SMART Technologies ULC

PQR-3

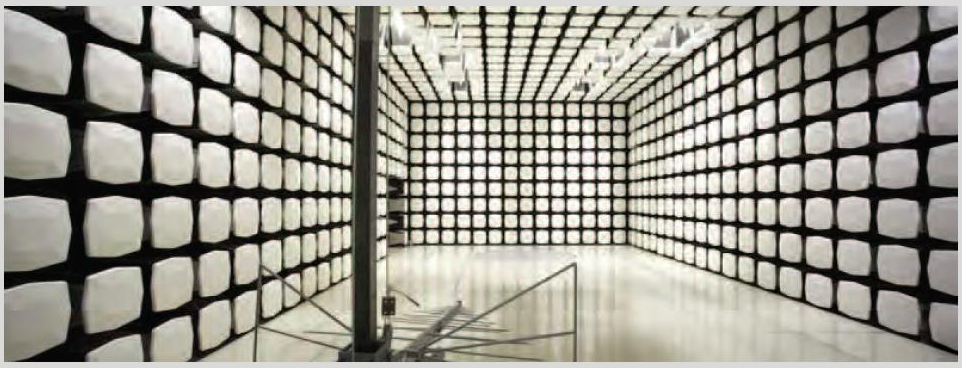
FCC 15.247:2026

RSS-247 Issue 4:2025

RSS-Gen Issue 5:2018+A1:2019+A2:2021

Proprietary 2.4 GHz radio

Report: SMTE0017.1 Rev. 01, Issue Date: May 13, 2026



ACCREDITED
CERT #3310.06

TABLE OF CONTENTS

element
2023.04.17

Section	Page Number

CERTIFICATE OF TEST

Last Date of Test: February 5, 2026
SMART Technologies ULC
EUT: PQR-3

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2026	ANSI C63.10:2020+Cor. 1-2023
RSS-247 Issue 4:2025	ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
RSS-Gen Issue 5:2018+A1:2019+A2:2021	

Guidance

FCC KDB 558074 v05r02:2019
Notice 2021 - CEB0001

Results

Test Description	Result	FCC Section(s)	RSS Section(s)	ANSI C63.10 Section(s)	Comments
Powerline Conducted Emissions	Pass	15.207	RSS-Gen 8.8	6.2	
Duty Cycle	N/A	KDB 558074 -6.0	RSS-Gen 3.2	11.6	See Data
DTS Bandwidth (6 dB)	Pass	15.247(a)(2), KDB 558074 -8.2	RSS-247 6.3.1(a)	11.8.2	
Occupied Bandwidth (99%)	N/A	KDB 558074 -2.1	RSS-Gen 6.7	6.9.3	See Data
RF Output Power	N/A	15.247(b)(3), KDB 558074 -8.3.1	RSS-247 6.3.2, RSS-Gen 6.12	11.9.1.1	
Equivalent Isotropic Radiated Power	Pass	15.247(b)(3), KDB 558074 -8.3.1	RSS-247 6.3.2, RSS-Gen 6.12	11.9.1.1	
Power Spectral Density	Pass	15.247(e), KDB 558074 - 8.4	RSS-247 6.3.1(b)	11.10.2	
Band Edge Compliance	Pass	15.247(d), KDB 558074 - 8.5	RSS-247 6.6	11.11	
Spurious Conducted Emissions	Pass	15.247(d), KDB 558074 - 8.5	RSS-247 6.6	11.11	
Radiated Band Edge Emissions	Pass	15.247(d), KDB 558074 - 8.6, 8.7	RSS-247 6.6, RSS-Gen 6.13, 8.10	11.12.1, 11.13.2, 6.6	
Spurious Radiated Emissions	Pass	15.247(d), KDB 558074 - 8.6, 8.7	RSS-247 6.6, RSS-Gen 6.13, 8.10	11.12.1, 11.13.2, 6.4, 6.5, 6.6	

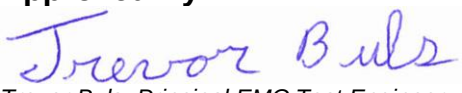
Deviations From Test Standards

None

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

CERTIFICATE OF TEST

Approved By:



Trevor Buls, Principal EMC Test Engineer
Signed for and on behalf of Element

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY

Revision Number	Description	Date (yyyy-mm-dd)	Page Number
01	Update method to C63.10:2020	2026-05-13	03
01	Updated Manufacturer name to reflect SMART Technologies ULC	2026-05-13	13-14
01	Updated EUT name	2026-05-13	17-20

FACILITIES

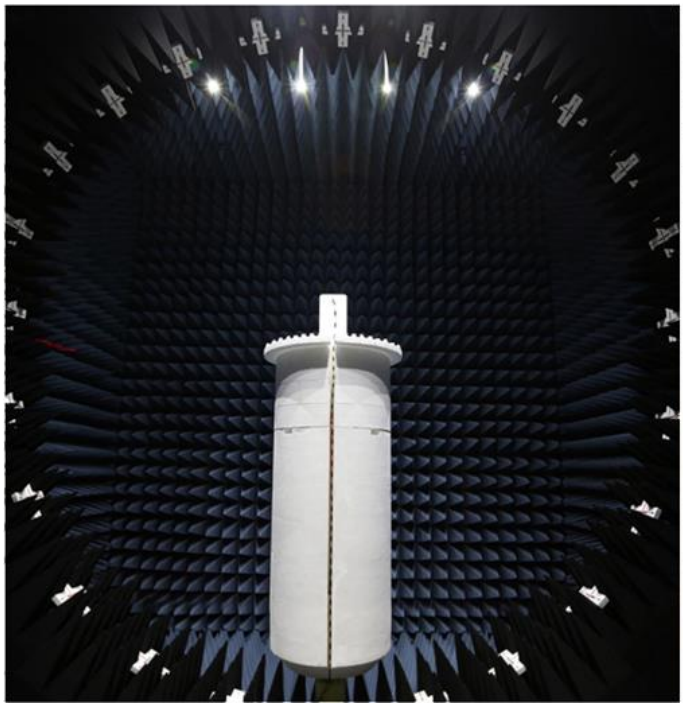
element
2025.07.17

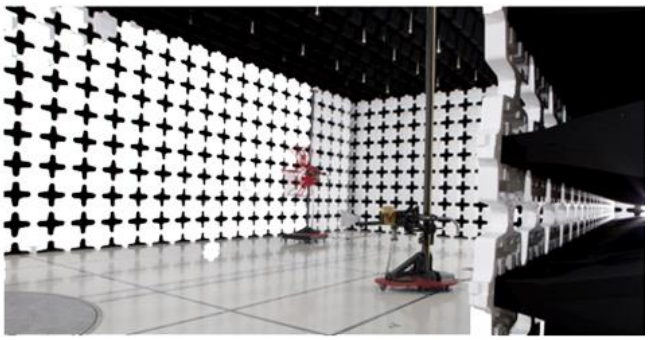
Testing was performed at the following location(s)

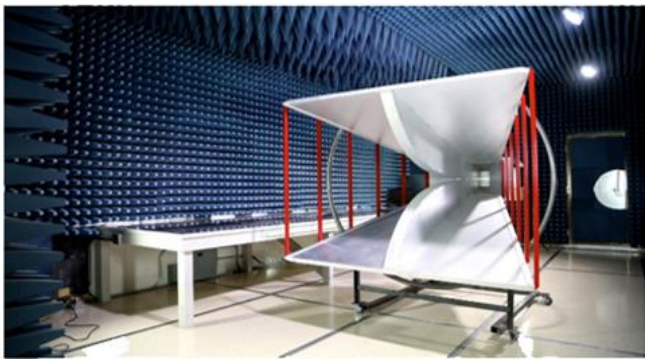
	Location	Labs (1)	Address	A2LA (2)	ISED (3)	BSMI (4)	VCCI (5)	CAB	FDA (6)
☐	California	OC01-17	41 Tesla Irvine, CA 92618 (949) 861-8918	3310.04	2834B	SL2-IN-E-1154R	A-0029	US0158	TL-55
☐	Minnesota	MN01-11	9349 W Broadway Ave. Brooklyn Park, MN 55445 (612) 638-5136	3310.05	2834E	SL2-IN-E-1152R	A-0109	US0175	TL-57
☐	Oregon	EV01-12	6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	3310.02	2834D	SL2-IN-E-1017	A-0108	US0017	TL-56
☒	Washington	NC01-05	19201 120th Ave NE Bothell, WA 98011 (425) 984-6600	3310.06	2834F	SL2-IN-E-1153R	A-0110	US0157	TL-67
☐	Offsite	N/A	See Product Description	N/A	N/A	N/A	N/A	N/A	N/A

See data sheets for specific labs

(1) The lab designations denote individual rooms within each location. (OC01, OC02, OC03, etc.)
(2) A2LA Certificate No.
(3) ISED Company No.
(4) BSMI No.
(5) VCCI Site Filing No.
(6) FDA ASCA No.







MEASUREMENT UNCERTAINTY

element
MU 2025-03-26

Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation reported is based on statistical analysis that was performed by the laboratory. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (k=2) can be found in the table below. A lab specific value may also be found in the applicable test description section. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable) and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Various Measurements

Test	All Labs (+/-)
Frequency Accuracy (%)	0.0007
Amplitude Accuracy (dB)	1.2
Conducted Power (dB)	1.2
Radiated Power via Substitution (dB)	0.7
Temperature (degrees C)	0.7
Humidity (% RH)	2.5
Voltage (AC) (%)	1
Voltage (DC) (%)	0.7
Near-field Measurement of E-Field (dB)	1.89
Near-field Measurement of H-Field (dB)	2.65

Field Strength Measurements (dB)

Range	NC01 (+/-)
9kHz-30MHz	1.7
30MHz-1GHz 3m	4.9
1GHz-6GHz	5.1
6GHz-40GHz	5.3
40GHz-220GHz	4.9

AC Powerline Conducted Emissions Measurements (dB)

Range	NC05 (+/-)
150k-30M LISN	3.1

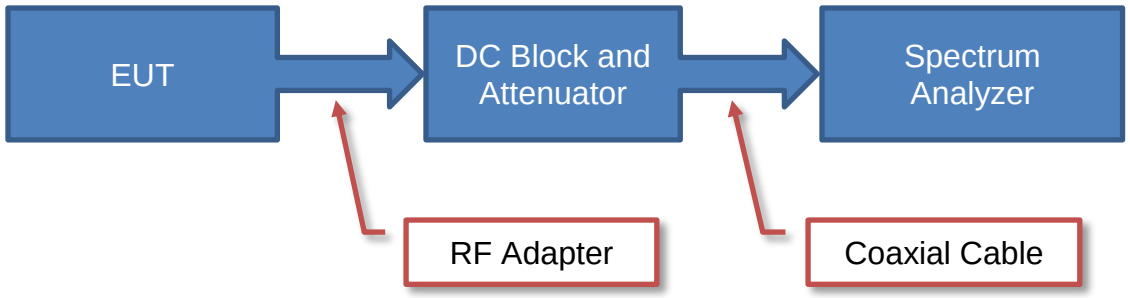
TEST SETUP BLOCK DIAGRAMS

Measurement Bandwidths

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Unless otherwise stated, measurements were made using the bandwidths and detectors specified. No video filter was used.

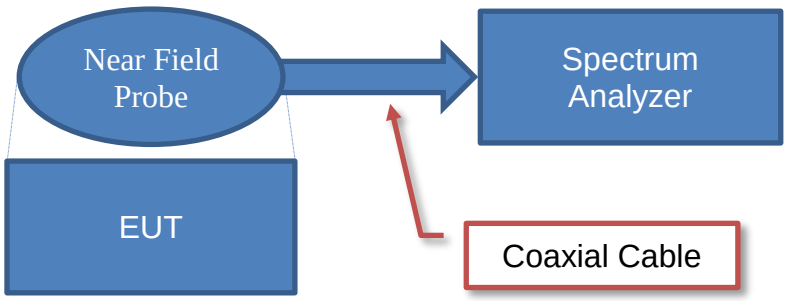
Antenna Port Conducted Measurements



Sample Calculation (logarithmic units)

Measured Value		Measured Level		Reference Level Offset
71.2	=	42.6	+	28.6

Near Field Test Fixture Measurements

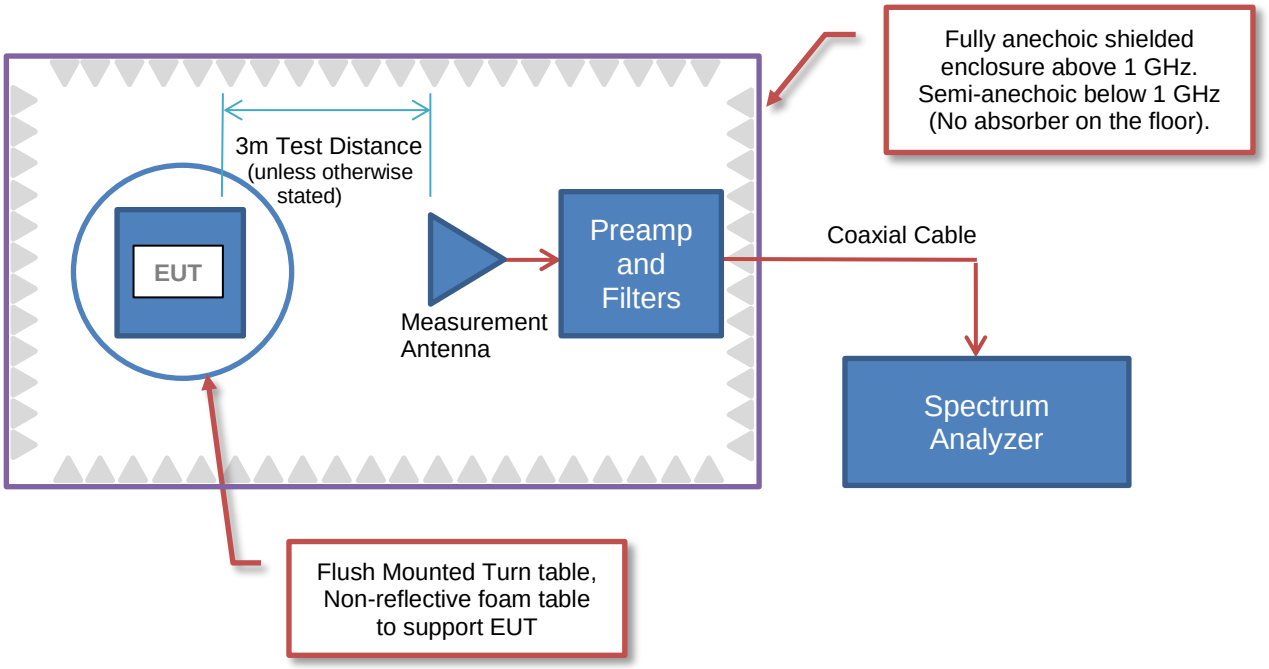


Sample Calculation (logarithmic units)

Measured Value		Measured Level		Reference Level Offset
71.2	=	42.6	+	28.6

TEST SETUP BLOCK DIAGRAMS

Emissions Measurements



Sample Calculation (logarithmic units)

