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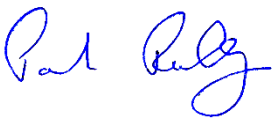
FCC Test Firm Registration	409640
IC Site Registration	IE0001
Date	20th Sept 2022
EUT Description	Sensor with Bluetooth Low Energy
FCC ID	2A7OO-OUTPUT-V2
Authorised by	**Paul Reilly**
Authorised Signature:	

TEST SUMMARY

The equipment complies with the requirements according to the following standards.

FCC 15.247 Section	RSS-247 Section	TEST PARAMETERS	Test Result
15.247 (a)2	RSS-247 5.2a	6dB bandwidth	Pass
15.247 (e)	RSS-247 5.2b	Power Spectral Density	Pass
15.247 (b)3	RSS-247 5.4d	Output power Conducted	Pass
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions	Pass
15.205 15.209	RSS Gen 8.9 RSS Gen 8.10	Radiated Spurious Emissions	Pass
	RSS Gen 6.7	99% bandwidth	Pass

RSS 247-2 (Feb 2017)
RSS Gen Issue5 Amd 2 (Feb 2021)

Exhibit A – Technical Report

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1.0 EUT Description

Type:	Sensor with Bluetooth Low Energy
Type of radio:	Stand-alone
Transmitter Type:	Bluetooth Low Energy
Operating Frequency Range(s):	2.402 GHz - 2.480GHz
Number of Channels:	79
Antenna:	Integral
Power configuration:	3.7 v DC
Ports:	USB-C port (for charging only)
Classification:	DTS
BLE Antenna Type :	Chip antenna
BLE Antenna Gain Max:	0.5 dBi
BLE Antenna Impedance:	50 ohms
Test Standards:	15.247 RSS-247
Test Methodology:	Measurements performed according to the procedures in ANSI C63.10-2013 KDB 558074 V5 R02

The OUTPUT-V2 was a wireless device (BLE) designed to be worn on the body or attached top gym equipment and reports various metrics on user movement to a mobile application (app).

Software used to control the EUT

The nRFgo Studio from Nordic Semiconductor was used, running on a standard Windows laptop was used control the EUT during test,
This application is downloadable form Nordic Semiconductor for the purposes of testing the nRF radio interface.

Some product test samples were programmed with Nordic DTM (Direct Test Mode) firmware.

The DTM application enables the DTM test functions described in *Bluetooth* Specification Version 5.2, Vol. 6, Part F.

The purpose of DTM is to test the operation of the radio at the physical level, such as:

- Transmission power and receiver sensitivity
- Frequency offset and drift
- Modulation characteristics
- Packet error rate
- Intermodulation performance
- Constant Tone Extension (Direction Finding)

The DTM firmware is compiled directly from the Nordic SDK.

1.1 EUT Operation

Operating Conditions during Test:

Conducted measurements were carried out on a sample (Sample #005) where the antenna was replaced by cable and SMA. The EUT was powered from a dc adapter (Phihong Technology Ltd. Model PSM03K-050Q-3) for all tests

The EUT was operated in test mode where the channel and modulation was set via USB connection from the EUT to a laptop.

Radiated measurements were performed on a sample (Sample #006) with standard internal antenna and powered from a dc adapter
(Phihong Technology Ltd. Model PSM03K-050Q-3) for all tests.

The firmware setting for output power was 0dBm for all tests.

Radiated results in this test report were performed with the populated pcb outside of its plastic enclosure. These represented worst case results compared to radiated testing with the pcb in the enclosure.

Environmental conditions

	Temperature	Relative Humidity
Test	°C	%
Conducted Emissions	23	40
Radiated Emissions <1GHz	18	42
Radiated Emissions >1GHz	19	47

1.2 Modifications

No modifications were required in order to pass the test specifications.

1.3 Date of Test

The tests were carried out on 13th ,14th, 15th 17th 18th Jul 2022.

1.4 Description of Test modes

Channel	Freq MHz
Low	2402
Mid	2440
High	2480

All tests were performed with the EUT on the low mid and high channels.

2 Emissions Measurements

2.1 Conducted Emissions Measurements

Radio Conducted measurements were carried out on the EUT as per section 1.1 above.

All results were measured as conducted on the antenna except radiated spurious emissions and radiated carrier power.

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2.2 Radiated Emissions Measurements

Radiated Power measurements were made at the Compliance Engineering Ireland Ltd anechoic chamber located in Dunshaughlin, Co. Meath, Ireland to determine the radio noise radiated from the EUT. A "Description of Measurement Facilities" has been submitted to the FCC and approved pursuant to Section 2.948 of CFR 47 of the FCC rules.
The EUT was centred on a motorized turntable, which allows 360 degree rotation.

Emissions below 1GHz were measured using a test antenna positioned at a distance of 3 metres from the EUT (as measured from the closest point of the EUT). The radiated emissions were maximised by configuring the EUT, by rotating the EUT, and by raising and lowering the antenna from 1 to 4 metres. In this case the resolution bandwidth was 100kHz.
Emissions in the 1GHz-18GHz range were measured using a horn antenna located at 3 metres distance from the EUT in a fully anechoic chamber.
The radiated emissions were maximised by configuring the EUT and by rotating the EUT, and by raising and lowering the test antenna from 1 to 4 metres.
Emissions above 18GHz were measured using a horn antenna located at 1 metre distance from the EUT in a fully anechoic chamber. The radiated emissions were maximised by configuring the EUT and by rotating the EUT and raising the test and antenna from 1 to 4 metres.
In this case the resolution bandwidth was 1MHz and video bandwidth was 3 MHz. for peak measurements. Average measurements were performed as per ANSI 63.10 2013 Section 11.12.2.5.2)

A pre-scan was performed to determine the worst case EUT orientation for the radiated measurements.
All radiated tests were performed with the EUT in orientation O3 for Horizontal polarization measurements and with the EUT in orientation O2 for Vertical polarisation measurements.
Ref Appendix D for orientations.

3. Results for Conducted emissions on the mains

The EUT was powered from the mains through a LISN and an off the shelf mains to 5V DC adapter
(Phihong Technology Ltd. Model PSM03K-050Q-3) for all tests

Limit as per 15.207

Detector	Frequency	Reading	Margin	Phase
QP/ Ave	MHz	dBuV	dB	L/N
Quasi-Peak	0.1523	33.53	-32.41	Live
Average	0.1748	27.57	-27.72	Live
Quasi-Peak	0.2468	44.59	-18.65	Live
Average	0.2490	38.66	-14.51	Live
Average	1.138	26.69	-19.31	Live

Detector	Frequency	Reading	Margin	Phase
QP/ Ave	MHz	dBuV	dB	L/N
Quasi-Peak	0.2423	38.67	-24.69	Neutral
Average	0.2445	27.03	-26.27	Neutral

Test Result Pass

4. Conducted Measurements

4.1 Bandwidth

4.1.1 6dB bandwidth

Test Method
As per Ansi 63.10 Section 11.8.2

Ansi63.10 Section **11.8.2 Option 2**
The automatic bandwidth measurement capability of an instrument may be employed using the *X* dB bandwidth mode with *X* set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW ≥ 3 × RBW, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥6 dB.

