EMI – TEST REPORT

- FCC Part 15.247, RSS-247 -

Type / Model Name	:	Radio Board H
Product Description	:	BLE Board
Applicant	:	Hilti Corporation
Address	:	Feldkircherstrasse 100
		9494 SCHAAN, LIECHTENSTEIN
Manufacturer	:	Hilti Corporation
Address	:	Feldkircherstrasse 100
		9494 SCHAAN, LIECHTENSTEIN

Test Result according to the standards listed in clause 1 test standards:	**POSITIVE**

Test Report No. : T45678-00-02WP	04. December 2019 Date of issue

Deutsche Akkreditierungsstelle
D-PL-12030-01-01
D-PL-12030-01-02

The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

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FCC ID: SDL-PR5XM IC: 5228A-PR5XM

Contents

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules and Regulations Part 15, Subpart A - General (September 2019)

Part 15, Subpart A, Section 15.31	Measurement standards
Part 15, Subpart A, Section 15.33	Frequency range of radiated measurements
Part 15, Subpart A, Section 15.35	Measurement detector functions and bandwidths

FCC Rules and Regulations Part 15, Subpart C - Intentional Radiators (September 2019)

Part 15, Subpart C, Section 15.203	Antenna requirement
Part 15, Subpart C, Section 15.204	External radio frequency power amplifiers and antenna modifications
Part 15, Subpart C, Section 15.205	Restricted bands of operation
Part 15, Subpart C, Section 15.207	Conducted limits
Part 15, Subpart C, Section 15.209	Radiated emission limits, general requirements
Part 15, Subpart C, Section 15.247	Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz and 5725 - 5850 MHz

ANSI C63.10: 2013	Testing Unlicensed Wireless Devices
ETSI TR 100 028 V1.3.1: 2001-03,	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Uncertainties in the Measurement of Mobile Radio Equipment Characteristics—Part 1 and Part 2
KDB 558074 D01 v05r02	Guidance for compliance measurements on DTS; FHSS and hybrid system devices operating under Section 15.247 of the FCC rules, April 2, 2019.

2 EQUIPMENT UNDER TEST

2.1 Photo documentation of the EUT – Detailed photos see ATTACHMENT A

2.2 Equipment type

Bluetooth Low Energy device

2.3 Short description of the equipment under test (EUT)

Board for communication between different Hilti tools.

Number of tested samples	:	1 radiated sample	1 conducted sample
Serial number	:	1	7
Firmware version	:	2.11.5.432	2.11.5.432

Items	Description
BT type	5.0 Low Energy
Modulation	GFSK
Frequency range	2400 MHz to 2483.5 MHz
Channel numbers	40
Data rate (kbps)	125, 500, 1000, 2000
Antenna type	Ceramic Monopole Antenna

2.4 Variants of the EUT

The tested variant has the article number 2234663. A variant (PCBA) without connecting cables exists with the article number 2214513.

2.5 Operation frequency and channel plan

The operating frequency is 2400 MHz to 2483.5 MHz.

Channel plan BT-Standard 802.15.1:

Channel	Frequency	Channel	Frequency
37	2402	18	2442
0	2404	19	2444
1	2406	20	2446
2	2408	21	2448
3	2410	22	2450
4	2412	23	2452
5	2414	24	2454
6	2416	25	2456
7	2418	26	2458
8	2420	27	2460
9	2422	28	2462
10	2424	29	2464
38	2426	30	2466
11	2428	31	2468
12	2430	32	2470
13	2432	33	2472
14	2434	34	2474
15	2436	35	2476
16	2438	36	2478
17	2440	39	2480

Note: the marked frequencies are determined for final testing.

2.6 Transmit operating modes

The EUT allows the user to select the following modes:
- TX continuous modulated

2.7 Antennas

The following antennas shall be used with the EUT:
The EUT has only an integrated PCB antenna, no external antenna shall be connected. The following antenna is soldered on the PCB:

Manufacturer	Model number	Type	Frequency range (GHz)	Peak gain (dBi)
Pulse Finland Oy	W3000 2.4 GHz WiFi Case #1	Ceramic Monopole Antenna	2.4 – 2.4835	1.4 @ 2.40 GHz 1.6 @ 2.44 GHz 1.9 @ 2.48 GHz

2.8 Power supply system utilised

Power supply voltage, V_{nom} : 3.0 – 3.3 V DC

2.9 Peripheral devices and interface cables

The following peripheral devices and interface cables are connected during the measurements:

- Control Box Model : Supplied by the applicant
- Laptop Model : Fujitsu, E752
- - Model : -

2.10 Determination of worst case conditions for final measurement

Measurements are made in all three orthogonal axes and the settings of the EUT are changed to locate at which position and at what setting of the EUT produce the maximum of the emissions.

The tests are carried out in the following frequency band:

2400 MHz – 2483.5 MHz

Preliminary tests are performed to find the worst case mode from all possible combinations between available modulations and data rates. The maximum output power depends on used data rate.

As worst case, the following channels and test modes are selected for the final test:

BLE V5	Available channel	Tested channels	Power setting	Modulation	Modulation type	Data rate
802.15.1	0 - 39	37, 17, 39	8 dBm	DSSS	GFSK	0.125 Mbps
802.15.1	0 - 39	37, 17, 39	8 dBm	DSSS	GFSK	0.5 Mbps
802.15.1	0 - 39	37, 17, 39	8 dBm	DSSS	GFSK	1.0 Mbps
802.15.1	0 - 39	37, 17, 39	8 dBm	DSSS	GFSK	2.0 Mbps

2.10.1 Test jig

No special test jig was used. However, the cables from the EUT were connected to a test box to supply the EUT with power and to be able to control the EUT.

2.10.2 Test software

The EUT has a special firmware that allows enabling a continuous transmission and receiving mode.