Radiated Emissions:

Measured Level (Amplitude)		Factor: Antenna Factor		Factor: Cable Factor		Factor: Amplifier Gain		Distance Adjustment Factor		External Attenuation		Field Strength
42.6	+	28.6	+	3.1	-	40.8	+	0.0	+	0.0	=	**33.5**

Conducted Emissions:

Measured Level (Amplitude)		Factor: Transducer Factor		Factor: Cable Factor		External Attenuation		Adjusted Level
26.7	+	0.3	+	0.1	+	20.0	=	**47.1**

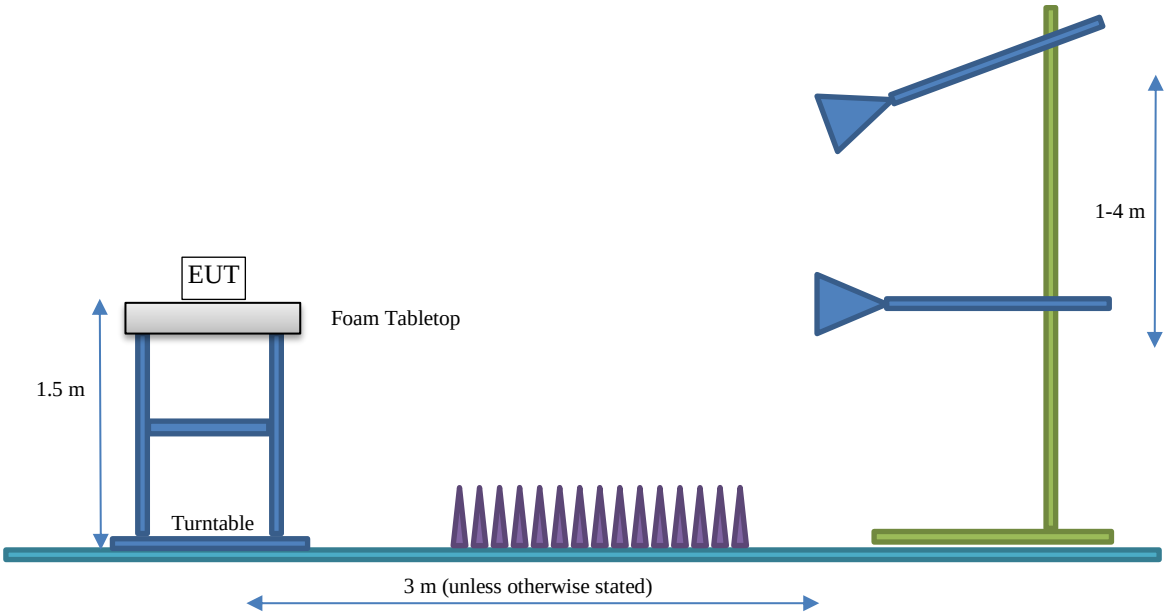
Radiated Power (ERP/EIRP) – Substitution Method:

Measured Level into Substitution Antenna (Amplitude dBm)		Substitution Antenna Factor (dBi)		EIRP to ERP (if applicable)		Measured power (dBm ERP/EIRP)
10.0	+	6.0	-	2.15	=	**13.9/16.0**

TEST SETUP BLOCK DIAGRAMS

Bore Sighting (>1GHz)

The diameter of the illumination area is the dimension of the line tangent to the EUT formed by 3 dB beamwidth of the measurement antenna at the measurement distance. At a 3 meter test distance, the diameter of the illumination area was 3.8 meters at 1 GHz and greater than 2.1 meters up to 6 GHz. Above 1 GHz, when required by the measurement standard, the antenna is pointed for both azimuth and elevation to maintain the receive antenna within the cone of radiation from the EUT. The specified measurement detectors were used for comparison of the emissions to the peak and average specification limits.



PRODUCT DESCRIPTION

Client and Equipment under Test (EUT) Information

Company Name:	SMART Technologies ULC
Address:	Suite 600, 214 11 Ave SW
City, State, Zip:	Calgary, AB T2R 0K1 CANADA
Test Requested By:	Sean MacKellar
EUT:	PQR-3
First Date of Test:	January 22, 2026
Last Date of Test:	February 5, 2026
Receipt Date of Samples:	January 22, 2026
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
The PQR-3 is a multistylus accessory for use with SMART Interactive Flat Panel displays. The PQR-3 is a WPT client device, powered by a hybrid-supercap, which can be charged via inductive WPT charging. The PQR-3 utilizes a proprietary 2.4 GHz radio for communication. Transmission is possible while charging (via WPT).

Testing Objective:
To demonstrate compliance of the proprietary 2.4 GHz radio to to FCC 15.247/RSS-247 requirements.

POWER SETTINGS AND ANTENNAS

The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information. The power settings below reflect the maximum power that the EUT is allowed to transmit at during normal operation.

ANTENNA GAIN (dBi)

Type	Manufacturer:	Frequency Range (MHz)	Gain (dBi)
Multilayer Chip	Wurth Elektronik	2400-2500	2.5

The EUT was tested using the power settings provided by the manufacturer which were based upon:

☒ Test software settings Software / firmware used for testing:_____STM32CubeMonitor-RF/ 2.18.0_____
☐ Rated power settings

SETTINGS FOR ALL TESTS IN THIS REPORT

Modulation Types / Data Rates	Type	Channel	Position	Frequency (MHz)	Power Setting
GFSK 1 Mbps	DTS	37	Low Channel	2402	31
		17	Mid Channel	2440	31
		18	Mid Channel	2442	31
		39	High Channel	2480	31

CONFIGURATIONS

Configuration SMTE0017-1

Software/Firmware Running During Test	
Description	**Version**
BLE_TransparentMode_Pen	1.2.0
STM32CubeMonitor-RF	2.18.0

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
SMART MultiStylus Board	SMART Technologies ULC	PQRMOD3	Conducted BLE

Peripherals in Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
DC Power Supply	Powerbes	SPS605	N/A
Interface Board	SMART Technologies ULC	1042903-01	2172061A_Y69_240921
Laptop	HP	HSN-124C-4	5CG925B25F

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Leads	No	1 m	No	SMART MultiStylus Board	DC Power Supply
Flex	No	0.3 m	No	SMART MultiStylus Board	Interface Board
FTDI UART to USB-A + Extension	Yes	10 m	No	Interface Board	Laptop

Configuration SMTE0017-2

Software/Firmware Running During Test	
Description	**Version**
Pen_TxRxCycle	2.1.1.202

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
SMART MultiStylus	SMART Technologies ULC	PQR-3	R30

Peripherals in Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
DC Power Supply	Tektronix	PS280	TW55636

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Leads	No	1 m	No	SMART MultiStylus Board	DC Power Supply

CONFIGURATIONS

Configuration SMTE0017-6

Software/Firmware Running During Test	
Description	**Version**
ToolSensePrimaryDebug	2.0.0.108

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
SMART MultiStylus	SMART Technologies ULC	PQR-3	Engineering Load

Peripherals in Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
150W DC Electronic Load	BK Precision	8540	182C24125
SMART Docking Station	SMART Technologies ULC	CBQR-3	Normal
Laptop	HP	HSN-124C-4	5CG925B25F
DC Power supply	Tektronix	PS280	TW55636
Laptop PSU	HP	HSTNN-CA15	WFTLQ0CGC578BE

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Load	No	1.5 m	Yes	SMART MultiStylus	DC Load
DC Power	No	1.5 m	Yes	SMART MultiStylus	DC Power
USB-C to USB-A	Yes	1.0 m	No	SMART Docking Station	Laptop
Laptop-to-PSU	No	1.6 m	No	Laptop	Laptop PSU
PSU-to-AC Mains	No	1.2 m	No	Laptop PSU	AC Mains

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2026-01-22	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
2	2026-02-04	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	2026-02-04	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
4	2026-02-04	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
5	2026-02-04	DTS Bandwidth (6 Db)	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	2026-02-04	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
7	2026-02-04	RF Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
8	2026-02-04	Equivalent Isotropic Radiated Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
9	2026-02-04	Occupied Bandwidth (99%)	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
10	2026-02-05	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
11	2026-02-05	Radiated Band Edge	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

POWERLINE CONDUCTED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Receiver	Gauss Instruments	TDEMI 30M	ARR	2025-05-20	2026-05-20
Cable - Conducted Cable Assembly	Northwest EMC	NC4, HHF, TYL	NC4A	2025-02-10	2026-02-10
LISN	Solar Electronics	9252-50-R-24-BNC	LIK	2025-07-07	2026-07-07
Pulse Limiter	Narda Safety Test Solutions	PL-01	VAD	NCR	NCR
LISN	Solar Electronics	9252-50-R-24-BNC	LIP	2025-11-12	2026-11-12

CONFIGURATIONS INVESTIGATED

SMTE0017-6

MODES INVESTIGATED

Proprietary 2.4 GHz radio communication with charge cradle

POWERLINE CONDUCTED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

EUT:	PQR-3	Work Order:	SMTE0016
Serial Number:	Engineering Load	Date:	2026-01-22
Customer:	SMART Technologies ULC	Temperature:	20.9°C
Attendees:	Sean MacKellar	Relative Humidity:	27.4%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mb
Tested By:	Harry Zhao	Job Site:	NC05
Power:	Power over USB	Configuration:	SMTE0017-6

TEST PARAMETERS

Run #:	52	Line:	High Line	Add. Ext. Attenuation (dB):	0

COMMENTS

Normal sample flashed with WPT firmware. Engineering load pen sample docked in cradle. Laptop PSU connected 120V/60Hz AC. The manufacturer is unable to force the radio into continuous transmission while charging, therefore testing was performed in a normal mode of operation.

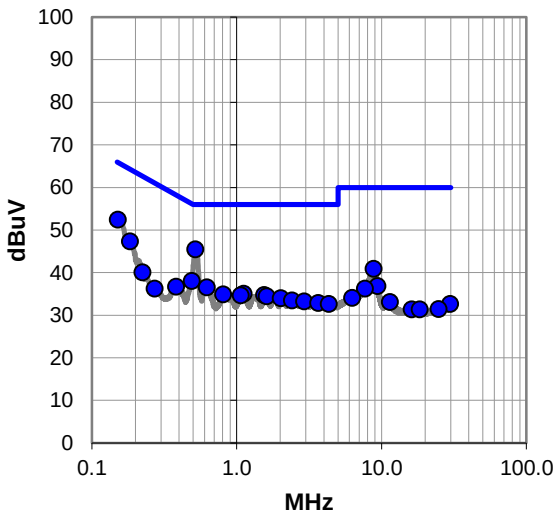
EUT OPERATING MODES

Proprietary 2.4 GHz radio communication with charge cradle

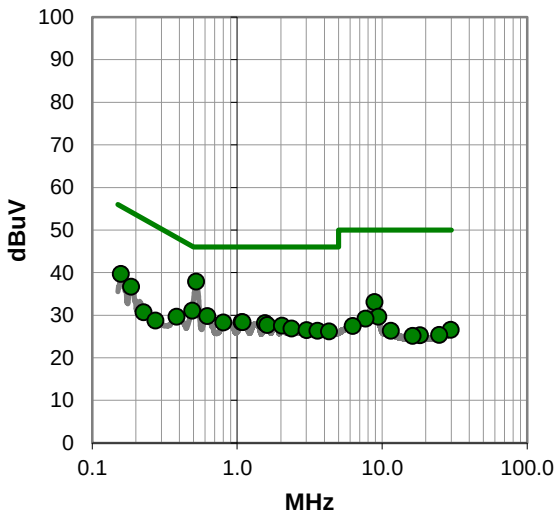
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



POWERLINE CONDUCTED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

RESULTS - Run #52

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.519	25.9	19.6	45.5	56.0	-10.5
0.152	32.4	20.1	52.5	65.9	-13.4
0.184	27.5	19.9	47.4	64.3	-16.9
0.489	18.5	19.6	38.1	56.2	-18.1
8.809	20.9	20.0	40.9	60.0	-19.1
0.623	17.0	19.6	36.6	56.0	-19.4
1.114	15.4	19.7	35.1	56.0	-20.9
0.808	15.3	19.6	34.9	56.0	-21.1
1.549	15.1	19.7	34.8	56.0	-21.2
1.069	15.0	19.7	34.7	56.0	-21.3
0.382	17.0	19.7	36.7	58.2	-21.5
1.610	14.8	19.7	34.5	56.0	-21.5
2.015	14.2	19.8	34.0	56.0	-22.0
2.408	13.7	19.8	33.5	56.0	-22.5
0.223	20.3	19.8	40.1	62.7	-22.6
2.921	13.5	19.8	33.3	56.0	-22.7
3.653	13.0	19.9	32.9	56.0	-23.1
9.393	16.8	20.1	36.9	60.0	-23.1
4.314	12.8	19.9	32.7	56.0	-23.3
7.687	16.3	20.0	36.3	60.0	-23.7
0.272	16.6	19.7	36.3	61.1	-24.8
6.253	14.1	20.0	34.1	60.0	-25.9
11.446	13.0	20.1	33.1	60.0	-26.9
29.752	10.7	22.0	32.7	60.0	-27.3
24.749	10.2	21.3	31.5	60.0	-28.5

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.519	18.3	19.6	37.9	46.0	-8.1
0.489	11.5	19.6	31.1	46.2	-15.1
0.158	19.6	20.1	39.7	55.6	-15.9
0.623	10.2	19.6	29.8	46.0	-16.2
8.859	13.1	20.0	33.1	50.0	-16.9
0.185	16.8	19.9	36.7	54.3	-17.6
1.073	8.7	19.7	28.4	46.0	-17.6
1.085	8.7	19.7	28.4	46.0	-17.6
0.802	8.7	19.6	28.3	46.0	-17.7
1.554	8.5	19.7	28.2	46.0	-17.8
1.610	8.0	19.7	27.7	46.0	-18.3
2.037	7.8	19.8	27.6	46.0	-18.4
0.382	10.0	19.7	29.7	48.2	-18.5
2.365	7.1	19.8	26.9	46.0	-19.1
3.009	6.6	19.9	26.5	46.0	-19.5
3.586	6.5	19.9	26.4	46.0	-19.6
4.286	6.3	19.9	26.2	46.0	-19.8
9.393	9.6	20.1	29.7	50.0	-20.3
7.692	9.2	20.0	29.2	50.0	-20.8
0.226	10.9	19.8	30.7	52.6	-21.9
0.272	9.1	19.7	28.8	51.1	-22.3
6.253	7.5	20.0	27.5	50.0	-22.5
29.751	4.6	22.0	26.6	50.0	-23.4
11.497	6.3	20.1	26.4	50.0	-23.6
24.751	4.1	21.3	25.4	50.0	-24.6

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

EUT:	PQR-3	Work Order:	SMTE0016
Serial Number:	Engineering Load	Date:	2026-01-22
Customer:	SMART Technologies ULC	Temperature:	20.9°C
Attendees:	Sean MacKellar	Relative Humidity:	27.4%
Customer Project:	None	Bar. Pressure (PMSL):	1018 mb
Tested By:	Harry Zhao	Job Site:	NC05
Power:	Power over USB	Configuration:	SMTE0017-6

TEST PARAMETERS

Run #:	53	Line:	Neutral	Add. Ext. Attenuation (dB):	0

COMMENTS

Normal sample flashed with WPT firmware. Engineering load pen sample docked in cradle. Laptop PSU connected 120V/60Hz AC. The manufacturer is unable to force the radio into continuous transmission while charging, therefore testing was performed in a normal mode of operation.