Limit for 6dB Bandwidth = 500KHz min

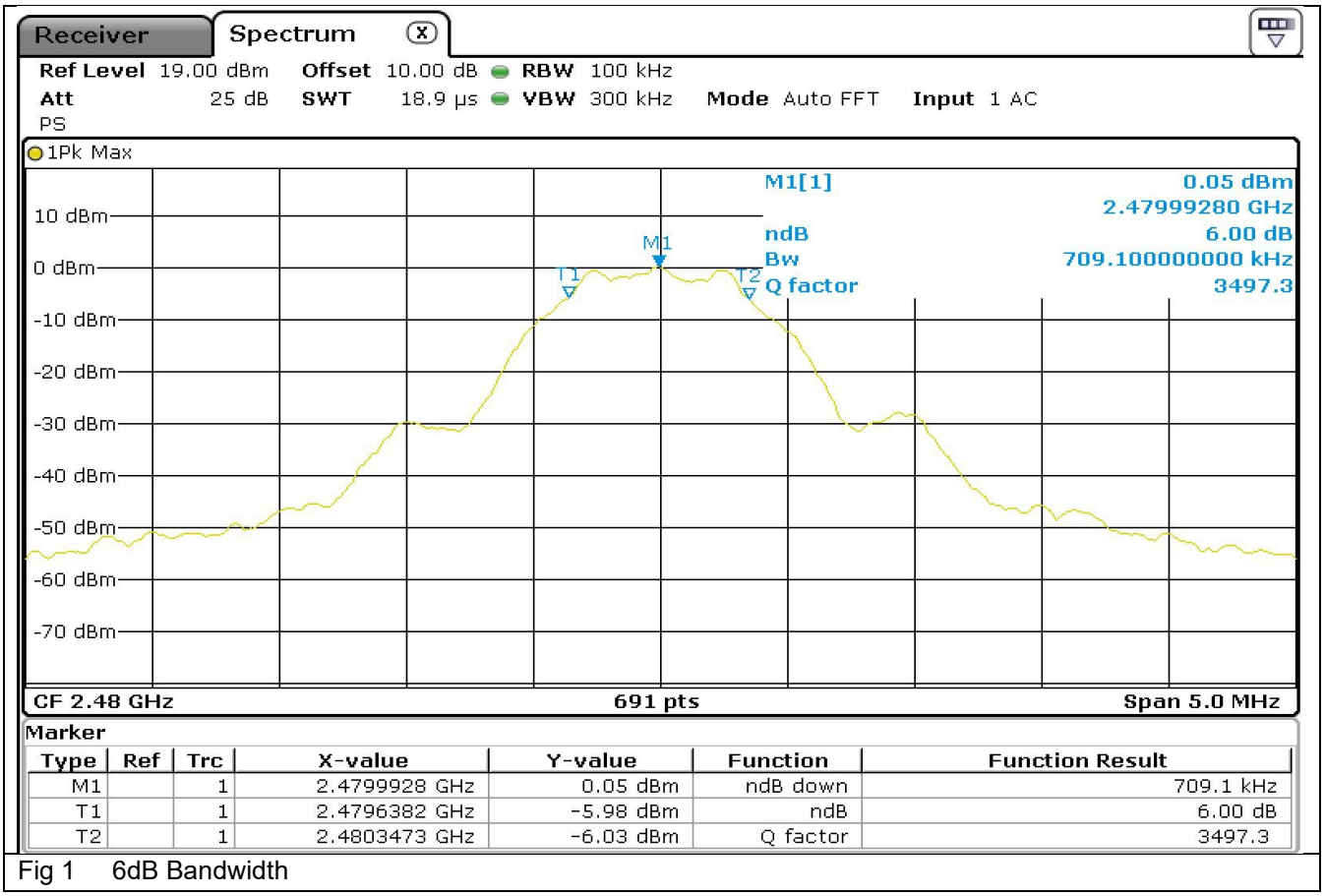


Fig 1 6dB Bandwidth

Frequency	6dB Bandwidth	Limit Min	Margin
GHz	KHz	KHz	KHz
2.402	701.9	500	201.9
2.44	709.1	500	209.1
2.48	709.1	500	209.1

Result :- Pass

4.1.2 99% bandwidth

Test Method
As per Ansi 63.10 Section 6.9.3

Ansi63.10 Section **6.9.3 Occupied bandwidth—power bandwidth (99%) measurement procedure**
The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.
The following procedure shall be used for measuring 99% power bandwidth:
a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
d) Step a) through step c) might require iteration to adjust within the specified range.
e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labelled. Tabular data may be reported in addition to the plot(s).

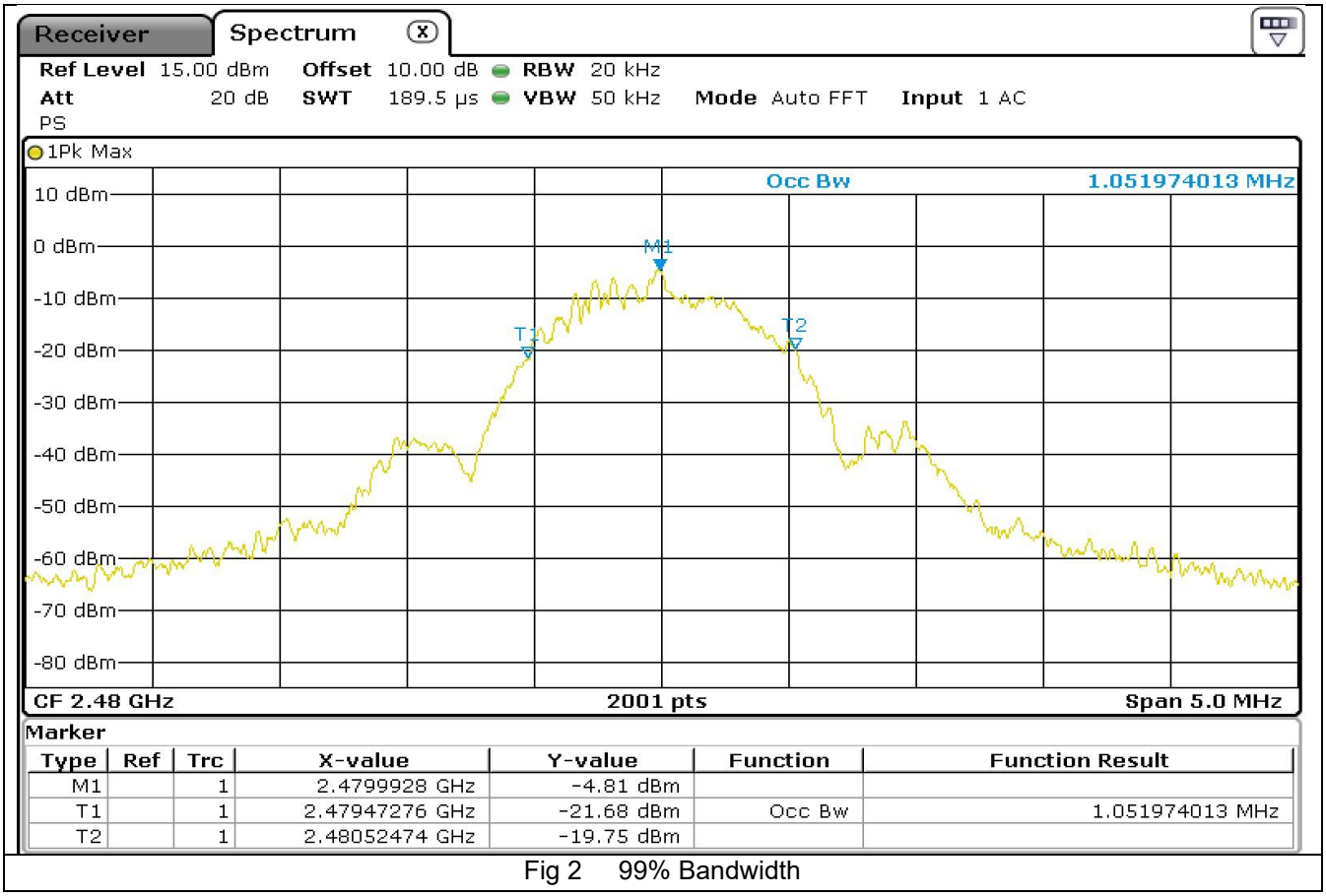


Fig 2 99% Bandwidth

Frequency	99% Bandwidth
GHz	MHz
2.402	1.047
2.44	1.049
2.48	1.052

Result :- Pass

4.2 Duty Cycle

Test Method

As per Ansi 63.10 Section 7.5 KDB 558074 zero span measurement method

7.5 Procedure for determining the average value of pulsed emissions

Unless otherwise specified, when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 s (100 ms). In cases where the pulse train exceeds 0.1 s, the measured field strength shall be determined during a 0.1 s interval.64 The following procedure is an example of how the average value may be determined. The average field strength may be found by measuring the peak pulse amplitude (in log equivalent units) and determining the duty cycle correction factor (in dB) associated with the pulse modulation as shown in Equation (10):

$\delta(dB) = 20\log(\Delta)$ (10)

where

δ is the duty cycle correction factor (dB)

Δ is the duty cycle (dimensionless)