3 TEST RESULT SUMMARY

BLE device using digital modulation:

Operating in the 2400 MHz – 2483.5 MHz band:

FCC Rule Part	RSS Rule Part	Description	Result
15.207(a)	RSS-Gen, 8.8	AC power line conducted emissions	passed
15.247(a)(2)	RSS-247, 6.2.4(1)	-6 dB EBW	passed
15.247(b)(3)	RSS-247, 6.2.4(1)	Maximum peak conducted output power	passed
15.247(b)(4)	-	Defacto limit	passed
15.247(d)	RSS-247, 6.2.4(2)	Out-of-band emission, radiated	passed
15.247(d)	RSS-Gen, 8.9	Emissions in restricted bands	passed
15.247(e)	RSS-247, 6.2.4(1)	PSD	passed
15.35(c)	RSS-Gen, 6.10	Pulsed operation	passed
15.203	RSS-Gen, 6.6	Antenna requirement	passed
-	RSS-Gen, 6.11	Transmitter frequency stability	passed
-	RSS-Gen, 6.6	99 % Bandwidth	passed

The mentioned new RSS Rule Parts in the above table are related to:
RSS-Gen, Issue 5, March 2019
RSS-247, Issue 2, February 2017

3.1 Final assessment

The equipment under test fulfills the EMI requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 08 October 2019

Testing concluded on : 21 October 2019

Checked by:

Klaus Gegenfurtner
2019.12.04 11:38:57
+01'00'

Klaus Gegenfurtner
Teamleader Radio

Issued by:

Willibald Probst
2019.12.04 08:41:38
+01'00'

Willibald Probst
Radio Team

4 TEST ENVIRONMENT

4.1 Address of the test laboratory

CSA Group Bayern GmbH
Ohmstrasse 1-4
94342 STRASSKIRCHEN
GERMANY

4.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 °C
Humidity:	30-60 %
Atmospheric pressure:	86-106 kPa

4.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. It is noted that the expanded measurement uncertainty corresponds to the measurement results from the standard measurement uncertainty multiplied by the coverage factor k = 2. The true value is located in the corresponding interval with a probability of 95 % The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4-2 / 11.2003 „Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements“ and is documented in the quality system acc. to DIN EN ISO/IEC 17025. For all measurements shown in this report, the measurement uncertainty of the test laboratory, CSA Group Bayern GmbH, is below the measurement uncertainty as defined by CISPR. Therefore, no special measures must be taken into consideration with regard to the limits according to CISPR. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	± 3.29 dB
20 dB Bandwidth	Center frequency of EUT	95%	$\pm 2.5 \times 10^{-7}$
99% Occupied Bandwidth	Center frequency of EUT	95%	$\pm 2.5 \times 10^{-7}$
Radiated Spurious Emissions	9 kHz to 30 MHz	95%	± 3.53 dB
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	± 3.71 dB
Radiated Spurious Emissions	1000 MHz to 10000 MHz	95%	± 2.34 dB
Peak conducted output power	902 MHz to 928 MHz	95%	± 0.35 dB
Conducted Spurious Emissions	9 kHz to 10000 MHz	95%	± 2.15 dB

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4.4 Measurement protocol for FCC and ISED

4.4.1 General information

CSA Group Bayern GmbH is recognized as wireless testing laboratory under the CAB identifier:

FCC: DE 0011
ISED: DE0009

4.4.2 General Standard information

The test methods used comply with ANSI C63.10 - "Testing Unlicensed Wireless Devices".

4.4.2.1 Justification

The equipment under test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral using the appropriate impedance characteristic or left unterminated. Where appropriate, cables are manually manipulated with respect to each other thus obtaining maximum disturbances from the unit.

4.4.2.2 Radiated emission (electrical field 30 MHz - 1 GHz)

Spurious emissions from the EUT are measured in the frequency range of 30 MHz to 1000 MHz using a tuned receiver and appropriate broadband linearly polarised antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection. Table top equipment is placed on a 1.0 X 1.5 m non-conducting table 80 centimetres above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. The setup of the equipment under test is established in accordance with ANSI C63.10.The interface cables that are closer than 40 centimetres to the ground plane are bundled in the center in a serpentine fashion so that they are at least 40 centimetres from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screened room located outside the test area. The antenna is positioned 3, 10 or 30 metres horizontally from the EUT and is repeated vertically. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 metres and the EUT is rotated 360 degrees.
The final level in dBµV/m is calculated by taking the reading from the EMI receiver (Level dBµV) and adding the correction factors and cable loss factor (dB). The FCC or CISPR limit is subtracted from this result in order to provide the limit margin listed in the measurement protocol.

The resolution bandwidth setting:
30 MHz – 1000 MHz: RBW: 120 kHz

Example:

Frequency	Level	+	Factor	=	Level	-	CISPR Limit	=	Delta
(MHz)	(dBµV)		(dB)		(dBµV/m)		(dBµV/m)		(dB)
719.0	75.0	+	32.6	=	107.6	-	110.0	=	-2.4

4.4.2.3 Radiated emission (electrical field 1 GHz - 40 GHz)

Radiated emissions from the EUT are measured in the frequency range 1 GHz up to the maximum frequency as specified in 47 CFR Part 15, Subpart A, Section 15.33, using a spectrum analyser and appropriate linearly polarized antennas. Table top equipment is placed on a 1.0 X 1.5 metre non-conducting table, 1.5 metre above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. The setup of the equipment under test is following set out in ANSI C63.10. The interface cables that are closer than 40 centimetres to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimetres from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screened room located outside the test area. Measurements are made in both the horizontal and vertical polarization planes in a fully anechoic room using a spectrum analyzer set to max peak detector function and a resolution 1 MHz and video bandwidth 3 MHz for peak measurement. The conditions determined as worst case will then be used for the final measurements. When the EUT is larger than the beam width of the measuring antenna it will be moved over the surface for the four sides of the equipment. Where appropriate, the test distance may be reduced in order to detect emissions under better uncertainty and are calculated at the specified test distance.

5 TEST CONDITIONS AND RESULTS

5.1 AC power line conducted emissions

For test instruments and accessories used see section 6 Part **A4**.

5.1.1 Description of the test location

Test location: Shielded Room S2

5.1.2 Photo documentation of the test set-up

For test setup photos see T44863-00 ATTACHMENT B

5.1.3 Applicable standard

According to FCC Part 15, Section 15.207(a):
Except as shown in paragraphs (b) and (c) of this Section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the given limits.

