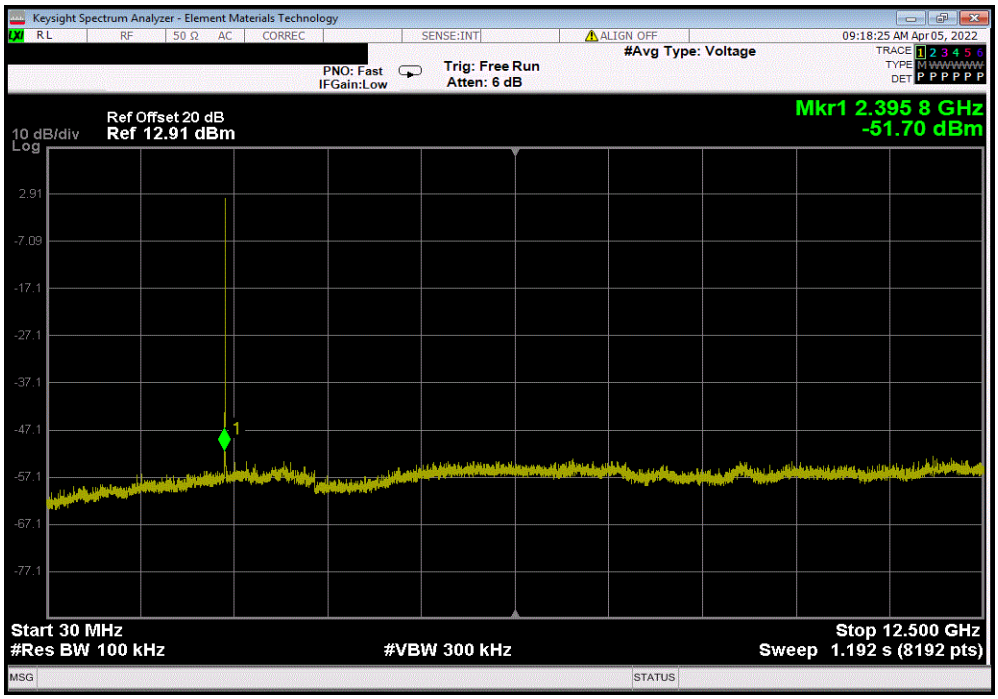
BLE/GFSK 1 Mbps, High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24873.34	-45.44	-20	Pass



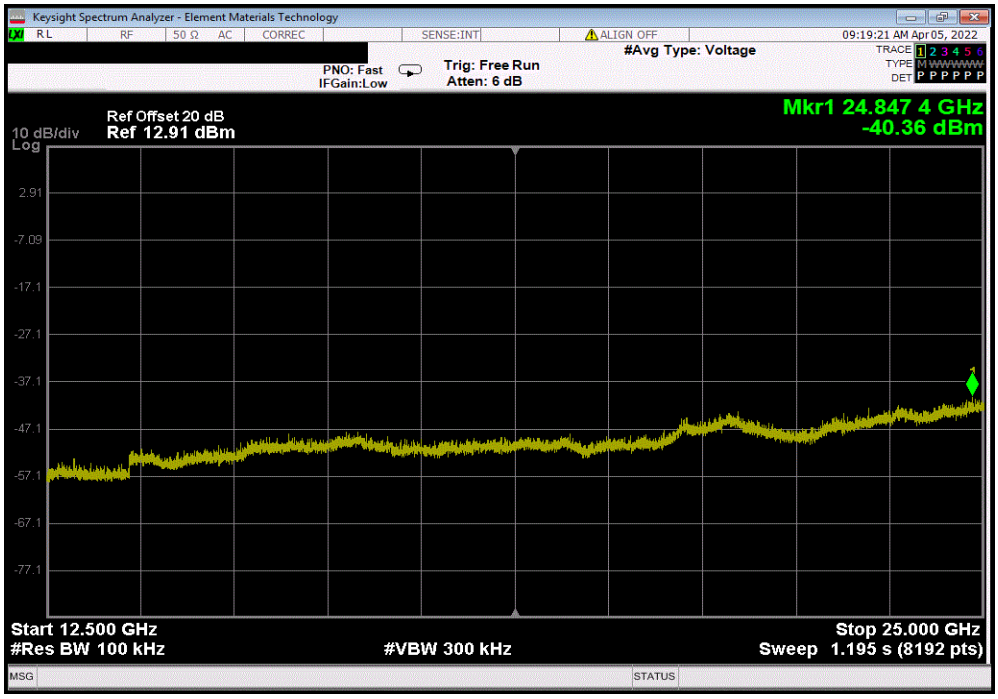
BLE/GFSK 2 Mbps, Low Channel, 2404 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2404.11	N/A	N/A	N/A



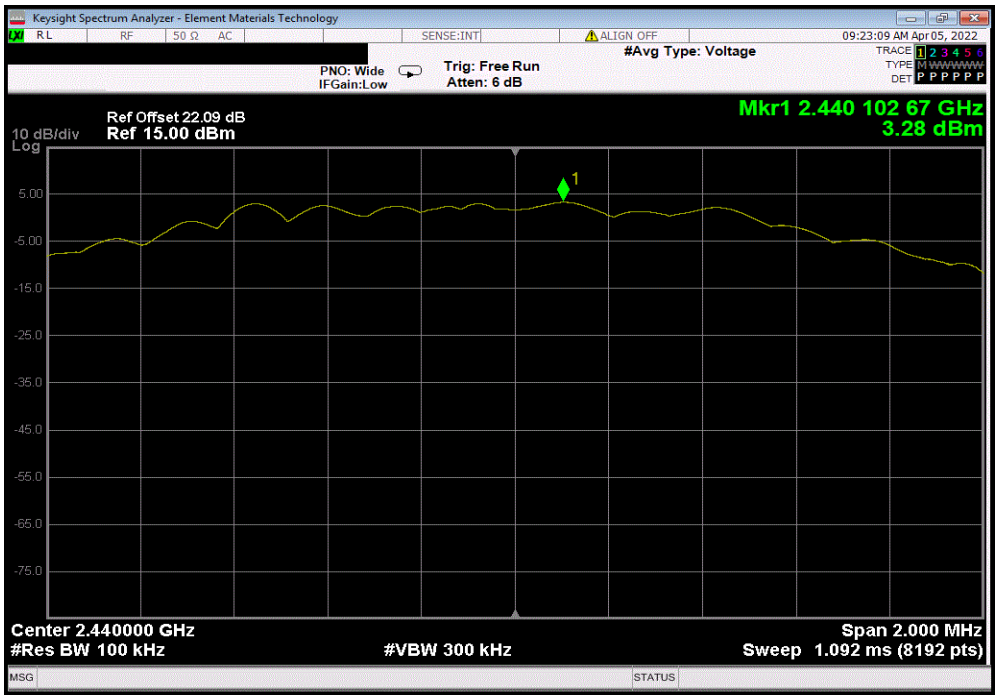
BLE/GFSK 2 Mbps, Low Channel, 2404 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	2395.81	-54.94	-20	Pass



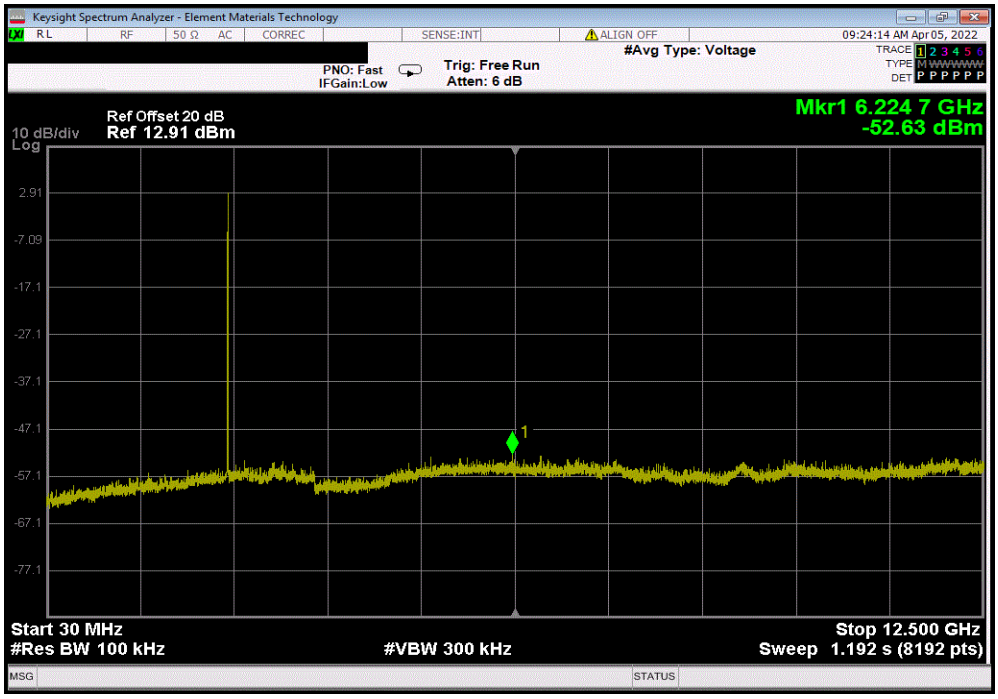
BLE/GFSK 2 Mbps, Low Channel, 2404 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24847.39	-43.6	-20	Pass



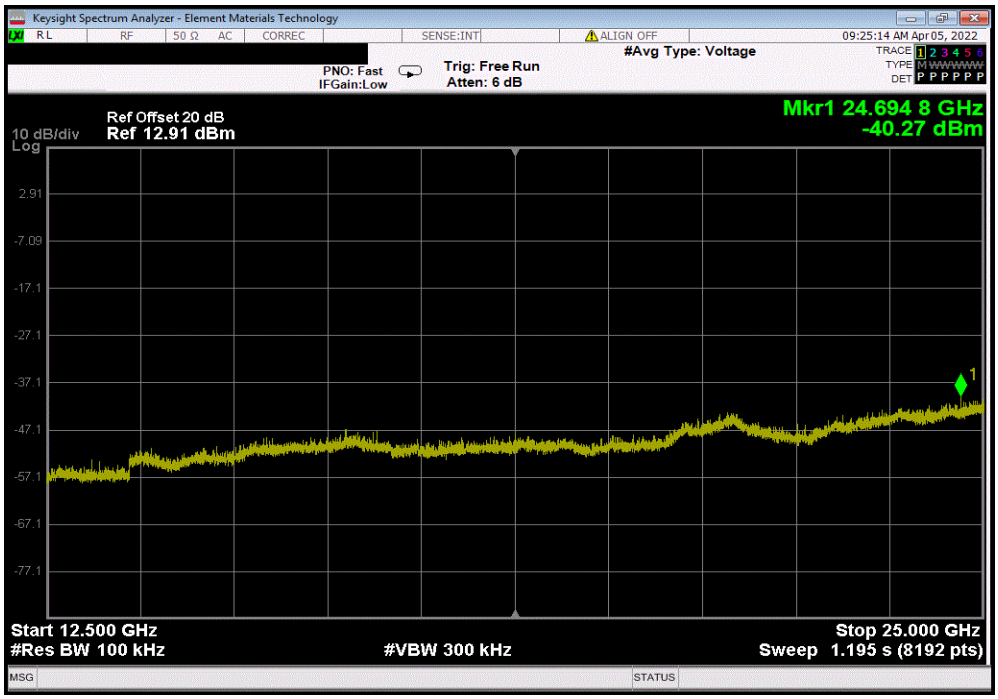
BLE/GFSK 2 Mbps, Mid Channel, 2440 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2440.1	N/A	N/A	N/A



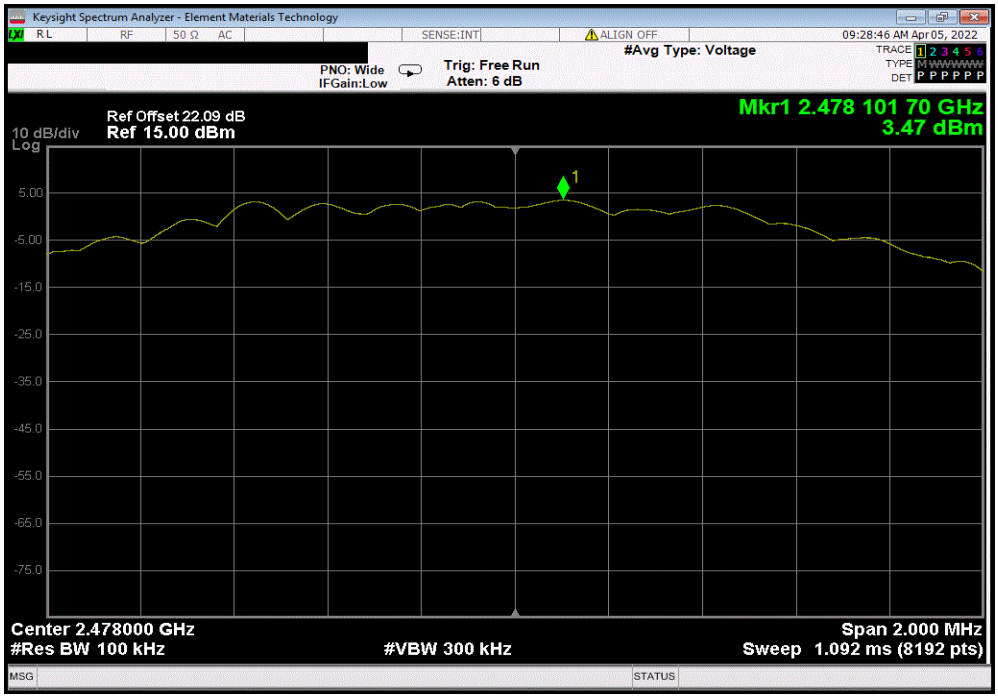
BLE/GFSK 2 Mbps, Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	6224.66	-55.96	-20	Pass



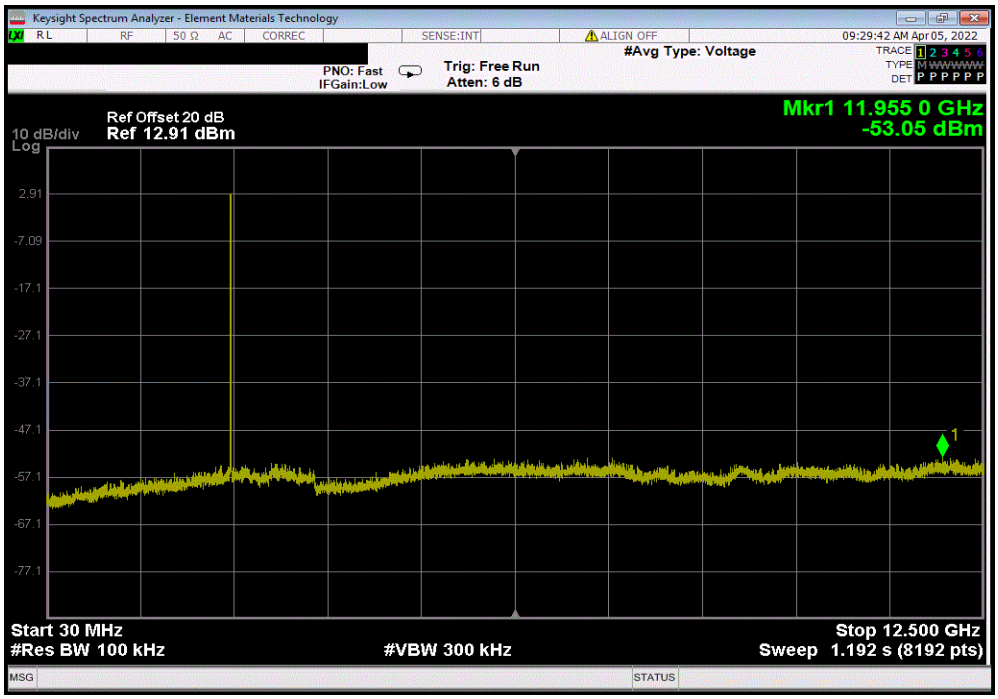
BLE/GFSK 2 Mbps, Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24694.79	-43.6	-20	Pass



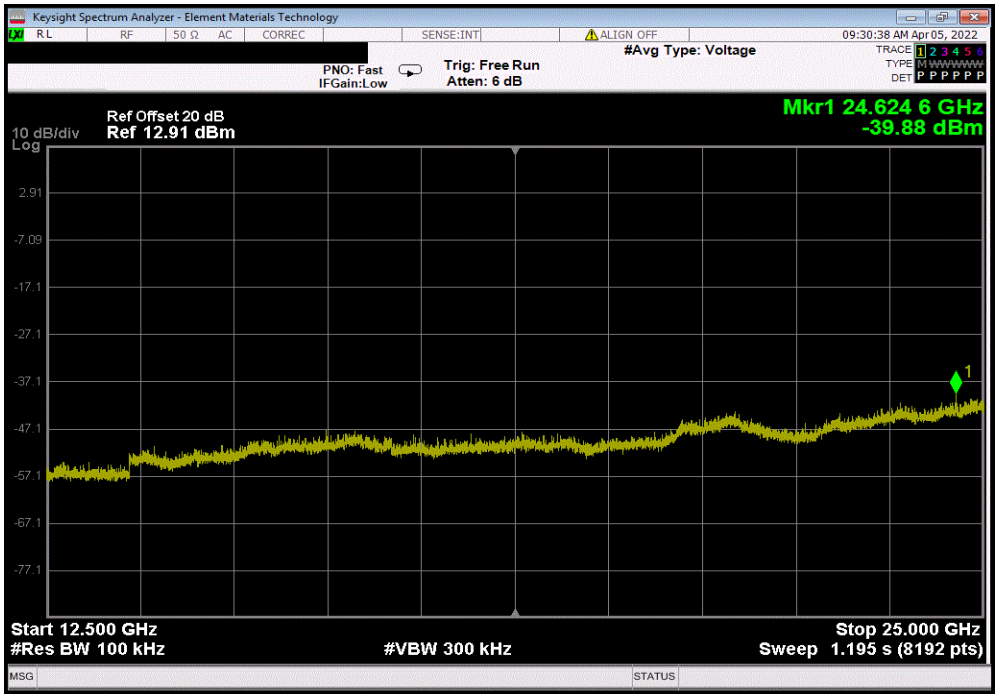
BLE/GFSK 2 Mbps, High Channel, 2478 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2478.1	N/A	N/A	N/A



BLE/GFSK 2 Mbps, High Channel, 2478 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	11954.98	-56.52	-20	Pass



BLE/GFSK 2 Mbps, High Channel, 2478 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24624.59	-43.35	-20	Pass



SPURIOUS CONDUCTED EMISSIONS

XMit 2022.02.07.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3379	AMZ	2022-11-06	2023-11-06
Attenuator	S.M. Electronics	SA26B-20	RFW	2022-02-08	2023-02-08
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	2022-09-10	2023-09-10
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	2022-04-25	2023-04-25
Generator - Signal	Agilent	N5183A	TIK	2022-01-24	2025-01-24

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the fundamental was measured with a 100 kHz resolution bandwidth and the highest value was recorded. The rest of the spectrum was then measured with a 100 kHz resolution bandwidth and the highest value was found. The difference between the value found on the fundamental and the rest of the spectrum was compared against the limit to determine compliance.

