

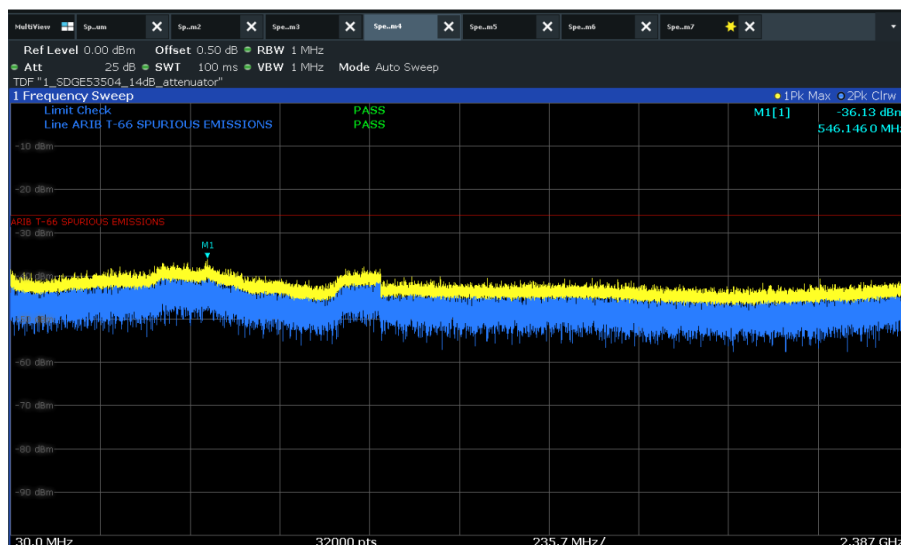


Figure 21 - High Channel – 30 MHz to 2387 MHz, 2M

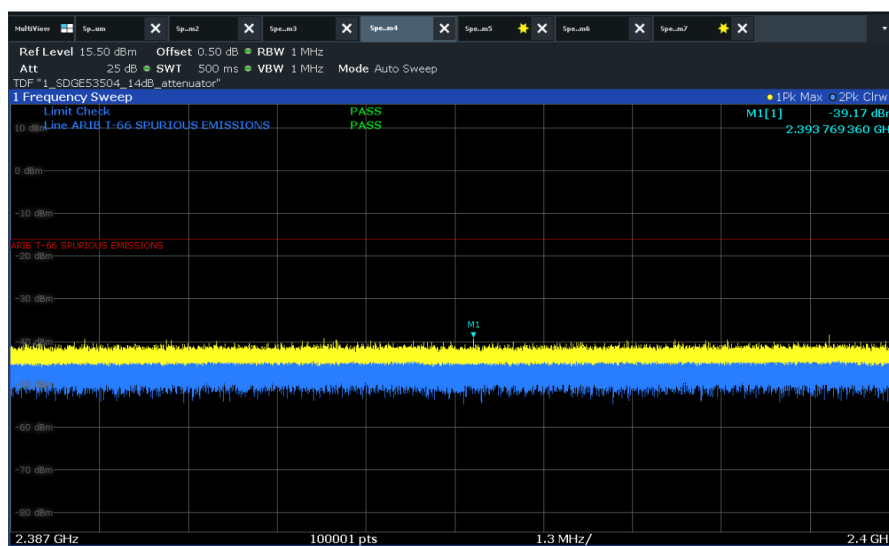


Figure 22 - High Channel – 2387MHz to 2400 MHz, 2M

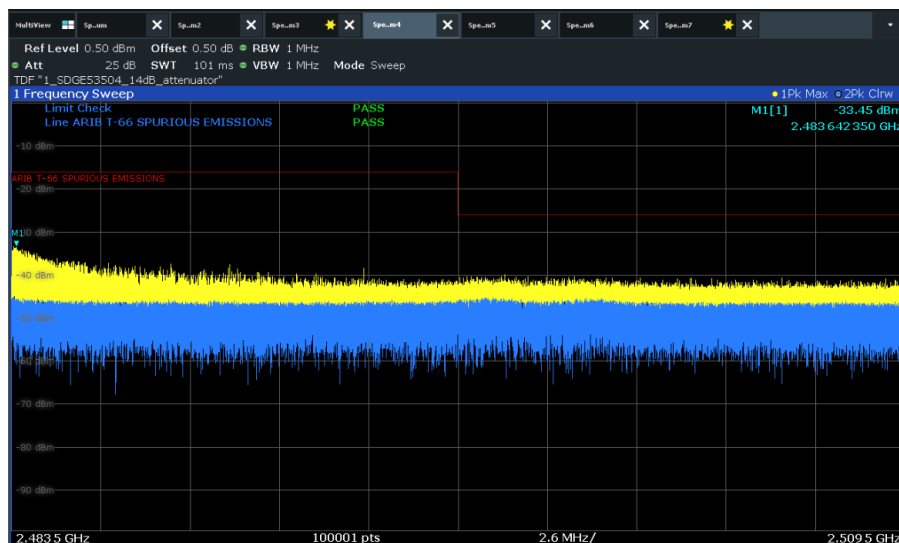


Figure 23 - High Channel – 2483.5 MHz to 2509.5 MHz, 2M

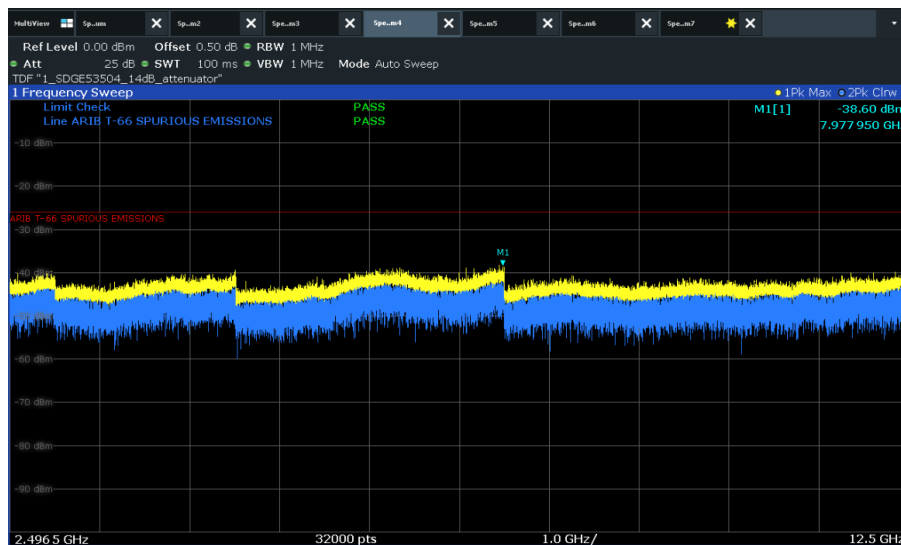


Figure 24 - High Channel – 2496.5 MHz to 125000 MHz, 2M



2.3.7 Test Location and Test Equipment Used

This test was carried out in SR5 (MM).

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal & Spectrum Analyzer	Rohde & Schwarz	FSW26	30188	1 year	04-Feb-2026
Attenuator 14dB atten with blue cable	(-)	5W DC-18GHz 14dB (ATX3518-20) with W17.03 cable	53504	1 year	04-Apr-2026

Table 17



2.4 Allowable Value for Occupied Bandwidth

2.4.1 Specification Reference

Certification Ordinance Article 2 Clause 1 Item19,
Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43,
WirelessTest_Instructions-Rev03.pdf

2.4.2 Equipment Under Test and Modification State

S/N: 1318288 - Modification State - None

2.4.3 Date of Test

16-June-2025 to 18-June-2025

2.4.4 Test Method

Bluetooth Low Energy- -Bluetooth

This is a conducted test case. This test was performed with an RF cable and 14dB attenuator.
The EUT was set to Modulated Tx Mode. A Table-Top test set up was utilized for this test.