5.1.4 Description of Measurement

The measurements are performed following the procedures set out in ANSI C63.10 described under item 4.4.3. If the minimum limit margin appears to be less than 20 dB with a peak mode measurement, the emissions are re-measured using a tuned receiver with quasi-peak and average detection and recorded on the data sheets.

5.1.5 Test result

Frequency range: 0.15 MHz - 30 MHz

Min. limit margin 20.6 dB at 17.9 MHz

Limit according to FCC Part 15, Section 15.207(a):

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

* Decreases with the logarithm of the frequency

The requirements are **FULFILLED.**

Remarks: Only Data Rate 1 Mbps has been tested as pre-mesurements showed no difference between the operation modes. For detailed test result please see the following test protocols.

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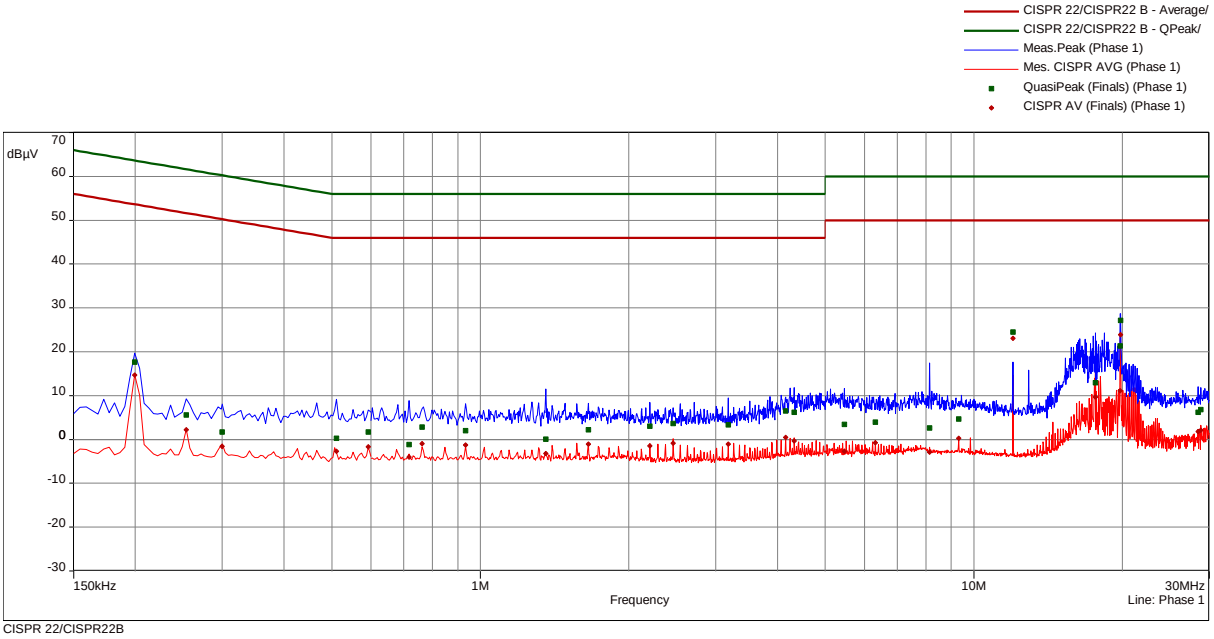
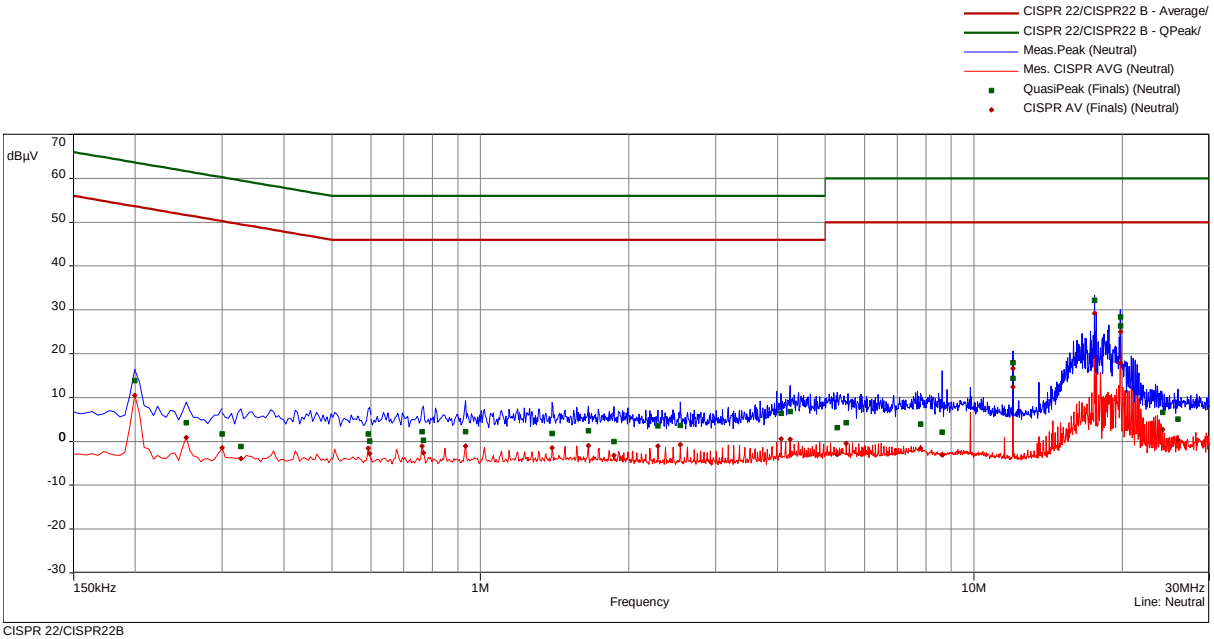
5.1.6 Test protocol

Test point	L1 + N	Result: passed
Operation mode:	1 Mbps, CH37 (2402 MHz)	
Remarks:	None.	