The reference level offset for the fundamental screen capture was based on a measured value of the loss between the spectrum analyzer and the EUT which was verified at the time of test. The remaining screen capture(s) use an internal transducer factor on the analyzer to correct the displayed trace based on the cable loss over frequency. The reference level offset for the additional screen capture(s) is then based on the expected attenuator value and any other losses.

Fundamental Offset = Ref Lvl Offset showing measured composite factor of all losses

Remaining Screen capture(s) Offset = “Internal” cable loss factor not shown on screen capture + Ref Lvl Offset showing expected attenuator value and any other losses

SPURIOUS CONDUCTED EMISSIONS

TbtTx 2022.06.03.0 XMit 2022.02.07.0

EUT:	XB3C2			**Work Order:**	DGII0474
Serial Number:	354846620001279			**Date:**	16-Jan-23
Customer:	Digi International Inc			**Temperature:**	21.7 °C
Attendees:	Brad Ferguson			**Humidity:**	28.5% RH
Project:	None			**Barometric Pres.:**	1002 mbar
Tested by:	Christopher Heintzelman	**Power:**	5VDC via USB	**Job Site:**	MN11

TEST SPECIFICATIONS	Test Method
FCC 15.247:2023	ANSI C63.10:2013

COMMENTS

Power set to -2dBm rated power.

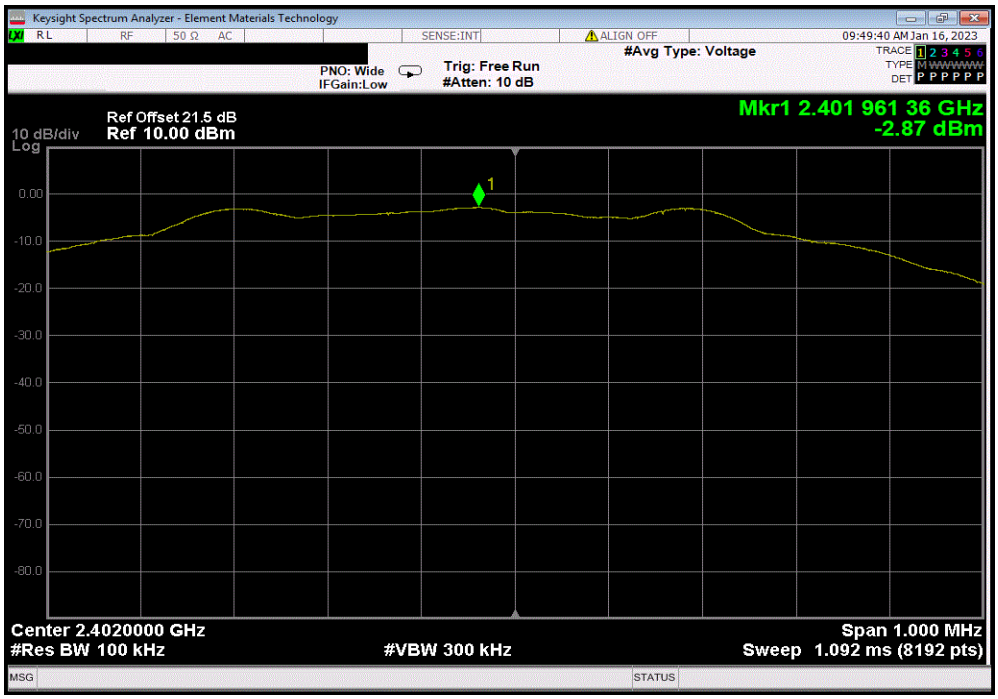
DEVIATIONS FROM TEST STANDARD

None

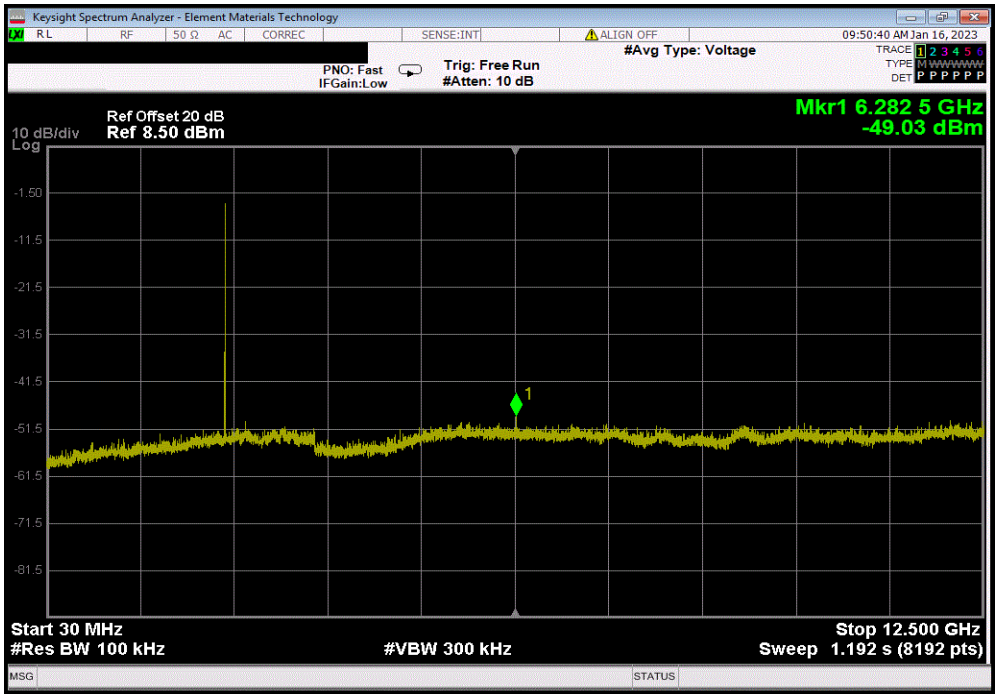
Configuration #	1	Signature

	Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
BLE/GFSK 1 Mbps Low Channel, 2402 MHz	Fundamental	2401.96	N/A	N/A	N/A
BLE/GFSK 1 Mbps Low Channel, 2402 MHz	30 MHz - 12.5 GHz	6282.51	-46.16	-20	Pass
BLE/GFSK 1 Mbps Low Channel, 2402 MHz	12.5 GHz - 25 GHz	24890.12	-34.31	-20	Pass
BLE/GFSK 1 Mbps Mid Channel, 2440 MHz	Fundamental	2439.96	N/A	N/A	N/A
BLE/GFSK 1 Mbps Mid Channel, 2440 MHz	30 MHz - 12.5 GHz	7043.71	-46.5	-20	Pass
BLE/GFSK 1 Mbps Mid Channel, 2440 MHz	12.5 GHz - 25 GHz	24957.27	-34.72	-20	Pass
BLE/GFSK 1 Mbps High Channel, 2480 MHz	Fundamental	2479.96	N/A	N/A	N/A
BLE/GFSK 1 Mbps High Channel, 2480 MHz	30 MHz - 12.5 GHz	5566.98	-47.32	-20	Pass
BLE/GFSK 1 Mbps High Channel, 2480 MHz	12.5 GHz - 25 GHz	24964.9	-34.83	-20	Pass
BLE/GFSK 2 Mbps Low Channel, 2404 MHz	Fundamental	2403.96	N/A	N/A	N/A
BLE/GFSK 2 Mbps Low Channel, 2404 MHz	30 MHz - 12.5 GHz	5871.46	-46.34	-20	Pass
BLE/GFSK 2 Mbps Low Channel, 2404 MHz	12.5 GHz - 25 GHz	24792.46	-34.24	-20	Pass
BLE/GFSK 2 Mbps Mid Channel, 2440 MHz	Fundamental	2439.96	N/A	N/A	N/A
BLE/GFSK 2 Mbps Mid Channel, 2440 MHz	30 MHz - 12.5 GHz	5618.74	-47.16	-20	Pass
BLE/GFSK 2 Mbps Mid Channel, 2440 MHz	12.5 GHz - 25 GHz	24887.07	-35.12	-20	Pass
BLE/GFSK 2 Mbps High Channel, 2478 MHz	Fundamental	2477.96	N/A	N/A	N/A
BLE/GFSK 2 Mbps High Channel, 2478 MHz	30 MHz - 12.5 GHz	9289.25	-47.22	-20	Pass
BLE/GFSK 2 Mbps High Channel, 2478 MHz	12.5 GHz - 25 GHz	24803.14	-34.92	-20	Pass

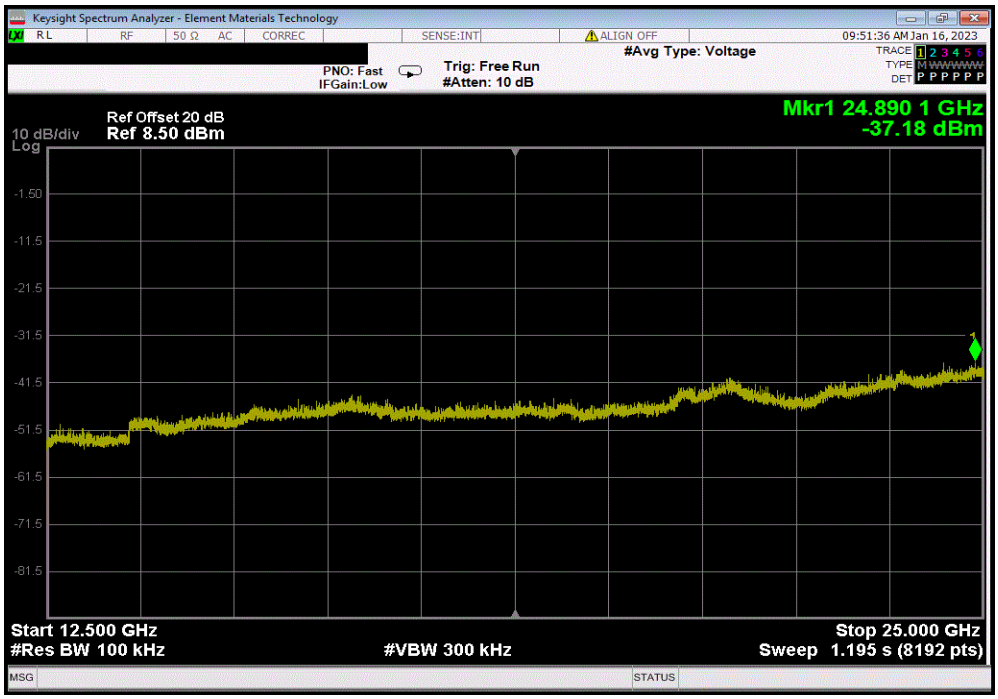
BLE/GFSK 1 Mbps Low Channel, 2402 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2401.96	N/A	N/A	N/A



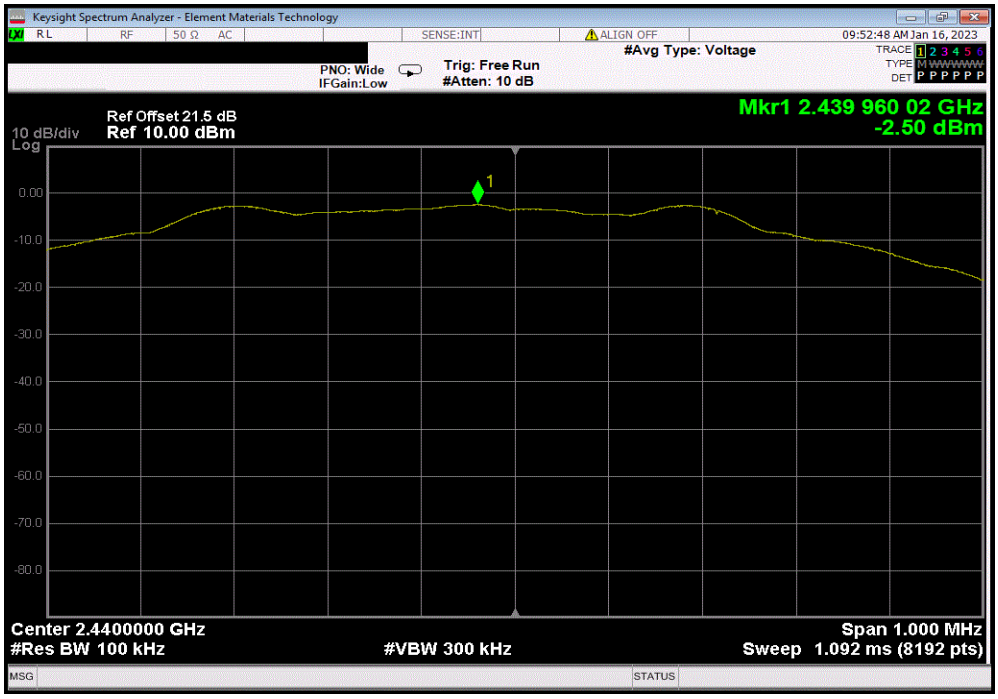
BLE/GFSK 1 Mbps Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	6282.51	-46.16	-20	Pass



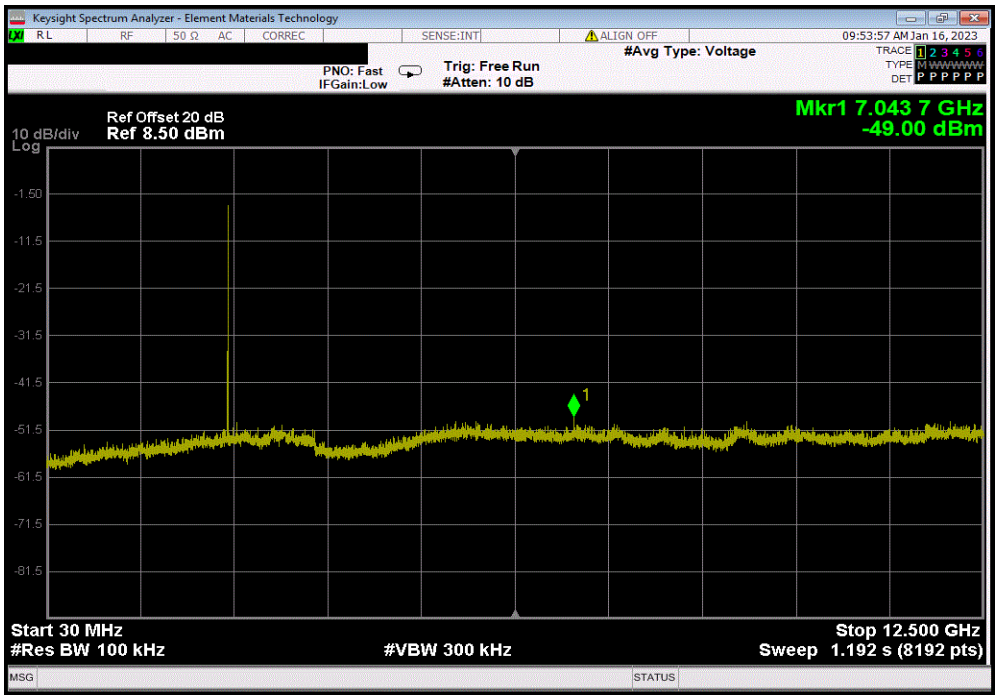
BLE/GFSK 1 Mbps Low Channel, 2402 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24890.12	-34.31	-20	Pass



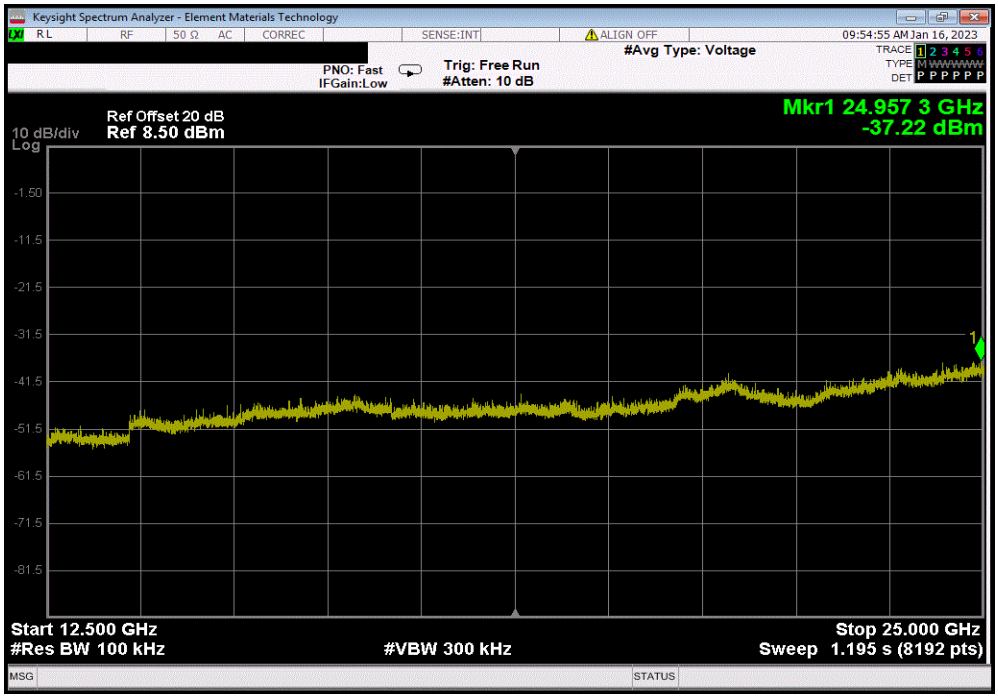
BLE/GFSK 1 Mbps Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2439.96	N/A	N/A	N/A