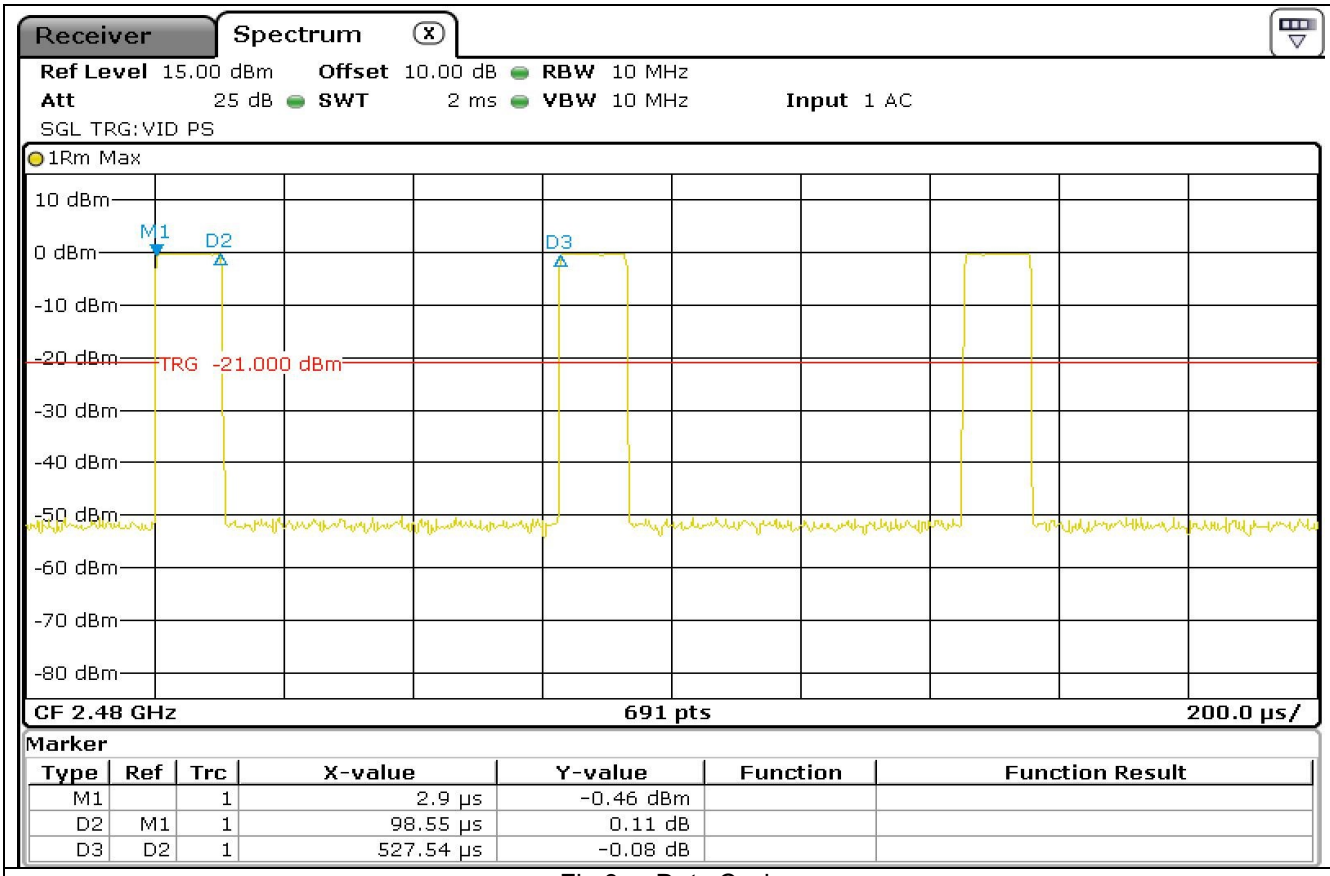


Fig 3 Duty Cycle

Duty Cycle

Note the duty cycle results above shows how the sample operated during testing.

Duty cycle =Ton/Tperiod =98.55/527.54 =18.68%

=> Duty cycle correction factor =20*log (1/d) = 14.57 dB

4.3 Power Spectral Density

Test Method
As per Ansi 63.10 Section 11.10.2

Ansi63.10 Section **Section 11.10.2 Method PKPSD (peak PSD)**
The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:
a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span to 1.5 times the DTS bandwidth.
c) Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
d) Set the VBW ≥ [3 × RBW].
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.
j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

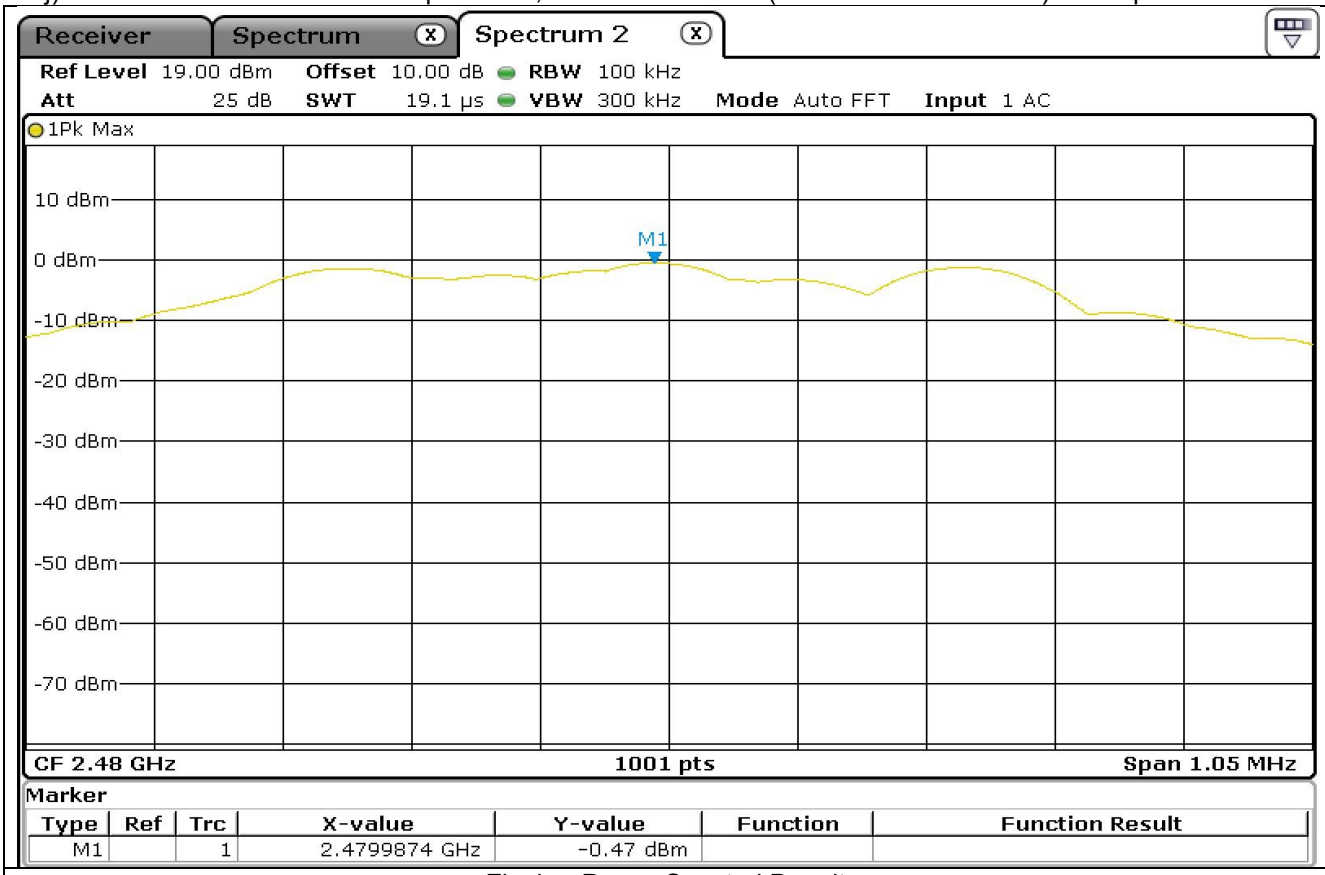


Fig 4 Power Spectral Density

Frequency	Measurement	Conducted Peak	Limit	Margin
GHz	dBm	dBm	dBm	dB
2.402	-0.43	-0.43	8	8.43
2.44	-0.51	-0.51	8	8.51
2.48	-0.47	-0.47	8	8.47

Result :- Pass

4.4 Output power Conducted

4.4.1 Test Method

As per Ansi 63.10 Section 11.9..1.1

Ansi63.10 Section **11.9.1.1 RBW ≥ DTS bandwidth**

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

a) Set the RBW ≥ DTS bandwidth.
b) Set VBW ≥ [3 × RBW].
c) Set span ≥ [3 × RBW].
d) Sweep time = auto couple.
e) Detector = peak.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use peak marker function to determine the peak amplitude level.