2.4.5 Environmental Conditions

Ambient Temperature 24.0 - 26.0 °C
Relative Humidity 51.0 %
Atmospheric Pressure 99.9 kPa

2.4.6 Test Results

Bluetooth Low Energy- -Bluetooth

Test Configuration			
Frequency Range:	2402-2480 MHz	Band:	2.4 GHz
Limit Clause(s):	Article 88 Appendix 43 Article 2 1-19 Rules Section 4		

Table 18



Mode	BLE 5.0
Data Rate	1 Mbps, 2Mbps
Antenna Configuration	SISO
Supply Voltage	3.6 VDC
Tx Mode	Continuous Modulated Stream

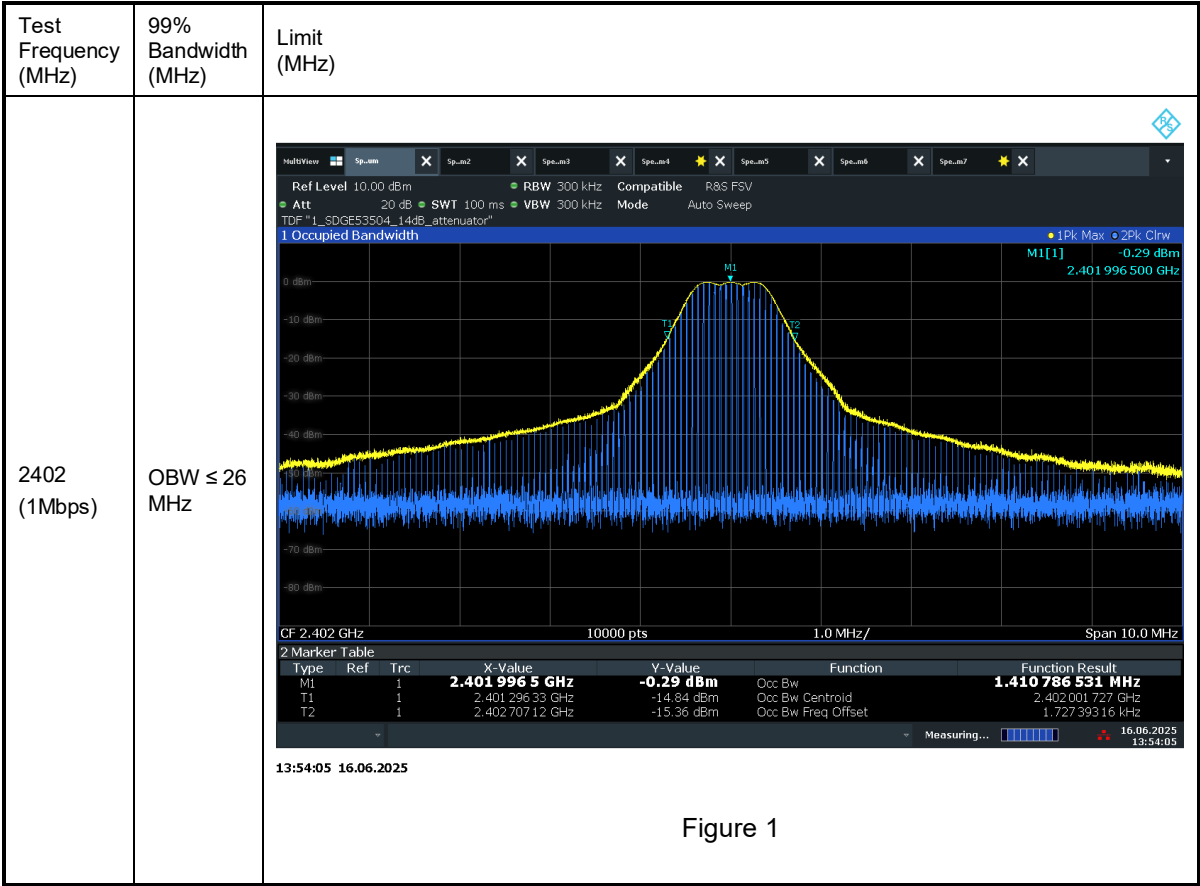
Table 19

Mode	Channel	Occupied Bandwidth (MHz)	Limit
1Mbps	37 (2402 MHz)	1.411	≤ 26MHz
	18 (2440 MHz)	1.418	
	39 (2480 MHz)	1.359	
2Mbps	37 (2402 MHz)	2.182	≤ 26MHz
	18 (2440 MHz)	2.212	
	39 (2480 MHz)	2.209	