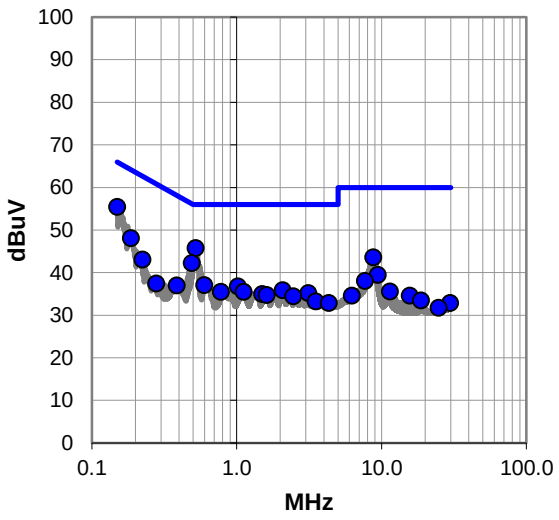
EUT OPERATING MODES

Proprietary 2.4 GHz radio communication with charge cradle

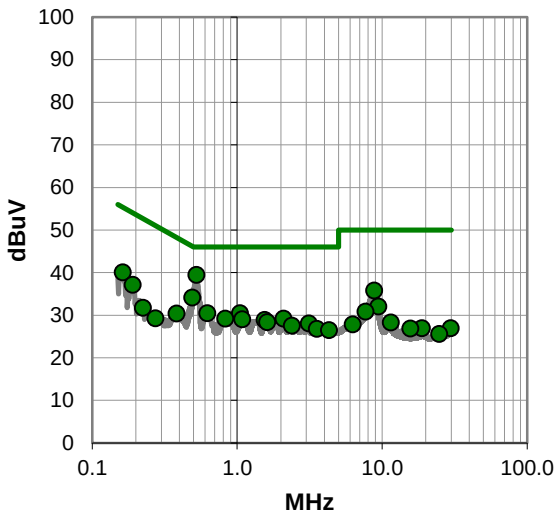
DEVIATIONS FROM TEST STANDARD

None

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



POWERLINE CONDUCTED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

RESULTS - Run #53

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.521	26.2	19.6	45.8	56.0	-10.2
0.150	35.3	20.2	55.5	66.0	-10.5
0.489	22.7	19.6	42.3	56.2	-13.9
0.187	28.2	19.9	48.1	64.2	-16.1
8.778	23.6	20.0	43.6	60.0	-16.4
0.599	17.5	19.6	37.1	56.0	-18.9
1.020	17.1	19.7	36.8	56.0	-19.2
0.223	23.3	19.8	43.1	62.7	-19.6
2.082	16.1	19.8	35.9	56.0	-20.1
0.777	15.9	19.6	35.5	56.0	-20.5
1.119	15.8	19.7	35.5	56.0	-20.5
9.406	19.4	20.1	39.5	60.0	-20.5
3.125	15.3	19.9	35.2	56.0	-20.8
1.500	15.3	19.7	35.0	56.0	-21.0
0.385	17.3	19.7	37.0	58.2	-21.2
1.613	15.1	19.7	34.8	56.0	-21.2
2.452	14.7	19.8	34.5	56.0	-21.5
7.684	18.1	20.0	38.1	60.0	-21.9
3.510	13.4	19.9	33.3	56.0	-22.7
4.315	13.0	19.9	32.9	56.0	-23.1
0.278	17.8	19.7	37.5	60.9	-23.4
11.447	15.5	20.1	35.6	60.0	-24.4
6.238	14.6	20.0	34.6	60.0	-25.4
15.640	14.0	20.6	34.6	60.0	-25.4
18.753	12.6	20.9	33.5	60.0	-26.5

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.522	19.9	19.6	39.5	46.0	-6.5
0.489	14.6	19.6	34.2	46.2	-12.0
8.810	15.8	20.0	35.8	50.0	-14.2
0.162	20.1	20.0	40.1	55.4	-15.3
0.621	10.9	19.6	30.5	46.0	-15.5
1.043	10.8	19.7	30.5	46.0	-15.5
0.824	9.6	19.6	29.2	46.0	-16.8
2.082	9.4	19.8	29.2	46.0	-16.8
0.190	17.3	19.9	37.2	54.1	-16.9
1.082	9.4	19.7	29.1	46.0	-16.9
1.546	9.2	19.7	28.9	46.0	-17.1
1.613	8.7	19.7	28.4	46.0	-17.6
0.382	10.7	19.7	30.4	48.2	-17.8
3.125	8.2	19.9	28.1	46.0	-17.9
9.396	12.0	20.1	32.1	50.0	-17.9
2.379	7.8	19.8	27.6	46.0	-18.4
7.684	10.9	20.0	30.9	50.0	-19.1
3.537	6.9	19.9	26.8	46.0	-19.2
4.299	6.6	19.9	26.5	46.0	-19.5
0.223	12.0	19.8	31.8	52.7	-20.9
11.442	8.2	20.1	28.3	50.0	-21.7
0.272	9.6	19.7	29.3	51.1	-21.8
6.247	7.9	20.0	27.9	50.0	-22.1
18.753	6.1	20.9	27.0	50.0	-23.0
29.751	5.0	22.0	27.0	50.0	-23.0

CONCLUSION

Pass

Tested By

DUTY CYCLE

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

TEST DESCRIPTION

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.

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

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	2025-05-09	2026-05-09
Block - DC	Fairview Microwave	SD3379	AMU	2025-05-09	2026-05-09
Attenuator	Fairview Microwave	SA4014-20	QAA	2025-05-09	2026-05-09
Generator - Signal	Agilent	N5183A	TIA	2024-07-09	2026-07-09
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2025-04-21	2026-04-21

DUTY CYCLE

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	Conducted BLE	Date:	2026-02-04
Customer:	SMART Technologies ULC	Temperature:	19.6°C
Attendees:	Sean MacKellar	Relative Humidity:	43.1%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mbar
Tested By:	Harry Zhao	Job Site:	NC04
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-1

COMMENTS

Reference level offset includes: measurement cable, 20 dB attenuator, DC block & customer's patch cable.

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

N/A

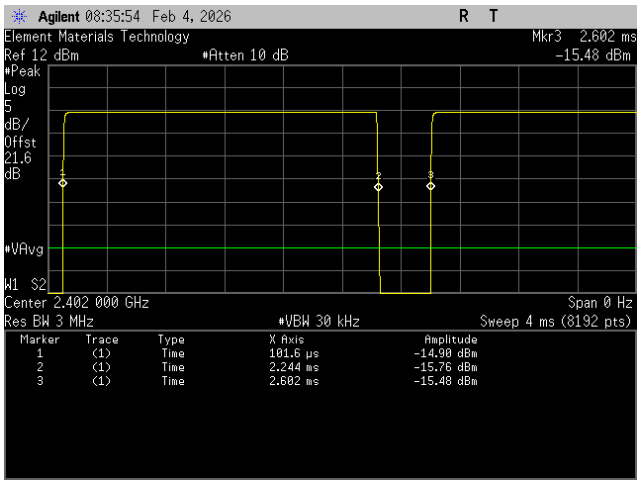
Tested By

TEST RESULTS

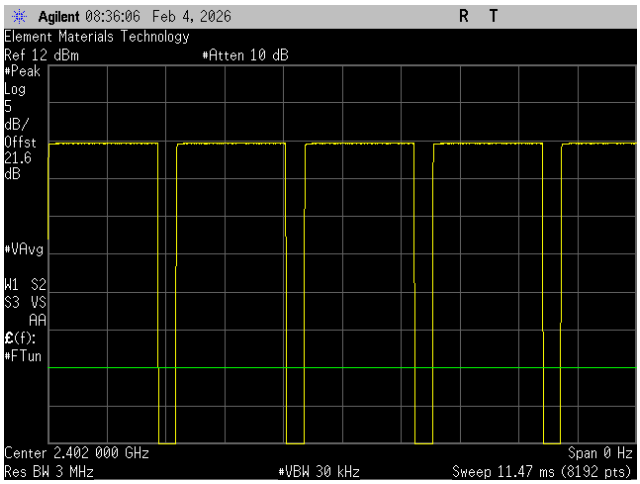
	Pulse Width	Period	Number of Pulses	Value (%)	Limit N/A ()	Results
GFSK 1 Mbps						
Low Channel, 2402 MHz	2.143 ms	2.5 ms	1	85.7	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
Mid Channel, 2442 MHz	2.143 ms	2.5 ms	1	85.7	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A
High Channel, 2480 MHz	2.143 ms	2.5 ms	1	85.7	N/A	N/A
	N/A	N/A	5	N/A	N/A	N/A

DUTY CYCLE

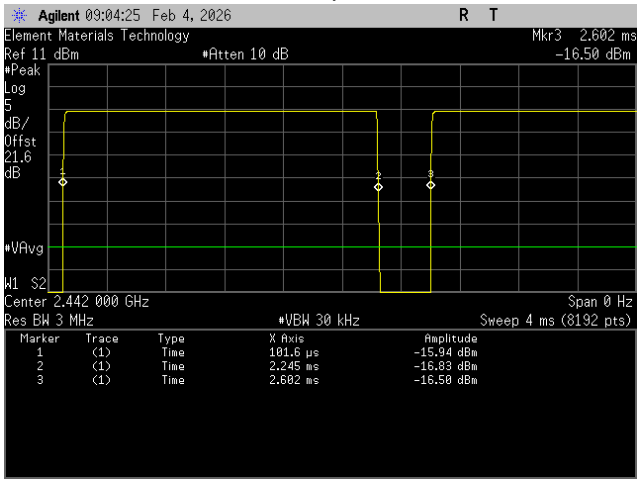
element
TbtTx 2025.09.12.2
WTD.2025.08.28.0



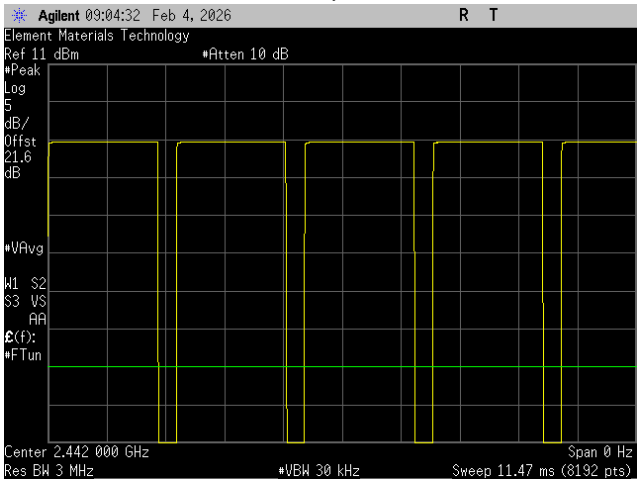
GFSK 1 Mbps
Low Channel, 2402 MHz



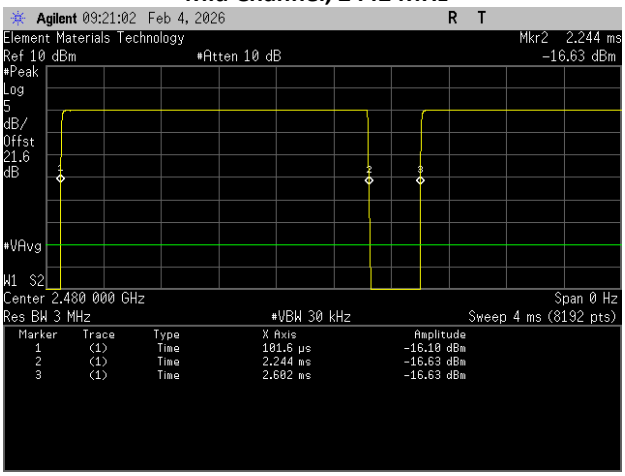
GFSK 1 Mbps
Low Channel, 2402 MHz



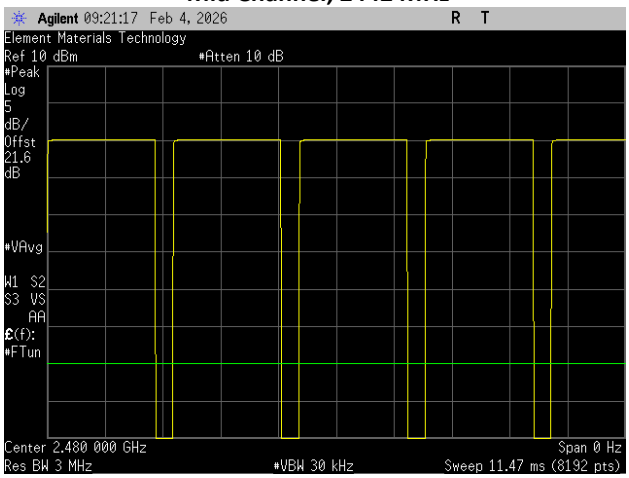
GFSK 1 Mbps
Mid Channel, 2442 MHz



GFSK 1 Mbps
Mid Channel, 2442 MHz



GFSK 1 Mbps
High Channel, 2480 MHz



GFSK 1 Mbps
High Channel, 2480 MHz

DTS BANDWIDTH (6 dB)

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

TEST DESCRIPTION

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.

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

The EUT was set to the channels and modes listed in the datasheet.

The 6dB DTS bandwidth was measured using the following analyzer settings:

Detector: Peak
Sweep time: Auto
Resolution Bandwidth: 1% to 5% of the OBW but not less than 100 kHz
Video Bandwidth: ≥ 3 * RBW
Trace: Max Hold
Span: Large enough to capture all products of the modulation process, including the emission skirts.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	2025-05-09	2026-05-09
Block - DC	Fairview Microwave	SD3379	AMU	2025-05-09	2026-05-09
Attenuator	Fairview Microwave	SA4014-20	QAA	2025-05-09	2026-05-09
Generator - Signal	Agilent	N5183A	TIA	2024-07-09	2026-07-09
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2025-04-21	2026-04-21

DTS BANDWIDTH (6 dB)

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	Conducted BLE	Date:	2026-02-04
Customer:	SMART Technologies ULC	Temperature:	19.7°C
Attendees:	Sean MacKellar	Relative Humidity:	42.8%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mbar
Tested By:	Harry Zhao	Job Site:	NC04
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-1

COMMENTS

Reference level offset includes: measurement cable, 20 dB attenuator, DC block & customer's patch cable.