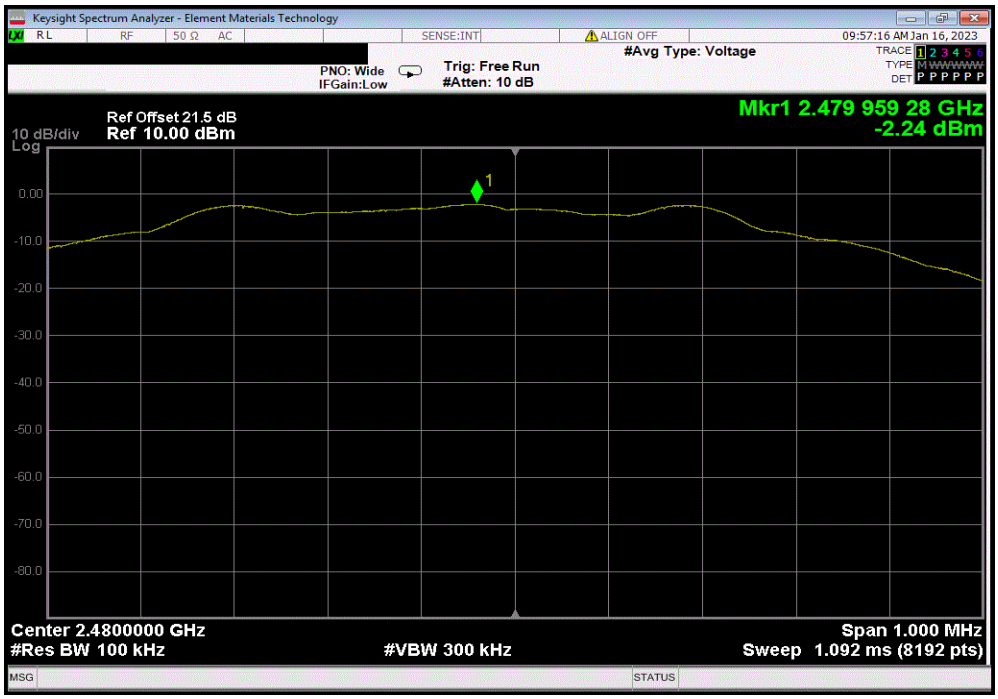
BLE/GFSK 1 Mbps Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	7043.71	-46.5	-20	Pass



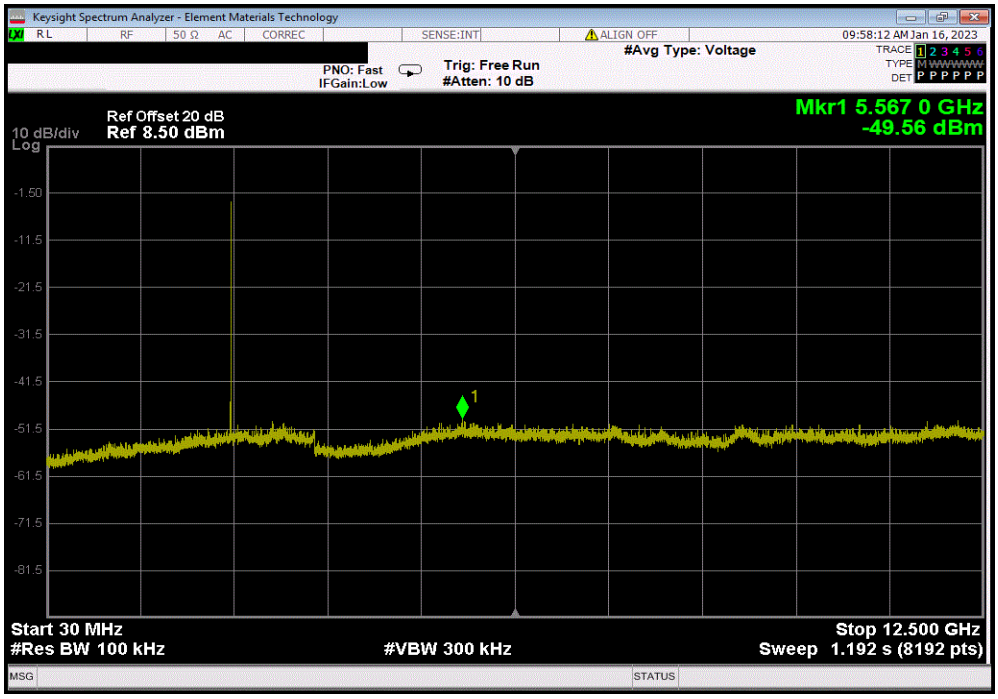
BLE/GFSK 1 Mbps Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24957.27	-34.72	-20	Pass



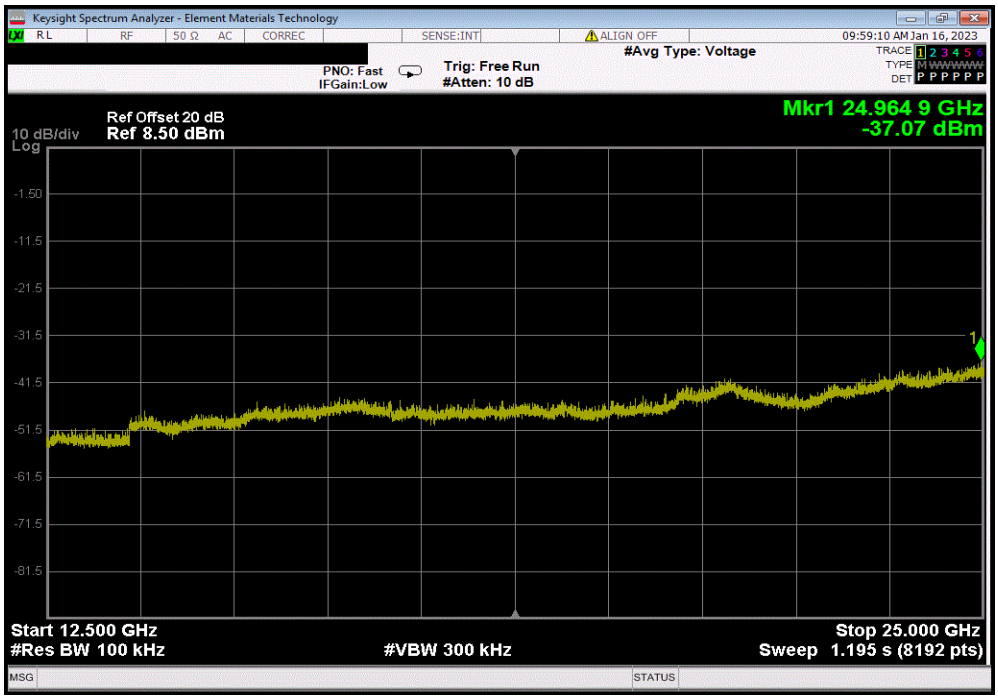
BLE/GFSK 1 Mbps High Channel, 2480 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2479.96	N/A	N/A	N/A



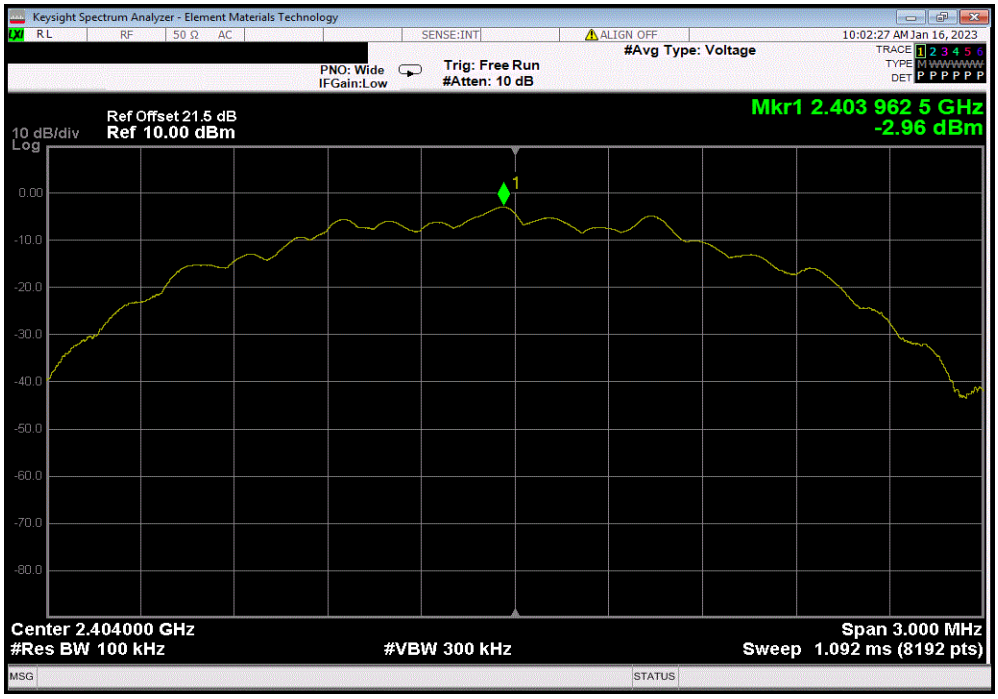
BLE/GFSK 1 Mbps High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	5566.98	-47.32	-20	Pass



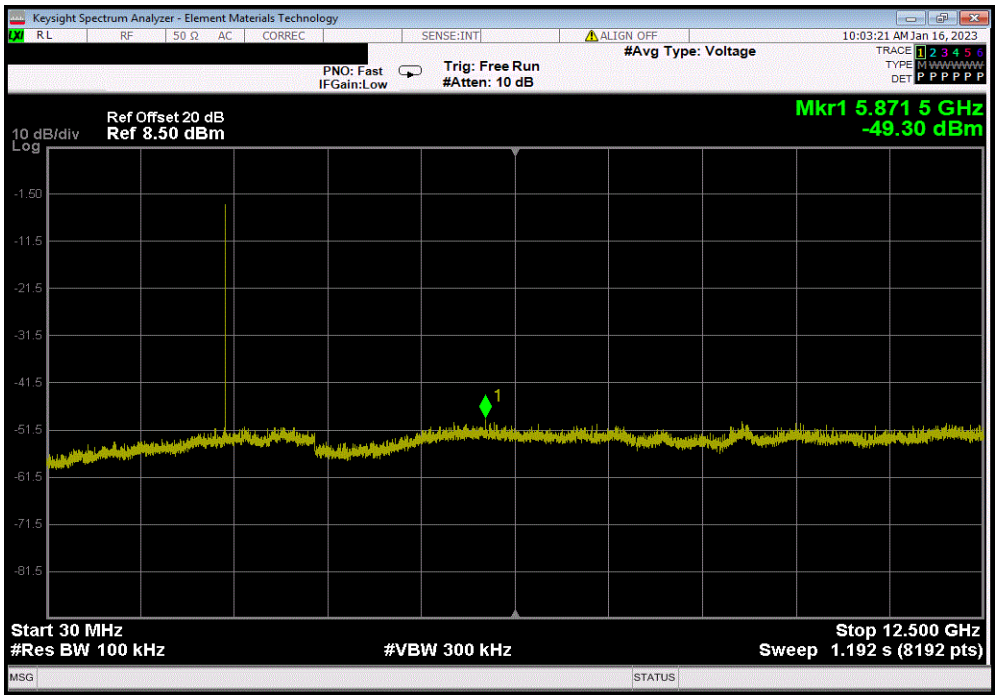
BLE/GFSK 1 Mbps High Channel, 2480 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24964.9	-34.83	-20	Pass



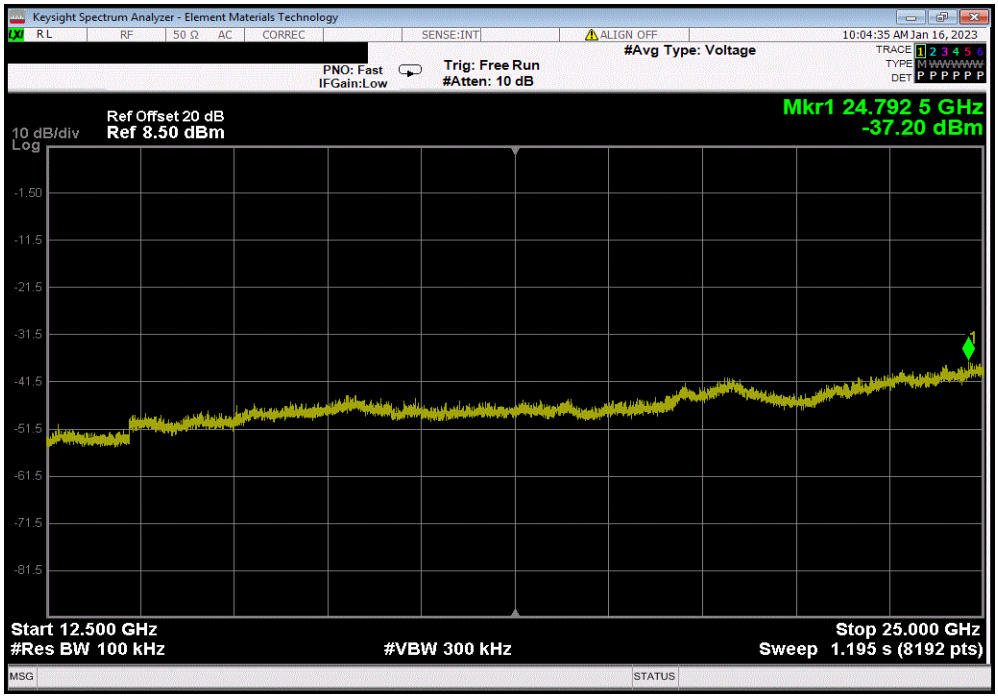
BLE/GFSK 2 Mbps Low Channel, 2404 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	2403.96	N/A	N/A	N/A



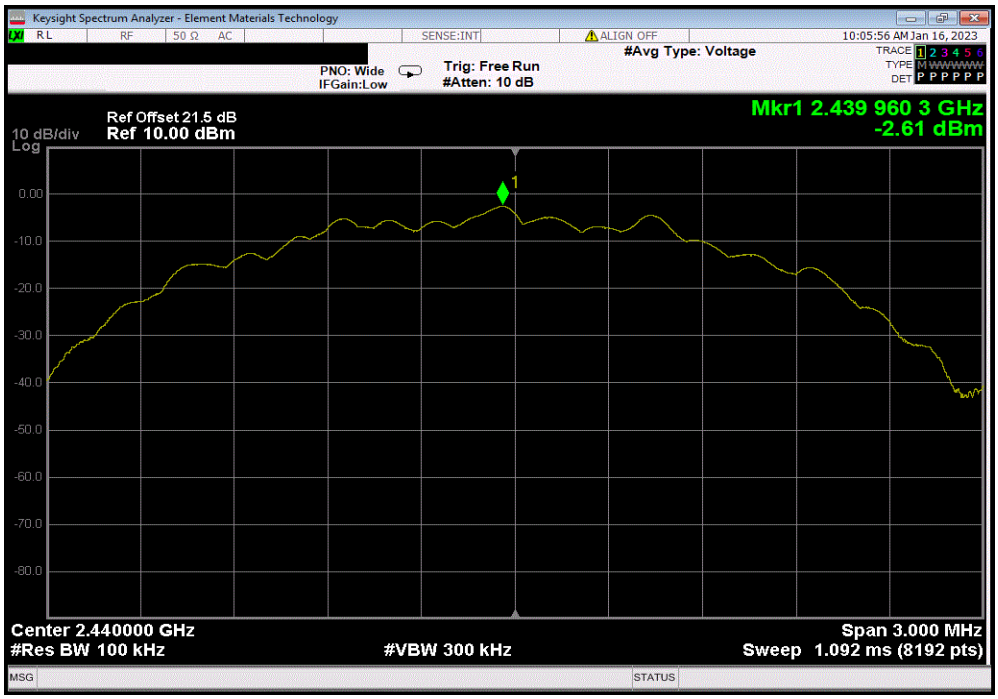
BLE/GFSK 2 Mbps Low Channel, 2404 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	5871.46	-46.34	-20	Pass



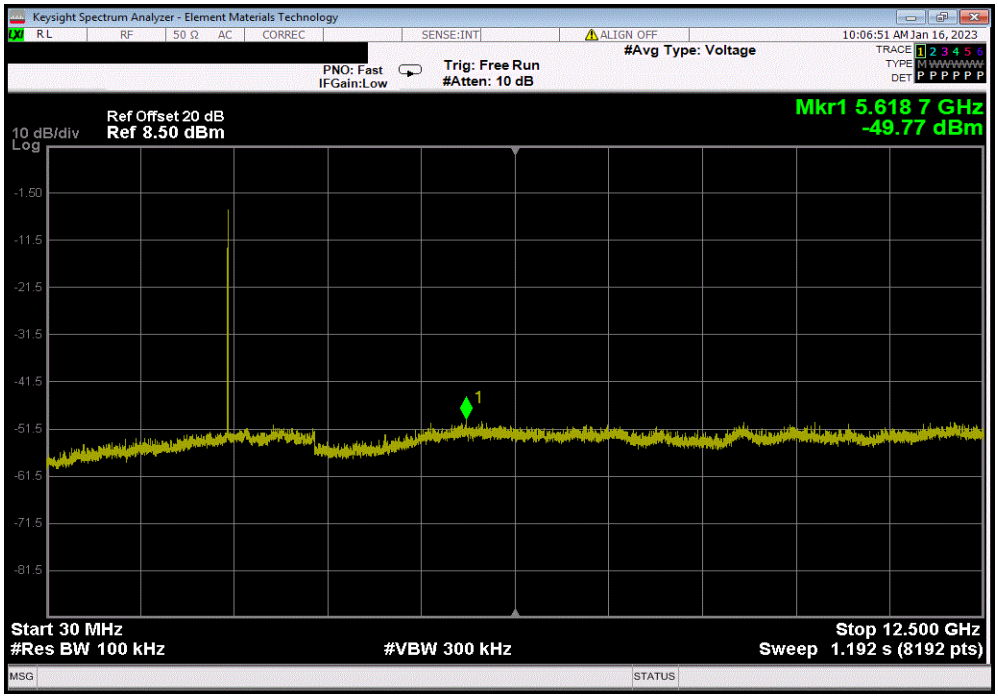
BLE/GFSK 2 Mbps Low Channel, 2404 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24792.46	-34.24	-20	Pass



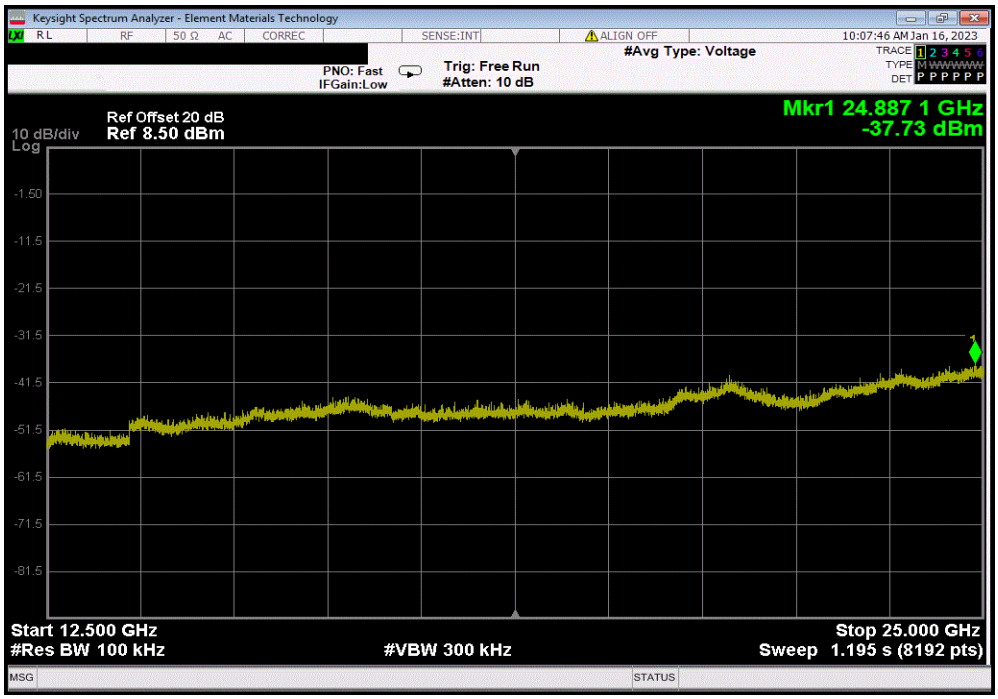
BLE/GFSK 2 Mbps Mid Channel, 2440 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2439.96	N/A	N/A	N/A