CISPR 22/CISPR22B



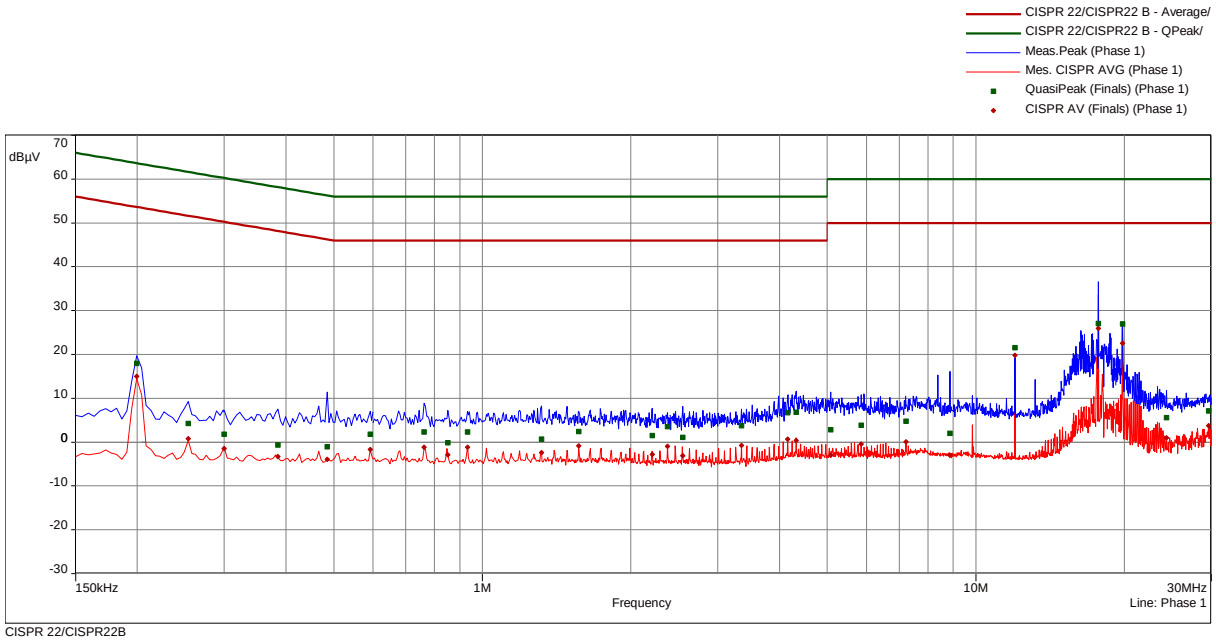
CISPR 22/CISPR22B

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

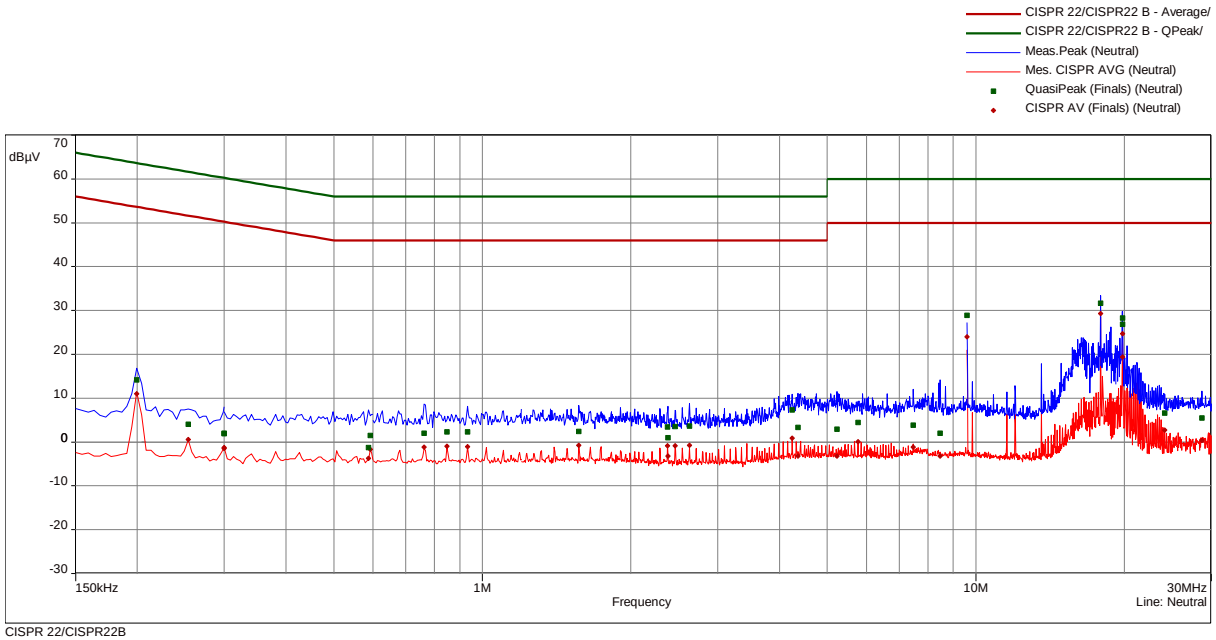
freq	SR	QP	margin	limit	AV	margin	limit	line	corr
MHz		dB(µV)	dB	dB	dB(µV)	dB	dB		dB
0.1995	1	17.69	-45.94	63.63	14.72	-38.91	53.63	Phase 1	10.09
0.2535	1	5.58	-56.06	61.64	2.24	-49.40	51.64	Phase 1	10.10
0.3	2	1.69	-58.55	60.24	-1.58	-51.82	50.24	Phase 1	10.12
0.5115	2	0.31	-55.69	56.00	-2.66	-48.66	46.00	Phase 1	10.14
0.5925	2	1.72	-54.28	56.00	-1.65	-47.65	46.00	Phase 1	10.15
0.717	3	-1.15	-57.15	56.00	-4.07	-50.07	46.00	Phase 1	10.18
0.762	3	2.79	-53.21	56.00	-0.98	-46.98	46.00	Phase 1	10.18
0.933	3	2.05	-53.95	56.00	-1.22	-47.22	46.00	Phase 1	10.18
1.3575	4	0.04	-55.96	56.00	-3.16	-49.16	46.00	Phase 1	10.24
1.6545	4	2.19	-53.81	56.00	-1.07	-47.07	46.00	Phase 1	10.26
2.2035	4	3.02	-52.98	56.00	-1.43	-47.43	46.00	Phase 1	10.29
2.4585	5	3.60	-52.40	56.00	-0.88	-46.88	46.00	Phase 1	10.31
3.1785	5	3.30	-52.70	56.00	-1.09	-47.09	46.00	Phase 1	10.35
4.155	5	6.51	-49.49	56.00	0.48	-45.52	46.00	Phase 1	10.41
4.326	5	6.22	-49.78	56.00	-0.29	-46.29	46.00	Phase 1	10.42
5.4705	6	3.46	-56.54	60.00	-2.69	-52.69	50.00	Phase 1	10.49
6.3165	6	3.96	-56.04	60.00	-0.72	-50.72	50.00	Phase 1	10.56
8.1345	6	2.61	-57.39	60.00	-2.89	-52.89	50.00	Phase 1	10.66
9.309	6	4.66	-55.34	60.00	0.30	-49.70	50.00	Phase 1	10.71
12.003	7	24.53	-35.47	60.00	23.07	-26.93	50.00	Phase 1	10.93
17.6505	7	12.99	-47.01	60.00	9.69	-40.31	50.00	Phase 1	11.34
19.803	8	21.39	-38.61	60.00	11.08	-38.92	50.00	Phase 1	11.45
19.8165	8	27.15	-32.85	60.00	23.91	-26.09	50.00	Phase 1	11.45
28.488	8	6.25	-53.75	60.00	1.77	-48.23	50.00	Phase 1	11.71
28.8255	8	6.80	-53.20	60.00	2.14	-47.86	50.00	Phase 1	11.71