Table 20 - Occupied Bandwidth Test Summary

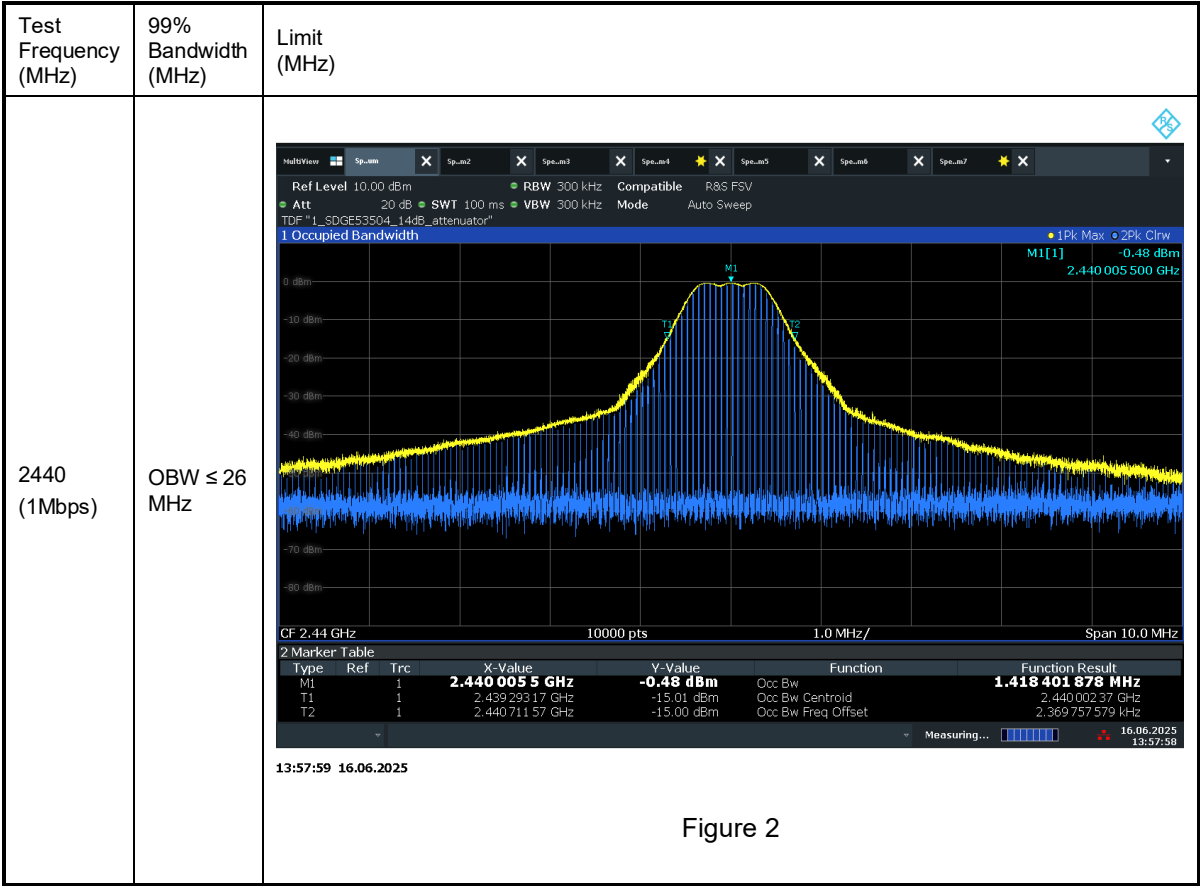


Product Service





Product Service





Product Service

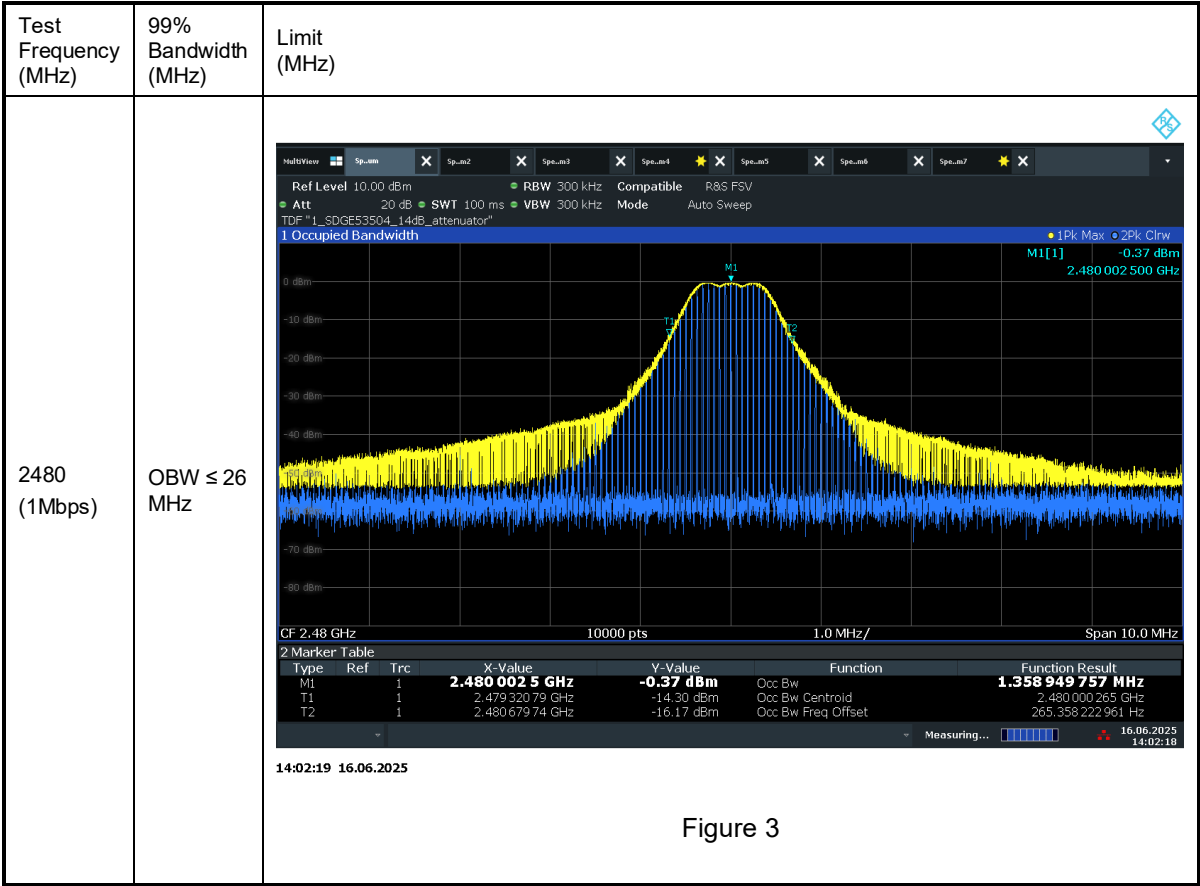
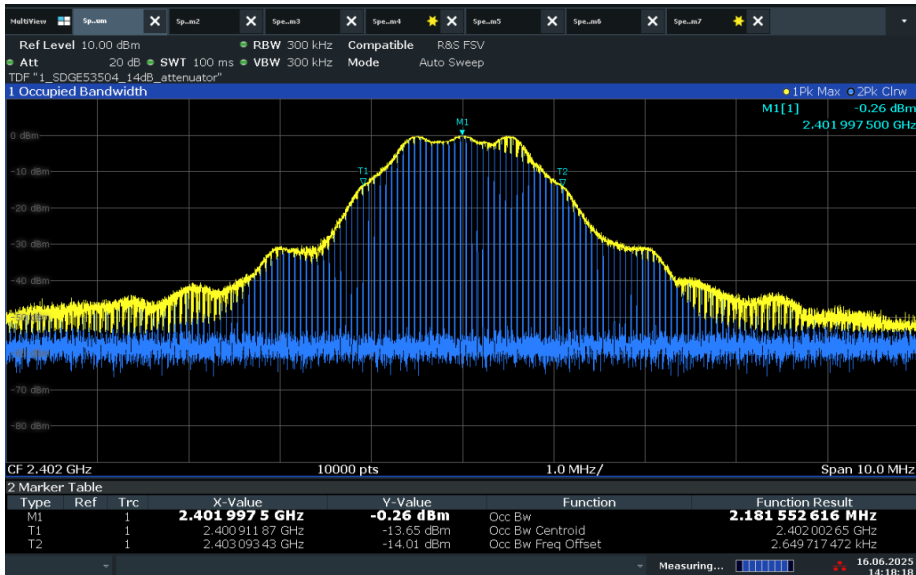
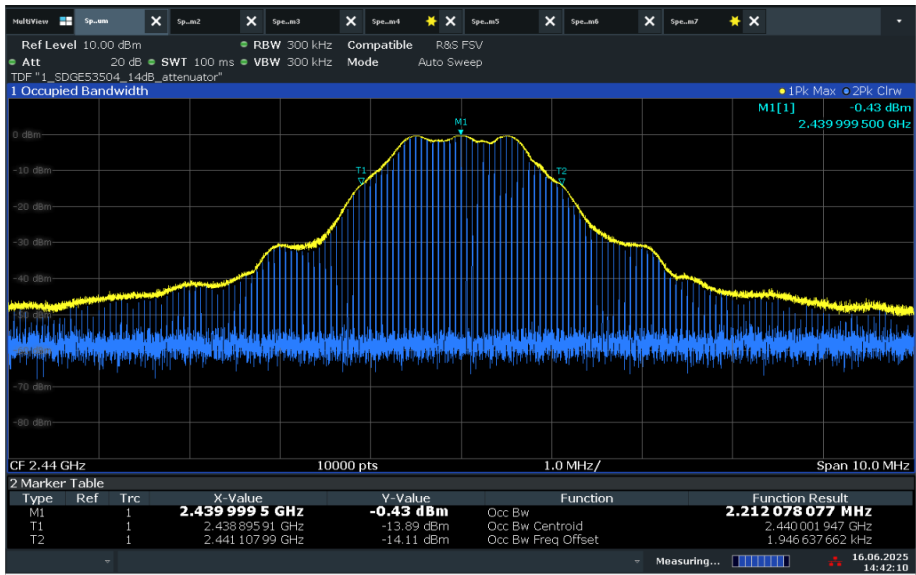


Table 21 - 99% Bandwidth Results (1Mbps)



Product Service

Test Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)																												
2402 (2Mbps)	OBW ≤ 26 MHz	<table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-Value</th><th>Y-Value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.4019975 GHz</td><td>-0.26 dBm</td><td>Occ Bw</td><td>2.181552616 MHz</td></tr><tr><td>T1</td><td>1</td><td></td><td>2.40091187 GHz</td><td>-13.65 dBm</td><td>Occ Bw Centroid</td><td>2.40200265 GHz</td></tr><tr><td>T2</td><td>1</td><td></td><td>2.40309343 GHz</td><td>-14.01 dBm</td><td>Occ Bw Freq Offset</td><td>2.649717472 kHz</td></tr></table>	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.4019975 GHz	-0.26 dBm	Occ Bw	2.181552616 MHz	T1	1		2.40091187 GHz	-13.65 dBm	Occ Bw Centroid	2.40200265 GHz	T2	1		2.40309343 GHz	-14.01 dBm	Occ Bw Freq Offset	2.649717472 kHz
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																								
M1	1		2.4019975 GHz	-0.26 dBm	Occ Bw	2.181552616 MHz																								
T1	1		2.40091187 GHz	-13.65 dBm	Occ Bw Centroid	2.40200265 GHz																								
T2	1		2.40309343 GHz	-14.01 dBm	Occ Bw Freq Offset	2.649717472 kHz																								
2440 (2Mbps)	OBW ≤ 26 MHz	<table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-Value</th><th>Y-Value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.4399995 GHz</td><td>-0.43 dBm</td><td>Occ Bw</td><td>2.212078077 MHz</td></tr><tr><td>T1</td><td>1</td><td></td><td>2.43889591 GHz</td><td>-13.89 dBm</td><td>Occ Bw Centroid</td><td>2.440001947 GHz</td></tr><tr><td>T2</td><td>1</td><td></td><td>2.44110799 GHz</td><td>-14.11 dBm</td><td>Occ Bw Freq Offset</td><td>1.946637662 kHz</td></tr></table>	Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.4399995 GHz	-0.43 dBm	Occ Bw	2.212078077 MHz	T1	1		2.43889591 GHz	-13.89 dBm	Occ Bw Centroid	2.440001947 GHz	T2	1		2.44110799 GHz	-14.11 dBm	Occ Bw Freq Offset	1.946637662 kHz
Type	Ref	Trc	X-Value	Y-Value	Function	Function Result																								
M1	1		2.4399995 GHz	-0.43 dBm	Occ Bw	2.212078077 MHz																								
T1	1		2.43889591 GHz	-13.89 dBm	Occ Bw Centroid	2.440001947 GHz																								
T2	1		2.44110799 GHz	-14.11 dBm	Occ Bw Freq Offset	1.946637662 kHz																								