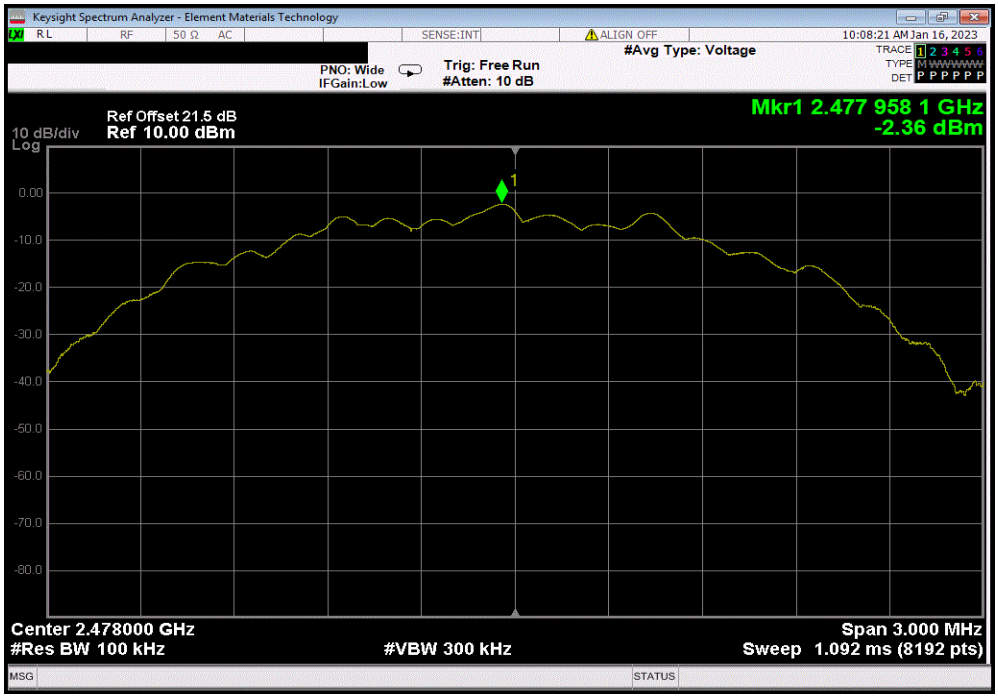
BLE/GFSK 2 Mbps Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	5618.74	-47.16	-20	Pass



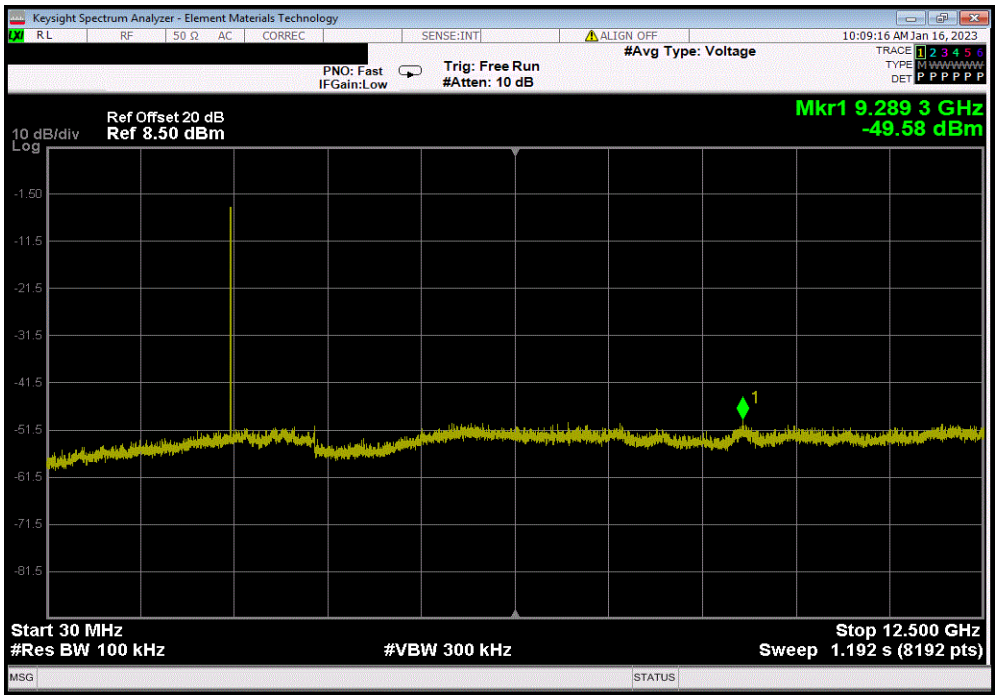
BLE/GFSK 2 Mbps Mid Channel, 2440 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24887.07	-35.12	-20	Pass



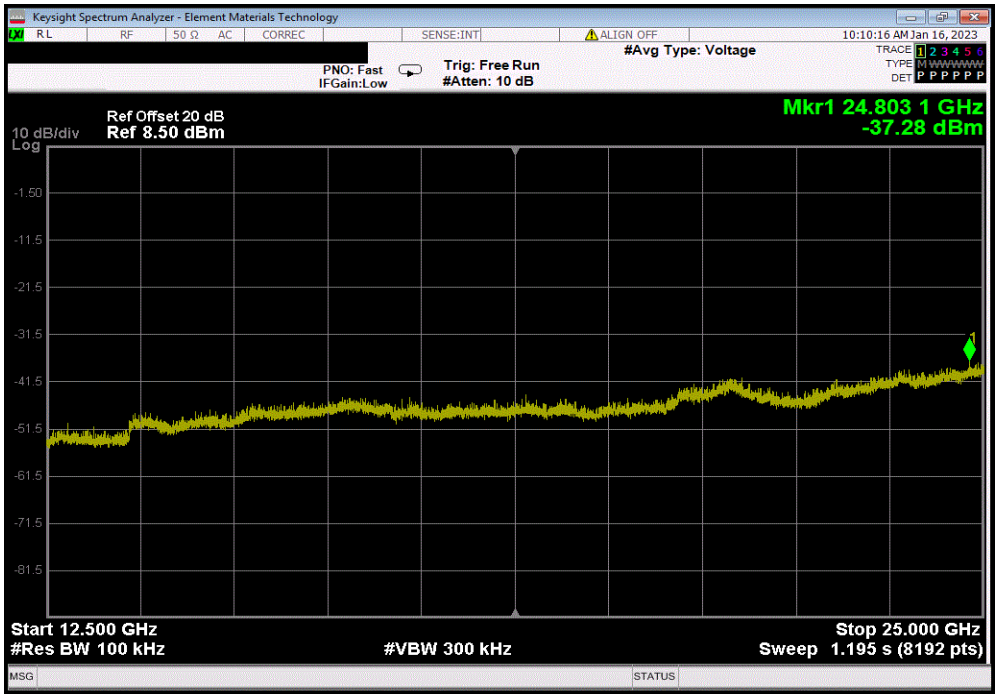
BLE/GFSK 2 Mbps High Channel, 2478 MHz					
Frequency Range		Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental	2477.96	N/A	N/A	N/A



BLE/GFSK 2 Mbps High Channel, 2478 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	9289.25	-47.22	-20	Pass



BLE/GFSK 2 Mbps High Channel, 2478 MHz				
Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	24803.14	-34.92	-20	Pass



SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.
For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These “pre-scans” are not included in the report. Final measurements on individual emissions were then made and included in this test report.
The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.
Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.
If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.
Measurements within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.
Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of 10*log(1/dc).

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18
Antenna - Double Ridge	ETS Lindgren	3115	AIB	2020-09-03	2022-09-03
Cable	Element	Double Ridge Guide Horn Cables	MNV	2022-01-24	2023-01-24
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	2022-01-24	2023-01-24
Antenna - Standard Gain	ETS-Lindgren	3160-07	AJJ	NCR	NCR
Cable	Element	Standard Gain Cable	MNW	2022-01-24	2023-01-24
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	2022-01-24	2023-01-24
Antenna - Standard Gain	ETS-Lindgren	3160-08	AJP	NCR	NCR
Amplifier - Pre-Amplifier	L-3 Narda-Miteq	AMF-6F-12001800-30-10P	PAP	2022-01-24	2023-01-24
Filter - High Pass	Micro-Tronics	HPM50111	HFM	2021-09-10	2022-09-10
Attenuator	Coaxicom	3910-20	AXY	2021-09-10	2022-09-10

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	5.2 dB	-5.2 dB

FREQUENCY RANGE INVESTIGATED

1 GHz TO 18 GHz

POWER INVESTIGATED

5VDC

CONFIGURATIONS INVESTIGATED

DGII0455-3
DGII0455-4
DGII0455-5

MODES INVESTIGATED

Transmitting BLE Low, Mid and High Ch (2440 and 2480 MHz), 1 Mbps and 2Mbps. 2Mbps data rate has Low/High Chs of 2404/2478 MHz.

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

EUT:	XB3C2	Work Order:	DGII0455
Serial Number:	350588280003609	Date:	2022-04-08
Customer:	Digi International Inc	Temperature:	22.6°C
Attendees:	None	Relative Humidity:	27.2%
Customer Project:	None	Bar. Pressure (PMSL):	1014 mb
Tested By:	Christopher Heintzelman	Job Site:	MN09
Power:	5VDC	Configuration:	DGII0455-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	13	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)

COMMENTS

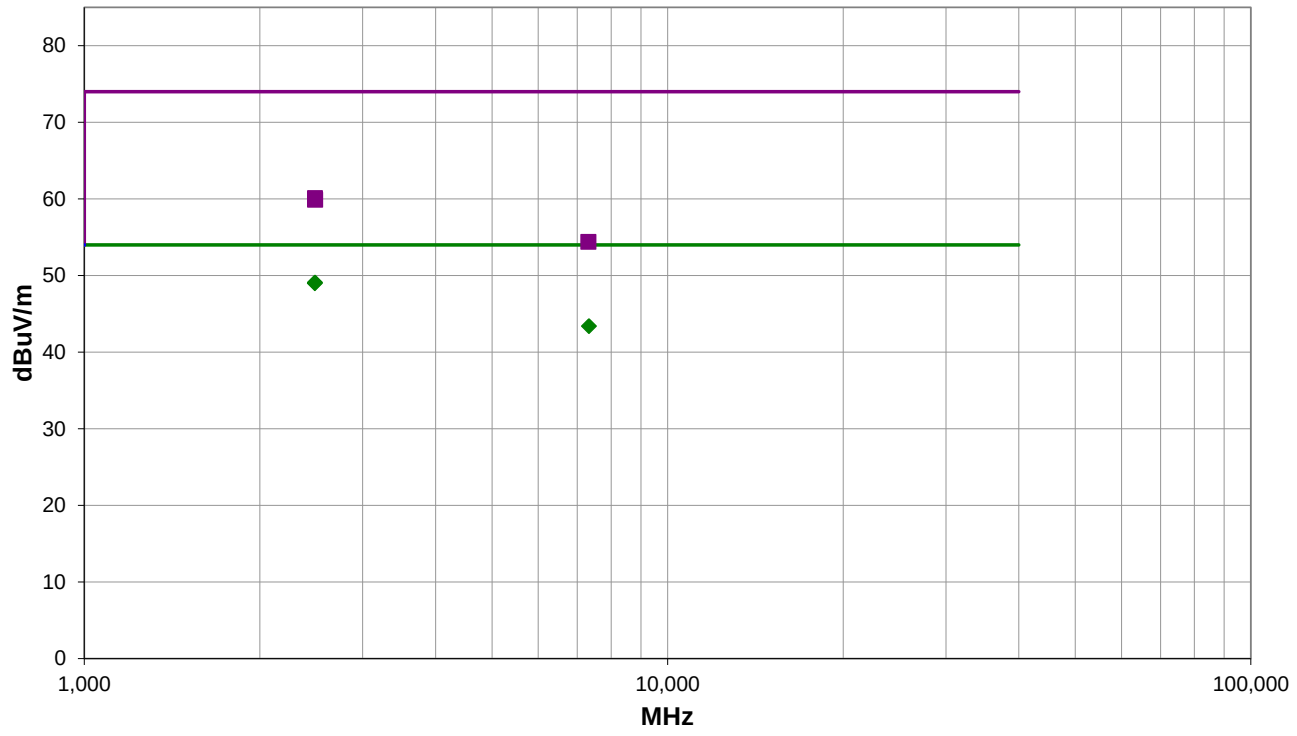
Dipole Antenna. Spot Check with 7dBm power setting.

EUT OPERATING MODES

Transmitting BLE Low, Mid and High Ch (2440 and 2480 MHz), 1 Mbps and 2Mbps. 2Mbps data rate has Low/High Chs of 2404/2478 MHz.

DEVIATIONS FROM TEST STANDARD

None



Run #: 13 ■ PK ◆ AV ● QP

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

RESULTS - Run #13

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2484.908	31.5	-2.4	1.7	283.0	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	EUT Vert, High Ch, 2 Mbps
2483.925	31.4	-2.4	1.5	30.0	3.0	20.0	Vert	AV	0.0	49.0	54.0	-5.0	EUT Vert, High Ch, 2 Mbps
7329.830	28.7	14.7	4.0	322.0	3.0	0.0	Vert	AV	0.0	43.4	54.0	-10.6	EUT Vert, noise floor, Mid Ch 1 Mbps
2485.500	42.5	-2.4	1.7	283.0	3.0	20.0	Horz	PK	0.0	60.1	74.0	-13.9	EUT Vert, High Ch, 2 Mbps
2486.458	42.3	-2.4	1.5	30.0	3.0	20.0	Vert	PK	0.0	59.9	74.0	-14.1	EUT Vert, High Ch, 2 Mbps
7311.290	39.9	14.5	4.0	322.0	3.0	0.0	Vert	PK	0.0	54.4	74.0	-19.6	EUT Vert, noise floor, Mid Ch 1 Mbps

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

EUT:	XB3C2	Work Order:	DGII0455
Serial Number:	350588280003609	Date:	2022-04-08
Customer:	Digi International Inc	Temperature:	22.6°C
Attendees:	None	Relative Humidity:	27.2%
Customer Project:	None	Bar. Pressure (PMSL):	1014 mb
Tested By:	Christopher Heintzelman	Job Site:	MN09
Power:	5VDC	Configuration:	DGII0455-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	26	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)

COMMENTS

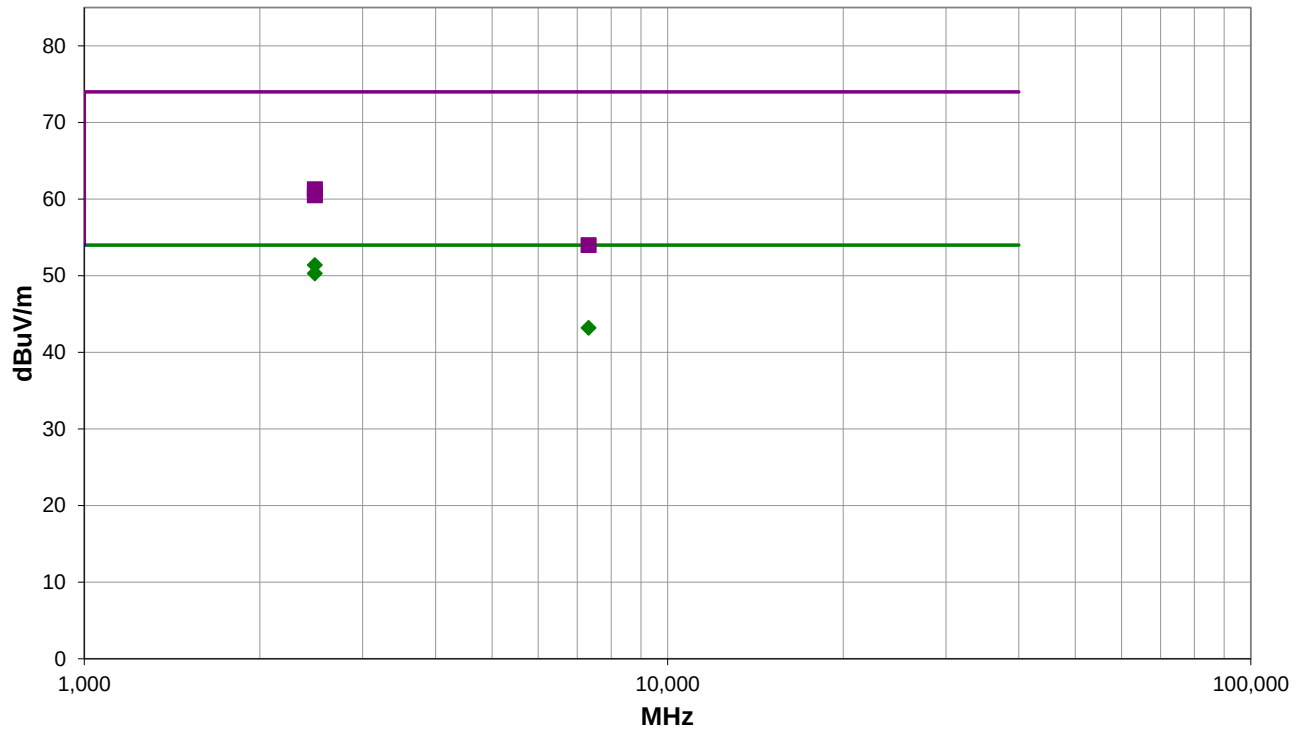
Patch Antenna. Spot Check 7dBm power setting.

EUT OPERATING MODES

Transmitting BLE Low, Mid and High Ch (2440 and 2480 MHz), 1 Mbps and 2Mbps. 2Mbps data rate has Low/High Chs of 2404/2478 MHz.