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

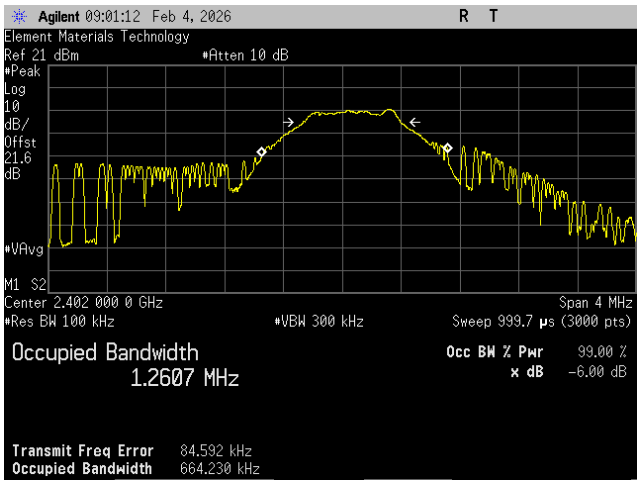
Tested By

TEST RESULTS

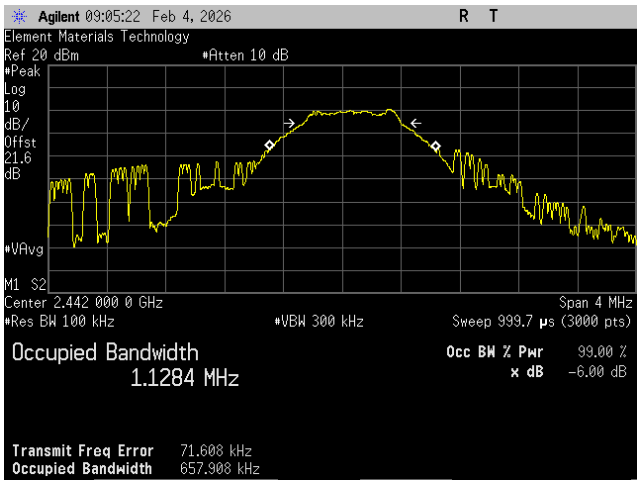
	Value	Limit	Result
GFSK 1 Mbps			
Low Channel, 2402 MHz	664.23 kHz	≥ 500 kHz	Pass
Mid Channel, 2442 MHz	657.908 kHz	≥ 500 kHz	Pass
High Channel, 2480 MHz	662.393 kHz	≥ 500 kHz	Pass

DTS BANDWIDTH (6 dB)

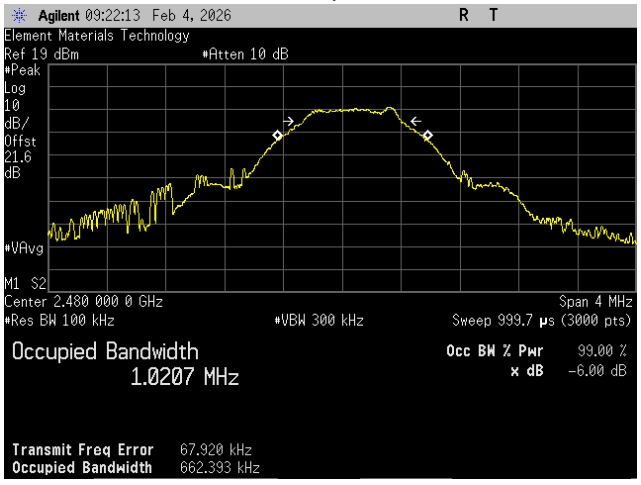
element
TbtTx 2025.09.12.2
WTD.2025.08.28.0



GFSK 1 Mbps
Low Channel, 2402 MHz



GFSK 1 Mbps
Mid Channel, 2442 MHz



GFSK 1 Mbps
High Channel, 2480 MHz

OUTPUT POWER

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

TEST DESCRIPTION

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.

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

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum.

Prior to measuring peak transmit power the DTS bandwidth (B) was measured.

The method found in ANSI C63.10:2020 Section 11.9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.

Analyzer settings:

Detector: Peak
Sweep time: Auto
Resolution Bandwidth: ≥ DTS bandwidth
Video Bandwidth: ≥ 3 * RBW
Trace: Max Hold

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	2025-05-09	2026-05-09
Block - DC	Fairview Microwave	SD3379	AMU	2025-05-09	2026-05-09
Attenuator	Fairview Microwave	SA4014-20	QAA	2025-05-09	2026-05-09
Generator - Signal	Agilent	N5183A	TIA	2024-07-09	2026-07-09
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2025-04-21	2026-04-21

OUTPUT POWER

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	Conducted BLE	Date:	2026-02-04
Customer:	SMART Technologies ULC	Temperature:	19.6°C
Attendees:	Sean MacKellar	Relative Humidity:	43.3%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mbar
Tested By:	Harry Zhao	Job Site:	NC04
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-1

COMMENTS

Reference level offset includes: measurement cable, 20 dB attenuator, DC block & customer's patch cable.

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

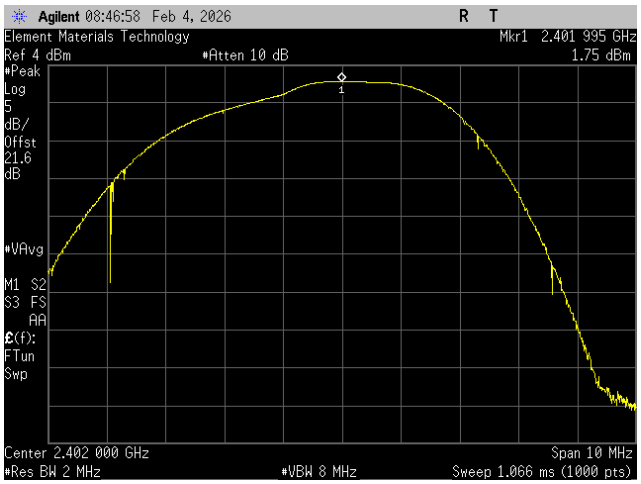
Pass

Tested By

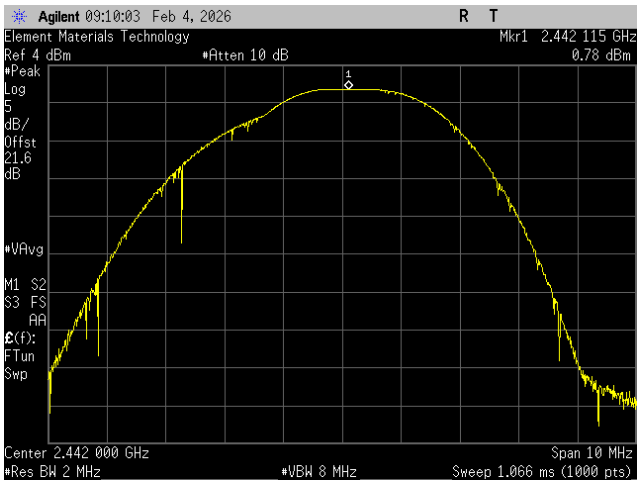
TEST RESULTS

	Out Pwr (dBm)	Limit (dBm)	Result
GFSK 1 Mbps			
Low Channel, 2402 MHz	1.75	30	Pass
Mid Channel, 2442 MHz	0.782	30	Pass
High Channel, 2480 MHz	0.161	30	Pass

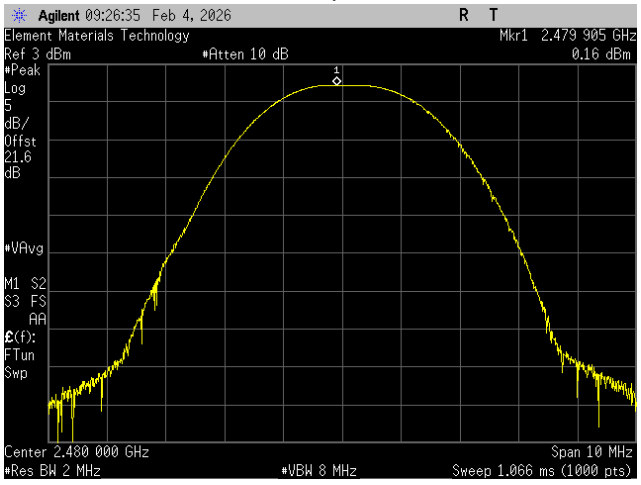
OUTPUT POWER



GFSK 1 Mbps
Low Channel, 2402 MHz



GFSK 1 Mbps
Mid Channel, 2442 MHz



GFSK 1 Mbps
High Channel, 2480 MHz

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

TEST DESCRIPTION

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.

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

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum.

Prior to measuring peak transmit power the DTS bandwidth (B) was measured.

The method found in ANSI C63.10:2020 Section 11.9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.

Equivalent Isotropic Radiated Power (EIRP) = Max Measured Power + Antenna gain (dBi)

Analyzer settings:

- Detector: Peak
- Sweep time: Auto
- Resolution Bandwidth: ≥ DTS bandwidth
- Video Bandwidth: ≥ 3 * RBW
- Trace: Max Hold

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	2025-05-09	2026-05-09
Block - DC	Fairview Microwave	SD3379	AMU	2025-05-09	2026-05-09
Attenuator	Fairview Microwave	SA4014-20	QAA	2025-05-09	2026-05-09
Generator - Signal	Agilent	N5183A	TIA	2024-07-09	2026-07-09
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2025-04-21	2026-04-21

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	Conducted BLE	Date:	2026-02-04
Customer:	SMART Technologies ULC	Temperature:	20.3°C
Attendees:	Sean MacKellar	Relative Humidity:	42.1%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mbar
Tested By:	Harry Zhao	Job Site:	NC04
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-1

COMMENTS

Reference level offset includes: measurement cable, 20 dB attenuator, DC block & customer's patch cable.

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

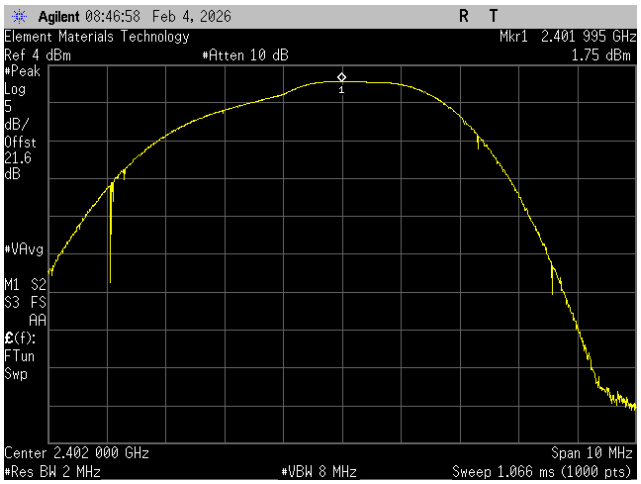
Tested By

TEST RESULTS

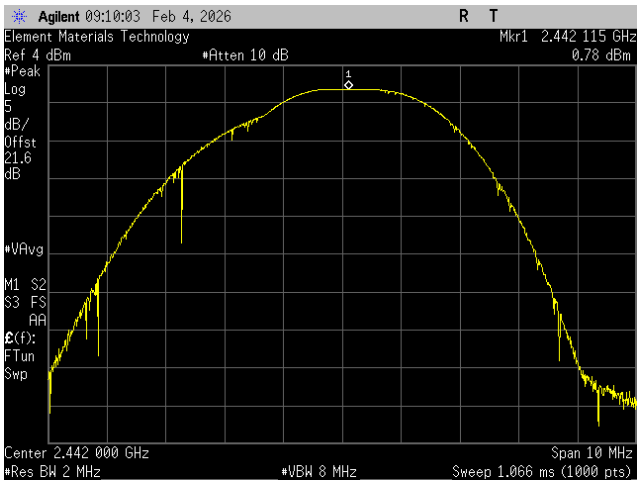
	Out Pwr (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Result
GFSK 1 Mbps					
Low Channel, 2402 MHz	1.75	2.5	4.25	36	Pass
Mid Channel, 2442 MHz	0.782	2.5	3.282	36	Pass
High Channel, 2480 MHz	0.161	2.5	2.661	36	Pass

EQUIVALENT ISOTROPIC RADIATED POWER (EIRP)

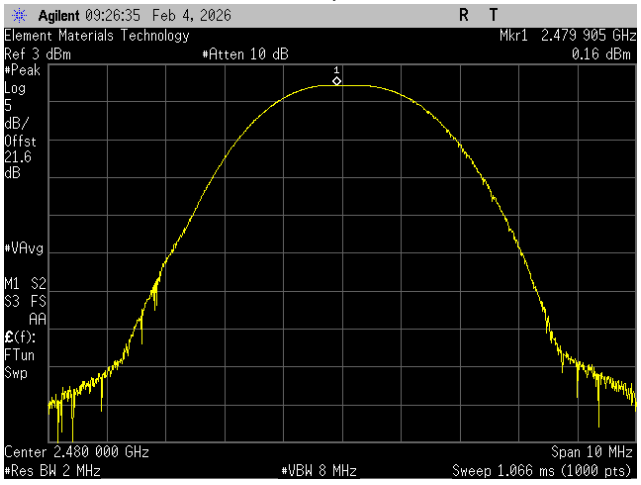
element
TbtTx 2025.09.12.2
WTD.2025.08.28.0



GFSK 1 Mbps
Low Channel, 2402 MHz



GFSK 1 Mbps
Mid Channel, 2442 MHz



GFSK 1 Mbps
High Channel, 2480 MHz

POWER SPECTRAL DENSITY

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

TEST DESCRIPTION

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.

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

The maximum power spectral density measurements was measured using the channels and modes as called out on the following data sheets.

Per the procedure outlined in ANSI C63.10 the peak power spectral density was measured in a 3 kHz RBW.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2025-04-21	2026-04-21
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	2025-05-09	2026-05-09
Generator - Signal	Agilent	N5183A	TIA	2024-07-09	2026-07-09
Block - DC	Fairview Microwave	SD3379	AMU	2025-05-09	2026-05-09
Attenuator	Fairview Microwave	SA4014-20	QAA	2025-05-09	2026-05-09

POWER SPECTRAL DENSITY

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	Conducted BLE	Date:	2026-02-04
Customer:	SMART Technologies ULC	Temperature:	19.7°C
Attendees:	Sean MacKellar	Relative Humidity:	42.7%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mbar
Tested By:	Harry Zhao	Job Site:	NC04
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-1

COMMENTS

Reference level offset includes: measurement cable, 20 dB attenuator, DC block & customer's patch cable.