0.1995	9	13.88	-49.75	63.63	10.54	-43.09	53.63	Neutral	10.11
0.2535	9	4.27	-57.37	61.64	0.93	-50.71	51.64	Neutral	10.11
0.3	10	1.69	-58.55	60.24	-1.50	-51.75	50.24	Neutral	10.12
0.327	10	-1.11	-60.64	59.53	-3.96	-53.49	49.53	Neutral	10.13
0.5925	10	1.72	-54.28	56.00	-1.61	-47.61	46.00	Neutral	10.15
0.597	10	0.10	-55.90	56.00	-2.80	-48.80	46.00	Neutral	10.15
0.762	11	2.17	-53.83	56.00	-1.01	-47.01	46.00	Neutral	10.18
0.7665	11	0.28	-55.72	56.00	-2.58	-48.58	46.00	Neutral	10.18
0.933	11	2.23	-53.77	56.00	-1.05	-47.05	46.00	Neutral	10.18
1.398	12	1.81	-54.19	56.00	-1.41	-47.41	46.00	Neutral	10.24
1.6545	12	2.37	-53.63	56.00	-0.91	-46.91	46.00	Neutral	10.26
1.866	12	-0.01	-56.01	56.00	-3.20	-49.20	46.00	Neutral	10.26
2.289	12	3.55	-52.45	56.00	-1.06	-47.06	46.00	Neutral	10.29
2.544	13	3.66	-52.34	56.00	-0.73	-46.73	46.00	Neutral	10.32
4.0695	13	6.43	-49.57	56.00	0.62	-45.38	46.00	Neutral	10.40
4.2405	13	6.85	-49.15	56.00	0.45	-45.55	46.00	Neutral	10.41
5.286	14	3.16	-56.84	60.00	-2.96	-52.96	50.00	Neutral	10.46
5.511	14	4.28	-55.72	60.00	-0.40	-50.40	50.00	Neutral	10.48
7.8015	14	3.98	-56.02	60.00	-1.59	-51.59	50.00	Neutral	10.61
8.6295	14	2.14	-57.86	60.00	-3.12	-53.12	50.00	Neutral	10.63
12.003	15	17.92	-42.08	60.00	16.59	-33.41	50.00	Neutral	10.81
12.0075	15	14.40	-45.60	60.00	12.43	-37.57	50.00	Neutral	10.81
17.5605	15	32.22	-27.78	60.00	29.22	-20.78	50.00	Neutral	11.14
19.812	16	28.35	-31.65	60.00	25.03	-24.97	50.00	Neutral	11.24
19.8255	16	26.40	-33.60	60.00	17.89	-32.11	50.00	Neutral	11.24
24.141	16	6.63	-53.37	60.00	2.78	-47.22	50.00	Neutral	11.26
25.8915	16	5.03	-54.97	60.00	0.40	-49.60	50.00	Neutral	11.23

FCC ID: SDL-PR5XM IC: 5228A-PR5XM

Test point	L1 + N	Result: passed
Operation mode:	1 Mbps, CH19 (2440 MHz)	
Remarks:	None.	