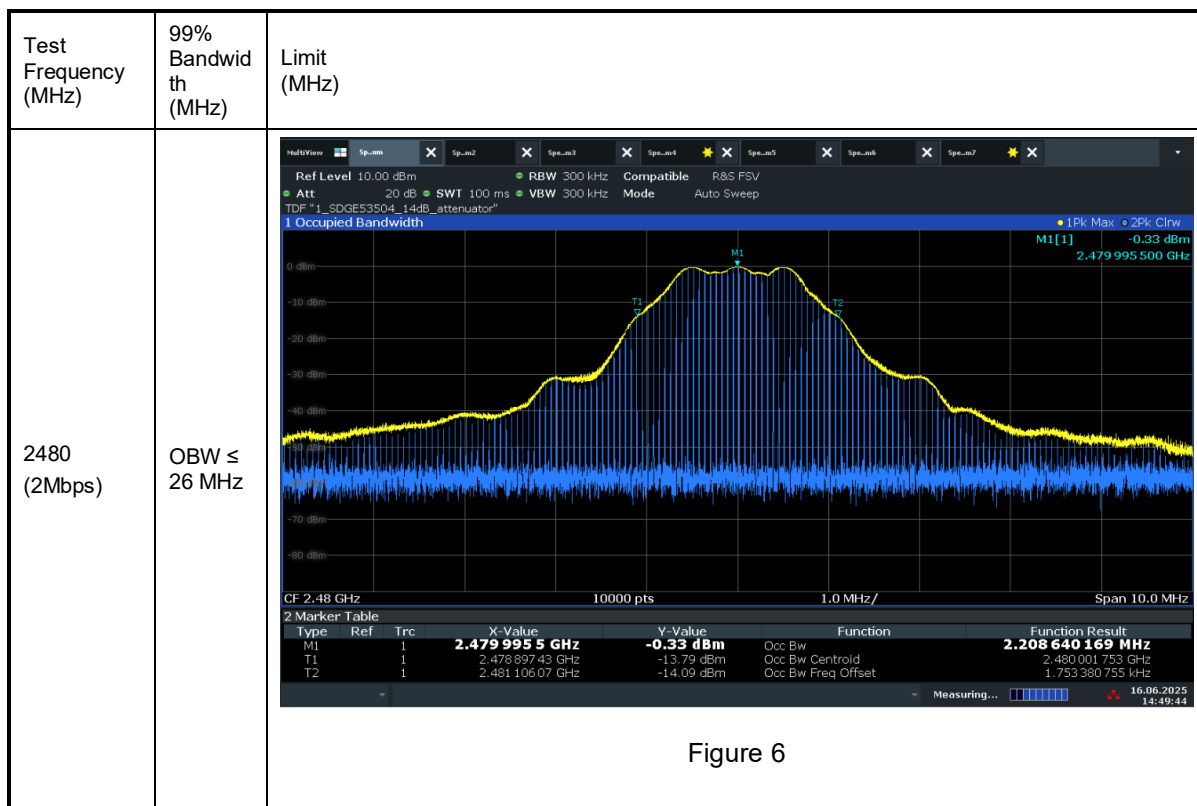


Table 22 - 99% Bandwidth Results (2Mbps)

2.4.7 Test Location and Test Equipment Used

This test was carried out in SR5 (MM).

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal & Spectrum Analyzer	Rohde & Schwarz	FSW26	30188	1 year	04-Feb-2026
Attenuator 14dB atten with blue cable	(-)	5W DC-18GHz 14dB (ATX3518-20) with W17.03 cable	53504	1 year	04-Apr-2026

Table 23



2.5 Limit on Secondary Radiation

2.5.1 Specification Reference

Certification Ordinance Article 2 Clause 1 Item19,
Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43,
WirelessTest_Instructions-Rev03.pdf

2.5.2 Equipment Under Test and Modification State

S/N: 1318288 - Modification State - None

2.5.3 Date of Test

18-June-2025 to 19-June-2025

2.5.4 Test Method

Bluetooth Low Energy- -Bluetooth

This is a conducted test case. This test was performed with an RF cable and 14dB attenuator. A Table-Top test set up was utilized for this test.

2.5.5 Environmental Conditions

Ambient Temperature	24.0 - 26.0 °C
Relative Humidity	51.0 %
Atmospheric Pressure	99.9 kPa

2.5.6 Test Results

Bluetooth Low Energy

3.6 V Supply

Test Configuration			
Frequency Range:	2402-2480 MHz	Band:	2.4 GHz
Limit Clause(s):	Article 88 Appendix 43 Article 2 1-19 Rules Section 7		

Table 24



Mode	BLE 5.0
Data Rate	1 Mbps, 2Mbps
Antenna Configuration	SISO
Supply Voltage	3.6 VDC
Tx Mode	Continuous Modulated Stream

Table 25

Measurement Frequency			2402 MHz	2440 MHz	2480 MHz	Result	Limit
Limit on Secondary Radiation	30 to 1000MHz	nW	0.100231	0.095280	0.103039	PASS	4nW Or Below
		MHz	497.773	497.763	497.782	-	-
	1000 to 10000MHz	nW	0.089125	0.124451	0.236592	PASS	20nW Or Below
		MHz	2401.961	2426.081	2480.260	-	-
	10000 to 12000MHz	nW	0.013032	0.015136	0.012972	PASS	20nW Or Below
		MHz	12482.938	12427.888	12469.763	-	-