4.4.2 Results

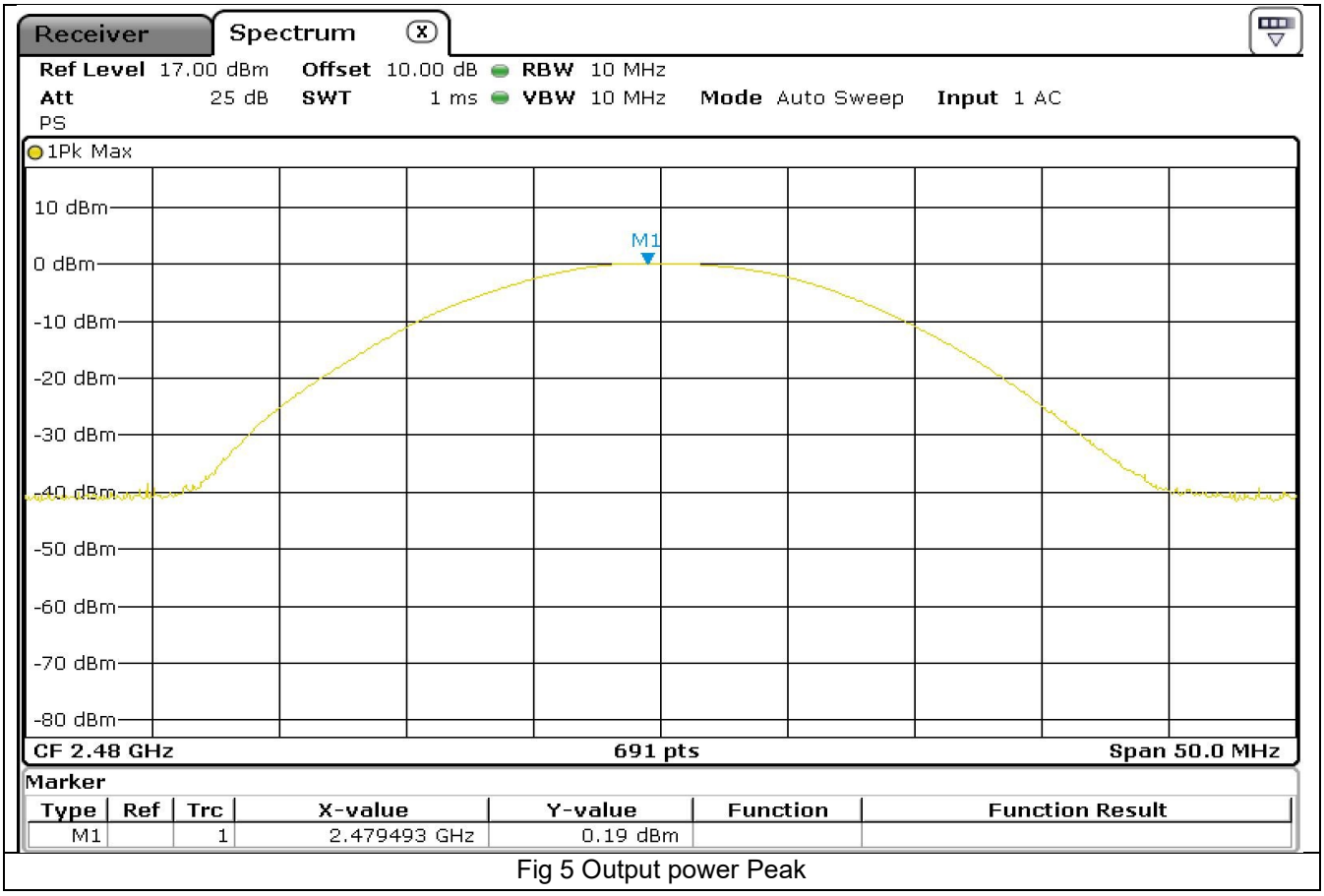


Fig 5 Output power Peak

Frequency	Conducted Peak Measurement	Limit	Margin
GHz	dBm	dBm	dB
2.402	0.16	30	29.84
2.44	0.15	30	29.85
2.48	0.19	30	29.81

Test Result :- Pass

5. Spurious Emissions Measurements

5.1 Conducted Spurious Emissions

5.1.1 Test Method

As per Ansi63.10 Section 11.11.1 and 6.10.4

Ansi63.10 Section **11.11.1 General**

Typical regulatory requirements specify that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions[89]:

a) If the maximum peak conducted output power procedure was used to determine compliance as described in 11.9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

Ansi63.10 Section **6.10.4 Authorized-band band-edge measurements (relative method)**

These procedures are applicable for determining compliance at authorized-band band-edges where the requirements are expressed as a value relative to the in-band signal level. Procedures for determining compliance with field strength limits at or close to the band-edges are given in 6.10.6 (see also Table A.2).

5.1.2 Results

Frequency	Peak 100KHz RBW	Measured	Limit Min	Margin
GHz	dBm	dBc	dBc	dB
2.402	-0.42	0	20	-
4.804	-67.26	66.84	20	46.84
7.206	-76.95	76.53	20	56.53
9.608	-75.39	74.97	20	54.97
2.274	-53.2	52.78	20	32.78
2.338	-47.5	47.08	20	27.08
2.53	-54	53.58	20	33.58

Frequency	Peak 100KHz RBW	Measured	Limit Min	Margin
GHz	dBm	dBc	dBc	dB
2.44	-0.1	0	20	-
4.88	-65	64.9	20	44.9
7.32	-77.15	77.05	20	57.05
9.76	-75.85	75.75	20	55.75
2.504	-50.1	50	20	30
2.376	-47.7	47.6	20	27.6
2.568	-54.3	54.2	20	34.2

Frequency	Peak 100KHz RBW	Measured	Limit Min	Margin
GHz	dBm	dBc	dBc	dB
2.48	-0.56	0	20	-
4.96	-66.6	66.04	20	46.04
7.44	-76.6	76.04	20	56.04
9.92	-75.41	74.85	20	54.85
2.352	-53.25	52.69	20	32.69
2.487	-51.09	50.53	20	30.53
2.544	-50.2	49.64	20	29.64
2.608	-53.5	52.94	20	32.94

Ref Appendix A for Scans

Test Result: - Pass

5.2 Radiated Spurious Emissions in Restricted bands

5.2.1 Test Method

As per Ansi63.10 Section 11.12.1 and 6.10.5

Ansi63.10 Section **11.12.1 Radiated emission measurements**

Because the typical emission requirements are specified in terms of radiated field strength levels, measurements performed to determine compliance have traditionally relied on a radiated test configuration.92 Radiated measurements remain the principal method for determining compliance to the specified requirements; however antenna-port conducted measurements are also now acceptable to determine compliance (see 11.12.2 for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in 6.3, 6.5, and 6.6 shall be followed

6.10.5 Restricted-band band-edge measurements

These procedures are applicable for determining compliance at band edges of restricted bands.

6.10.5.1 Test setup

Restricted-band band-edge tests shall be performed as radiated measurements, on a test site meeting the specifications in 5.2 at the measurement distances specified in 5.3.57

The instrumentation shall meet the requirements in 4.1.1 using the bandwidths and detectors specified in 4.1.4.2. Considering the requirements of 5.8, the antenna(s) shall be connected to the antenna ports. When performing radiated measurements, the measurement antenna(s) shall meet the specifications in 4.3. The EUT shall be connected to an antenna and operated at the highest power settings following procedures in 6.3, and the relevant procedure in 6.4, 6.5, or 6.6

Frequency MHz	Quasi Peak Level dBuV/m	Antenna Polarity	Antenna Factor dB	Cable loss dB	Final Field Strength Quasi Peak dBuV/m	Quasi Peak Limit dBuV/m	Margin dB
962.425	-8.9	Vertical	24.2	2.4	17.7	54.0	36.3
240.15	-6.3	Vertical	15.7	1.4	10.8	46.0	35.2
244.95	3.9	Horizontal	15.8	1.4	21.1	46.0	24.9

Frequency	Measured Peak Level	Antenna Factor	Preamp Gain	Cable Loss	Antenna Polarity	Duty Cycle Correction	Final Peak Level	Average Limit +20dB	Margin
GHz	dBuV/m	dB	dB	dB	V/H	dB	dBuV/m	dBuV/m	dB
4.804	45.9	32.4	37.1	5.2	Vertical	0.00	46.4	74	27.6
12.010	44.0	40.3	36.5	7.8	Vertical	0.00	55.6	74	18.4
4.804	45.7	32.4	37.1	5.2	Vertical	0.00	46.2	74	27.8
12.010	44.0	40.3	36.5	7.8	Horizontal	0.00	55.6	74	18.4

Frequency	Measured Peak Level	Antenna Factor	Preamp Gain	Cable Loss	Antenna Polarity	Duty Cycle Correction	Final Average Level	Average Limit	Margin
GHz	dBuV/m	dB	dB	dB	V/H	dB	dBuV/m	dBuV/m	dB
12.010	44.0	40.3	36.5	7.8	Vertical	-14.57	41.1	54	12.9
12.010	44.0	40.3	36.5	7.8	Horizontal	-14.57	41.0	54	13.0

Frequency	Measured Peak Level	Antenna Factor	Preamp Gain	Cable Loss	Antenna Polarity	Duty Cycle Correction	Final Peak Level	Average Limit +20dB	Margin
4.880	45.8	32.4	37.3	5.2	Vertical	0.00	46.1	74	27.9
7.320	44.6	37.7	38	6.7	Vertical	0.00	51.0	74	23.0
12.200	43.6	40.3	37.7	8.9	Vertical	0.00	55.1	74	18.9
4.880	46.0	32.4	37.3	5.2	Vertical	0.00	46.3	74	27.7
7.320	43.9	37.7	38	6.7	Horizontal	0.00	50.3	74	23.7
12.200	43.7	40.3	37.7	8.9	Horizontal	0.00	55.2	74	18.8

Frequency	Measured Peak Level	Antenna Factor	Preamp Gain	Cable Loss	Antenna Polarity	Duty Cycle Correction	Final Average Level	Average Limit	Margin
12.200	43.6	40.3	37.7	8.9	Vertical	-14.75	40.4	54	13.6
12.200	43.7	40.3	37.7	8.9	Horizontal	-14.75	40.4	54	13.6

Frequency	Measured Peak Level	Antenna Factor	Preamp Gain	Cable Loss	Antenna Polarity	Duty Cycle Correction	Final Peak Level	Average Limit +20dB	Margin
4.960	44.4	33.5	37.4	5.4	Vertical	0.00	45.9	74	28.1
7.440	45.1	37.7	37.5	6.3	Vertical	0.00	51.6	74	22.4
12.400	42.7	40.3	36.4	8.0	Vertical	0.00	54.6	74	19.4
4.960	44.9	33.5	37.4	5.4	Horizontal	0.00	46.4	74	27.6
7.440	44.4	37.7	37.5	6.3	Horizontal	0.00	50.9	74	23.1
12.400	42.9	40.3	36.4	8.0	Horizontal	0.00	54.8	74	19.3

Frequency	Measured Peak Level	Antenna Factor	Preamp Gain	Cable Loss	Antenna Polarity	Duty Cycle Correction	Final Average Level	Average Limit	Margin
12.400	42.7	40.3	36.4	8.0	Vertical	-14.57	40.0	54	14.0
12.400	42.9	40.3	36.4	8.0	Horizontal	-14.57	40.2	54	13.8

Average measurements not performed where the Final Peak level is below the Average limit of 54dBuV/m.