DEVIATIONS FROM TEST STANDARD

None



Run #: 26 ■ PK ◆ AV ● QP

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

RESULTS - Run #26

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.533	33.8	-2.4	2.0	316.0	3.0	20.0	Horz	AV	0.0	51.4	54.0	-2.6	EUT On Side, High Ch, 2 Mbps
2483.508	32.7	-2.4	1.5	79.0	3.0	20.0	Horz	AV	0.0	50.3	54.0	-3.7	EUT On Side, High Ch, 1 Mbps
7318.400	28.6	14.6	1.9	261.0	3.0	0.0	Horz	AV	0.0	43.2	54.0	-10.8	EUT Horz, Mid Ch, 1 Mbps
2484.233	43.7	-2.4	2.0	316.0	3.0	20.0	Horz	PK	0.0	61.3	74.0	-12.7	EUT On Side, High Ch, 2 Mbps
2483.967	42.9	-2.4	1.5	79.0	3.0	20.0	Horz	PK	0.0	60.5	74.0	-13.5	EUT On Side, High Ch, 1 Mbps
7317.858	39.4	14.6	1.9	261.0	3.0	0.0	Horz	PK	0.0	54.0	74.0	-20.0	EUT Horz, Mid Ch, 1 Mbps

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

EUT:	XB3C2	Work Order:	DGII0455
Serial Number:	350588280003609	Date:	2022-04-08
Customer:	Digi International Inc	Temperature:	22.6°C
Attendees:	None	Relative Humidity:	27.2%
Customer Project:	None	Bar. Pressure (PMSL):	1014 mb
Tested By:	Christopher Heintzelman	Job Site:	MN09
Power:	5VDC	Configuration:	DGII0455-5

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	39	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)

COMMENTS

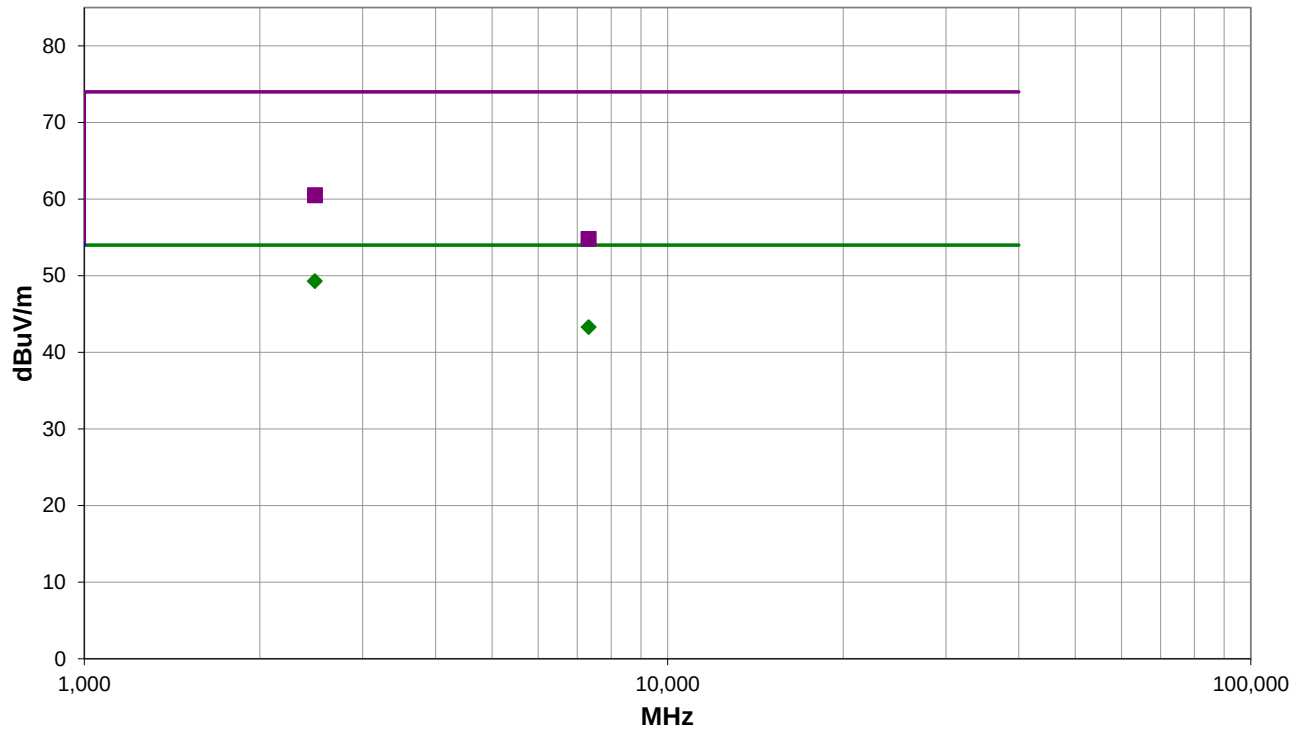
Internal Antenna. Spot Check 7dBm power setting.

EUT OPERATING MODES

Transmitting BLE Low, Mid and High Ch (2440 and 2480 MHz), 1 Mbps and 2Mbps. 2Mbps data rate has Low/High Chs of 2404/2478 MHz.

DEVIATIONS FROM TEST STANDARD

None



Run #: 39 ■ PK ◆ AV ● QP

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

RESULTS - Run #39

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2484.008	31.7	-2.4	1.5	3.0	3.0	20.0	Horz	AV	0.0	49.3	54.0	-4.7	EUT Vert, High Ch, 2 Mbps
7321.408	28.7	14.6	1.0	189.0	3.0	0.0	Horz	AV	0.0	43.3	54.0	-10.7	EUT On Side, Mid Ch, 1 Mbps
2485.225	42.9	-2.4	1.5	3.0	3.0	20.0	Horz	PK	0.0	60.5	74.0	-13.5	EUT Vert, High Ch, 2 Mbps
7317.717	40.2	14.6	1.0	189.0	3.0	0.0	Horz	PK	0.0	54.8	74.0	-19.2	EUT On Side, Mid Ch, 1 Mbps

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These “pre-scans” are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.
If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.
Measurements within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.
Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of 10*log(1/dc).

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAQ	2021-05-21	2022-05-21
Antenna - Double Ridge	ETS Lindgren	3115	AJQ	2021-01-25	2023-01-25
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	2022-01-18	2023-01-18
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	2022-01-18	2023-01-18
Attenuator	Fairview Microwave	SA18E-20	TWZ	2021-09-09	2022-09-09
Attenuator	Fairview Microwave	SA18E-10	TYA	2021-09-09	2022-09-09
Filter - High Pass	Micro-Tronics	HPM50111	LFN	2021-09-09	2022-09-09
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	NCR
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	2022-01-18	2023-01-18
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	2022-01-18	2023-01-18
Antenna - Biconilog	ETS Lindgren	3142D	AXO	2021-09-14	2023-09-14
Cable	ESM Cable Corp.	Bilog Cables	MNH	2021-10-13	2022-10-13
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	2021-10-13	2022-10-13
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	2022-01-18	2023-01-18
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	2021-09-09	2022-09-09
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNP	2021-09-09	2022-09-09
Filter - Low Pass	Micro-Tronics	LPM50004	LFK	2021-09-09	2022-09-09
Filter - High Pass	Micro-Tronics	HPM50111	HFM	2021-09-10	2022-09-10
Antenna - Double Ridge	ETS Lindgren	3115	AIB	2020-09-03	2022-09-03
Attenuator	Coaxicom	3910-20	AXY	2021-09-10	2022-09-10
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFG	2021-05-18	2022-05-18
Cable	Element	Double Ridge Guide Horn Cables	MNV	2022-01-24	2023-01-24
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	2022-01-24	2023-01-24

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	5.2 dB	-5.2 dB

FREQUENCY RANGE INVESTIGATED

30 MHz TO 26500 MHz

POWER INVESTIGATED

5VDC via laptop
USB via Laptop

CONFIGURATIONS INVESTIGATED

DGII0455-3

MODES INVESTIGATED

Transmitting BLE Low, Mid, and High Chs (2402, 2440, and 2480 MHz), 1 Mbps. 8dBm power setting.
Transmitting BLE, Low, Mid, and High Chs (2402, 2440, and 2480 MHz), 1 and 2 Mbps. 8dBm power setting. 2mbps data rate has low/high chs of 2404 and 2478 MHz.

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

EUT:	XB3C2	Work Order:	DGII0455
Serial Number:	350588280003609	Date:	2022-03-23
Customer:	Digi International Inc	Temperature:	23.1°C
Attendees:	None	Relative Humidity:	30.4%
Customer Project:	None	Bar. Pressure (PMSL):	1009 mb
Tested By:	Christopher Heintzelman	Job Site:	MN05
Power:	USB via Laptop	Configuration:	DGII0455-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	19	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)

COMMENTS

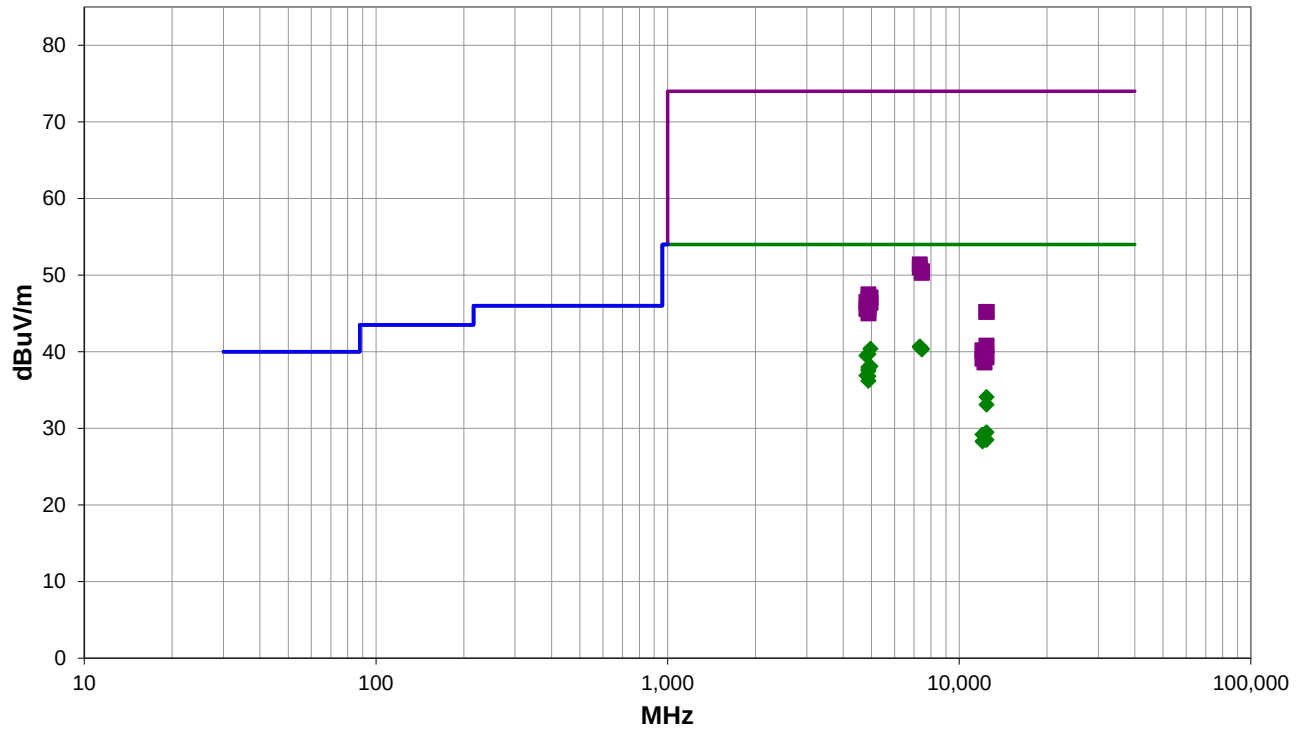
Dipole Antenna. IMEI 350588280003609. Laptop powered at 120VAC/60Hz.

EUT OPERATING MODES

Transmitting BLE Low, Mid, and High Chs (2402, 2440, and 2480 MHz), 1 Mbps. 8dBm power setting.

DEVIATIONS FROM TEST STANDARD

None



Run #: 19 PK AV QP

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

RESULTS - Run #19

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7321.308	30.4	10.3	1.5	289.9	3.0	0.0	Vert	AV	0.0	40.7	54.0	-13.3	EUT Vertical Mid Ch, 1 Mbps
7318.850	30.3	10.3	1.3	51.0	3.0	0.0	Horz	AV	0.0	40.6	54.0	-13.4	EUT Horizontal Mid Ch, 1 Mbps
7440.450	30.4	10.0	1.5	70.9	3.0	0.0	Vert	AV	0.0	40.4	54.0	-13.6	EUT Vert, High Ch, 1 Mbps
4959.950	37.3	3.1	2.1	286.0	3.0	0.0	Horz	AV	0.0	40.4	54.0	-13.6	EUT Horz, High Ch, 1 Mbps
7441.208	30.3	10.0	1.8	358.0	3.0	0.0	Horz	AV	0.0	40.3	54.0	-13.7	EUT Horz, High Ch, 1 Mbps
4879.833	36.8	2.9	1.3	289.0	3.0	0.0	Horz	AV	0.0	39.7	54.0	-14.3	EUT Horizontal Mid Ch, 1 Mbps
4803.867	36.7	2.8	2.1	286.9	3.0	0.0	Horz	AV	0.0	39.5	54.0	-14.5	EUT Horizontal Low Ch, 1 Mbps
4959.842	35.0	3.1	1.3	204.9	3.0	0.0	Vert	AV	0.0	38.1	54.0	-15.9	EUT Vert, High Ch, 1 Mbps
4879.933	35.1	2.9	1.5	134.0	3.0	0.0	Horz	AV	0.0	38.0	54.0	-16.0	EUT Vertical Mid Ch, 1 Mbps
4879.817	34.8	2.9	2.3	81.9	3.0	0.0	Horz	AV	0.0	37.7	54.0	-16.3	EUT On Side, Mid ch, 1 Mbps
4879.892	34.6	2.9	2.4	344.9	3.0	0.0	Vert	AV	0.0	37.5	54.0	-16.5	EUT Vertical Mid Ch, 1 Mbps
4803.867	34.1	2.8	2.4	253.9	3.0	0.0	Vert	AV	0.0	36.9	54.0	-17.1	EUT Vert, Low Ch, 1 Mbps
4879.833	33.9	2.9	3.1	300.0	3.0	0.0	Vert	AV	0.0	36.8	54.0	-17.2	EUT Horizontal Mid Ch, 1 Mbps
4879.967	33.3	2.9	1.0	66.9	3.0	0.0	Vert	AV	0.0	36.2	54.0	-17.8	EUT On Side, Mid ch, 1 Mbps
12400.420	30.2	3.9	1.5	138.0	3.0	0.0	Vert	AV	0.0	34.1	54.0	-19.9	EUT Vert, High Ch, 1 Mbps
12400.790	29.2	3.9	1.5	178.9	3.0	0.0	Horz	AV	0.0	33.1	54.0	-20.9	EUT Horiz, High Ch, 1 Mbps
7321.525	41.1	10.3	1.5	289.9	3.0	0.0	Vert	PK	0.0	51.4	74.0	-22.6	EUT Vertical Mid Ch, 1 Mbps
7321.383	40.7	10.3	1.3	51.0	3.0	0.0	Horz	PK	0.0	51.0	74.0	-23.0	EUT Horizontal Mid Ch, 1 Mbps
7438.683	40.5	10.0	1.8	358.0	3.0	0.0	Horz	PK	0.0	50.5	74.0	-23.5	EUT Horz, High Ch, 1 Mbps
7438.342	40.3	10.0	1.5	70.9	3.0	0.0	Vert	PK	0.0	50.3	74.0	-23.7	EUT Vert, High Ch, 1 Mbps
12398.580	30.2	-0.7	1.9	6.9	3.0	0.0	Vert	AV	0.0	29.5	54.0	-24.5	EUT Vert, High Ch, 1 Mbps
12198.060	30.5	-1.3	1.5	155.0	3.0	0.0	Vert	AV	0.0	29.2	54.0	-24.8	EUT Vertical Mid Ch, 1 Mbps
12010.850	30.5	-1.3	1.5	34.9	3.0	0.0	Vert	AV	0.0	29.2	54.0	-24.8	EUT Vert, Low Ch, 1 Mbps
12197.850	29.8	-1.3	1.5	127.9	3.0	0.0	Horz	AV	0.0	28.5	54.0	-25.5	EUT Horizontal Mid Ch, 1 Mbps
12398.450	29.2	-0.7	1.5	218.9	3.0	0.0	Horz	AV	0.0	28.5	54.0	-25.5	EUT Horiz, High Ch, 1 Mbps
12011.780	29.6	-1.3	1.5	189.0	3.0	0.0	Horz	AV	0.0	28.3	54.0	-25.7	EUT Horizontal Low Ch, 1 Mbps
4880.000	44.6	2.9	1.3	289.0	3.0	0.0	Horz	PK	0.0	47.5	74.0	-26.5	EUT Horizontal Mid Ch, 1 Mbps
4959.658	44.0	3.1	2.1	286.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9	EUT Horz, High Ch, 1 Mbps
4880.417	43.9	2.9	1.5	134.0	3.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2	EUT Vertical Mid Ch, 1 Mbps
4804.108	43.7	2.8	2.1	286.9	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	EUT Horizontal Low Ch, 1 Mbps
4960.300	43.3	3.1	1.3	204.9	3.0	0.0	Vert	PK	0.0	46.4	74.0	-27.6	EUT Vert, High Ch, 1 Mbps
4880.333	43.4	2.9	2.3	81.9	3.0	0.0	Horz	PK	0.0	46.3	74.0	-27.7	EUT On Side, Mid ch, 1 Mbps
4880.633	43.1	2.9	2.4	344.9	3.0	0.0	Vert	PK	0.0	46.0	74.0	-28.0	EUT Vertical Mid Ch, 1 Mbps
4880.458	42.7	2.9	3.1	300.0	3.0	0.0	Vert	PK	0.0	45.6	74.0	-28.4	EUT Horizontal Mid Ch, 1 Mbps
4803.625	42.8	2.8	2.4	253.9	3.0	0.0	Vert	PK	0.0	45.6	74.0	-28.4	EUT Vert, Low Ch, 1 Mbps
12401.880	41.3	3.9	1.5	178.9	3.0	0.0	Horz	PK	0.0	45.2	74.0	-28.8	EUT Horiz, High Ch, 1 Mbps
12400.340	41.3	3.9	1.5	138.0	3.0	0.0	Vert	PK	0.0	45.2	74.0	-28.8	EUT Vert, High Ch, 1 Mbps
4880.250	42.1	2.9	1.0	66.9	3.0	0.0	Vert	PK	0.0	45.0	74.0	-29.0	EUT On Side, Mid ch, 1 Mbps
12399.840	41.5	-0.7	1.9	6.9	3.0	0.0	Vert	PK	0.0	40.8	74.0	-33.2	EUT Vert, High Ch, 1 Mbps
12010.000	41.5	-1.3	1.5	34.9	3.0	0.0	Vert	PK	0.0	40.2	74.0	-33.8	EUT Vert, Low Ch, 1 Mbps
12198.230	40.9	-1.3	1.5	155.0	3.0	0.0	Vert	PK	0.0	39.6	74.0	-34.4	EUT Vertical Mid Ch, 1 Mbps
12399.340	40.0	-0.7	1.5	218.9	3.0	0.0	Horz	PK	0.0	39.3	74.0	-34.7	EUT Horiz, High Ch, 1 Mbps
12012.390	40.4	-1.3	1.5	189.0	3.0	0.0	Horz	PK	0.0	39.1	74.0	-34.9	EUT Horizontal Low Ch, 1 Mbps