Table 26 – Test Results Summary

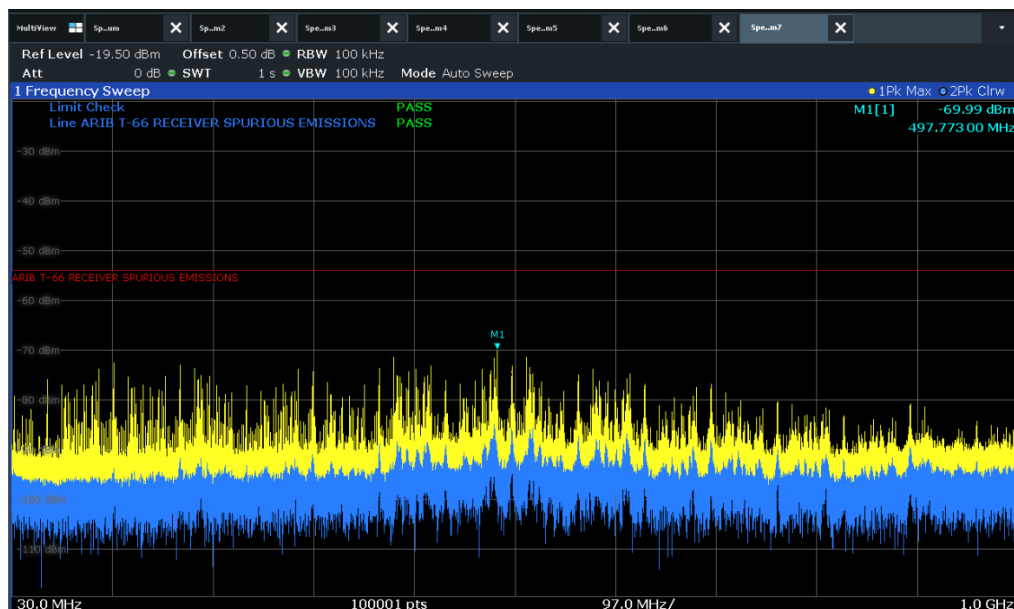


Figure 1 – Low Channel - 30 MHz to 1000 MHz

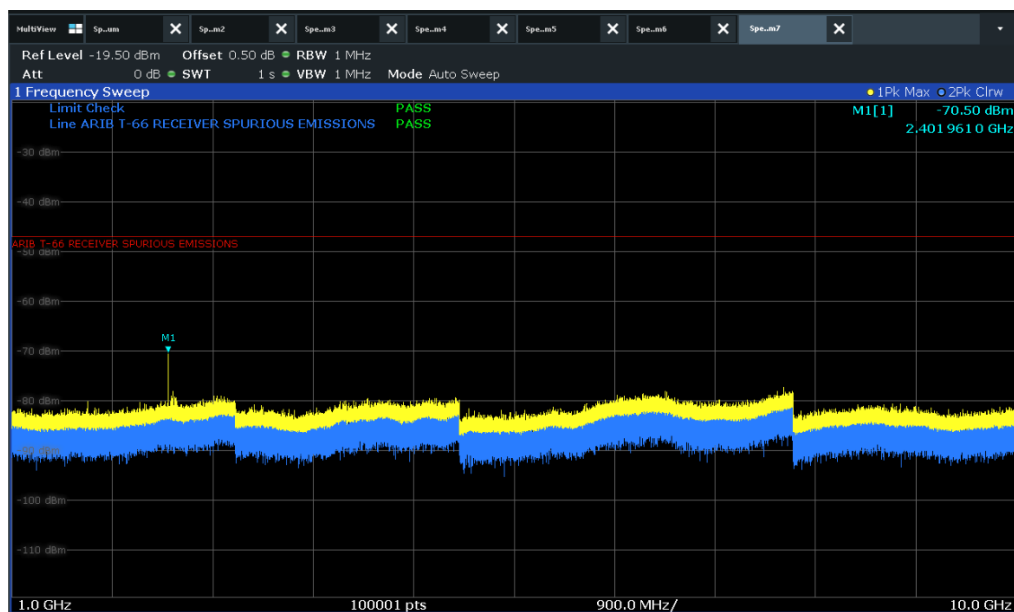


Figure 2 - Low Channel - 1000 MHz to 10000 MHz

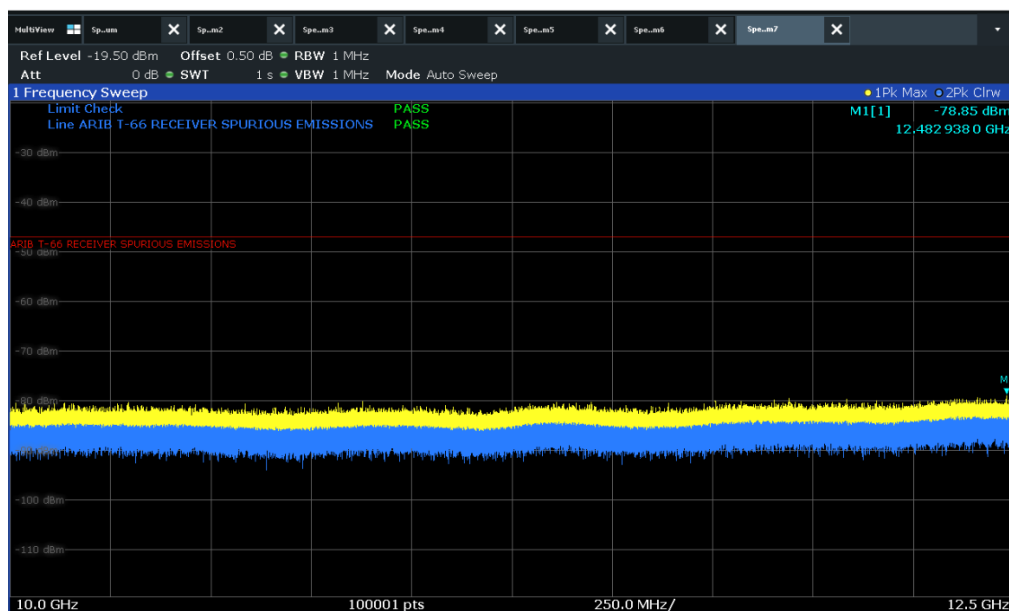


Figure 3 - Low Channel - 10000 MHz to 125000 MHz

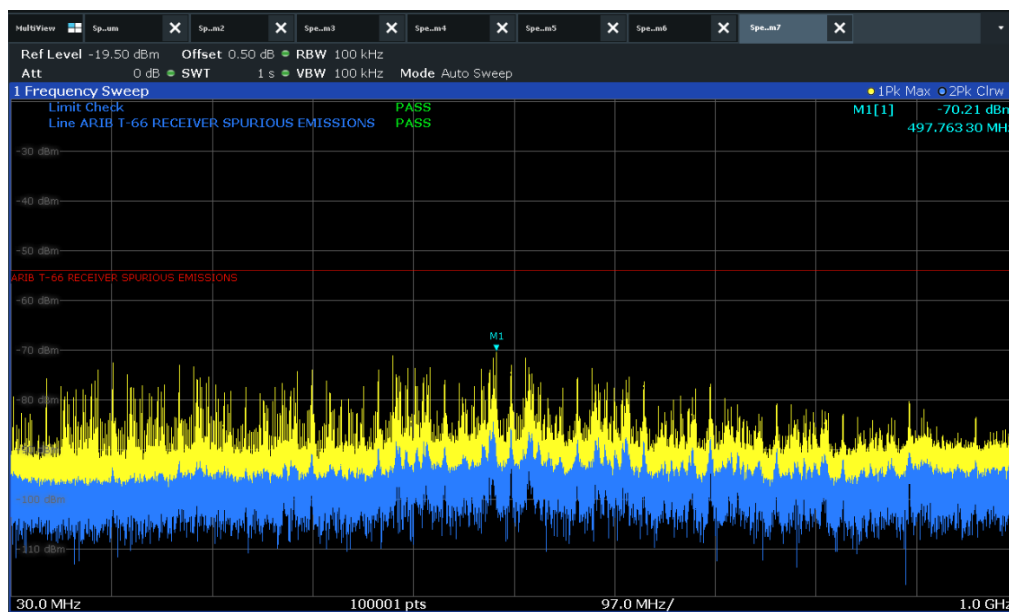


Figure 4 – Mid Channel - 30 MHz to 1000 MHz

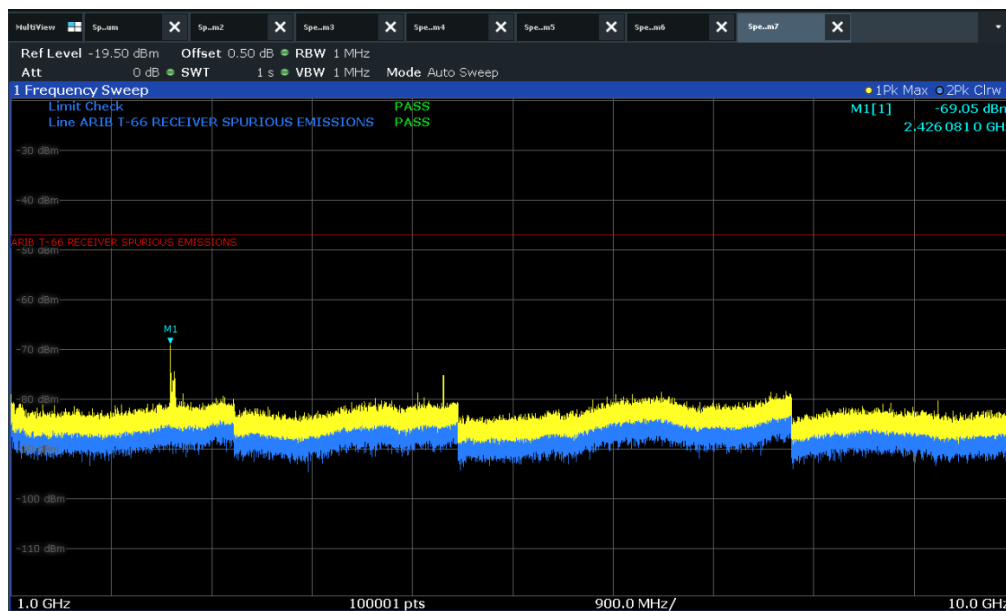


Figure 5 - Mid Channel - 1000 MHz to 10000 MHz