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

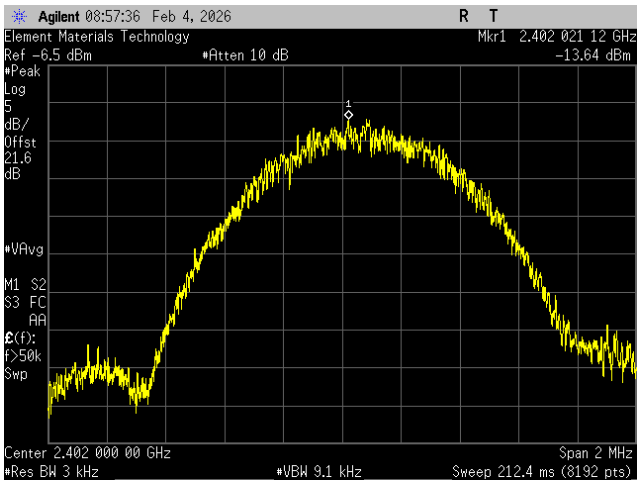
Tested By

TEST RESULTS

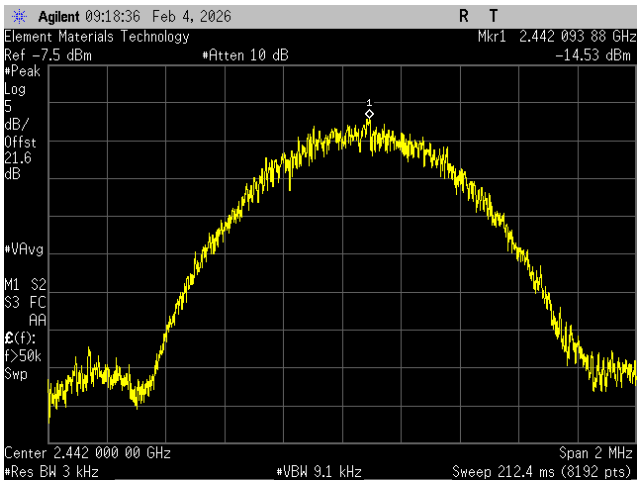
	Value dBm/3kHz	Limit ≤ (dBm/3kHz)	Results
GFSK 1 Mbps			
Low Channel, 2402 MHz	-13.638	8	Pass
Mid Channel, 2442 MHz	-14.531	8	Pass
High Channel, 2480 MHz	-15.443	8	Pass

POWER SPECTRAL DENSITY

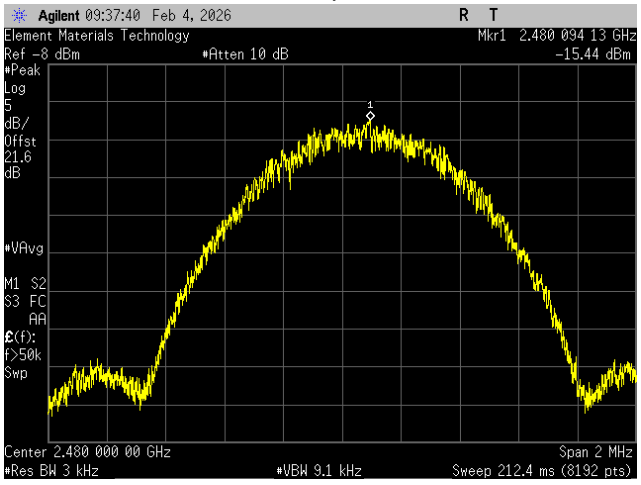
element
TbtTx 2025.09.12.2
WTD.2025.08.28.0



GFSK 1 Mbps
Low Channel, 2402 MHz



GFSK 1 Mbps
Mid Channel, 2442 MHz



GFSK 1 Mbps
High Channel, 2480 MHz

BAND EDGE COMPLIANCE

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

TEST DESCRIPTION

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.

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

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge. The analyzer screen captures for this test show an example of the emission mask for the test mode also used during the radiated spurious emissions at the restricted band edges test.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2025-04-21	2026-04-21
Generator - Signal	Agilent	N5183A	TIA	2024-07-09	2026-07-09
Attenuator	Fairview Microwave	SA4014-20	QAA	2025-05-09	2026-05-09
Block - DC	Fairview Microwave	SD3379	AMU	2025-05-09	2026-05-09
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	2025-05-09	2026-05-09

BAND EDGE COMPLIANCE

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	Conducted BLE	Date:	2026-02-04
Customer:	SMART Technologies ULC	Temperature:	20.7°C
Attendees:	Sean MacKellar	Relative Humidity:	40.8%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mbar
Tested By:	Harry Zhao	Job Site:	NC04
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-1

COMMENTS

Reference level offset includes: measurement cable, 20 dB attenuator, DC block & customer's patch cable.

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

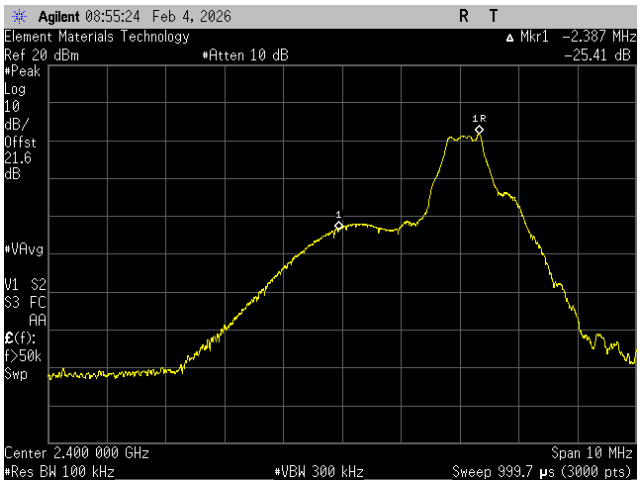
Tested By

TEST RESULTS

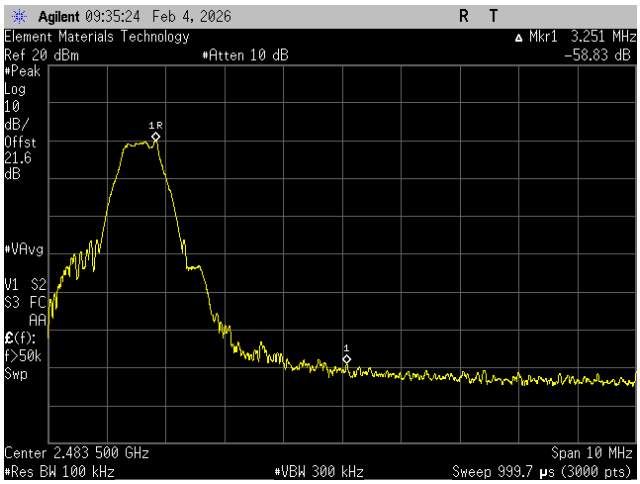
	Value (dBc)	Limit ≤ (dBc)	Result
GFSK 1 Mbps			
Low Channel, 2402 MHz	-25.41	-20	Pass
High Channel, 2480 MHz	-58.83	-20	Pass

BAND EDGE COMPLIANCE

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0



GFSK 1 Mbps
Low Channel, 2402 MHz



GFSK 1 Mbps
High Channel, 2480 MHz

SPURIOUS CONDUCTED EMISSIONS

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

TEST DESCRIPTION

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.

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3379	AMU	2025-05-09	2026-05-09
Attenuator	Fairview Microwave	SA4014-20	QAA	2025-05-09	2026-05-09
Generator - Signal	Agilent	N5183A	TIA	2024-07-09	2026-07-09
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2025-04-21	2026-04-21
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	2025-05-09	2026-05-09

SPURIOUS CONDUCTED EMISSIONS

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	Conducted BLE	Date:	2026-02-04
Customer:	SMART Technologies ULC	Temperature:	19.8°C
Attendees:	Sean MacKellar	Relative Humidity:	42.6%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mbar
Tested By:	Harry Zhao	Job Site:	NC04
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-1

COMMENTS

Reference level offset includes: measurement cable, 20 dB attenuator, DC block & customer's patch cable.

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

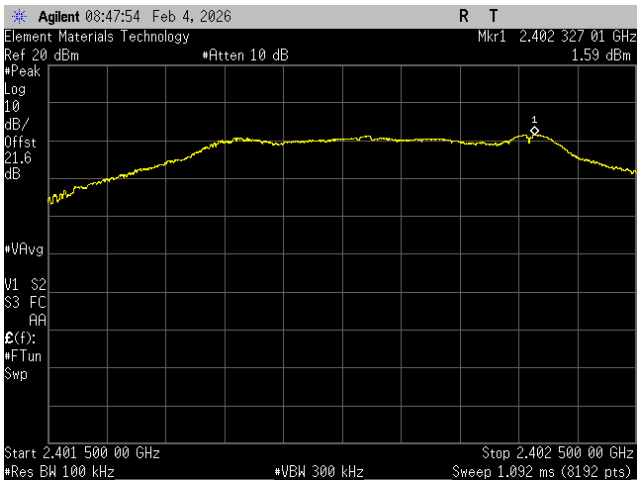
Tested By

TEST RESULTS

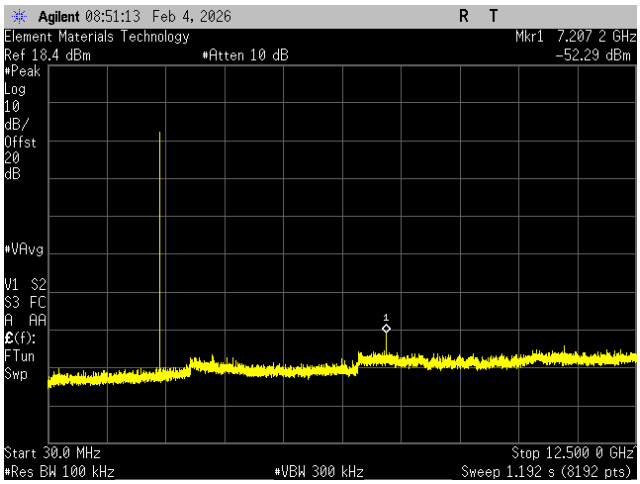
	Frequency Range	Measured Freq (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result
GFSK 1 Mbps					
Low Channel, 2402 MHz	Fundamental	2402.33	N/A	N/A	N/A
	30 MHz - 12.5 GHz	7207.2	-53.88	-20	Pass
	12.5 GHz - 25 GHz	24261.4	-52.57	-20	Pass
Mid Channel, 2442 MHz	Fundamental	2442.32	N/A	N/A	N/A
	30 MHz - 12.5 GHz	7326.9	-52.02	-20	Pass
	12.5 GHz - 25 GHz	24617	-52.4	-20	Pass
High Channel, 2480 MHz	Fundamental	2480.32	N/A	N/A	N/A
	30 MHz - 12.5 GHz	7439.5	-53.83	-20	Pass
	12.5 GHz - 25 GHz	24056.9	-51.13	-20	Pass

SPURIOUS CONDUCTED EMISSIONS

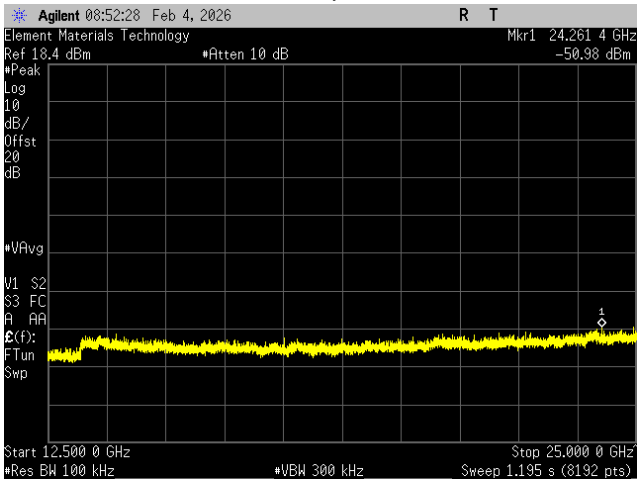
element
TbtTx 2025.09.12.2
WTD.2025.08.28.0