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
12201.960	39.9	-1.3	1.5	127.9	3.0	0.0	Horz	PK	0.0	38.6	74.0	-35.4	EUT Horizontal Mid Ch, 1 Mbps

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

EUT:	XB3C2	Work Order:	DGII0455
Serial Number:	350588280003609	Date:	2022-03-24
Customer:	Digi International Inc	Temperature:	23.1°C
Attendees:	None	Relative Humidity:	28%
Customer Project:	None	Bar. Pressure (PMSL):	1012 mb
Tested By:	Christopher Heintzelman	Job Site:	MN09
Power:	5VDC via laptop	Configuration:	DGII0455-3

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	0	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)

COMMENTS

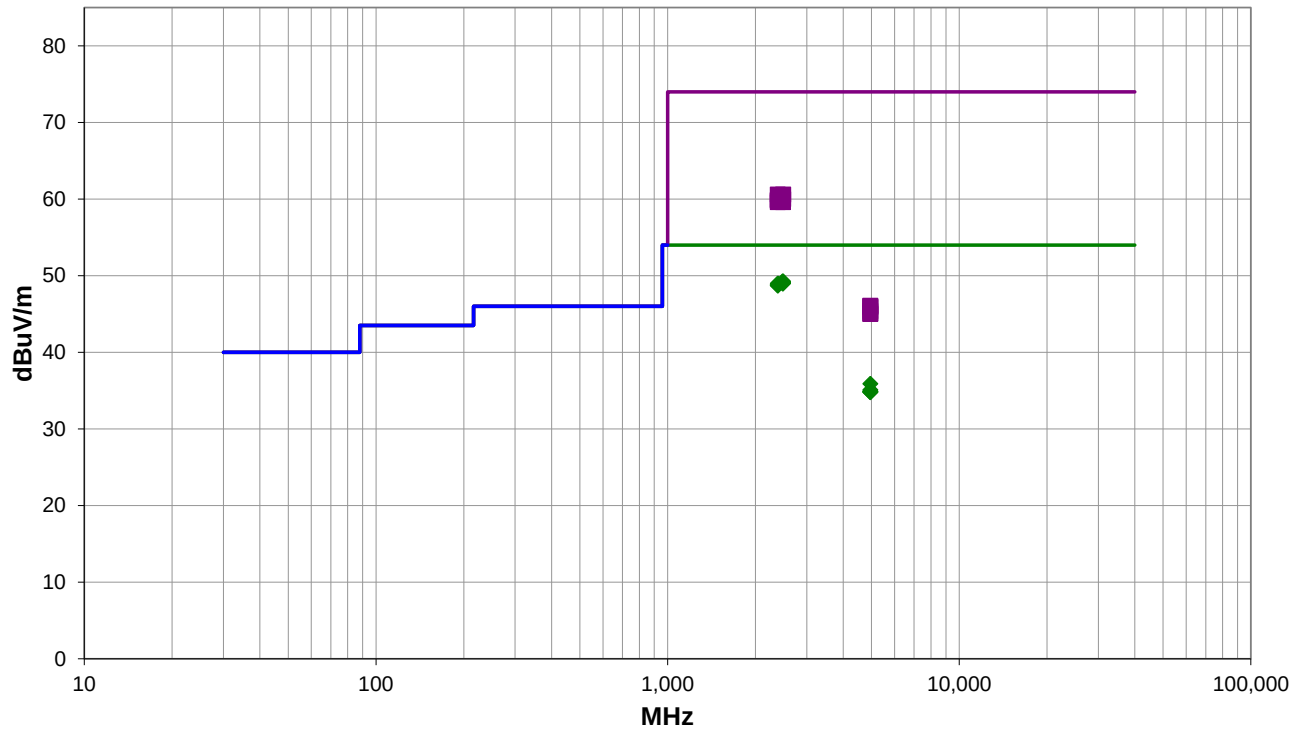
Dipole Antenna. IMEI 350588280003609. Laptop powered at 120VAC/60Hz.

EUT OPERATING MODES

Transmitting BLE, Low, Mid, and High Chs (2402, 2440, and 2480 MHz), 1 and 2 Mbps. 8dBm power setting. 2mbps data rate has low/high chs of 2404 and 2478 MHz.

DEVIATIONS FROM TEST STANDARD

None



Run #: 0 PK AV QP

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

RESULTS - Run #0

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.558	31.7	-2.4	1.5	171.0	3.0	20.0	Vert	AV	0.0	49.3	54.0	-4.7	EUT Vert, High Ch, 2 Mbps
2483.667	31.6	-2.4	3.7	70.0	3.0	20.0	Horz	AV	0.0	49.2	54.0	-4.8	EUT Vert, High Ch, 1 Mbps
2484.492	31.6	-2.4	1.5	307.0	3.0	20.0	Vert	AV	0.0	49.2	54.0	-4.8	EUT Vert, High Ch, 1 Mbps
2484.783	31.5	-2.4	1.5	298.0	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	EUT On Side, High Ch, 1 Mbps
2483.850	31.5	-2.4	3.5	165.0	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	EUT Horz, High Ch, 1 Mbps
2483.792	31.4	-2.4	1.5	328.0	3.0	20.0	Vert	AV	0.0	49.0	54.0	-5.0	EUT On Side, High Ch, 1 Mbps
2483.742	31.4	-2.4	1.3	34.0	3.0	20.0	Vert	AV	0.0	49.0	54.0	-5.0	EUT Horz, High Ch, 1 Mbps
2387.083	31.4	-2.4	1.5	57.0	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	EUT Vert, Low Ch, 2 Mbps
2483.525	31.4	-2.4	1.5	43.0	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	EUT Vert, High Ch, 2 Mbps
2385.858	31.2	-2.4	1.5	185.0	3.0	20.0	Horz	AV	0.0	48.8	54.0	-5.2	EUT Vert, Low Ch, 1 Mbps
2385.108	31.2	-2.4	1.5	94.0	3.0	20.0	Vert	AV	0.0	48.8	54.0	-5.2	EUT Vert, Low Ch, 2 Mbps
2386.867	31.1	-2.4	1.5	224.0	3.0	20.0	Vert	AV	0.0	48.7	54.0	-5.3	EUT Vert, Low Ch, 1 Mbps
2385.625	43.0	-2.4	1.5	57.0	3.0	20.0	Horz	PK	0.0	60.6	74.0	-13.4	EUT Vert, Low Ch, 2 Mbps
2488.058	43.0	-2.4	1.5	171.0	3.0	20.0	Vert	PK	0.0	60.6	74.0	-13.4	EUT Vert, High Ch, 2 Mbps
2485.617	42.9	-2.4	1.5	307.0	3.0	20.0	Vert	PK	0.0	60.5	74.0	-13.5	EUT Vert, High Ch, 1 Mbps
2484.342	42.8	-2.4	1.5	298.0	3.0	20.0	Horz	PK	0.0	60.4	74.0	-13.6	EUT On Side, High Ch, 1 Mbps
2484.442	42.5	-2.4	1.5	328.0	3.0	20.0	Vert	PK	0.0	60.1	74.0	-13.9	EUT On Side, High Ch, 1 Mbps
2488.408	42.4	-2.4	3.5	165.0	3.0	20.0	Horz	PK	0.0	60.0	74.0	-14.0	EUT Horz, High Ch, 1 Mbps
2483.742	42.3	-2.4	3.7	70.0	3.0	20.0	Horz	PK	0.0	59.9	74.0	-14.1	EUT Vert, High Ch, 1 Mbps
2386.625	42.3	-2.4	1.5	224.0	3.0	20.0	Vert	PK	0.0	59.9	74.0	-14.1	EUT Vert, Low Ch, 1 Mbps
2485.075	42.3	-2.4	1.5	43.0	3.0	20.0	Horz	PK	0.0	59.9	74.0	-14.1	EUT Vert, High Ch, 2 Mbps
2387.408	42.2	-2.4	1.5	185.0	3.0	20.0	Horz	PK	0.0	59.8	74.0	-14.2	EUT Vert, Low Ch, 1 Mbps
2486.283	42.0	-2.4	1.3	34.0	3.0	20.0	Vert	PK	0.0	59.6	74.0	-14.4	EUT Horz, High Ch, 1 Mbps
2386.567	42.0	-2.4	1.5	94.0	3.0	20.0	Vert	PK	0.0	59.6	74.0	-14.4	EUT Vert, Low Ch, 2 Mbps
4955.050	30.3	5.6	2.2	279.0	3.0	0.0	Horz	AV	0.0	35.9	54.0	-18.1	EUT Horz, High Ch, 2 mbps
4955.358	29.5	5.6	1.4	208.0	3.0	0.0	Vert	AV	0.0	35.1	54.0	-18.9	EUT Horz, High Ch, 2 mbps
4953.675	29.3	5.6	3.3	337.0	3.0	0.0	Vert	AV	0.0	34.9	54.0	-19.1	EUT On Side, High Ch, 2 Mbps
4954.967	29.3	5.6	2.4	30.0	3.0	0.0	Vert	AV	0.0	34.9	54.0	-19.1	EUT Vert, High Ch, 2 Mbps
4955.775	29.2	5.6	1.5	35.0	3.0	0.0	Horz	AV	0.0	34.8	54.0	-19.2	EUT On Side, High Ch, 2 Mbps
4954.408	29.2	5.6	3.0	93.0	3.0	0.0	Horz	AV	0.0	34.8	54.0	-19.2	EUT Vert, High Ch, 2 Mbps
4954.358	40.5	5.6	2.2	279.0	3.0	0.0	Horz	PK	0.0	46.1	74.0	-27.9	EUT Horz, High Ch, 2 mbps
4954.608	40.4	5.6	2.4	30.0	3.0	0.0	Vert	PK	0.0	46.0	74.0	-28.0	EUT Vert, High Ch, 2 Mbps
4957.258	40.3	5.6	1.4	208.0	3.0	0.0	Vert	PK	0.0	45.9	74.0	-28.1	EUT Horz, High Ch, 2 mbps
4956.242	39.8	5.6	1.5	35.0	3.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	EUT On Side, High Ch, 2 Mbps
4956.225	39.5	5.6	3.0	93.0	3.0	0.0	Horz	PK	0.0	45.1	74.0	-28.9	EUT Vert, High Ch, 2 Mbps
4953.542	39.4	5.6	3.3	337.0	3.0	0.0	Vert	PK	0.0	45.0	74.0	-29.0	EUT On Side, High Ch, 2 Mbps

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These “pre-scans” are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.

Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of 10*log(1/dc).

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAQ	2021-05-21	2022-05-21
Antenna - Double Ridge	ETS Lindgren	3115	AJQ	2021-01-25	2023-01-25
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	2022-01-18	2023-01-18
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	2022-01-18	2023-01-18
Attenuator	Fairview Microwave	SA18E-20	TWZ	2021-09-09	2022-09-09
Filter - High Pass	Micro-Tronics	HPM50111	LFN	2021-09-09	2022-09-09
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	NCR
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	2022-01-18	2023-01-18
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	2022-01-18	2023-01-18
Antenna - Biconilog	ETS Lindgren	3142D	AXO	2021-09-14	2023-09-14
Cable	ESM Cable Corp.	Bilog Cables	MNH	2021-10-13	2022-10-13
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	2021-10-13	2022-10-13
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	2022-01-18	2023-01-18
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	2021-09-09	2022-09-09
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNP	2021-09-09	2022-09-09
Filter - Low Pass	Micro-Tronics	LPM50004	LFK	2021-09-09	2022-09-09

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	5.2 dB	-5.2 dB

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

FREQUENCY RANGE INVESTIGATED

30 MHz TO 26500 MHz

POWER INVESTIGATED

5VDC

CONFIGURATIONS INVESTIGATED

DGII0455-5

MODES INVESTIGATED

Transmitting BLE. 8dBm power setting. Low, Mid, and High Chs (2402, 2440, and 2480 MHz), 1 and 2 Mbps.

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

EUT:	XB3C2	Work Order:	DGII0455
Serial Number:	350588280003609	Date:	2022-03-25
Customer:	Digi International Inc	Temperature:	23.7°C
Attendees:	None	Relative Humidity:	26.6%
Customer Project:	None	Bar. Pressure (PMSL):	1011 mb
Tested By:	Christopher Heintzelman	Job Site:	MN05
Power:	5VDC	Configuration:	DGII0455-5

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	57	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)

COMMENTS

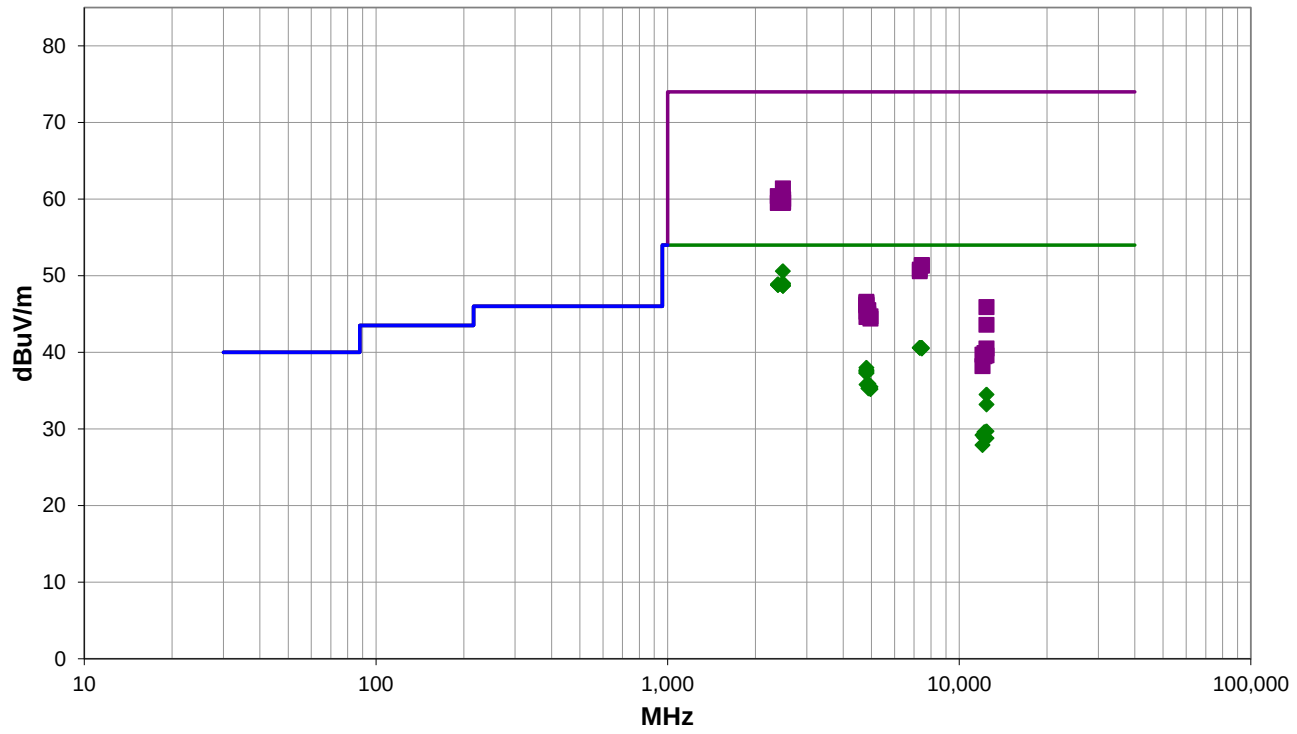
IMEI 350588280003609. -0.67 dBi Internal antenna. 2mbps data rate has low/high chs of 2404 and 2478 MHz. Test mode is 100% duty cycle.

EUT OPERATING MODES

Transmitting BLE. 8dBm power setting. Low, Mid, and High Chs (2402, 2440, and 2480 MHz), 1 and 2 Mbps.