Test Result: - Pass

5.3 Radiated Band Edge / Restricted band Measurements

Band Edge/ Restricted Band near 2.4 GHz band

Frequency	Measured Peak Level	Antenna Factor	Preamp Gain	Cable Loss	Antenna Polarity	Duty Cycle Correction	Final Peak Level	Average Limit +20dB	Margin
GHz	dBuV/m	dB	dB	dB	V/H	dB	dBuV/m	dBuV/m	dB
2.400	68.5	27.4	38.5	3.5	Vertical	0.00	60.91	74	13.1
2.400	68.5	27.4	38.5	3.5	Horizontal	0.00	60.9	74	13.1

Frequency	Measured Peak Level	Antenna Factor	Preamp Gain	Cable Loss	Antenna Polarity	Duty Cycle Correction	Final Peak Level	Average Limit +20dB	Margin
GHz	dBuV/m	dB	dB	dB	V/H	dB	dBuV/m	dBuV/m	dB
2.4835	61.62	28.7	38.3	3.4	Vertical	0.00	55.42	74	18.6
2.4835	61.91	28.7	38.3	3.4	Horizontal	0.00	55.71	74	18.3

Frequency	Final Peak Level	Antenna Polarity	Duty Cycle Correction	Average Level	Average Limit	Margin
GHz	dBuV/m	V/H	dB	dBuV/m	dBuV/m	dB
2.4000	60.91	Vertical	-14.57	46.34	54	7.7
2.4000	60.92	Horizontal	-14.57	46.35	54	7.7

Frequency	Final Peak Level	Antenna Polarity	Duty Cycle Correction	Average Level	Average Limit	Margin
GHz	dBuV/m	V/H	dB	dBuV/m	dBuV/m	dB
2.4835	55.42	Vertical	-14.57	40.85	54	13.2
2.4835	55.71	Horizontal	-14.57	41.14	54	12.9

Duty Cycle correction for Average measurement of pulsed signal -14.57dB
as per ANSI C63.10 Section 7.5

Test Result: - Pass

5.4 Radiated Power at fundamental

Frequency	Measured Peak Level	Antenna Factor	Preamp Gain	Cable Loss	Antenna Polarity	Final Peak Level	Power	Limit	Margin
MHz	dBuV/m	dB	dB	dB	V/H	dBuV/m	dBm	dBm	dB
2402	69.4	44.7	32.7	10.0	Vertical	91.4	-3.8	36.0	39.8
2402	73.6	44.7	32.7	10.0	Horizontal	95.6	0.4	36.0	35.6
2440	70.0	44.7	32.7	10.0	Vertical	92.0	-3.2	36.0	39.2
2440	73.0	44.7	32.7	10.0	Horizontal	95.0	-0.2	36.0	36.2
2480	69.7	44.7	32.7	10.0	Vertical	91.7	-3.5	36.0	39.5
2480	73.6	44.7	32.7	10.0	Horizontal	95.6	0.4	36.0	35.6

Note the Radiated field strength was measured at 3 metres and
the conversion formula below was used to determine the EIRP in dBm

$$EIRP\ (dBm) = E_{3m}\ (dBuV/m) - 95.2$$

Test Result Pass

6 Measurement Uncertainties

Measurement	Uncertainty
Radio Frequency	+/- $5x10^{-7}$
Maximum Frequency Deviation	+/- 1.7 %
Conducted Emissions	+/- 1 dB
Radiated Emission 30MHz-100MHz	+/- 5.3 dB
Radiated Emission 100MHz-300MHz	+/- 4.7 dB
Radiated Emission 300MHz-1GHz	+/- 3.9 dB
Radiated Emission 1GHz-40GHz	+/- 3.8 dB
Modulation bandwidth	+/- $5x10^{-7}$
Duty Cycle	+/- 5 %
Power supply	±0.1 VDC
Temperature	±0.2 °C
Frequency	±0.01 ppm

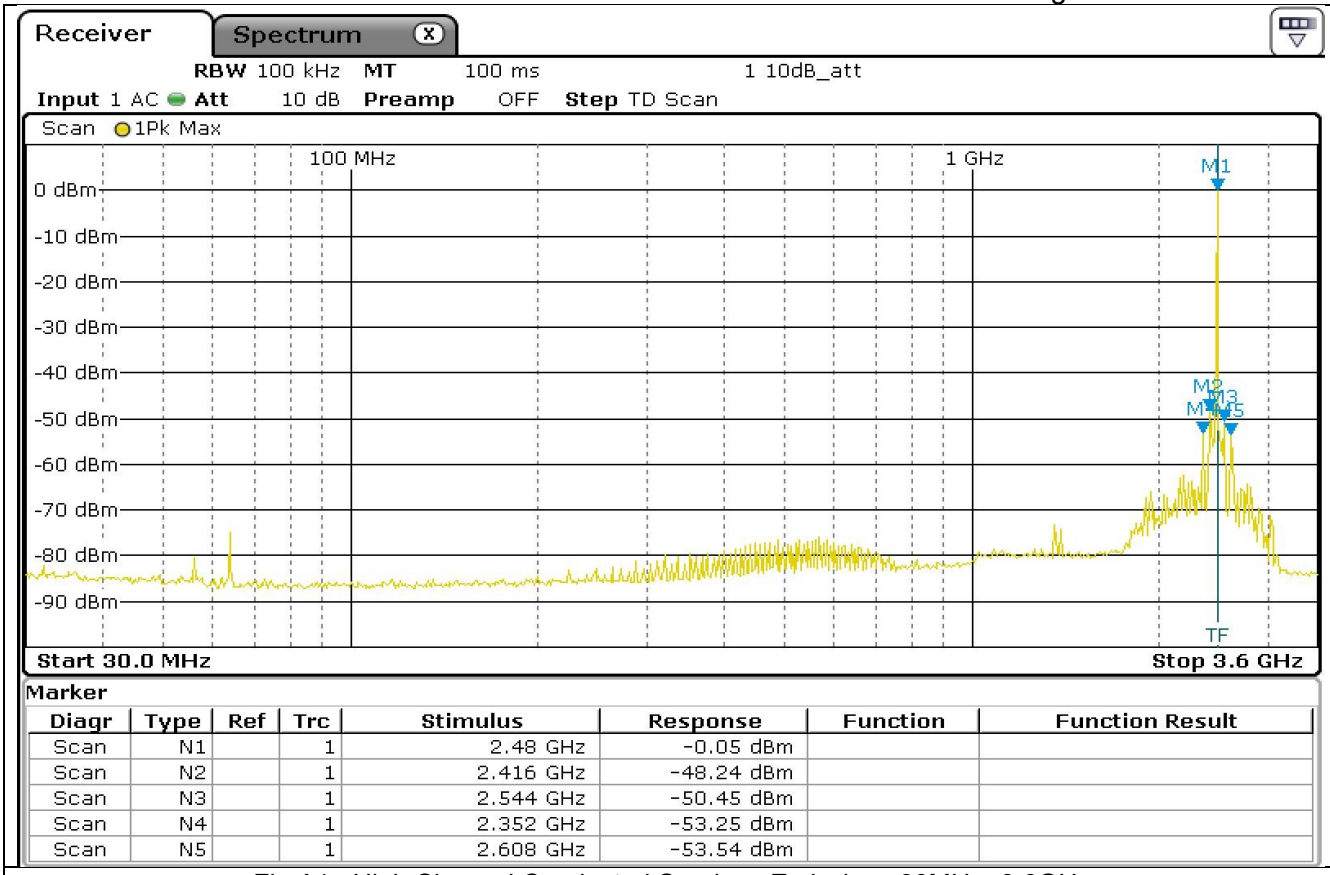
The measurement uncertainties stated were calculated with a k=2 for a confidence level of over 95% as per ETS TR100 028.

The test data can be compared directly to the specification limit to determine compliance, as the calculated measurement uncertainty meets the requirements of the applicable specification.