CISPR 22/CISPR22B



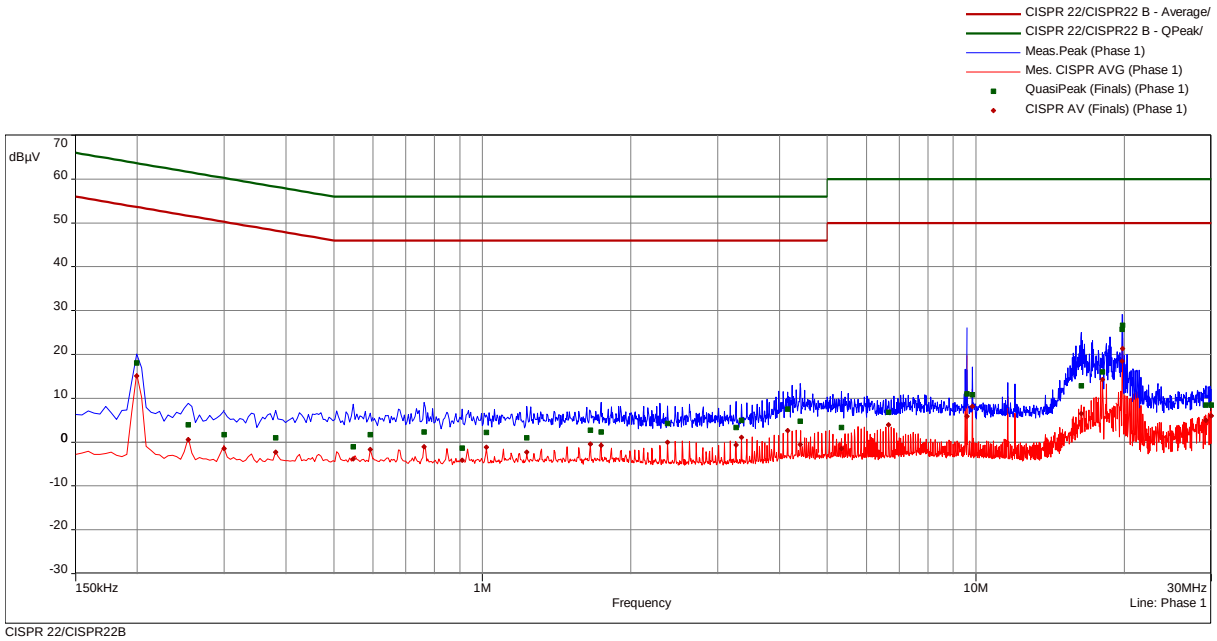
CISPR 22/CISPR22B

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

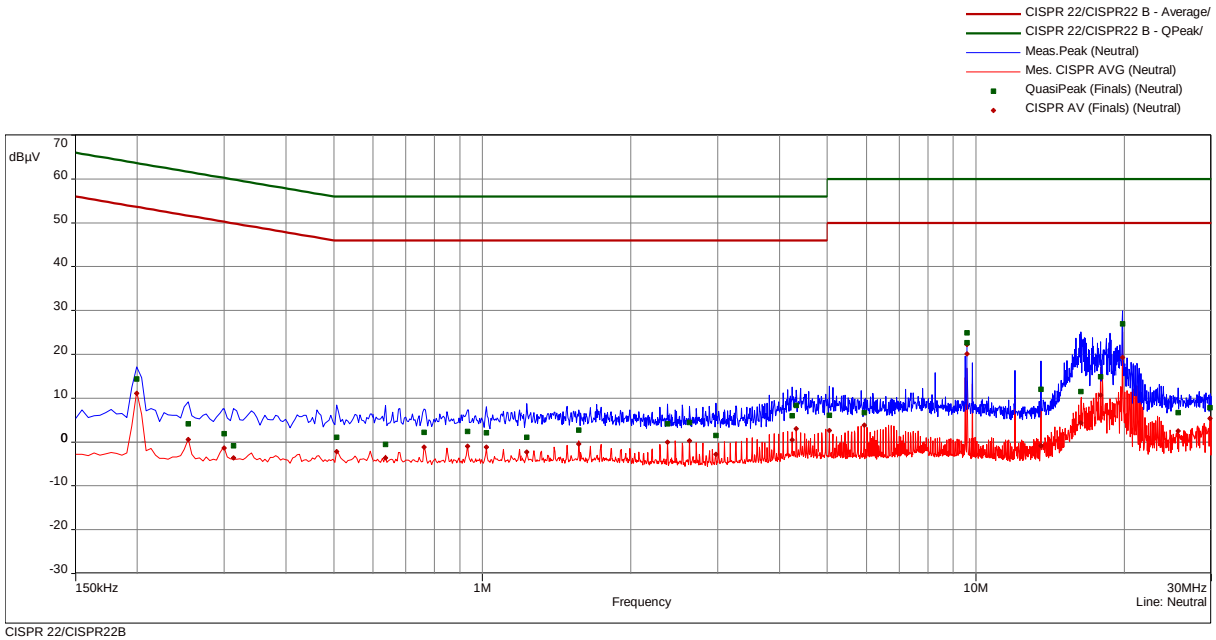
freq	SR	QP	margin	limit	AV	margin	limit	line	corr
MHz		dB(µV)	dB	dB	dB(µV)	dB	dB		dB
0.1995	1	17.94	-45.69	63.63	14.96	-38.67	53.63	Phase 1	10.09
0.2535	1	4.26	-57.38	61.64	0.77	-50.88	51.64	Phase 1	10.10
0.3	2	1.81	-58.43	60.24	-1.49	-51.73	50.24	Phase 1	10.12
0.3855	2	-0.69	-58.85	58.16	-3.34	-51.50	48.16	Phase 1	10.14
0.4845	2	-1.02	-57.28	56.26	-3.96	-50.22	46.26	Phase 1	10.14
0.5925	2	1.78	-54.22	56.00	-1.63	-47.63	46.00	Phase 1	10.15
0.762	3	2.29	-53.71	56.00	-1.19	-47.19	46.00	Phase 1	10.18
0.852	3	-0.17	-56.17	56.00	-2.87	-48.87	46.00	Phase 1	10.18
0.933	3	2.29	-53.71	56.00	-1.17	-47.17	46.00	Phase 1	10.18
1.317	4	0.69	-55.31	56.00	-2.41	-48.41	46.00	Phase 1	10.23
1.569	4	2.42	-53.58	56.00	-0.83	-46.83	46.00	Phase 1	10.26
2.208	4	1.50	-54.50	56.00	-2.81	-48.81	46.00	Phase 1	10.29
2.3745	4	3.56	-52.44	56.00	-0.93	-46.93	46.00	Phase 1	10.30
2.5485	5	1.05	-54.95	56.00	-3.08	-49.08	46.00	Phase 1	10.32
3.3495	5	3.71	-52.29	56.00	-0.71	-46.71	46.00	Phase 1	10.35
4.155	5	6.68	-49.32	56.00	0.72	-45.28	46.00	Phase 1	10.41
4.326	5	6.83	-49.17	56.00	0.40	-45.60	46.00	Phase 1	10.42
5.0835	6	2.81	-57.19	60.00	-2.98	-52.98	50.00	Phase 1	10.46
5.853	6	3.83	-56.17	60.00	-0.48	-50.48	50.00	Phase 1	10.52
7.221	6	4.77	-55.23	60.00	0.03	-49.97	50.00	Phase 1	10.62
8.8635	6	1.97	-58.03	60.00	-3.02	-53.02	50.00	Phase 1	10.69
12.003	7	21.53	-38.47	60.00	19.77	-30.23	50.00	Phase 1	10.93
17.7045	7	27.03	-32.97	60.00	25.98	-24.02	50.00	Phase 1	11.34
19.8165	8	27.00	-33.00	60.00	22.60	-27.40	50.00	Phase 1	11.45