DEVIATIONS FROM TEST STANDARD

None



Run #: 57 PK AV QP

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

RESULTS - Run #57

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.517	34.4	-3.8	1.5	322.9	3.0	20.0	Horz	AV	0.0	50.6	54.0	-3.4	EUT Vert, High Ch, 2 Mbps
2483.542	32.8	-3.8	1.5	131.0	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	EUT Vert, High Ch, 1 Mbps
2483.500	32.8	-3.8	1.5	65.0	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	EUT Horz, High Ch, 1 Mbps
2483.575	32.7	-3.8	3.6	253.9	3.0	20.0	Vert	AV	0.0	48.9	54.0	-5.1	EUT Horz, High Ch, 1 Mbps
2388.958	32.4	-3.5	2.3	123.0	3.0	20.0	Horz	AV	0.0	48.9	54.0	-5.1	EUT Vert, Low Ch, 2 Mbps
2389.600	32.3	-3.5	1.5	243.9	3.0	20.0	Vert	AV	0.0	48.8	54.0	-5.2	EUT Horz, Low Ch, 1 Mbps
2388.758	32.3	-3.5	1.5	333.0	3.0	20.0	Horz	AV	0.0	48.8	54.0	-5.2	EUT Vert, Low Ch, 1 Mbps
2487.317	32.5	-3.8	1.5	88.0	3.0	20.0	Horz	AV	0.0	48.7	54.0	-5.3	EUT On Side, High Ch, 1 Mbps
2484.375	32.5	-3.8	1.5	128.9	3.0	20.0	Vert	AV	0.0	48.7	54.0	-5.3	EUT On Side, High Ch, 1 Mbps
2483.517	32.5	-3.8	1.5	293.0	3.0	20.0	Vert	AV	0.0	48.7	54.0	-5.3	EUT Vert, High Ch, 1 Mbps
2484.100	45.2	-3.8	1.5	322.9	3.0	20.0	Horz	PK	0.0	61.4	74.0	-12.6	EUT Vert, High Ch, 2 Mbps
7322.075	30.3	10.3	1.5	175.9	3.0	0.0	Horz	AV	0.0	40.6	54.0	-13.4	EUT On Side, Mid Ch, 1 Mbps
7320.258	30.3	10.3	1.4	48.0	3.0	0.0	Vert	AV	0.0	40.6	54.0	-13.4	EUT Vert, Mid Ch, 1 Mbps
7437.717	30.6	10.0	1.5	207.9	3.0	0.0	Vert	AV	0.0	40.6	54.0	-13.4	EUT Vert, High Ch, 1 Mbps
7442.108	30.5	10.0	3.8	138.9	3.0	0.0	Horz	AV	0.0	40.5	54.0	-13.5	EUT On Side, High Ch, 1 Mbps
2386.492	43.9	-3.5	2.3	123.0	3.0	20.0	Horz	PK	0.0	60.4	74.0	-13.6	EUT Vert, Low Ch, 2 Mbps
2487.458	43.8	-3.8	3.6	253.9	3.0	20.0	Vert	PK	0.0	60.0	74.0	-14.0	EUT Horz, High Ch, 1 Mbps
2388.467	43.5	-3.5	1.5	243.9	3.0	20.0	Vert	PK	0.0	60.0	74.0	-14.0	EUT Horz, Low Ch, 1 Mbps
2483.942	43.6	-3.8	1.5	65.0	3.0	20.0	Horz	PK	0.0	59.8	74.0	-14.2	EUT Horz, High Ch, 1 Mbps
2484.067	43.5	-3.8	1.5	131.0	3.0	20.0	Horz	PK	0.0	59.7	74.0	-14.3	EUT Vert, High Ch, 1 Mbps
2488.467	43.4	-3.8	1.5	128.9	3.0	20.0	Vert	PK	0.0	59.6	74.0	-14.4	EUT On Side, High Ch, 1 Mbps
2485.808	43.4	-3.8	1.5	293.0	3.0	20.0	Vert	PK	0.0	59.6	74.0	-14.4	EUT Vert, High Ch, 1 Mbps
2484.242	43.3	-3.8	1.5	88.0	3.0	20.0	Horz	PK	0.0	59.5	74.0	-14.5	EUT On Side, High Ch, 1 Mbps
2386.267	43.0	-3.5	1.5	333.0	3.0	20.0	Horz	PK	0.0	59.5	74.0	-14.5	EUT Vert, Low Ch, 1 Mbps
4803.917	35.2	2.8	3.5	184.0	3.0	0.0	Horz	AV	0.0	38.0	54.0	-16.0	EUT On Side, Low Ch, 1 Mbps
4803.933	34.9	2.8	2.8	9.9	3.0	0.0	Vert	AV	0.0	37.7	54.0	-16.3	EUT Vert, Low Ch, 1 Mbps
4803.842	34.8	2.8	2.1	2.9	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	EUT Horz, Low Ch, 1 Mbps
4803.942	34.7	2.8	1.4	90.0	3.0	0.0	Horz	AV	0.0	37.5	54.0	-16.5	EUT Vert, Low Ch, 1 Mbps
4803.892	34.5	2.8	1.8	5.9	3.0	0.0	Vert	AV	0.0	37.3	54.0	-16.7	EUT On Side, Low Ch, 1 Mbps
4803.942	34.5	2.8	2.7	335.0	3.0	0.0	Vert	AV	0.0	37.3	54.0	-16.7	EUT Horz, Low Ch, 1 Mbps
4879.950	33.0	2.9	2.3	232.9	3.0	0.0	Horz	AV	0.0	35.9	54.0	-18.1	EUT On Side, Mid Ch, 1 Mbps
4808.792	33.0	2.8	2.9	124.9	3.0	0.0	Horz	AV	0.0	35.8	54.0	-18.2	EUT On Side, Low Ch, 2 Mbps
4959.883	32.4	3.1	1.4	141.0	3.0	0.0	Horz	AV	0.0	35.5	54.0	-18.5	EUT On Side, High Ch, 1 Mbps
4879.825	32.4	2.9	4.0	72.0	3.0	0.0	Vert	AV	0.0	35.3	54.0	-18.7	EUT Vert, Mid Ch, 1 Mbps
4959.925	32.1	3.1	1.5	132.9	3.0	0.0	Vert	AV	0.0	35.2	54.0	-18.8	EUT Vert, High Ch, 1 Mbps
12401.550	30.6	3.9	1.5	153.0	3.0	0.0	Vert	AV	0.0	34.5	54.0	-19.5	EUT Vert, High Ch, 1 Mbps
12400.280	29.3	3.9	1.3	243.0	3.0	0.0	Horz	AV	0.0	33.2	54.0	-20.8	EUT On Side, High Ch, 1 Mbps
7438.467	41.4	10.0	1.5	207.9	3.0	0.0	Vert	PK	0.0	51.4	74.0	-22.6	EUT Vert, High Ch, 1 Mbps
7440.808	41.3	10.0	3.8	138.9	3.0	0.0	Horz	PK	0.0	51.3	74.0	-22.7	EUT On Side, High Ch, 1 Mbps
7319.133	40.5	10.3	1.4	48.0	3.0	0.0	Vert	PK	0.0	50.8	74.0	-23.2	EUT Vert, Mid Ch, 1 Mbps
7320.350	40.3	10.3	1.5	175.9	3.0	0.0	Horz	PK	0.0	50.6	74.0	-23.4	EUT On Side, Mid Ch, 1 Mbps
12398.400	30.4	-0.7	1.5	315.0	3.0	0.0	Vert	AV	0.0	29.7	54.0	-24.3	EUT Vert, High Ch, 1 Mbps
12198.380	30.9	-1.3	1.5	236.9	3.0	0.0	Vert	AV	0.0	29.6	54.0	-24.4	EUT Vert, Mid Ch, 1 Mbps

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Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
12012.140	30.5	-1.3	1.5	55.9	3.0	0.0	Vert	AV	0.0	29.2	54.0	-24.8	EUT Vert, Low Ch, 1 Mbps
12197.780	30.2	-1.3	2.3	225.9	3.0	0.0	Horz	AV	0.0	28.9	54.0	-25.1	EUT On Side, Mid Ch, 1 Mbps
12398.390	29.5	-0.7	1.5	47.0	3.0	0.0	Horz	AV	0.0	28.8	54.0	-25.2	EUT On Side, High Ch, 1 Mbps
12012.280	29.2	-1.3	1.8	303.0	3.0	0.0	Horz	AV	0.0	27.9	54.0	-26.1	EUT On Side, Low Ch, 1 Mbps
4803.758	43.8	2.8	2.7	335.0	3.0	0.0	Vert	PK	0.0	46.6	74.0	-27.4	EUT Horz, Low Ch, 1 Mbps
4803.408	43.7	2.8	1.4	90.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	EUT Vert, Low Ch, 1 Mbps
4804.100	43.5	2.8	2.1	2.9	3.0	0.0	Horz	PK	0.0	46.3	74.0	-27.7	EUT Horz, Low Ch, 1 Mbps
4803.008	43.4	2.8	3.5	184.0	3.0	0.0	Horz	PK	0.0	46.2	74.0	-27.8	EUT On Side, Low Ch, 1 Mbps
4803.683	43.3	2.8	1.8	5.9	3.0	0.0	Vert	PK	0.0	46.1	74.0	-27.9	EUT On Side, Low Ch, 1 Mbps
12402.190	42.0	3.9	1.5	153.0	3.0	0.0	Vert	PK	0.0	45.9	74.0	-28.1	EUT Vert, High Ch, 1 Mbps
4879.583	42.6	2.9	4.0	72.0	3.0	0.0	Vert	PK	0.0	45.5	74.0	-28.5	EUT Vert, Mid Ch, 1 Mbps
4803.150	42.5	2.8	2.8	9.9	3.0	0.0	Vert	PK	0.0	45.3	74.0	-28.7	EUT Vert, Low Ch, 1 Mbps
4879.642	42.1	2.9	2.3	232.9	3.0	0.0	Horz	PK	0.0	45.0	74.0	-29.0	EUT On Side, Mid Ch, 1 Mbps
4960.483	41.6	3.1	1.5	132.9	3.0	0.0	Vert	PK	0.0	44.7	74.0	-29.3	EUT Vert, High Ch, 1 Mbps
4808.992	41.8	2.8	2.9	124.9	3.0	0.0	Horz	PK	0.0	44.6	74.0	-29.4	EUT On Side, Low Ch, 2 Mbps
4959.700	41.3	3.1	1.4	141.0	3.0	0.0	Horz	PK	0.0	44.4	74.0	-29.6	EUT On Side, High Ch, 1 Mbps
12401.280	39.7	3.9	1.3	243.0	3.0	0.0	Horz	PK	0.0	43.6	74.0	-30.4	EUT On Side, High Ch, 1 Mbps
12397.750	41.2	-0.7	1.5	315.0	3.0	0.0	Vert	PK	0.0	40.5	74.0	-33.5	EUT Vert, High Ch, 1 Mbps
12198.060	41.2	-1.3	1.5	236.9	3.0	0.0	Vert	PK	0.0	39.9	74.0	-34.1	EUT Vert, Mid Ch, 1 Mbps
12010.620	41.0	-1.3	1.5	55.9	3.0	0.0	Vert	PK	0.0	39.7	74.0	-34.3	EUT Vert, Low Ch, 1 Mbps
12398.570	40.3	-0.7	1.5	47.0	3.0	0.0	Horz	PK	0.0	39.6	74.0	-34.4	EUT On Side, High Ch, 1 Mbps
12198.260	40.8	-1.3	2.3	225.9	3.0	0.0	Horz	PK	0.0	39.5	74.0	-34.5	EUT On Side, Mid Ch, 1 Mbps
12007.720	39.4	-1.2	1.8	303.0	3.0	0.0	Horz	PK	0.0	38.2	74.0	-35.8	EUT On Side, Low Ch, 1 Mbps

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

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WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.
For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These “pre-scans” are not included in the report. Final measurements on individual emissions were then made and included in this test report.
The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.
If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.
Measurements within 2 MHz of the allowable band may have been taken using the integration method from ANSI C63.10 clause 11.13.3. This procedure uses the channel power feature of the spectrum analyzer to integrate the power of the emission within a 1 MHz bandwidth.
Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of 10*log(1/dc).

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Filter - Band Reject	Wainwright Instruments	WTRCT10-2400-2700-20-30-40EEK	CUO	2022-01-28	2023-01-28
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAQ	2021-05-21	2022-05-21
Antenna - Double Ridge	ETS Lindgren	3115	AJQ	2021-01-25	2023-01-25
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	2022-01-18	2023-01-18
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	2022-01-18	2023-01-18
Attenuator	Fairview Microwave	SA18E-20	TWZ	2021-09-09	2022-09-09
Attenuator	Fairview Microwave	SA18E-10	TYA	2021-09-09	2022-09-09
Filter - High Pass	Micro-Tronics	HPM50111	LFN	2021-09-09	2022-09-09
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	NCR
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	2022-01-18	2023-01-18
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	2022-01-18	2023-01-18
Antenna - Biconilog	ETS Lindgren	3142D	AXO	2021-09-14	2023-09-14
Cable	ESM Cable Corp.	Bilog Cables	MNH	2021-10-13	2022-10-13
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	2021-10-13	2022-10-13
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	2022-01-18	2023-01-18
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	NCR
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	2021-09-09	2022-09-09
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNP	2021-09-09	2022-09-09
Filter - Low Pass	Micro-Tronics	LPM50004	LFK	2021-09-09	2022-09-09

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	5.2 dB	-5.2 dB

FREQUENCY RANGE INVESTIGATED

30 MHz TO 26500 MHz

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POWER INVESTIGATED

5VDC

CONFIGURATIONS INVESTIGATED

DGII0455-4

MODES INVESTIGATED

Transmitting BLE. 8dBm power setting. Low, Mid, and High Chs (2402, 2440, and 2480 MHz), 1 and 2 Mbps. 2mbps data rate has low/high chs of 2404 and 2478 MHz. Test mode is 100% duty cycle.

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EUT:	XB3C2	Work Order:	DGII0455
Serial Number:	350588280003609	Date:	2022-03-25
Customer:	Digi International Inc	Temperature:	22.9°C
Attendees:	None	Relative Humidity:	28.3%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mb
Tested By:	Christopher Heintzelman	Job Site:	MN05
Power:	5VDC	Configuration:	DGII0455-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	37	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)

COMMENTS

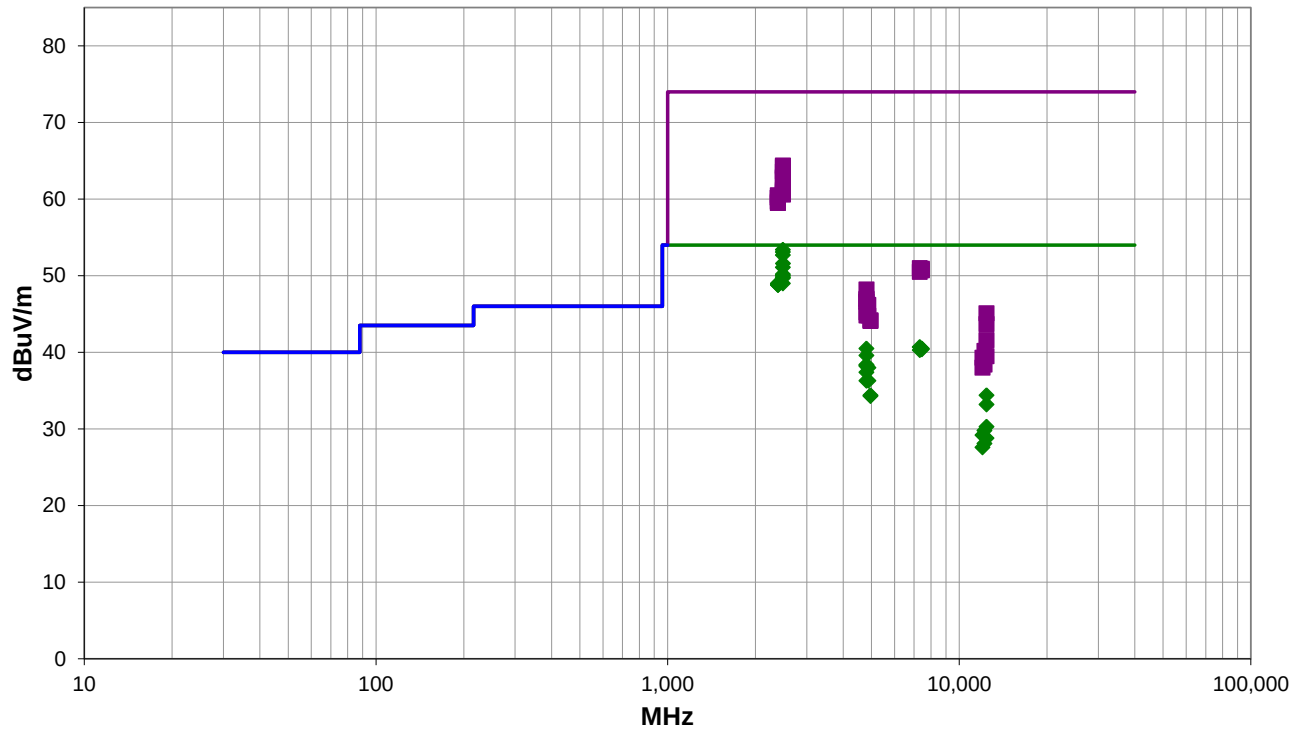
IMEI 350588280003609. 4.0 dBi gain Flat Patch antenna.

EUT OPERATING MODES

Transmitting BLE. 8dBm power setting. Low, Mid, and High Chs (2402, 2440, and 2480 MHz), 1 and 2 Mbps. 2mbps data rate has low/high chs of 2404 and 2478 MHz. Test mode is 100% duty cycle.