7 List of Test Equipment

Instrument	Manufacturer	Model	Serial Num	CEI Ref	Cal Due Date	Cal Interval Months
Microwave Preamplifier	Hewlett Packard	83017A	3123A00175	805	30-Sep-22	12
Spectrum Analyser 30Hz-40GHz	Rohde& Schwarz	FSP40	100053	850	10-Dec-24	36
Test Receiver 3.6GHz	Rohde& Schwarz	ESR	1316.3003k03-101625-s	869	28-May-23	36
LISN	Rohde & Schwarz	ESH3-Z5	825460/003	604	16-Feb-23	36
Antenna Horn	EMCO	3115	9905-5809	655	21-Jan-24	24
Fully Anechoic Chamber	CEI	FAR 3M	906	906	23-Jul-25	36
Anechoic Chamber	CEI	SAR 10M	845	845	17-May-25	36
Antenna Biconical	Schwarzbeck	VHBB 9124	9124 667	871	06-Oct-24	36
Antenna Log Periodic	Chase	UPA6108	1072	609	09-Sep-24	36
Cable Ntype 10m				963	29-Jul-23	12
Cable Ntype 2m				828	29-Jul-23	12
Cable purple Ktype 1.8m				917	29-Jul-23	12
Cable Ntype 10m				914	29-Jul-23	12
Cable HF Ktype 1.5m				705	29-Jul-23	12

Appendix A Conducted Measurements on the Antenna Port



Marker

Diagr	Type	Ref	Trc	Stimulus	Response	Function	Function Result
Scan	N1		1	2.48 GHz	-0.05 dBm		
Scan	N2		1	2.416 GHz	-48.24 dBm		
Scan	N3		1	2.544 GHz	-50.45 dBm		
Scan	N4		1	2.352 GHz	-53.25 dBm		
Scan	N5		1	2.608 GHz	-53.54 dBm		