24.339	8	5.64	-54.36	60.00	0.99	-49.01	50.00	Phase 1	11.66
29.64	8	7.12	-52.88	60.00	3.71	-46.29	50.00	Phase 1	11.72
0.1995	9	14.23	-49.41	63.63	11.00	-42.63	53.63	Neutral	10.11
0.2535	9	4.04	-57.60	61.64	0.62	-51.02	51.64	Neutral	10.11
0.3	9	1.93	-58.31	60.24	-1.43	-51.68	50.24	Neutral	10.12
0.3	10	2.05	-58.19	60.24	-1.29	-51.54	50.24	Neutral	10.12
0.588	10	-1.26	-57.26	56.00	-3.73	-49.73	46.00	Neutral	10.15
0.5925	10	1.54	-54.46	56.00	-1.70	-47.70	46.00	Neutral	10.15
0.762	11	2.05	-53.95	56.00	-1.15	-47.15	46.00	Neutral	10.18
0.8475	11	2.34	-53.66	56.00	-0.95	-46.95	46.00	Neutral	10.18
0.933	11	2.35	-53.65	56.00	-1.03	-47.03	46.00	Neutral	10.18
1.569	12	2.42	-53.58	56.00	-0.76	-46.76	46.00	Neutral	10.26
2.3745	12	3.48	-52.52	56.00	-0.81	-46.81	46.00	Neutral	10.30
2.379	12	0.95	-55.05	56.00	-3.16	-49.16	46.00	Neutral	10.30
2.4585	13	3.58	-52.42	56.00	-0.83	-46.83	46.00	Neutral	10.31
2.6295	13	3.63	-52.37	56.00	-0.77	-46.77	46.00	Neutral	10.32
4.2405	13	7.36	-48.64	56.00	0.85	-45.15	46.00	Neutral	10.41
4.3575	13	3.30	-52.70	56.00	-3.16	-49.16	46.00	Neutral	10.42
5.232	14	2.91	-57.09	60.00	-3.18	-53.18	50.00	Neutral	10.46
5.7675	14	4.42	-55.58	60.00	0.03	-49.97	50.00	Neutral	10.50
7.464	14	3.89	-56.11	60.00	-1.14	-51.14	50.00	Neutral	10.60
8.463	14	1.98	-58.02	60.00	-3.21	-53.21	50.00	Neutral	10.63
9.6	15	28.88	-31.12	60.00	24.04	-25.96	50.00	Neutral	10.66
17.8935	15	31.71	-28.29	60.00	29.36	-20.64	50.00	Neutral	11.16
19.812	16	28.27	-31.73	60.00	24.66	-25.34	50.00	Neutral	11.24
19.8165	16	26.90	-33.10	60.00	19.35	-30.65	50.00	Neutral	11.24
24.141	16	6.63	-53.37	60.00	2.77	-47.23	50.00	Neutral	11.26
28.6905	16	5.49	-54.51	60.00	0.42	-49.58	50.00	Neutral	11.14