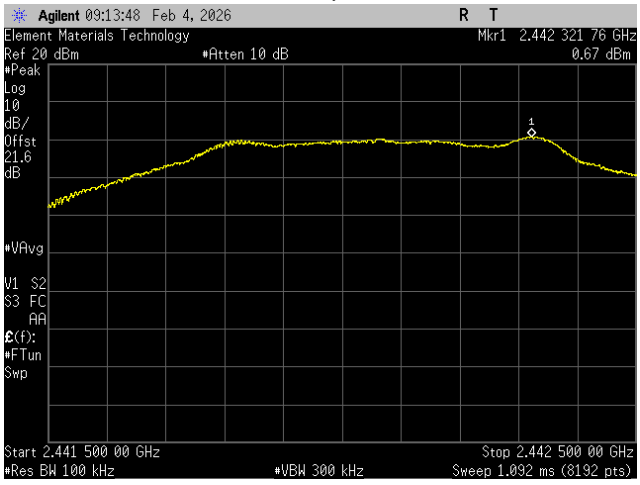
GFSK 1 Mbps
Low Channel, 2402 MHz



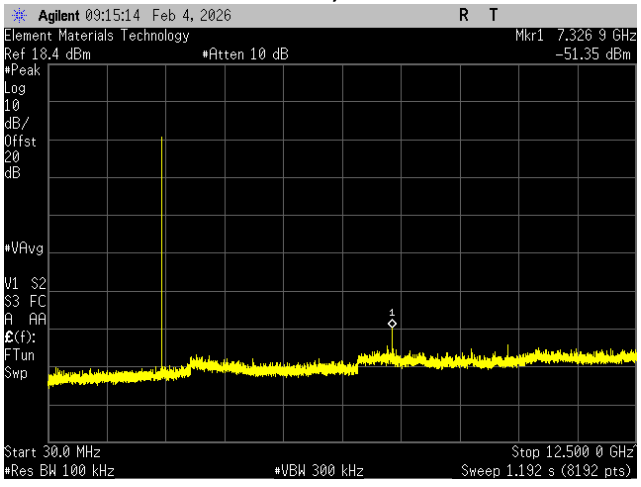
GFSK 1 Mbps
Low Channel, 2402 MHz



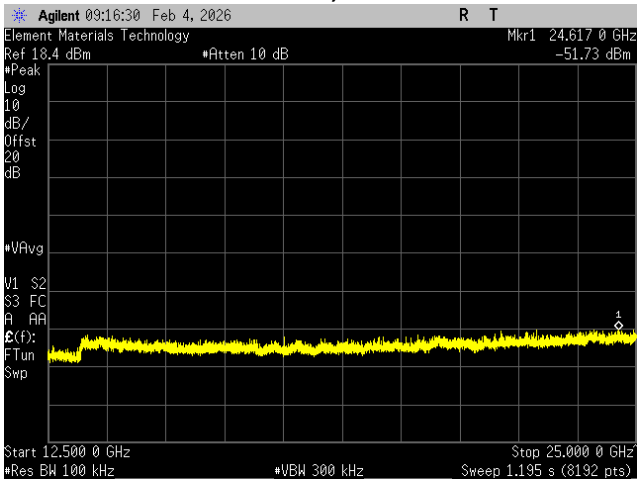
GFSK 1 Mbps
Low Channel, 2402 MHz



GFSK 1 Mbps
Mid Channel, 2442 MHz



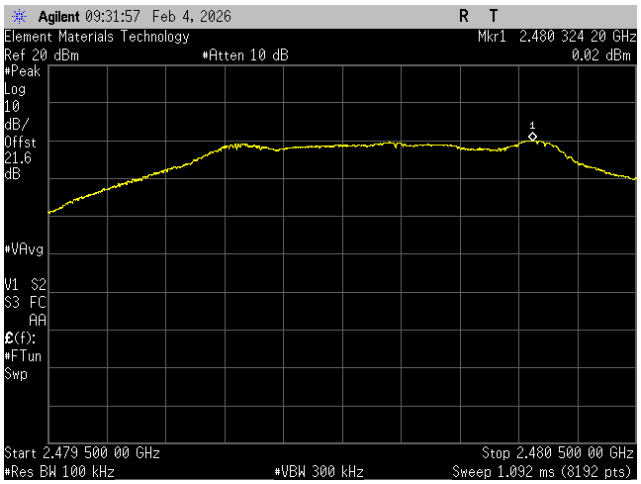
GFSK 1 Mbps
Mid Channel, 2442 MHz



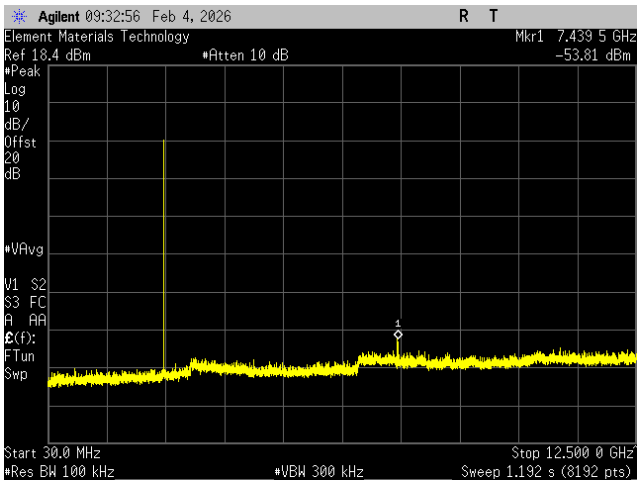
GFSK 1 Mbps
Mid Channel, 2442 MHz

SPURIOUS CONDUCTED EMISSIONS

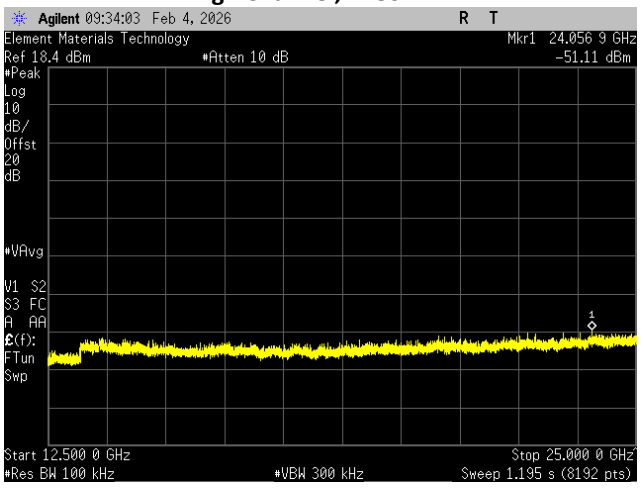
element
TbtTx 2025.09.12.2
WTD.2025.08.28.0



GFSK 1 Mbps
High Channel, 2480 MHz



GFSK 1 Mbps
High Channel, 2480 MHz



GFSK 1 Mbps
High Channel, 2480 MHz

OCCUPIED BANDWIDTH (99%)

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

TEST DESCRIPTION

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.

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

The 99% occupied bandwidth was measured with the EUT configured for continuous modulated operation.

Per ANSI C63.10:2020, 6.9.3, the spectrum analyzer was configured as follows:

Sweep time: Auto
Resolution Bandwidth: 1% to 5% of the OBW
Video Bandwidth: ≥ 3 * RBW
Trace: Max Hold
Span: Large enough to capture all products of the modulation process, including the emission skirts.

A sample detector was used unless the device was not able to be operated in a continuous transmit mode, in which case a peak detector was used.

The spectrum analyzer occupied bandwidth measurement function was used to sum the power of the transmission in linear terms to obtain the 99% bandwidth.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	2025-05-09	2026-05-09
Block - DC	Fairview Microwave	SD3379	AMU	2025-05-09	2026-05-09
Attenuator	Fairview Microwave	SA4014-20	QAA	2025-05-09	2026-05-09
Generator - Signal	Agilent	N5183A	TIA	2024-07-09	2026-07-09
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2025-04-21	2026-04-21

OCCUPIED BANDWIDTH (99%)

element
TbtTx 2025.09.12.2
WTD.2025.08.28.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	Conducted BLE	Date:	2026-02-04
Customer:	SMART Technologies ULC	Temperature:	20.7°C
Attendees:	Sean MacKellar	Relative Humidity:	41.2%
Customer Project:	None	Bar. Pressure (PMSL):	1010 mbar
Tested By:	Harry Zhao	Job Site:	NC04
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-1

COMMENTS

Reference level offset includes: measurement cable, 20 dB attenuator, DC block & customer's patch cable.

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

N/A

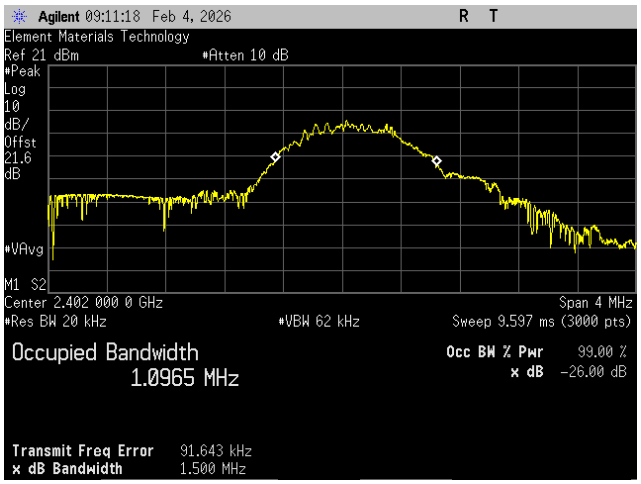
Tested By

TEST RESULTS

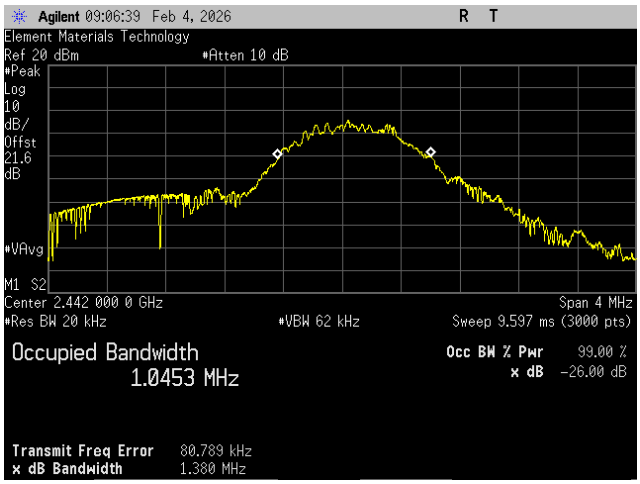
	Value	Limit	Result
GFSK 1 Mbps			
Low Channel, 2402 MHz	1.096 MHz	N/A	N/A
Mid Channel, 2442 MHz	1.045 MHz	N/A	N/A
High Channel, 2480 MHz	1.022 MHz	N/A	N/A

OCCUPIED BANDWIDTH (99%)

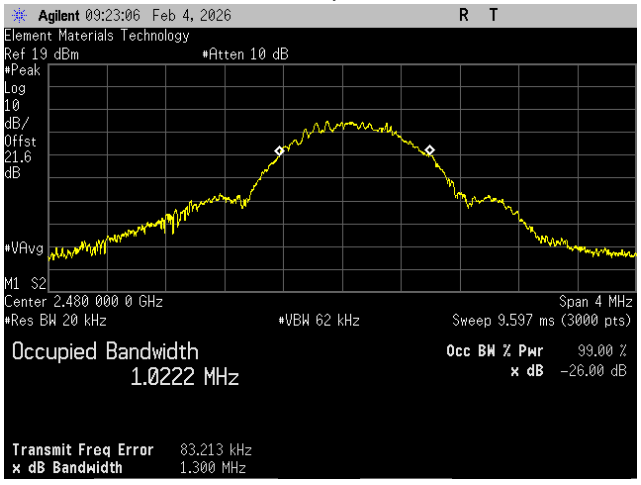
element
TbtTx 2025.09.12.2
WTD.2025.08.28.0



GFSK 1 Mbps
Low Channel, 2402 MHz



GFSK 1 Mbps
Mid Channel, 2442 MHz



GFSK 1 Mbps
High Channel, 2480 MHz

RADIATED BAND EDGE EMISSIONS

element
EmiR5 2025.04.30.2
WTD.2025.08.28.0

TEST DESCRIPTION

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.

The measurement was made in a radiated configuration of the fundamental with the carrier fully maximized for its highest radiated power.

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.

The 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 attenuation were used (if needed) 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:

PK = Peak Detector
AV = RMS Detector

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	Keysight	N9010A	AFN	2025-04-21	2026-04-21
Antenna - Double Ridge	ETS Lindgren	3115	AJM	2024-06-10	2026-06-10
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVZ	2025-05-10	2026-05-10
Cable	Northwest EMC	3115 Horn Cable	NC2	2025-05-10	2026-05-10
Attenuator	Fairview Microwave	SA18E-20	AQV	2025-07-31	2026-07-31

RADIATED BAND EDGE EMISSIONS

element
EmiR5 2025.04.30.2
WTD.2025.08.28.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	R30	Date:	2026-02-05
Customer:	SMART Technologies ULC	Temperature:	19.3°C
Attendees:	Sean MacKellar	Relative Humidity:	35.5%
Customer Project:	None	Bar. Pressure (PMSL):	1022 mbar
Tested By:	Harry Zhao	Job Site:	NC01
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-2

COMMENTS

The test mode operates at 85.4% duty cycle (DC), an upward DC correction factor of 10*log(1/DC) = 10*log(1/0.854) = 0.685 dB was applied to the average measurements. Per KDB 558074, Section 11, Question 3, protocol-limited duty cycles allow the application duty cycle correction factor that is based upon the worst-case duty cycle to the average measurements. When in actual operation, the max operating duty cycle is 3.118%. A downward DC correction factor of 10*log(0.03118) = -15.06 dB was applied to the average measurements. Total correction applied = -14.375 dB.

DEVIATIONS FROM TEST STANDARD

None

CONCLUSION

Pass

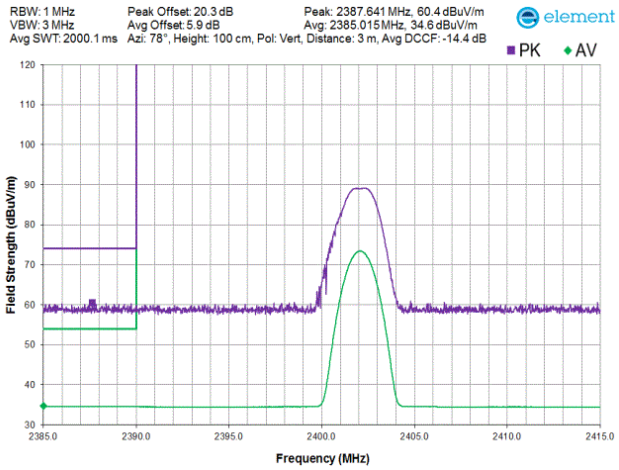
Tested By

TEST RESULTS

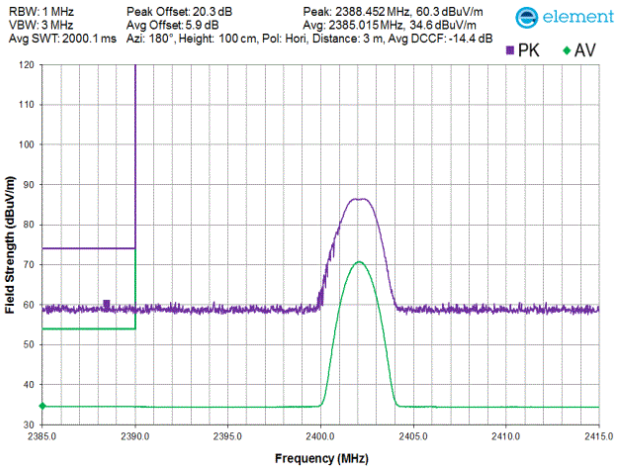
	Frequency (MHz)	PK (dBuV/m) AV (dBuV/m)	PK Lim (dBuV/m) AV Lim (dBuV/m)	Worst Margin (dB)	Pol. (H/V)	EUT Orientation	Results
GFSK 1 Mbps							
Low Channel, 2402 MHz	2387.641 2385.015	60.4 34.6	74.0 54.0	-13.6	V	Horizontal	Pass
	2388.452 2385.015	60.3 34.6	74.0 54.0	-13.7	H	Vertical	Pass
High Channel, 2480 MHz	2488.090 2483.503	61.4 34.5	74.0 54.0	-12.6	V	Vertical	Pass
	2484.933 2483.503	61.5 34.5	74.0 54.0	-12.5	H	Vertical	Pass
	2484.838 2483.503	61.1 34.5	74.0 54.0	-12.9	H	on Side	Pass
	2486.369 2483.503	61.3 34.5	74.0 54.0	-12.7	V	on Side	Pass
	2485.363 2483.503	61.7 34.5	74.0 54.0	-12.3	V	Horizontal	Pass
	2484.103 2483.503	61.5 34.5	74.0 54.0	-12.5	H	Horizontal	Pass

RADIATED BAND EDGE EMISSIONS

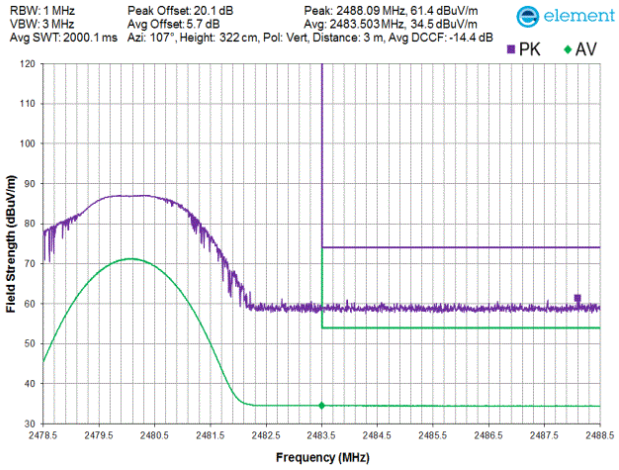
element
EmiR5 2025.04.30.2
WTD.2025.08.28.0