DEVIATIONS FROM TEST STANDARD

None



Run #: 37 PK AV QP

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PSA-ESCI 2022.1.12.0

RESULTS - Run #37

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.525	37.2	-3.8	1.3	88.9	3.0	20.0	Horz	AV	0.0	53.4	54.0	-0.6	EUT On Side, High Ch, 2 Mbps
2483.525	36.9	-3.8	1.3	87.0	3.0	20.0	Horz	AV	0.0	53.1	54.0	-0.9	EUT On Side, High Ch, 2 Mbps
2483.508	36.5	-3.8	1.1	37.9	3.0	20.0	Vert	AV	0.0	52.7	54.0	-1.3	EUT On Side, High Ch, 2 Mbps
2485.558	35.4	-3.8	2.9	25.0	3.0	20.0	Horz	AV	0.0	51.6	54.0	-2.4	EUT On Side, High Ch, 2 Mbps, 2 MHz from band edge
2483.500	34.9	-3.8	1.1	91.9	3.0	20.0	Horz	AV	0.0	51.1	54.0	-2.9	EUT On Side, High Ch, 1 Mbps
2483.550	34.0	-3.8	1.5	12.9	3.0	20.0	Horz	AV	0.0	50.2	54.0	-3.8	EUT Horz, High Ch, 1 Mbps
2483.500	33.8	-3.8	1.5	240.9	3.0	20.0	Vert	AV	0.0	50.0	54.0	-4.0	EUT On Side, High Ch, 1 Mbps
2483.550	33.6	-3.8	1.9	346.0	3.0	20.0	Vert	AV	0.0	49.8	54.0	-4.2	EUT Vert, High Ch, 1 Mbps
2483.558	33.5	-3.8	3.6	268.9	3.0	20.0	Vert	AV	0.0	49.7	54.0	-4.3	EUT Horz, High Ch, 1 Mbps
2483.567	32.8	-3.8	1.0	44.0	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	EUT Vert, High Ch, 1 Mbps
2388.825	32.5	-3.5	1.5	37.9	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	EUT On Side, Low Ch, 2 Mbps
2388.567	32.4	-3.5	1.5	81.0	3.0	20.0	Horz	AV	0.0	48.9	54.0	-5.1	EUT On Side, Low Ch, 2 Mbps
2389.425	32.4	-3.5	1.5	34.0	3.0	20.0	Vert	AV	0.0	48.9	54.0	-5.1	EUT On Side, Low Ch, 2 Mbps
2389.775	32.4	-3.5	1.5	23.9	3.0	20.0	Vert	AV	0.0	48.9	54.0	-5.1	EUT On Side, Low Ch, 2 Mbps
2389.658	32.3	-3.5	1.5	250.0	3.0	20.0	Horz	AV	0.0	48.8	54.0	-5.2	EUT On Side, Low Ch, 1 Mbps
2389.658	32.3	-3.5	1.5	126.0	3.0	20.0	Vert	AV	0.0	48.8	54.0	-5.2	EUT On Side, Low Ch, 1 Mbps
2483.558	48.2	-3.8	2.9	25.0	3.0	20.0	Horz	PK	0.0	64.4	74.0	-9.6	EUT On Side, High Ch, 2 Mbps
2483.558	48.0	-3.8	2.9	24.9	3.0	20.0	Horz	PK	0.0	64.2	74.0	-9.8	EUT On Side, High Ch, 2 Mbps
2483.608	47.4	-3.8	1.1	37.9	3.0	20.0	Vert	PK	0.0	63.6	74.0	-10.4	EUT On Side, High Ch, 2 Mbps
2483.667	46.7	-3.8	1.3	87.0	3.0	20.0	Horz	PK	0.0	62.9	74.0	-11.1	EUT On Side, High Ch, 2 Mbps
2484.683	46.6	-3.8	1.3	88.9	3.0	20.0	Horz	PK	0.0	62.8	74.0	-11.2	EUT On Side, High Ch, 2 Mbps
2485.700	46.4	-3.8	2.9	25.0	3.0	20.0	Horz	PK	0.0	62.6	74.0	-11.4	EUT On Side, High Ch, 2 Mbps, 2 MHz from band edge
2483.558	45.0	-3.8	1.1	91.9	3.0	20.0	Horz	PK	0.0	61.2	74.0	-12.8	EUT On Side, High Ch, 1 Mbps
2485.775	44.8	-3.8	1.0	44.0	3.0	20.0	Horz	PK	0.0	61.0	74.0	-13.0	EUT Vert, High Ch, 1 Mbps
2484.067	44.7	-3.8	3.6	268.9	3.0	20.0	Vert	PK	0.0	60.9	74.0	-13.1	EUT Horz, High Ch, 1 Mbps
2484.358	44.6	-3.8	1.5	12.9	3.0	20.0	Horz	PK	0.0	60.8	74.0	-13.2	EUT Horz, High Ch, 1 Mbps
2483.825	44.6	-3.8	1.5	240.9	3.0	20.0	Vert	PK	0.0	60.8	74.0	-13.2	EUT On Side, High Ch, 1 Mbps
7318.242	30.4	10.3	1.5	131.9	3.0	0.0	Horz	AV	0.0	40.7	54.0	-13.3	EUT Horz, Mid Ch, 1 Mbps
2485.958	44.4	-3.8	1.9	346.0	3.0	20.0	Vert	PK	0.0	60.6	74.0	-13.4	EUT Vert, High Ch, 1 Mbps
4803.817	37.7	2.8	3.4	333.9	3.0	0.0	Horz	AV	0.0	40.5	54.0	-13.5	EUT Horz, Low Ch, 1 Mbps
7440.942	30.5	10.0	1.5	336.0	3.0	0.0	Vert	AV	0.0	40.5	54.0	-13.5	EUT Vert, High Ch, 1 Mbps
2387.500	44.0	-3.5	1.5	37.9	3.0	20.0	Horz	PK	0.0	60.5	74.0	-13.5	EUT On Side, Low Ch, 2 Mbps
7439.900	30.4	10.0	1.5	145.9	3.0	0.0	Horz	AV	0.0	40.4	54.0	-13.6	EUT Horz, High Ch, 1 Mbps
7321.283	30.0	10.3	1.5	229.9	3.0	0.0	Vert	AV	0.0	40.3	54.0	-13.7	EUT Vert, Mid Ch, 1 Mbps
2387.325	43.7	-3.5	1.5	250.0	3.0	20.0	Horz	PK	0.0	60.2	74.0	-13.8	EUT On Side, Low Ch, 1 Mbps
2385.850	43.7	-3.5	1.5	34.0	3.0	20.0	Vert	PK	0.0	60.2	74.0	-13.8	EUT On Side, Low Ch, 2 Mbps
2387.217	43.2	-3.5	1.5	81.0	3.0	20.0	Horz	PK	0.0	59.7	74.0	-14.3	EUT On Side, Low Ch, 2 Mbps
4803.850	36.8	2.8	1.4	90.0	3.0	0.0	Horz	AV	0.0	39.6	54.0	-14.4	EUT Vert, Low Ch, 1 Mbps
2388.883	43.0	-3.5	1.5	126.0	3.0	20.0	Vert	PK	0.0	59.5	74.0	-14.5	EUT On Side, Low Ch, 1 Mbps
2387.917	43.0	-3.5	1.5	23.9	3.0	20.0	Vert	PK	0.0	59.5	74.0	-14.5	EUT On Side, Low Ch, 2 Mbps
4803.750	35.6	2.8	1.5	182.9	3.0	0.0	Vert	AV	0.0	38.4	54.0	-15.6	EUT Vert, Low Ch, 1 Mbps
4803.925	35.5	2.8	3.5	333.0	3.0	0.0	Vert	AV	0.0	38.3	54.0	-15.7	EUT Horz, Low Ch, 1 Mbps

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer T	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4807.200	35.4	2.8	2.0	311.0	3.0	0.0	Horz	AV	0.0	38.2	54.0	-15.8	EUT Horz, Low Ch, 2 Mbps
4879.917	35.1	2.9	2.7	335.0	3.0	0.0	Horz	AV	0.0	38.0	54.0	-16.0	EUT Horz, Mid Ch, 1 Mbps
4803.842	34.6	2.8	3.7	192.0	3.0	0.0	Vert	AV	0.0	37.4	54.0	-16.6	EUT On Side, Low Ch, 1 Mbps
4803.875	33.5	2.8	1.5	217.0	3.0	0.0	Horz	AV	0.0	36.3	54.0	-17.7	EUT On Side, Low Ch, 1 Mbps
4879.908	33.4	2.9	3.5	311.0	3.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7	EUT Vert, Mid Ch, 1 Mbps
4959.667	31.3	3.1	1.8	95.9	3.0	0.0	Horz	AV	0.0	34.4	54.0	-19.6	EUT Horz, High Ch, 1 Mbps
12400.440	30.5	3.9	1.3	210.9	3.0	0.0	Vert	AV	0.0	34.4	54.0	-19.6	EUT Vert, High Ch, 1 Mbps
4959.908	31.2	3.1	1.6	181.9	3.0	0.0	Vert	AV	0.0	34.3	54.0	-19.7	EUT Vert, High Ch, 1 Mbps
12400.200	29.3	3.9	1.3	329.9	3.0	0.0	Horz	AV	0.0	33.2	54.0	-20.8	EUT Horz, High Ch, 1 Mbps
7321.317	40.7	10.3	1.5	131.9	3.0	0.0	Horz	PK	0.0	51.0	74.0	-23.0	EUT Horz, Mid Ch, 1 Mbps
7440.625	40.9	10.0	1.5	336.0	3.0	0.0	Vert	PK	0.0	50.9	74.0	-23.1	EUT Vert, High Ch, 1 Mbps
7441.600	40.7	10.0	1.5	145.9	3.0	0.0	Horz	PK	0.0	50.7	74.0	-23.3	EUT Horz, High Ch, 1 Mbps
7319.500	40.2	10.3	1.5	229.9	3.0	0.0	Vert	PK	0.0	50.5	74.0	-23.5	EUT Vert, Mid Ch, 1 Mbps
12398.770	31.0	-0.7	1.5	330.9	3.0	0.0	Vert	AV	0.0	30.3	54.0	-23.7	EUT Vert, High Ch, 1 Mbps
12197.840	31.1	-1.3	1.5	182.9	3.0	0.0	Vert	AV	0.0	29.8	54.0	-24.2	EUT Vert, Mid Ch, 1 Mbps
12012.200	30.5	-1.3	1.5	243.9	3.0	0.0	Vert	AV	0.0	29.2	54.0	-24.8	EUT Vert, Low Ch, 1 Mbps
12397.930	29.5	-0.7	3.0	193.9	3.0	0.0	Horz	AV	0.0	28.8	54.0	-25.2	EUT Horz, High Ch, 1 Mbps
4804.350	45.4	2.8	3.4	333.9	3.0	0.0	Horz	PK	0.0	48.2	74.0	-25.8	EUT Horz, Low Ch, 1 Mbps
12197.850	29.4	-1.3	2.3	292.0	3.0	0.0	Horz	AV	0.0	28.1	54.0	-25.9	EUT Horz, Mid Ch, 1 Mbps
12009.930	28.9	-1.3	1.5	149.9	3.0	0.0	Horz	AV	0.0	27.6	54.0	-26.4	EUT Horz, Low Ch, 1 Mbps
4806.817	44.2	2.8	2.0	311.0	3.0	0.0	Horz	PK	0.0	47.0	74.0	-27.0	EUT Horz, Low Ch, 2 Mbps
4804.150	44.1	2.8	1.4	90.0	3.0	0.0	Horz	PK	0.0	46.9	74.0	-27.1	EUT Vert, Low Ch, 1 Mbps
4804.200	43.8	2.8	3.5	333.0	3.0	0.0	Vert	PK	0.0	46.6	74.0	-27.4	EUT Horz, Low Ch, 1 Mbps
4803.608	43.8	2.8	1.5	182.9	3.0	0.0	Vert	PK	0.0	46.6	74.0	-27.4	EUT Vert, Low Ch, 1 Mbps
4880.092	43.3	2.9	2.7	335.0	3.0	0.0	Horz	PK	0.0	46.2	74.0	-27.8	EUT Horz, Mid Ch, 1 Mbps
4804.392	42.4	2.8	3.7	192.0	3.0	0.0	Vert	PK	0.0	45.2	74.0	-28.8	EUT On Side, Low Ch, 1 Mbps
12401.830	41.2	3.9	1.3	210.9	3.0	0.0	Vert	PK	0.0	45.1	74.0	-28.9	EUT Vert, High Ch, 1 Mbps
4804.333	42.0	2.8	1.5	217.0	3.0	0.0	Horz	PK	0.0	44.8	74.0	-29.2	EUT On Side, Low Ch, 1 Mbps
4879.458	41.9	2.9	3.5	311.0	3.0	0.0	Vert	PK	0.0	44.8	74.0	-29.2	EUT Vert, Mid Ch, 1 Mbps
4959.850	41.1	3.1	1.8	95.9	3.0	0.0	Horz	PK	0.0	44.2	74.0	-29.8	EUT Horz, High Ch, 1 Mbps
4960.000	41.0	3.1	1.6	181.9	3.0	0.0	Vert	PK	0.0	44.1	74.0	-29.9	EUT Vert, High Ch, 1 Mbps
12400.790	39.8	3.9	1.3	329.9	3.0	0.0	Horz	PK	0.0	43.7	74.0	-30.3	EUT Horz, High Ch, 1 Mbps
12397.980	42.3	-0.7	1.5	330.9	3.0	0.0	Vert	PK	0.0	41.6	74.0	-32.4	EUT Vert, High Ch, 1 Mbps
12200.330	41.5	-1.3	1.5	182.9	3.0	0.0	Vert	PK	0.0	40.2	74.0	-33.8	EUT Vert, Mid Ch, 1 Mbps
12398.620	40.2	-0.7	3.0	193.9	3.0	0.0	Horz	PK	0.0	39.5	74.0	-34.5	EUT Horz, High Ch, 1 Mbps
12010.180	40.6	-1.3	1.5	243.9	3.0	0.0	Vert	PK	0.0	39.3	74.0	-34.7	EUT Vert, Low Ch, 1 Mbps
12197.970	39.7	-1.3	2.3	292.0	3.0	0.0	Horz	PK	0.0	38.4	74.0	-35.6	EUT Horz, Mid Ch, 1 Mbps
12011.920	39.3	-1.3	1.5	149.9	3.0	0.0	Horz	PK	0.0	38.0	74.0	-36.0	EUT Horz, Low Ch, 1 Mbps

CONCLUSION

Pass

Tested By

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

EUT:	XB3C2	Work Order:	DGII0455
Serial Number:	350588280003609	Date:	2022-03-25
Customer:	Digi International Inc	Temperature:	22.9°C
Attendees:	None	Relative Humidity:	28.3%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mb
Tested By:	Christopher Heintzelman, Kyle McMullan	Job Site:	MN05
Power:	5VDC	Configuration:	DGII0455-4

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.247:2022	ANSI C63.10:2013

TEST PARAMETERS

Run #:	44	Test Distance (m):	3	Ant. Height(s) (m):	1 to 4(m)

COMMENTS

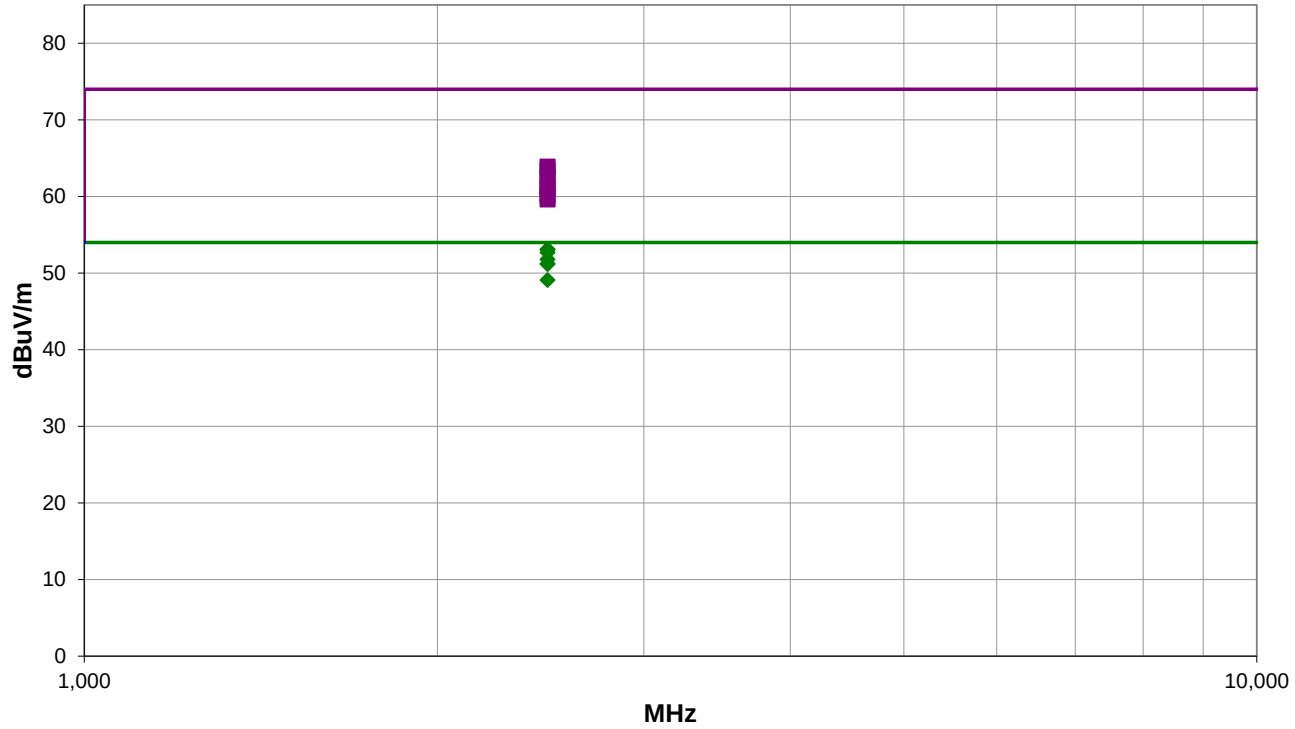
IMEI 350588280003609. 4.4dBi gain Flat Patch antenna. Manually added 3.6dB due to added filter/cable loss @ 2483.5MHz. This was added under the 'factor' column.

EUT OPERATING MODES

Transmitting BLE. 8dBm power setting. Low, Mid, and High Chs (2402, 2440, and 2480 MHz), 1 and 2 Mbps. 2mbps data rate has low/high chs of 2404 and 2478 MHz. Test mode is 100% duty cycle.

DEVIATIONS FROM TEST STANDARD

None



Run #: 44 PK AV QP

SPURIOUS RADIATED EMISSIONS

element
WTD.2021.09.21.0
EmiR5 2022.03.10.0
PSA-ESCI 2022.1.12.0

RESULTS - Run #44

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.500	43.3	-0.2	2.87	25.0	3.0	10.0	Horz	AV	0.0	53.1	54.0	-0.9	Notch filter, 10dB attenuation. EUT On Side, High Ch, 2 Mbps
2483.733	43.3	-0.2	1.5	310.0	3.0	10.0	Vert	AV	0.0	53.1	54.0	-0.9	Notch filter, 10dB attenuation. EUT Vert, High Ch, 2 Mbps
2483.558	42.9	-0.2	2.89	23.0	3.0	10.0	Horz	AV	0.0	52.7	54.0	-1.3	Notch filter, 10dB attenuation. EUT On Side, High Ch, 2 Mbps
2483.517	42.0	-0.2	3.83	70.0	3.0	10.0	Vert	AV	0.0	51.8	54.0	-2.2	Notch filter, 10dB attenuation. EUT Horz, High Ch, 2 Mbps
2483.525	41.4	-0.2	3.72	38.9	3.0	10.0	Vert	AV	0.0	51.2	54.0	-2.8	Notch filter, 10dB attenuation. EUT On Side, High Ch, 2 Mbps
2483.500	41.4	-0.2	1.34	24.9	3.0	10.0	Horz	AV	0.0	51.2	54.0	-2.8	Notch filter, 10dB attenuation. EUT Horz, High Ch, 2 Mbps
2483.525	39.3	-0.2	1.48	92.9	3.0	10.0	Horz	AV	0.0	49.1	54.0	-4.9	Notch filter, 10dB attenuation. EUT Vert, High Ch, 2 Mbps
2483.500	54.1	-0.2	2.89	23.0	3.0	10.0	Horz	PK	0.0	63.9	74.0	-10.1	Notch filter, 10dB attenuation. EUT On Side, High Ch, 2 Mbps
2483.750	53.6	-0.2	2.87	25.0	3.0	10.0	Horz	PK	0.0	63.4	74.0	-10.6	Notch filter, 10dB attenuation. EUT On Side, High Ch, 2 Mbps
2483.517	52.7	-0.2	3.83	70.0	3.0	10.0	Vert	PK	0.0	62.5	74.0	-11.5	Notch filter, 10dB attenuation. EUT Horz, High Ch, 2 Mbps
2483.958	51.6	-0.2	3.72	38.9	3.0	10.0	Vert	PK	0.0	61.4	74.0	-12.6	Notch filter, 10dB attenuation. EUT On Side, High Ch, 2 Mbps
2483.592	51.2	-0.2	1.34	24.9	3.0	10.0	Horz	PK	0.0	61.0	74.0	-13.0	Notch filter, 10dB attenuation. EUT Horz, High Ch, 2 Mbps
2483.850	50.4	-0.2	1.5	310.0	3.0	10.0	Vert	PK	0.0	60.2	74.0	-13.8	Notch filter, 10dB attenuation. EUT Vert, High Ch, 2 Mbps
2483.558	49.8	-0.2	1.48	92.9	3.0	10.0	Horz	PK	0.0	59.6	74.0	-14.4	Notch filter, 10dB attenuation. EUT Vert, High Ch, 2 Mbps

CONCLUSION

Pass

Tested By

End of Test Report