Fig A1 High Channel Conducted Spurious Emissions 30MHz -3.6GHz

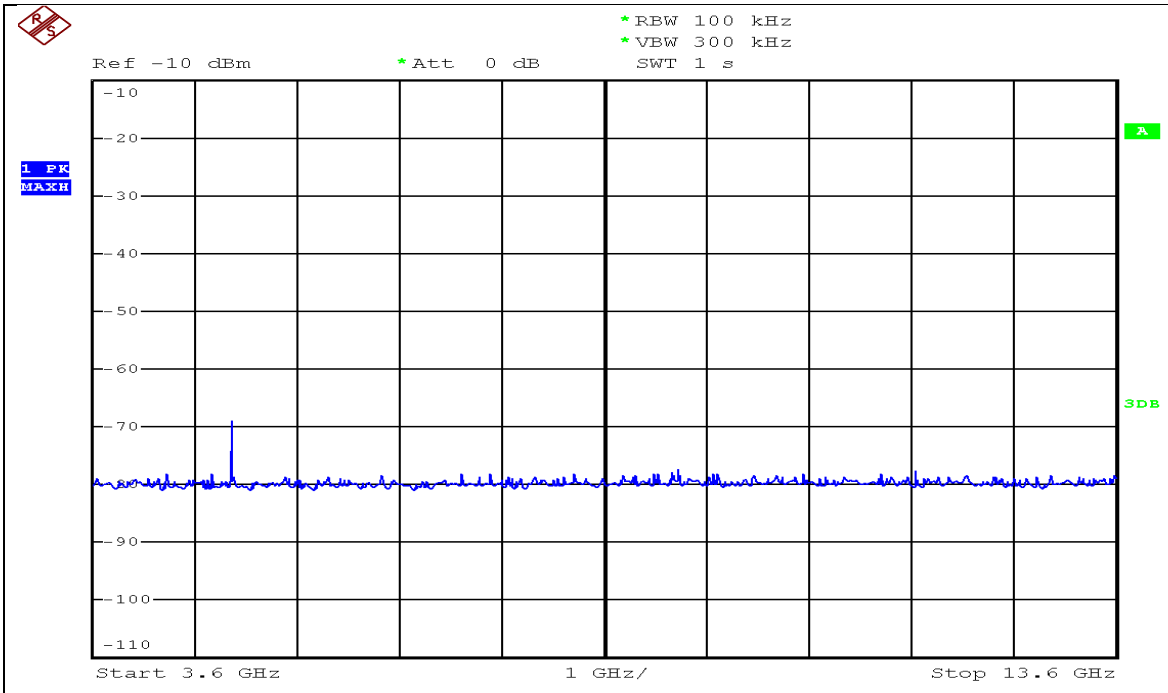


Fig A2 High Channel Conducted Spurious Emissions 3.6GHz-13.6GHz

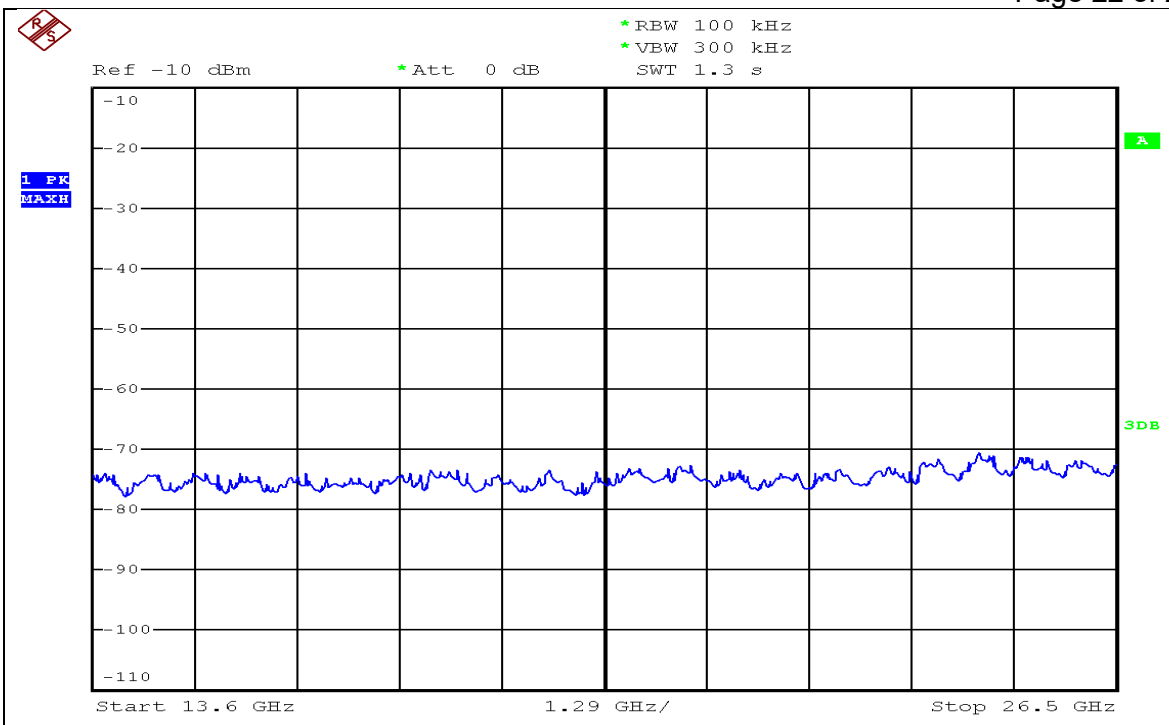


Fig A3 High Channel Conducted Spurious Emissions 13.6GHz -26.5GHz

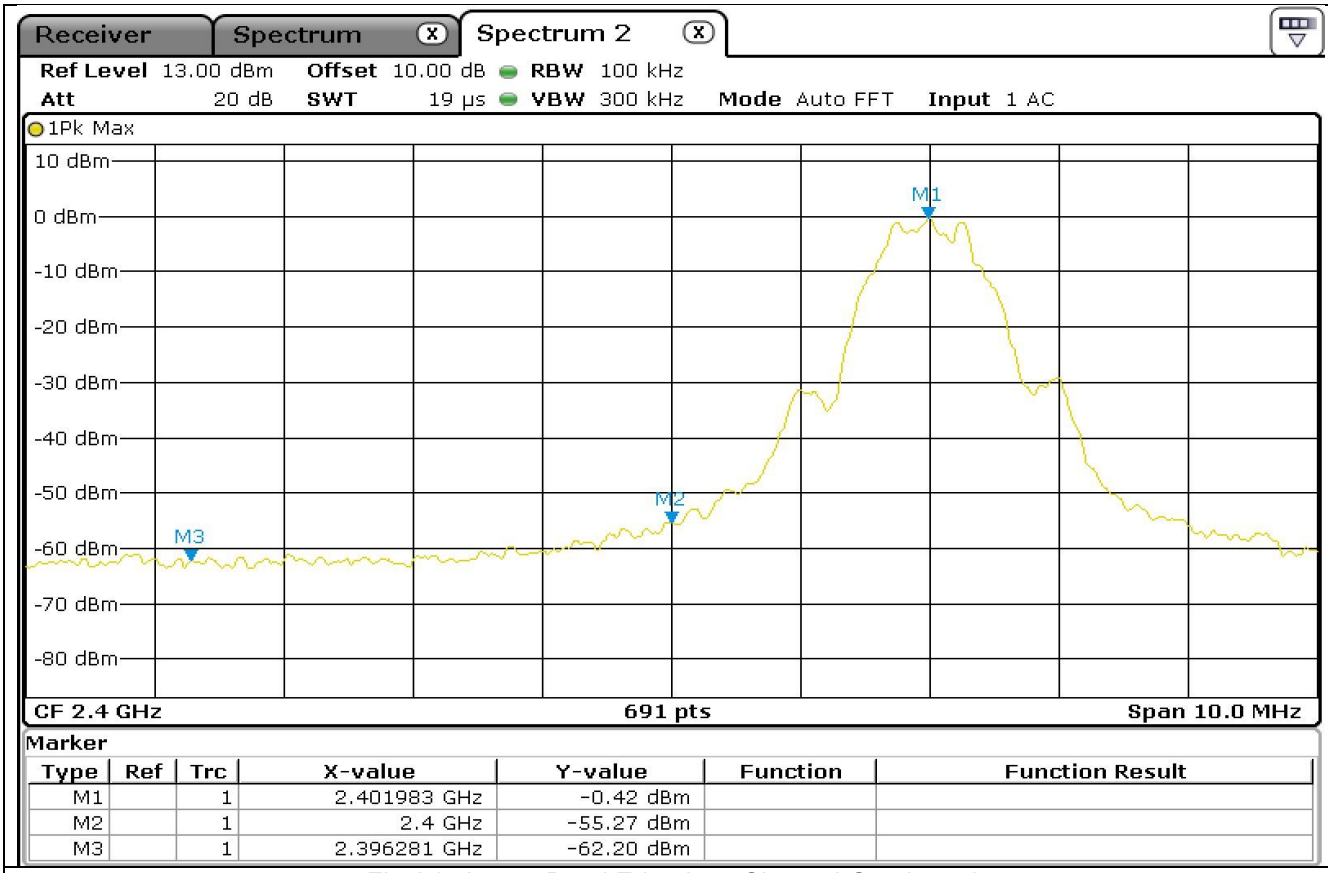


Fig A4 Lower Band Edge Low Channel Conducted

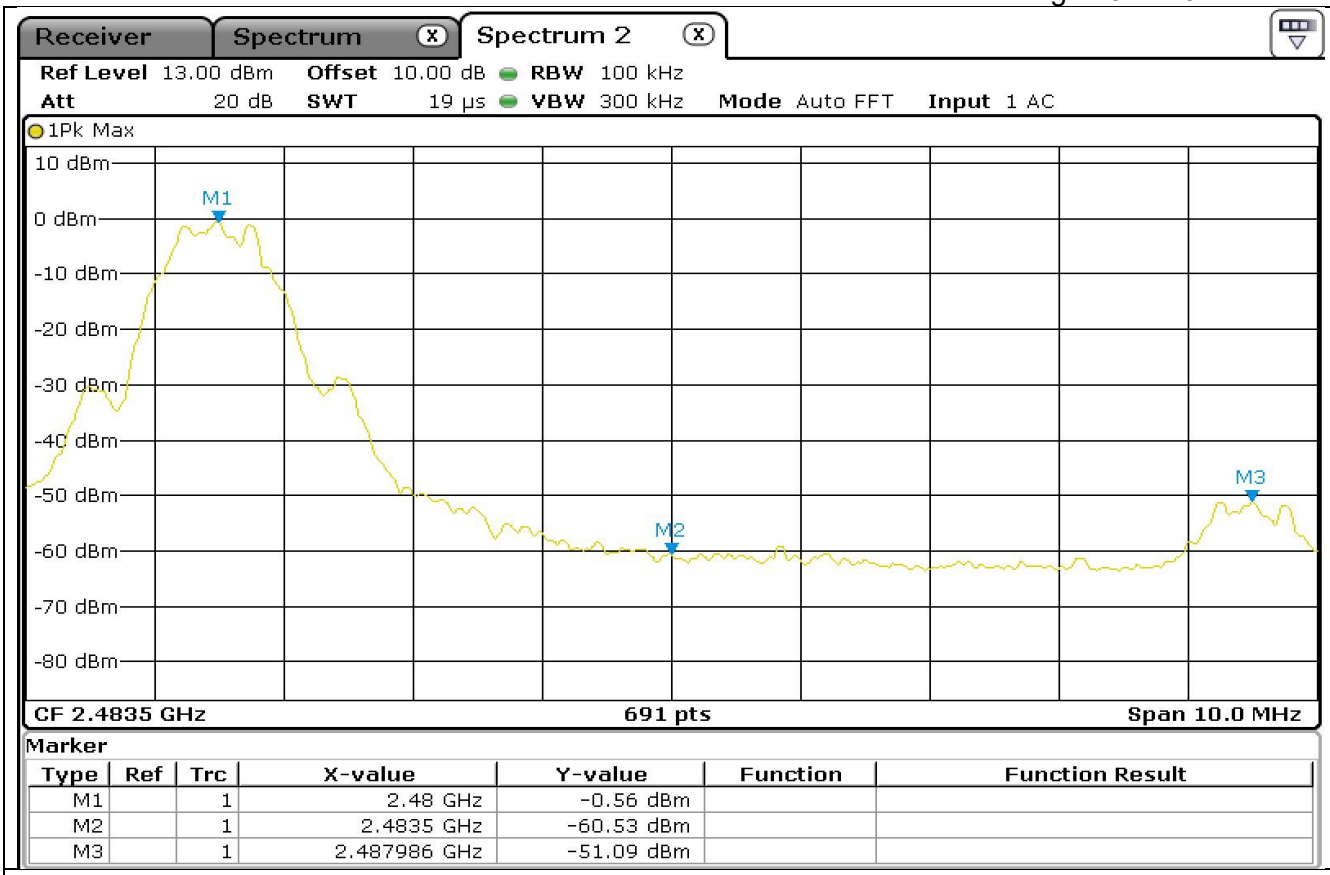


Fig A5 Upper band edge High Channel Conducted