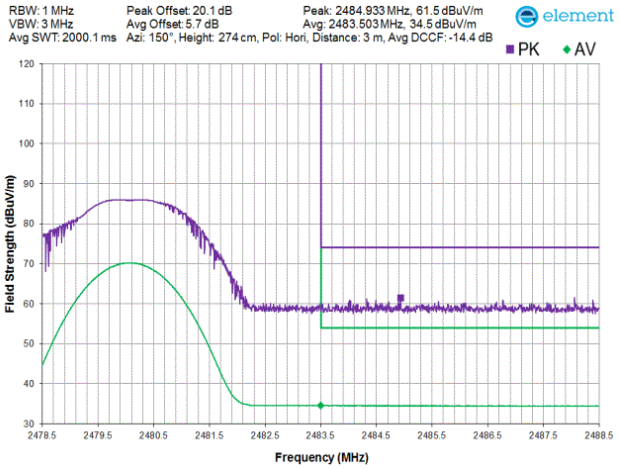
GFSK 1 Mbps
Low Channel, 2402 MHz



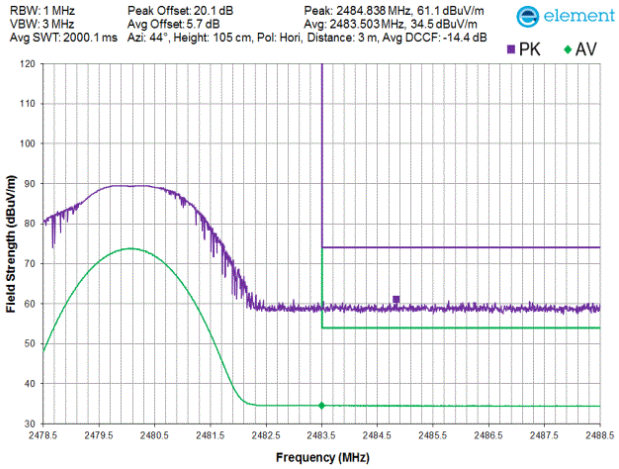
GFSK 1 Mbps
Low Channel, 2402 MHz



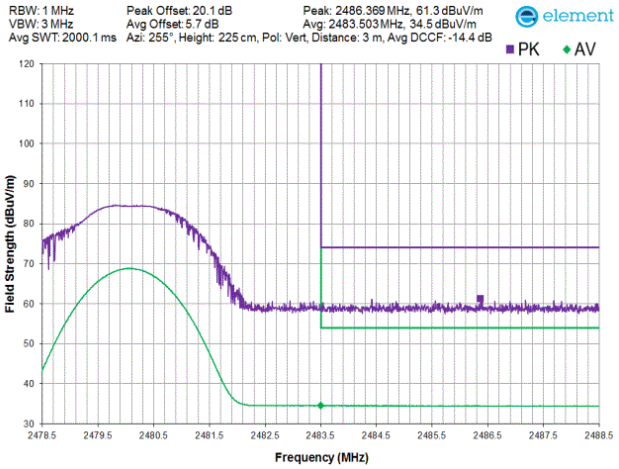
GFSK 1 Mbps
High Channel, 2480 MHz



GFSK 1 Mbps
High Channel, 2480 MHz



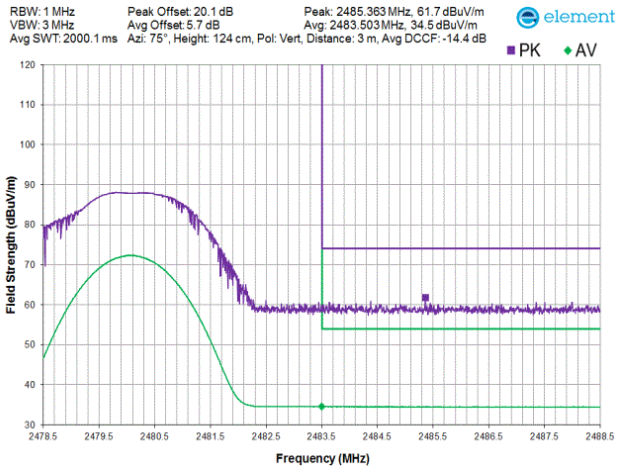
GFSK 1 Mbps
High Channel, 2480 MHz



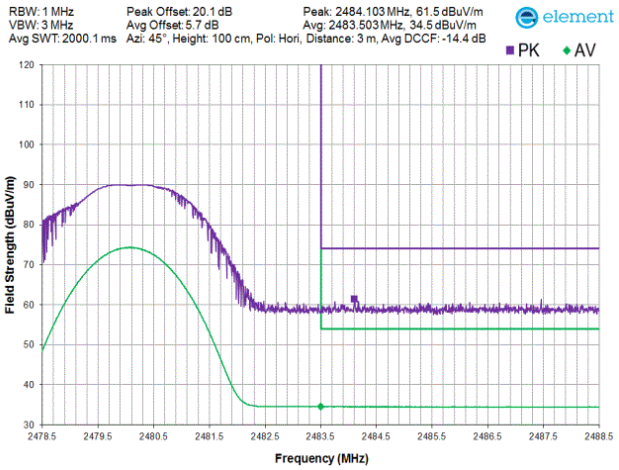
GFSK 1 Mbps
High Channel, 2480 MHz

RADIATED BAND EDGE EMISSIONS

element
EmiR5 2025.04.30.2
WTD.2025.08.28.0



GFSK 1 Mbps
High Channel, 2480 MHz



GFSK 1 Mbps
High Channel, 2480 MHz

SPURIOUS RADIATED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

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 shown in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. A reference preview scan (pre-scan) is 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 axes 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 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.

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	Keysight	N9010A	AFN	2025-04-21	2026-04-21
Filter - Low Pass	Micro-Tronics	LPM50004	LFF	2025-10-15	2026-10-15
Cable	Northwest EMC	Bilog Cables	NC1	2025-10-15	2026-10-15
Antenna - Biconilog	Teseq	CBL 6141B	AYL	2025-10-30	2027-10-30
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAB	2025-10-15	2026-10-15
Antenna - Double Ridge	EMCO	3115	AHM	2024-06-24	2026-06-24
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVZ	2025-05-10	2026-05-10
Cable	Northwest EMC	3115 Horn Cable	NC2	2025-05-10	2026-05-10
Attenuator	Fairview Microwave	SA18E-20	AQV	2025-07-31	2026-07-31
Filter - High Pass	Micro-Tronics	HPM50111	HHI	2025-09-24	2026-09-24
Antenna - Standard Gain	EMCO	3160-07	AHP	2025-02-14	2026-02-14
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOK	2025-07-31	2026-07-31
Cable	High Speed Interconnects	EW292A-NGNG-300	NC3	2025-07-31	2026-07-31
Antenna - Standard Gain	EMCO	3160-08	AHO	2025-02-14	2026-02-14
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOJ	2025-07-31	2026-07-31
Antenna - Standard Gain	ETS Lindgren	3160-09	AIY	2025-11-18	2026-11-18
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOD	2025-05-29	2026-05-29
Cable	Northwest EMC	N/A	NC8	2025-05-29	2026-05-29
Antenna - Loop	EMCO	6502	AZC	2025-08-28	2027-08-28
Cable	Northwest EMC	NC01 Mag Field Loop / Near Field Probe cable	NC6	2025-09-29	2026-09-29

SPURIOUS RADIATED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

FREQUENCY RANGE INVESTIGATED

9 kHz TO 26.5 GHz

POWER INVESTIGATED

4VDC via DC Power Supply

CONFIGURATIONS INVESTIGATED

SMTE0017-2

MODES INVESTIGATED

Transmitting, Low Ch. = 2402 MHz, Mid Ch. = 2440 MHz, High Ch. = 2480 MHz

SPURIOUS RADIATED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

EUT:	PQR-3	Work Order:	SMTE0017
Serial Number:	R30	Date:	2026-02-05
Customer:	SMART Technologies ULC	Temperature:	20.7°C
Attendees:	Sean MacKellar	Relative Humidity:	40.3%
Customer Project:	None	Bar. Pressure (PMSL):	1016 mb
Tested By:	Harry Zhao	Job Site:	NC01
Power:	4VDC via DC Power Supply	Configuration:	SMTE0017-2

TEST PARAMETERS

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

COMMENTS

The test mode operates at 85.4% duty cycle (DC), an upward DC correction factor of 10*log(1/DC) = 10*log(1/0.854) = 0.685 dB was applied to the average measurements. Per KDB 558074, Section 11, Question 3, protocol-limited duty cycles allow the application duty cycle correction factor that is based upon the worst-case duty cycle to the average measurements. When in actual operation, the max operating duty cycle is 3.118%. A downward DC correction factor of 10*log(0.03118) = -15.06 dB was applied to the average measurements. Total correction applied = -14.375 dB.

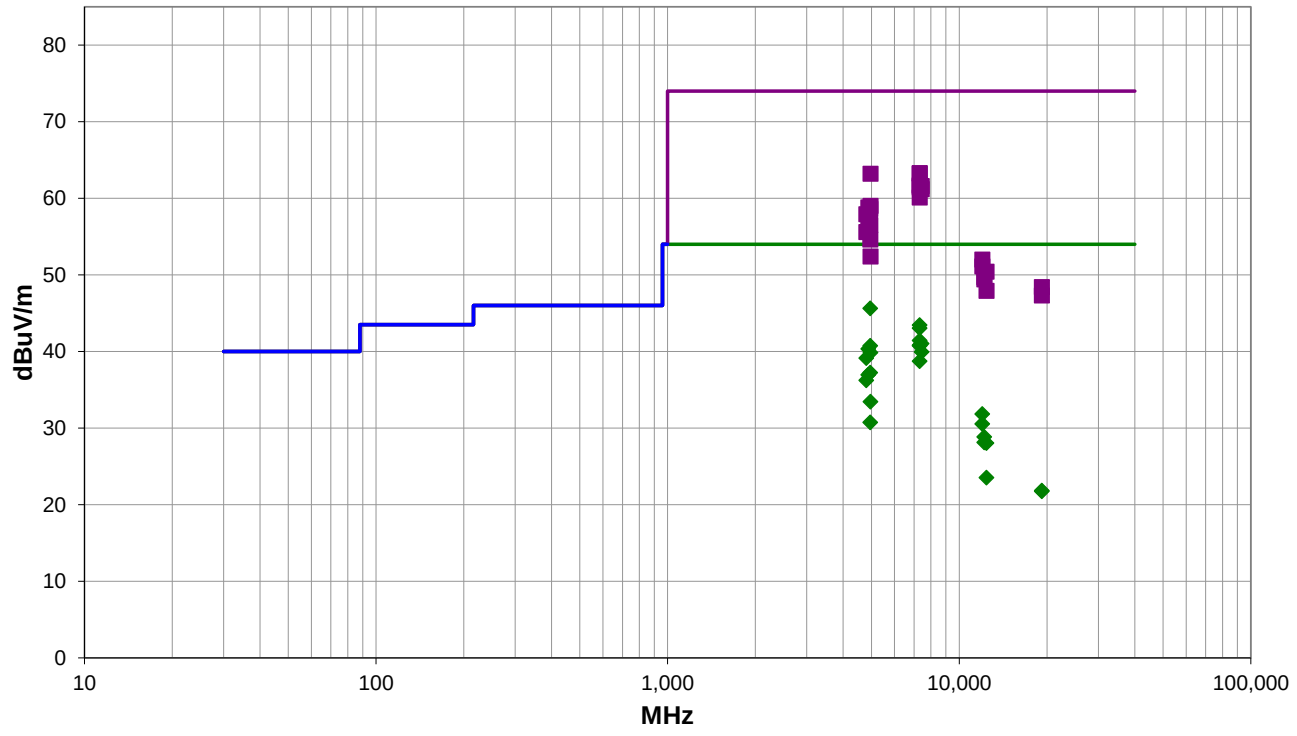
See data comments below for EUT orientation, channel & data rate.

EUT OPERATING MODES

Transmitting, Low Ch. = 2402 MHz, Mid Ch. = 2440 MHz, High Ch. = 2480 MHz

DEVIATIONS FROM TEST STANDARD

None



Run #: 13 PK AV QP

SPURIOUS RADIATED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

RESULTS - Run #13

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor	External Attenuation (dB)	Polarity/ Transducer	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4960.133	49.8	10.2	2.8	119.0	-14.4	0.0	Horz	AV	0.0	45.6	54.0	-8.4	High Ch., EUT on Side, 1 Mbps
7320.692	43.2	14.6	1.5	47.0	-14.4	0.0	Vert	AV	0.0	43.4	54.0	-10.6	Mid Ch., EUT Vertical, 1 Mbps
7319.317	48.7	14.6	1.5	47.0	0.0	0.0	Vert	PK	0.0	63.3	74.0	-10.7	Mid Ch., EUT Vertical, 1 Mbps
7319.517	48.6	14.6	1.2	163.0	0.0	0.0	Vert	PK	0.0	63.2	74.0	-10.8	Mid Ch., EUT on Side, 1 Mbps
4960.475	53.0	10.2	2.8	119.0	0.0	0.0	Horz	PK	0.0	63.2	74.0	-10.8	High Ch., EUT on Side, 1 Mbps
7319.742	42.8	14.6	1.2	163.0	-14.4	0.0	Vert	AV	0.0	43.0	54.0	-11.0	Mid Ch., EUT on Side, 1 Mbps
7319.617	47.1	14.6	2.1	114.0	0.0	0.0	Horz	PK	0.0	61.7	74.0	-12.3	Mid Ch., EUT on Side, 1 Mbps
7321.142	46.9	14.7	2.6	124.0	0.0	0.0	Horz	PK	0.0	61.6	74.0	-12.4	Mid Ch., EUT Horizontal, 1 Mbps
7439.617	46.2	15.4	2.8	29.0	0.0	0.0	Vert	PK	0.0	61.6	74.0	-12.4	High Ch., EUT Vertical, 1 Mbps
7319.658	41.2	14.6	2.1	114.0	-14.4	0.0	Horz	AV	0.0	41.4	54.0	-12.6	Mid Ch., EUT on Side, 1 Mbps
7319.600	46.8	14.6	2.2	67.0	0.0	0.0	Horz	PK	0.0	61.4	74.0	-12.6	Mid Ch., EUT Vertical, 1 Mbps
7440.950	45.8	15.4	2.8	114.0	0.0	0.0	Horz	PK	0.0	61.2	74.0	-12.8	High Ch., EUT on Side, 1 Mbps
7440.717	40.0	15.4	2.8	29.0	-14.4	0.0	Vert	AV	0.0	41.0	54.0	-13.0	High Ch., EUT Vertical, 1 Mbps
7320.675	40.6	14.6	2.2	67.0	-14.4	0.0	Horz	AV	0.0	40.8	54.0	-13.2	Mid Ch., EUT Vertical, 1 Mbps
7319.708	40.5	14.6	2.6	124.0	-14.4	0.0	Horz	AV	0.0	40.7	54.0	-13.3	Mid Ch., EUT Horizontal, 1 Mbps
4960.125	44.9	10.2	2.4	40.0	-14.4	0.0	Horz	AV	0.0	40.7	54.0	-13.3	High Ch., EUT Horizontal, 1 Mbps
4880.133	43.9	10.8	2.6	115.0	-14.4	0.0	Horz	AV	0.0	40.3	54.0	-13.7	Mid Ch., EUT on Side, 1 Mbps
7321.167	45.4	14.7	1.4	49.0	0.0	0.0	Vert	PK	0.0	60.1	74.0	-13.9	Mid Ch., EUT Horizontal, 1 Mbps
7440.667	38.9	15.4	2.8	114.0	-14.4	0.0	Horz	AV	0.0	39.9	54.0	-14.1	High Ch., EUT on Side, 1 Mbps
4960.200	44.0	10.2	3.0	254.0	-14.4	0.0	Vert	AV	0.0	39.8	54.0	-14.2	High Ch., EUT Vertical, 1 Mbps
4804.142	43.3	10.2	2.5	103.0	-14.4	0.0	Horz	AV	0.0	39.1	54.0	-14.9	Low Ch., EUT on Side, 1 Mbps
4960.550	48.8	10.2	2.4	40.0	0.0	0.0	Horz	PK	0.0	59.0	74.0	-15.0	High Ch., EUT Horizontal, 1 Mbps
4880.600	48.0	10.8	2.6	115.0	0.0	0.0	Horz	PK	0.0	58.8	74.0	-15.2	Mid Ch., EUT on Side, 1 Mbps
7320.700	38.5	14.6	1.4	49.0	-14.4	0.0	Vert	AV	0.0	38.7	54.0	-15.3	Mid Ch., EUT Horizontal, 1 Mbps
4959.708	48.4	10.2	3.0	254.0	0.0	0.0	Vert	PK	0.0	58.6	74.0	-15.4	High Ch., EUT Vertical, 1 Mbps
4804.492	47.7	10.2	2.5	103.0	0.0	0.0	Horz	PK	0.0	57.9	74.0	-16.1	Low Ch., EUT on Side, 1 Mbps
4960.108	41.4	10.2	2.9	259.0	-14.4	0.0	Vert	AV	0.0	37.2	54.0	-16.8	High Ch., EUT Horizontal, 1 Mbps
4880.133	40.5	10.8	3.5	317.0	-14.4	0.0	Vert	AV	0.0	36.9	54.0	-17.1	Mid Ch., EUT Vertical, 1 Mbps
4959.833	46.3	10.2	2.9	259.0	0.0	0.0	Vert	PK	0.0	56.5	74.0	-17.5	High Ch., EUT Horizontal, 1 Mbps
4880.525	45.6	10.8	3.5	317.0	0.0	0.0	Vert	PK	0.0	56.4	74.0	-17.6	Mid Ch., EUT Vertical, 1 Mbps
4804.117	40.4	10.2	4.0	72.0	-14.4	0.0	Vert	AV	0.0	36.2	54.0	-17.8	Low Ch., EUT Vertical, 1 Mbps
4804.683	45.4	10.2	4.0	72.0	0.0	0.0	Vert	PK	0.0	55.6	74.0	-18.4	Low Ch., EUT Vertical, 1 Mbps
4959.658	44.4	10.2	2.3	156.0	0.0	0.0	Horz	PK	0.0	54.6	74.0	-19.4	High Ch., EUT Vertical, 1 Mbps
4960.167	37.6	10.2	2.3	156.0	-14.4	0.0	Horz	AV	0.0	33.4	54.0	-20.6	High Ch., EUT Vertical, 1 Mbps
4960.667	42.2	10.2	1.5	12.0	0.0	0.0	Vert	PK	0.0	52.4	74.0	-21.6	High Ch., EUT on Side, 1 Mbps
12011.590	53.3	-1.3	3.3	226.0	0.0	0.0	Horz	PK	0.0	52.0	74.0	-22.0	Low Ch., EUT on Side, 1 Mbps
12009.310	47.5	-1.3	3.3	226.0	-14.4	0.0	Horz	AV	0.0	31.8	54.0	-22.2	Low Ch., EUT on Side, 1 Mbps
12011.420	52.4	-1.3	1.2	66.0	0.0	0.0	Vert	PK	0.0	51.1	74.0	-22.9	Low Ch., EUT Vertical, 1 Mbps
4960.042	34.9	10.2	1.5	12.0	-14.4	0.0	Vert	AV	0.0	30.7	54.0	-23.3	High Ch., EUT on Side, 1 Mbps
12011.420	46.2	-1.3	1.2	66.0	-14.4	0.0	Vert	AV	0.0	30.5	54.0	-23.5	Low Ch., EUT Vertical, 1 Mbps