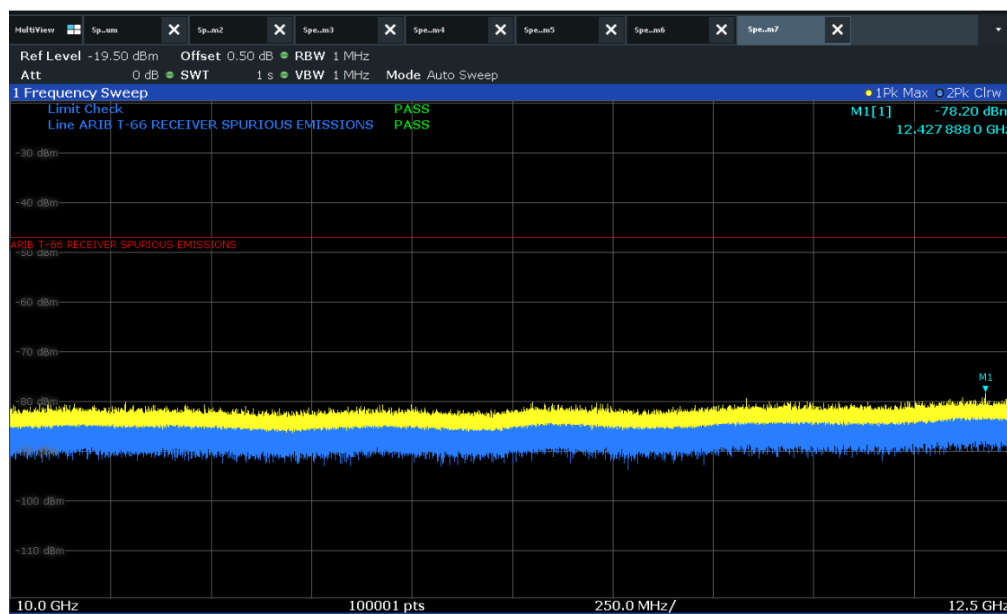


Figure 6 – Mid Channel - 10000 MHz to 125000 MHz

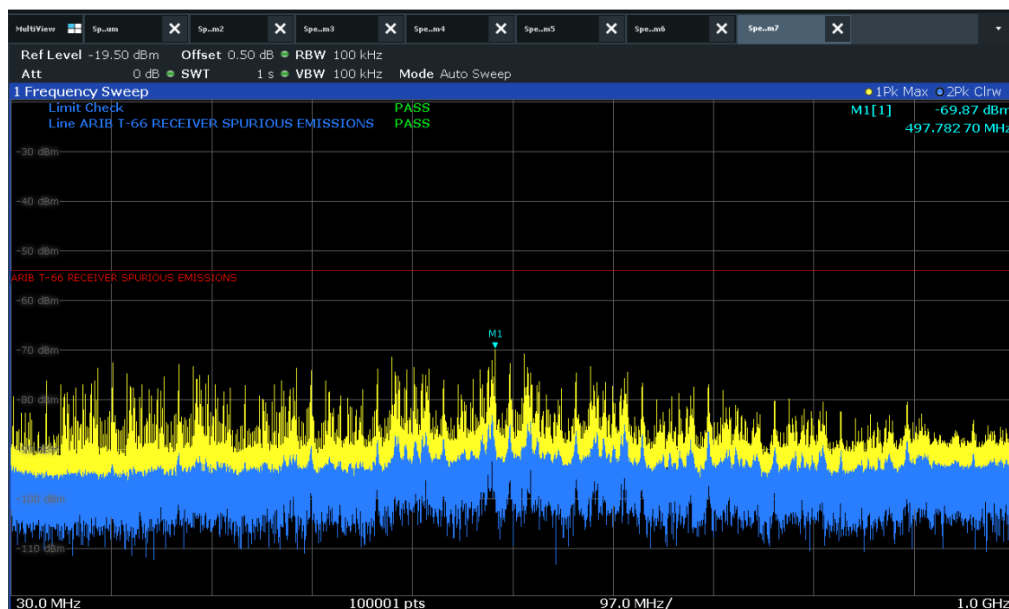


Figure 7 – High Channel - 30 MHz to 1000 MHz

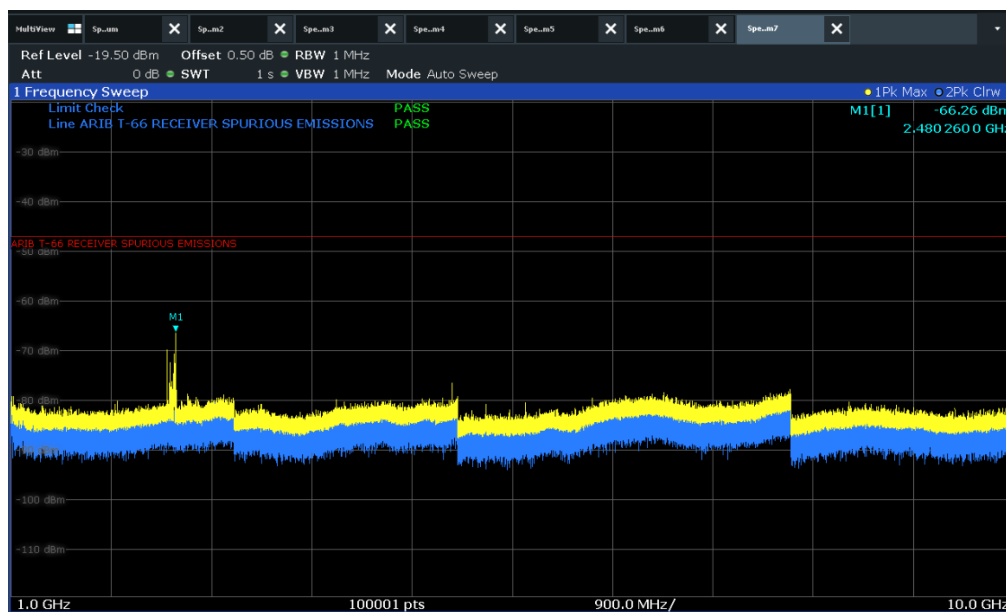


Figure 8 - High Channel - 1000 MHz to 10000 MHz

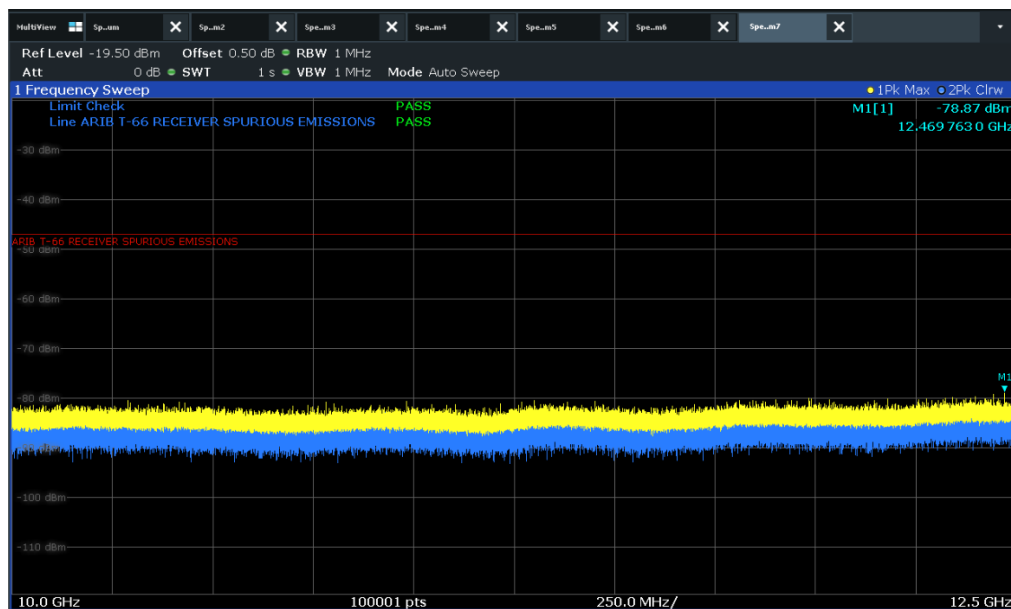


Figure 9 – High Channel - 10000 MHz to 125000 MHz



2.5.7 Test Location and Test Equipment Used

This test was carried out in SR5 (MM).