Appendix B Radiated tests for Band Edges /Restricted band

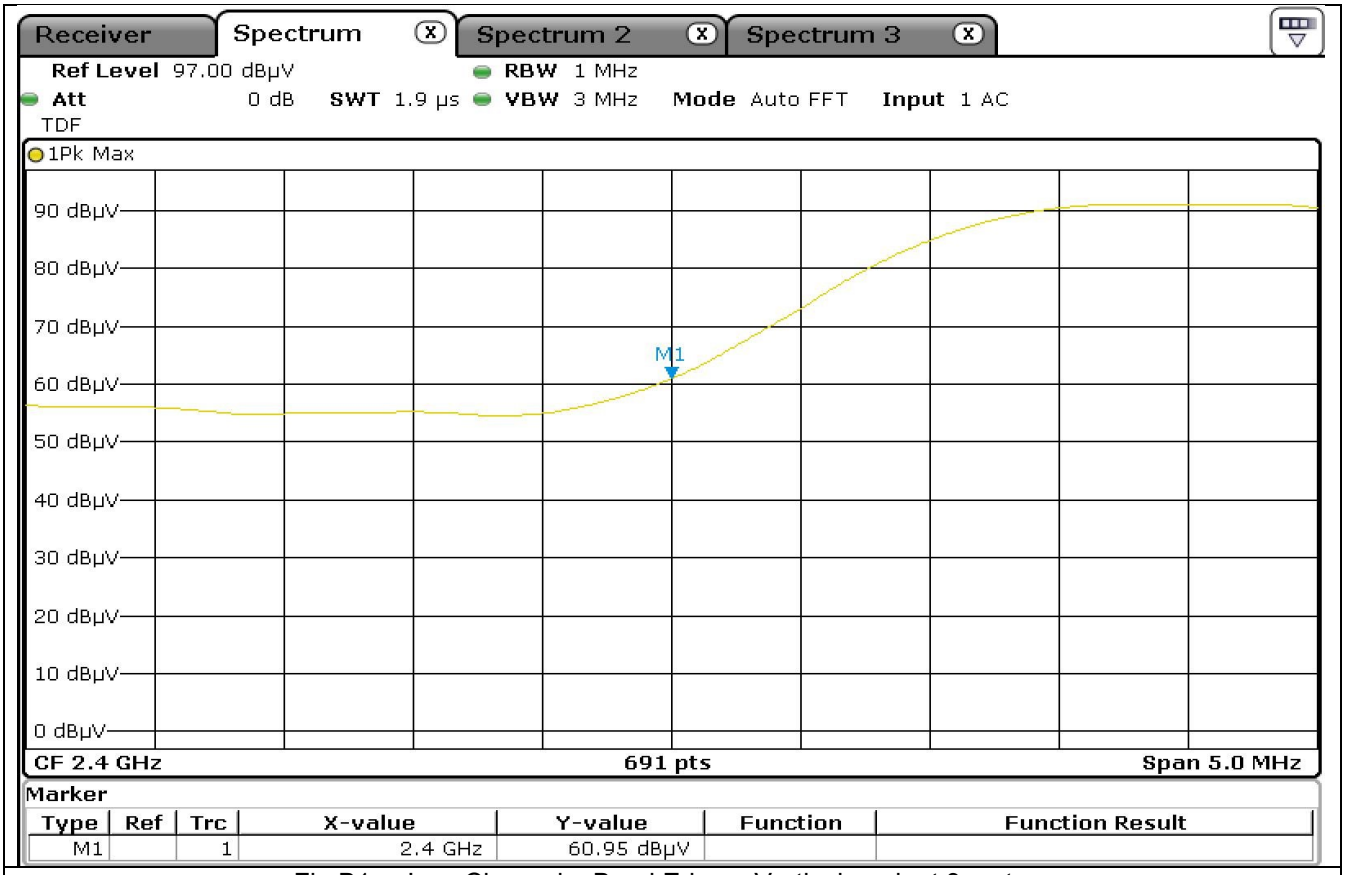


Fig B1 Low Channel Band Edge Vertical peak at 3 metres

Fig B2 Low Channel Band Edge Horizontal peak at 3 metres

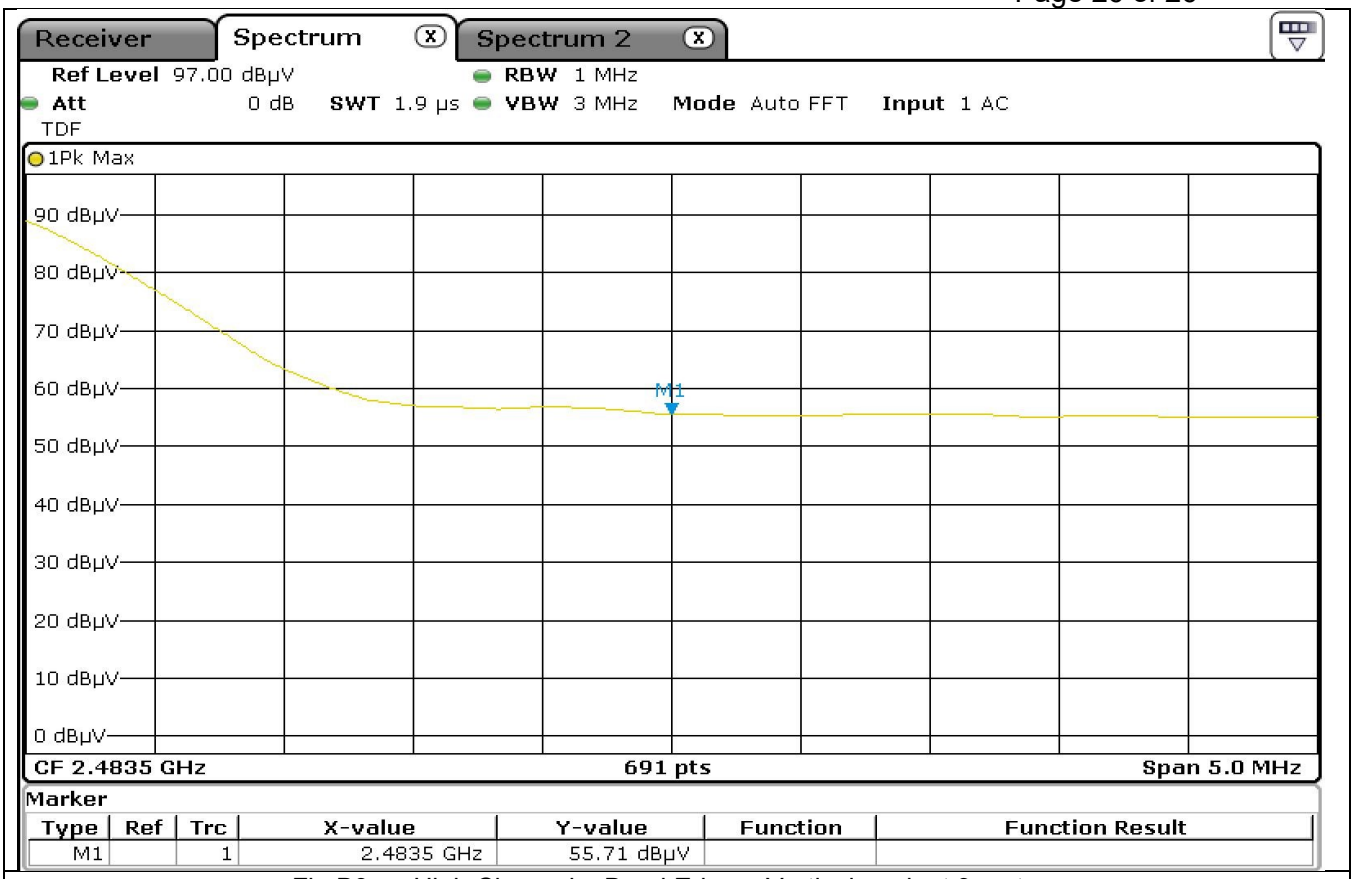


Fig B3 High Channel Band Edge Vertical peak at 3 metres

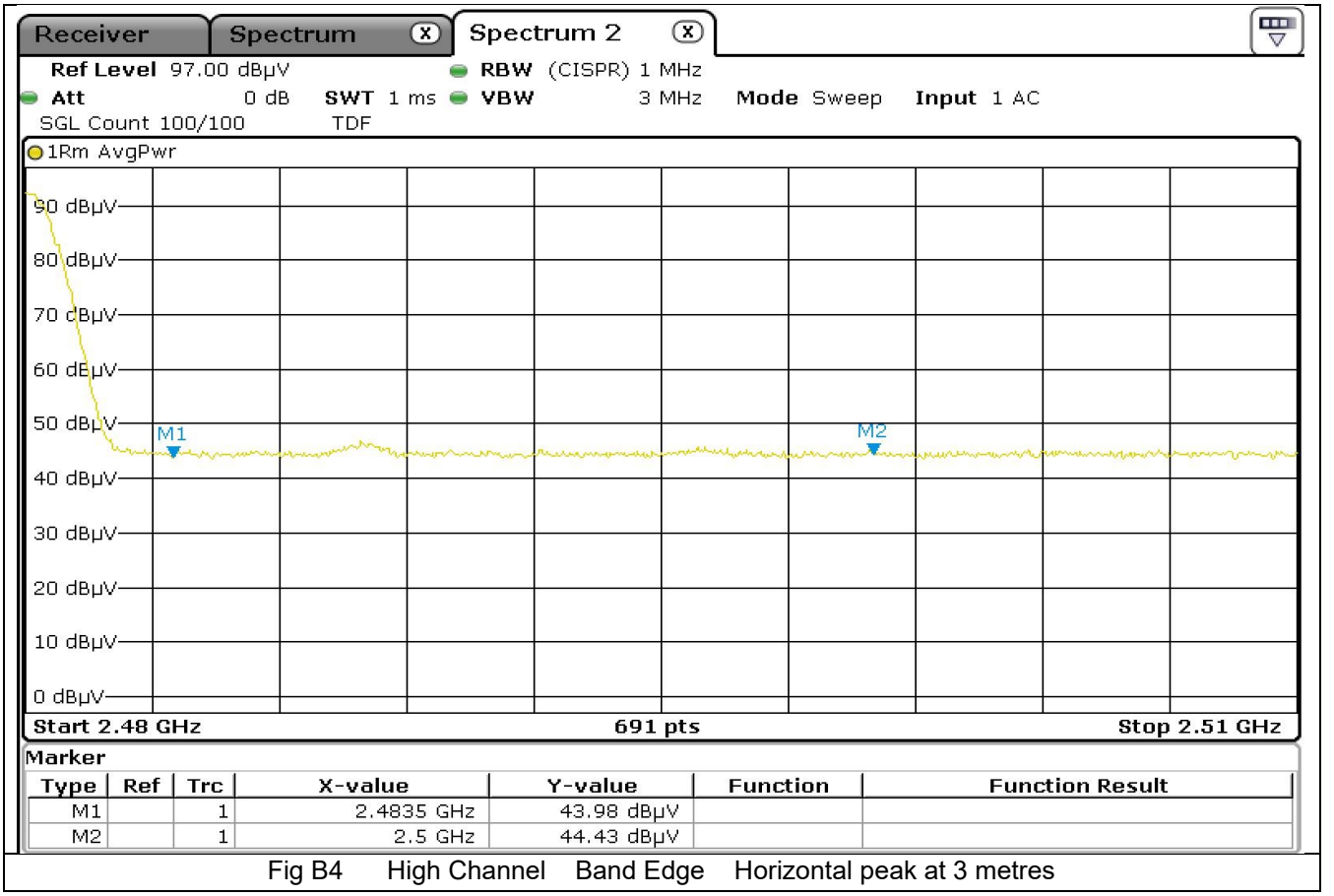


Fig B4 High Channel Band Edge Horizontal peak at 3 metres