SPURIOUS RADIATED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

Freq (MHz)	Amplitude (dBuV)	Factor (dB/m)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor	External Attenuation (dB)	Polarity/ Transducer	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
12401.440	48.1	2.3	3.3	37.0	0.0	0.0	Vert	PK	0.0	50.4	74.0	-23.6	High Ch., EUT Vertical, 1 Mbps
12201.630	49.4	0.3	2.3	103.0	0.0	0.0	Vert	PK	0.0	49.7	74.0	-24.3	Mid Ch., EUT Vertical, 1 Mbps
12201.560	49.1	0.3	1.0	242.0	0.0	0.0	Horz	PK	0.0	49.4	74.0	-24.6	Mid Ch., EUT on Side, 1 Mbps
12201.410	42.9	0.3	2.3	103.0	-14.4	0.0	Vert	AV	0.0	28.8	54.0	-25.2	Mid Ch., EUT Vertical, 1 Mbps
19217.440	46.3	2.1	1.5	213.0	0.0	0.0	Vert	PK	0.0	48.4	74.0	-25.6	Low Ch., EUT Vertical, 1 Mbps
12201.420	42.2	0.3	1.0	242.0	-14.4	0.0	Horz	AV	0.0	28.1	54.0	-25.9	Mid Ch., EUT on Side, 1 Mbps
12401.400	40.1	2.3	3.3	37.0	-14.4	0.0	Vert	AV	0.0	28.0	54.0	-26.0	High Ch., EUT Vertical, 1 Mbps
12401.600	45.6	2.3	1.5	345.0	0.0	0.0	Horz	PK	0.0	47.9	74.0	-26.1	High Ch., EUT on Side, 1 Mbps
19216.830	45.2	2.1	1.5	302.0	0.0	0.0	Horz	PK	0.0	47.3	74.0	-26.7	Low Ch., EUT on Side, 1 Mbps
12401.330	35.6	2.3	1.5	345.0	-14.4	0.0	Horz	AV	0.0	23.5	54.0	-30.5	High Ch., EUT on Side, 1 Mbps
19218.210	34.1	2.1	1.5	213.0	-14.4	0.0	Vert	AV	0.0	21.8	54.0	-32.2	Low Ch., EUT Vertical, 1 Mbps
19217.040	34.0	2.1	1.5	302.0	-14.4	0.0	Horz	AV	0.0	21.7	54.0	-32.3	Low Ch., EUT on Side, 1 Mbps

CONCLUSION

Pass

Tested By

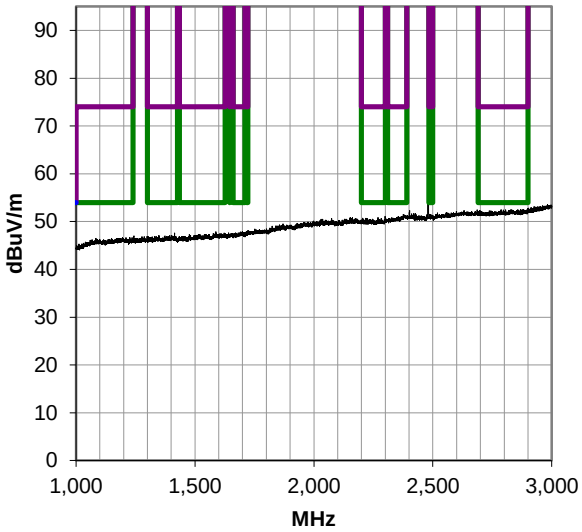
SPURIOUS RADIATED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

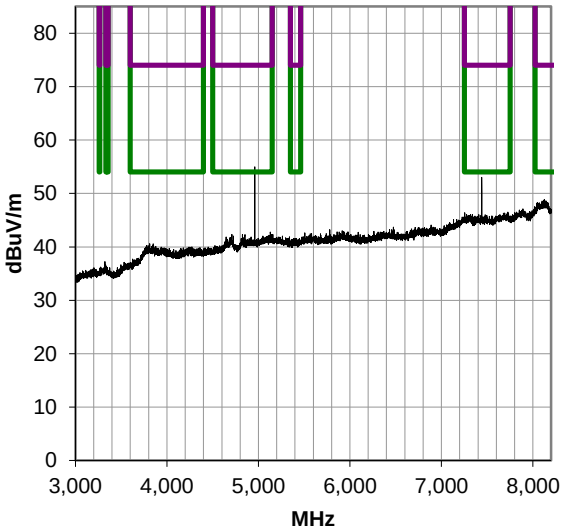
PRESCAN DATA

Radiated spurious emissions from the EUT are initially reviewed with Pre-scans (Preview scans). Pre-scans are performed, with the EUT transmitting on the lowest applicable data rate, for both vertical and horizontal polarizations. The Pre-scan plots below are shown with a peak detector and RBW for the following frequency ranges: 9 kHz RBW (< 30 MHz); 120 kHz RBW (30 - 1000 MHz); 1 MHz RBW (> 1 GHz). In the case where unintentional emissions are observed, an ambient or idle pre-scan with the radio off, will be shown for comparison.

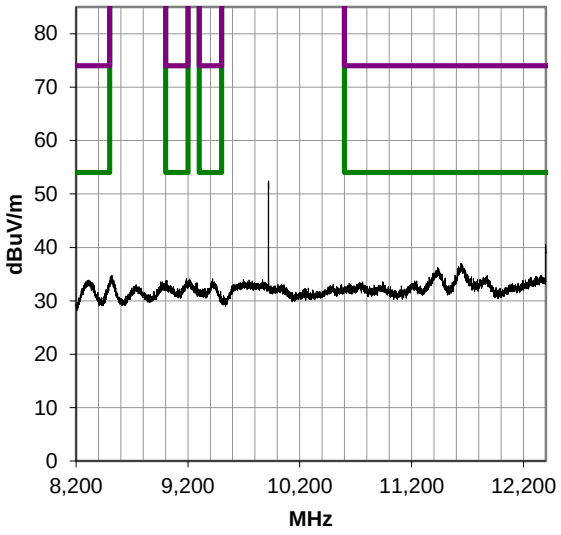
1000-3000 MHz, Run 9



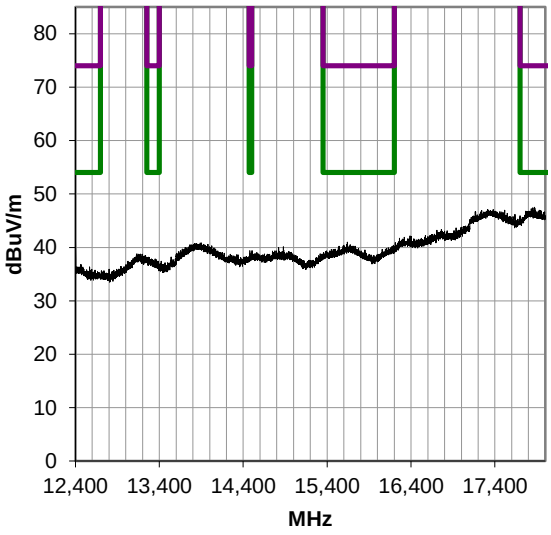
3000-8200 MHz, Run 10



8200-12400 MHz, Run 11



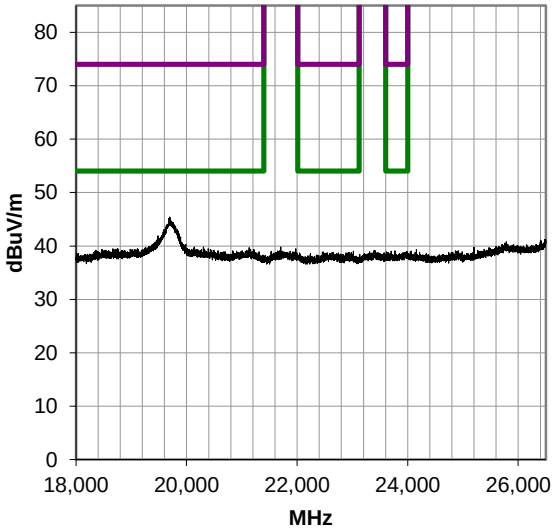
12400-18000 MHz, Run 12



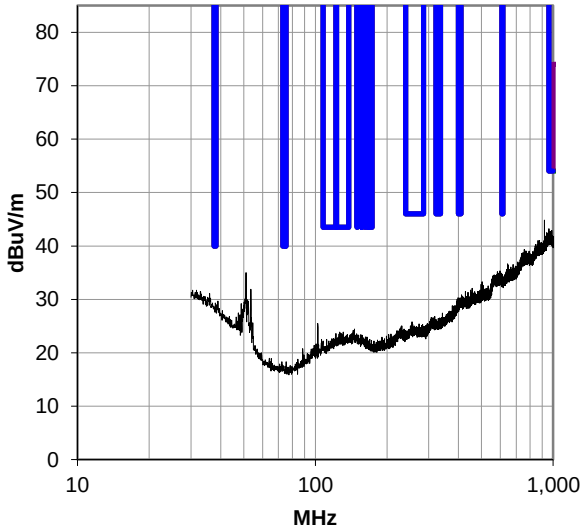
SPURIOUS RADIATED EMISSIONS

element
WTD.2025.08.28.0
EmiR5 2025.04.30.2
PSA-ESCI 2024.11.22.0

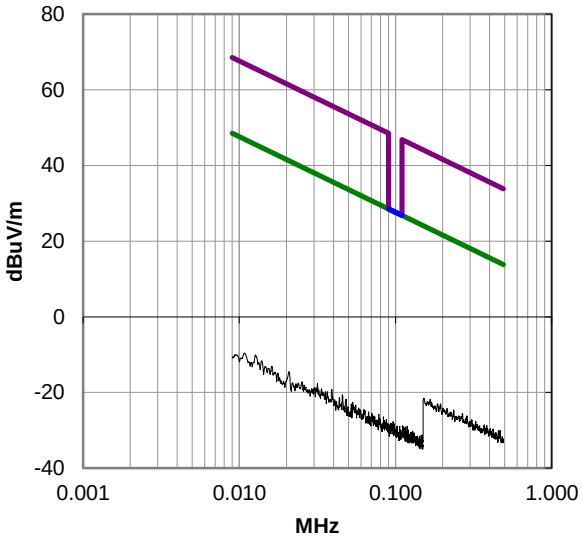
18000-26500 MHz, Run 28



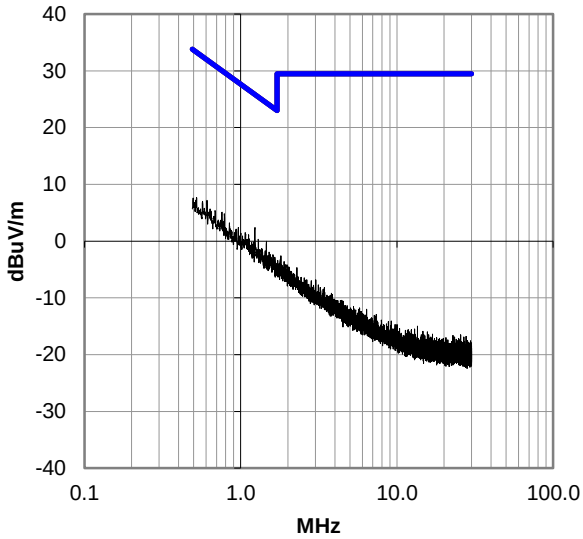
30-1000 MHz, Run 53



0.009-0.49 MHz, Run 58



0.49-30 MHz, Run 59



End of Test Report