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal & Spectrum Analyzer	Rohde & Schwarz	FSW26	30188	1 year	04-Feb-2026
Attenuator 14dB atten with blue cable	(-)	5W DC-18GHz 14dB (ATX3518-20) with W17.03 cable	53504	1 year	04-Apr-2026

Table 27



2.6 Antenna Gain

2.6.1 Specification Reference

Certification Ordinance Article 2 Clause 1 Item19,
Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43,
WirelessTest_Instructions-Rev03.pdf

2.6.2 Equipment Under Test and Modification State

S/N: 1318288 - Modification State - None

2.6.3 Date of Test

16-June-2025 to 18-June-2025

2.6.4 Test Method

Bluetooth Low Energy- -Bluetooth

This test was performed in accordance with Certification Ordinance Article 2 Clause 1 Item19.
The following information was provided by the manufacturer. (See Annex A for Details).

The maximum half power beamwidth was calculated by determining the EIRP relative to an antenna with a transmitting power of 12.14 dBm (16.37 mW).

$$A = \text{EIRP (mW)} / 16.37$$

$$\text{Maximum Half-Power Beamwidth} = 360 \text{ degrees} / A.$$

2.6.5 Environmental Conditions

Ambient Temperature	24.0 °C
Relative Humidity	51.0 %
Atmospheric Pressure	kPa mbar



2.6.6 Test Results

Bluetooth Low Energy- -Bluetooth

Parameter	Results
Frequency Range (MHz)	2402
Declared RF Output Power (dBm)	0
Antenna Gain (dBi)	-14.48
EIRP (mW)	0.036

Table 28

Antenna	Type	Requirement	Antenna Gain	Results
Inverted "F" PCB Antenna	Custom	<12.14	-14.48 dBi	Complies

Table 29

Example Calculation: 0 dBm + (-14.48 dBi) = -14.48 dBm EIRP (Complies with 12.14 dBm limit)

2.6.7 Test Location and Test Equipment Used

This test was carried out in SR5 (MM).

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal & Spectrum Analyzer	Rohde & Schwarz	FSW26	30188	1 year	04-Feb-2026
Attenuator 14dB atten with blue cable	(-)	5W DC-18GHz 14dB (ATX3518-20) with W17.03 cable	53504	1 year	04-Apr-2026

Table 30



2.7 Interference Protection Function

2.7.1 Specification Reference

Certification Ordinance Article 2 Clause 1 Item19,
Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43,
WirelessTest_Instructions-Rev03.pdf

2.7.2 Equipment Under Test and Modification State

S/N: 1324061 - Modification State - None

2.7.3 Date of Test

16-June-2025 to 18-June-2025

2.7.4 Test Method

Bluetooth Low Energy- -Bluetooth

This test was performed in accordance with Certification Ordinance Article 2 Clause 1 Item19.

Evidence of the device transmitting a MAC address was captured by BLE Scanner App Version 8.1 on a iOS smartphone (iPhone 14 Pro Max). Radiated test sample (SN: 1324061) in Normal mode was utilized for this test.

2.7.5 Environmental Conditions

Ambient Temperature	24.0 °C °C
Relative Humidity	51.0 % %
Atmospheric Pressure	99.9 kPa

2.7.6 Test Results

Bluetooth Low Energy- -Bluetooth

Result: The client device under test transmitted an identification code to the master device to identify itself as a valid/authorised client.

Result: **PASSED**



Product Service

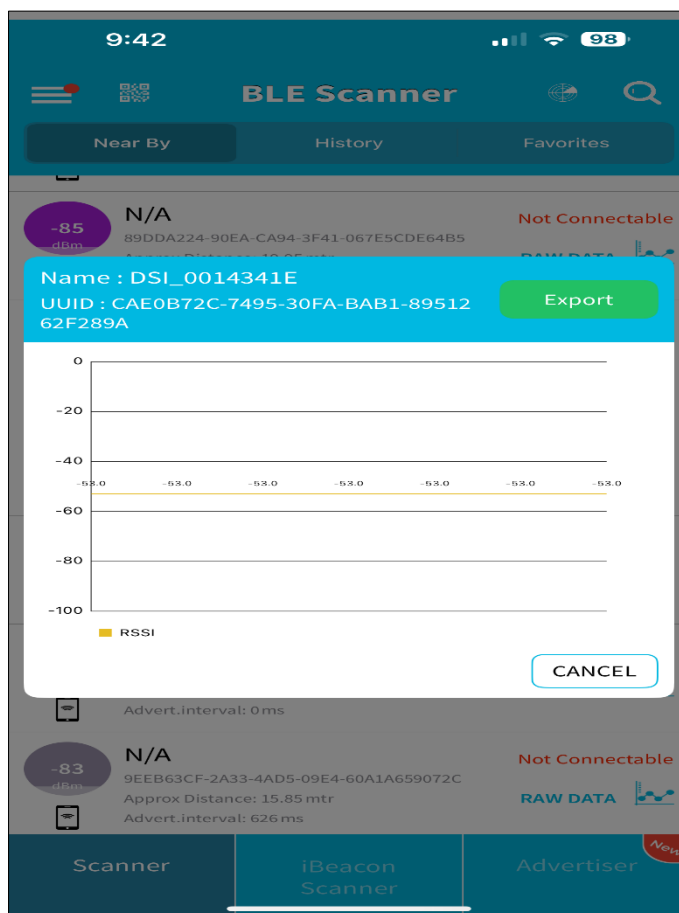


Figure 1 - Evidence



Product Service

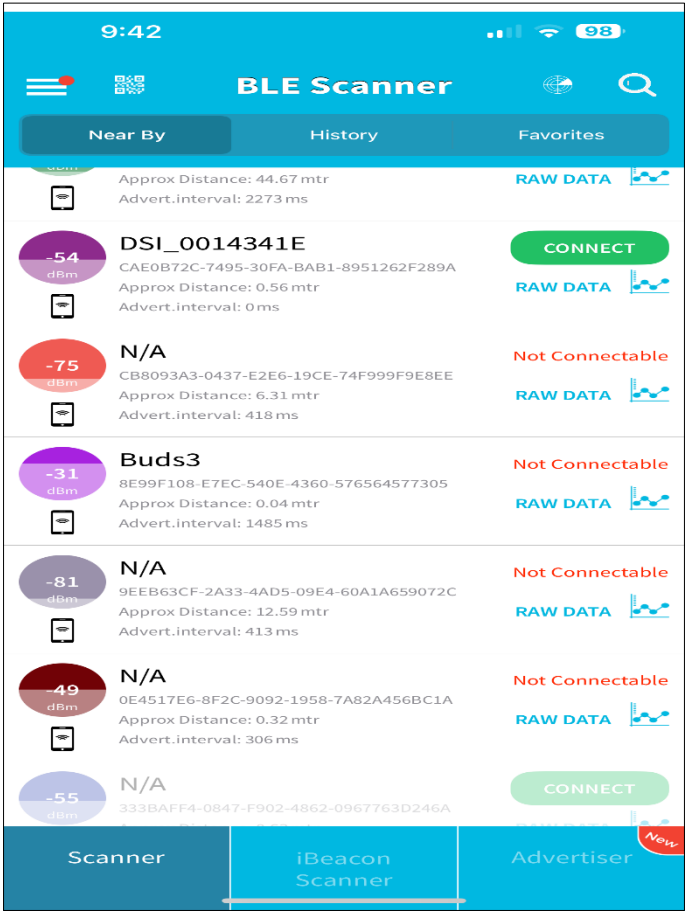


Figure 2 - Evidence



Product Service

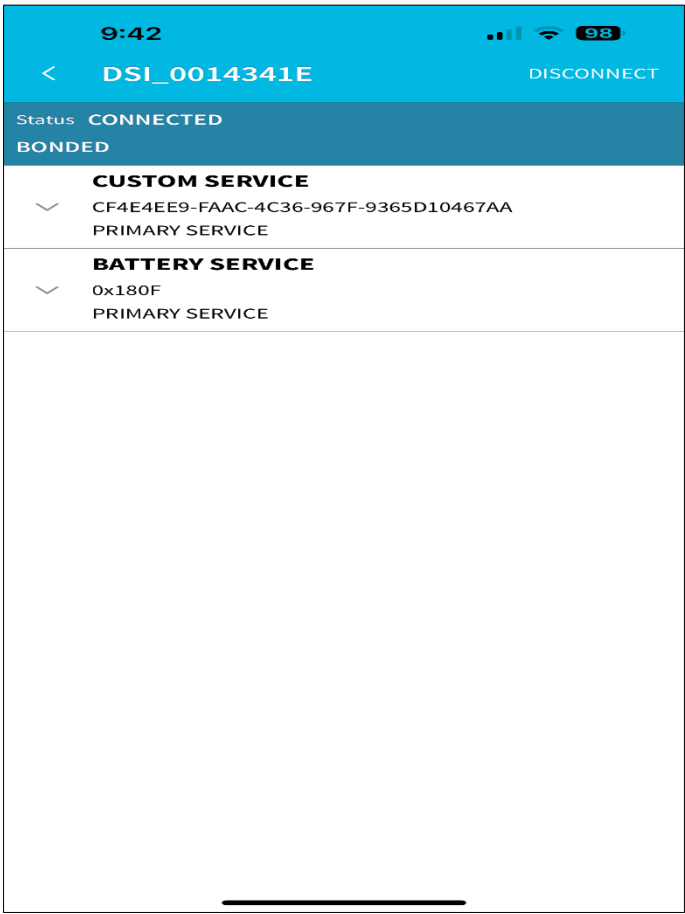


Figure 3 - Evidence



9:42

Figure 4 - Evidence



9:43

Figure 5 - Evidence



2.7.7 Test Location and Test Equipment Used

This test was carried out in SR5 (MM).

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Signal & Spectrum Analyzer	Rohde & Schwarz	FSW26	30188	1 year	04-Feb-2026
Attenuator 14dB atten with blue cable	(-)	5W DC-18GHz 14dB (ATX3518-20) with W17.03 cable	53504	1 year	04-Apr-2026
SMA Antenna	generic	-	-	N/A	

Table 31



2.8 Allowable Deviation in Antenna Power

2.8.1 Specification Reference

Certification Ordinance Article 2 Clause 1 Item19,
 Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43,
 WirelessTest_Instructions-Rev03.pdf

2.8.2 Equipment Under Test and Modification State

S/N: 1324061 - Modification State 0

2.8.3 Date of Test

16-June-2025 to 18-June-2025

2.8.4 Test Method

Bluetooth Low Energy- -Bluetooth

This test was performed in accordance with Certification Ordinance Article 2 Clause 1 Item19.

Limit: upper limit +20%.

2.8.5 Environmental Conditions

Ambient Temperature	24.0 °C °C
Relative Humidity	51.0 % %
Atmospheric Pressure	99.9 kPa

2.8.6 Test Results

Measurement Frequency		2402MHz	2440MHz	2480MHz	Declared Output Power	Result	Limit
RF Output Power	mW	0.741310	0.741310	0.741310	1 mW	PASS	10mW or Below
RF Output Power Tolerance	%	-25.869000	-25.869000	-25.869000			+20%

Table 32 – 1Mbps Test Summary



Measurement Frequency		2402MHz	2440MHz	2480MHz	Declared Output Power	Result	Limit
RF Output Power	mW	0.524807	0.501187	0.512861	1 mW	PASS	10mW or Below
RF Output Power Tolerance	%	-47.519300	-49.881300	-48.713900			+20%

Table 33 – 2Mbps Test Summary



3 Test Equipment Information

3.1 General Test Equipment Used

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Support PC MS Windows 10 Pro	Lenovo	Model 20JS0004US S/N PC-0KP3YL 17/03	-	-	-

Table 34



Product Service

4 Incident Reports

No incidents reports were raised.

5 Photographs

5.1 Equipment Under Test (EUT)



Conducted Sample



Radiated Sample



6 Measurement Uncertainty

Calculation of Measurement Uncertainty per CISPR 16-4-2:2011 with Corr. 1

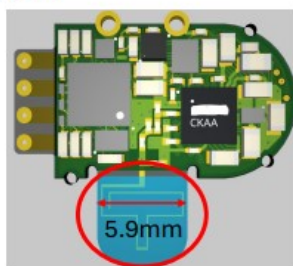
	Input Quantity (Contribution) X_i	Value	Prob. Dist.	Divisor	$u_i(x)$	$u_i(x)^2$
1	Receiver reading	0.10 dB	Normal, k=1	1.000	0.10	0.01
2	Cable attenuation	1.00 dB	Normal, k=2	2.000	0.50	0.25
3	Receiver sinewave accuracy	0.09 dB	Normal, k=2	2.000	0.05	0.00
4	Receiver pulse amplitude	0.00 dB	Rectangular	1.732	0.00	0.00
5	Receiver pulse repetition rate	0.00 dB	Rectangular	1.732	0.00	0.00
6	Noise floor proximity	0.00 dB	Rectangular	1.732	0.00	0.00
7	Frequency interpolation	0.10 dB	Rectangular	1.732	0.06	0.00
8	Mismatch	0.07 dB	U-shaped	1.414	0.05	0.00
Combined standard uncertainty			Normal	0.52 dB		
Expanded uncertainty			Normal, k=2	1.04 dB		

Note: Input quantities in red represent values unique to the lab and have been based upon empirical results taken by the lab or from calibration test data.

7 ANNEX A

X02,X01,X00 Flex Loop Antenna Test Data

The X02, X01, X00 Flex Loop Antenna is an antenna structure fabricated onto the implant's Flex portion of the PCB. The device under test (DUT) was performed in Speag broad band solution to emulate tissue with a wall depth of 5mm. The antenna is designed and tuned for implantation. Data represented at 2440MHz, highest gain between 2400-2480MHz BLE Spectrum.



Frequency	2440MHz (Center of BLE Spectrum)
Average Gain	-18.16dBi
Peak Gain	-14.48dBi
Efficiency	1.53%

Data Sciences International, an affiliate of Harvard Biosciences Inc.



Product Service

ACTIVE 3D ANTENNA PATTERN MEASUREMENTS

EUT:	OTA
Serial Number:	2-2
Customer:	Data Sciences International, Inc.
Attendees:	Dustin Morris
Customer Project:	None
Tested By:	Christopher Heintzelman
Test Run Description:	2-2_2440

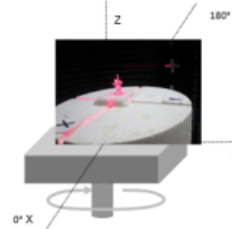
COMMENTS

Mouse model -4dBm AWP provided by the customer.

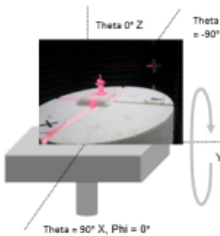
3D PATTERN DATA

Frequency (MHz)	2440
Ant. Port Input Pwr. (dBm)	-4.00
Tot. Rad. Pwr. (dBm)	-22.16
Peak ERP (dBm)	-18.48
Directivity (dBi)	3.68
Efficiency (dB)	-18.16
Efficiency (%)	1.53
Peak Gain (dBi)	-14.43
Average Gain (dB)	-18.16
E-Plane 3 dB BW (°)	132.00

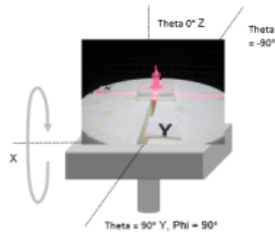
Azimuth Cut (Theta Axis = 90°)



Elevation Cut (Phi Axis = 0°)

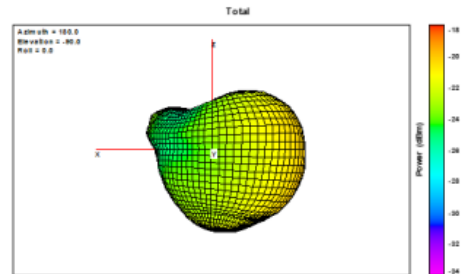
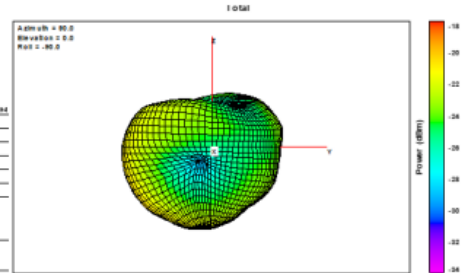


Elevation Cut (Phi Axis = 90°)



OTA1001.H104

Work Order:	DSC0004
Date:	12/22/2023
Temperature:	22.3 °C
Relative Humidity:	30.8% RH
Bar. Pressure:	1020 mbar
Job Site:	MN10





Product Service

2D Polar Plots