FCC ID: SDL-PR5XM IC: 5228A-PR5XM

Test point	L1 + N	Result: passed
Operation mode:	1 Mbps, CH39 (2480 MHz)	
Remarks:	None.	



CISPR 22/CISPR22B



CISPR 22/CISPR22B

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

freq	SR	QP	margin	limit	AV	margin	limit	line	corr
MHz		dB(µV)	dB	dB	dB(µV)	dB	dB		dB
0.1995	1	18.08	-45.55	63.63	15.13	-38.50	53.63	Phase 1	10.09
0.2535	1	3.99	-57.66	61.64	0.55	-51.09	51.64	Phase 1	10.10
0.3	2	1.75	-58.49	60.24	-1.49	-51.74	50.24	Phase 1	10.12
0.381	2	1.00	-57.26	58.26	-2.25	-50.51	48.26	Phase 1	10.14
0.5475	2	-1.01	-57.01	56.00	-3.81	-49.81	46.00	Phase 1	10.15
0.5925	2	1.66	-54.34	56.00	-1.63	-47.63	46.00	Phase 1	10.15
0.762	3	2.29	-53.71	56.00	-1.05	-47.05	46.00	Phase 1	10.18
0.9105	3	-1.41	-57.41	56.00	-4.11	-50.11	46.00	Phase 1	10.18
1.0185	3	2.18	-53.82	56.00	-1.18	-47.18	46.00	Phase 1	10.19
1.2315	4	0.95	-55.05	56.00	-2.29	-48.29	46.00	Phase 1	10.22
1.6545	4	2.71	-53.29	56.00	-0.44	-46.44	46.00	Phase 1	10.26
1.74	4	2.31	-53.69	56.00	-0.75	-46.75	46.00	Phase 1	10.27
2.3745	4	4.24	-51.76	56.00	-0.07	-46.07	46.00	Phase 1	10.30
3.2685	5	3.37	-52.63	56.00	-0.63	-46.63	46.00	Phase 1	10.35
3.3495	5	4.94	-51.06	56.00	1.05	-44.95	46.00	Phase 1	10.35
4.155	5	7.53	-48.47	56.00	2.59	-43.41	46.00	Phase 1	10.41
4.407	5	4.79	-51.21	56.00	-0.58	-46.58	46.00	Phase 1	10.43
5.34	6	3.35	-56.65	60.00	-1.49	-51.49	50.00	Phase 1	10.48
6.6585	6	6.80	-53.20	60.00	3.97	-46.03	50.00	Phase 1	10.59
9.6	6	11.03	-48.97	60.00	5.87	-44.13	50.00	Phase 1	10.72
9.8385	7	10.81	-49.19	60.00	8.17	-41.83	50.00	Phase 1	10.73
16.3455	7	12.85	-47.15	60.00	6.54	-43.46	50.00	Phase 1	11.26
18.0645	7	16.04	-43.96	60.00	14.33	-35.67	50.00	Phase 1	11.36
19.8075	8	25.76	-34.24	60.00	18.46	-31.54	50.00	Phase 1	11.45
19.8165	8	26.63	-33.37	60.00	21.35	-28.65	50.00	Phase 1	11.45
29.2665	8	8.45	-51.55	60.00	5.02	-44.98	50.00	Phase 1	11.72
29.9865	8	8.40	-51.60	60.00	6.05	-43.95	50.00	Phase 1	11.72
0.1995	9	14.40	-49.23	63.63	11.13	-42.50	53.63	Neutral	10.11
0.2535	9	4.14	-57.51	61.64	0.63	-51.01	51.64	Neutral	10.11
0.3	10	1.93	-58.31	60.24	-1.33	-51.57	50.24	Neutral	10.12
0.3135	10	-0.87	-60.74	59.88	-3.62	-53.49	49.88	Neutral	10.12
0.507	10	1.14	-54.86	56.00	-2.14	-48.14	46.00	Neutral	10.14
0.636	11	-0.50	-56.50	56.00	-3.56	-49.56	46.00	Neutral	10.16
0.762	11	2.17	-53.83	56.00	-1.12	-47.12	46.00	Neutral	10.18
0.933	11	2.40	-53.60	56.00	-0.92	-46.92	46.00	Neutral	10.18
1.0185	11	2.06	-53.94	56.00	-1.15	-47.15	46.00	Neutral	10.19
1.2315	12	1.09	-54.91	56.00	-2.24	-48.24	46.00	Neutral	10.22
1.569	12	2.76	-53.24	56.00	-0.44	-46.44	46.00	Neutral	10.26
2.3745	12	4.19	-51.81	56.00	-0.02	-46.02	46.00	Neutral	10.30
2.6295	13	4.48	-51.52	56.00	0.32	-45.68	46.00	Neutral	10.32
2.9715	13	1.51	-54.49	56.00	-2.80	-48.80	46.00	Neutral	10.34
4.245	13	6.02	-49.98	56.00	0.47	-45.53	46.00	Neutral	10.41
4.326	13	8.37	-47.63	56.00	3.06	-42.94	46.00	Neutral	10.41
5.0475	14	6.06	-53.94	60.00	2.60	-47.40	50.00	Neutral	10.45
5.9385	14	6.76	-53.24	60.00	3.82	-46.18	50.00	Neutral	10.51
9.6	14	22.62	-37.38	60.00	20.15	-29.85	50.00	Neutral	10.66
9.6	15	24.96	-35.04	60.00	22.24	-27.76	50.00	Neutral	10.66
13.56	15	12.08	-47.92	60.00	-0.81	-50.81	50.00	Neutral	10.91
16.341	15	11.57	-48.43	60.00	4.39	-45.61	50.00	Neutral	11.07
17.8935	15	14.88	-45.12	60.00	10.66	-39.34	50.00	Neutral	11.16
19.821	16	26.94	-33.06	60.00	19.31	-30.69	50.00	Neutral	11.24
25.7025	16	6.76	-53.24	60.00	2.48	-47.52	50.00	Neutral	11.24
29.8155	16	7.85	-52.15	60.00	5.38	-44.62	50.00	Neutral	11.10

5.2 EBW and OBW

For test instruments and accessories used see section 6 Part **MB**.

5.2.1 Description of the test location

Test location: Shielded Room S6

5.2.2 Photo documentation of the test set-up

For test setup photos see T44863-00 ATTACHMENT B

5.2.3 Applicable standard

According to FCC Part 15, Section 15.247(a)(2):
Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 – 2483.5 MHz and 5725 – 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

5.2.4 Description of Measurement

The bandwidth was measured at an amplitude level reduced from the reference level of a modulated channel by a ratio of -6 dB. The reference level is the level of the highest signal amplitude observed at the transmitter at either the fundamental frequency or the first order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical. An alternative is to use the bandwidth measurement of the analyser.

Spectrum analyser settings for EBW:
RBW: 100 kHz, VBW: 300 kHz, Detector: Max peak, Sweep time: auto, Span: 2 EBW;
Spectrum analyser settings for OBW:
RBW: 1-5% OBW, VBW: 3 * RBW, Detector: Max peak, Sweep time: auto, Span: 2 OBW;

5.2.5 Test result

Data rate 125 kbps
6 dB BW:

Channel	Centre frequency (MHz)	6 dB bandwidth (kHz)	Minimum limit (kHz)
37	2402	620.40	500
17	2440	623.40	500
39	2480	620.40	500

99% OBW:

Channel	Centre frequency (MHz)	99 % bandwidth (kHz)
37	2402	1045.11
17	2440	1048.93
39	2480	1041.32

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Data rate 500 kbps
6 dB BW:

Channel	Centre frequency (MHz)	6 dB bandwidth (kHz)	Minimum limit (kHz)
37	2402	662.30	500
17	2440	665.30	500
39	2480	659.30	500

99% OBW:

Channel	Centre frequency (MHz)	99 % bandwidth (kHz)
37	2402	1022.14
17	2440	1023.28
39	2480	1022.29

Data rate 1 Mbps
6 dB BW:

Channel	Centre frequency (MHz)	6 dB bandwidth (kHz)	Minimum limit (kHz)
37	2402	689.30	500
17	2440	707.30	500
39	2480	704.30	500

99% OBW:

Channel	Centre frequency (MHz)	99 % bandwidth (kHz)
37	2402	1029.96
17	2440	1028.66
39	2480	1031.11

Data rate 2 Mbps
6 dB BW:

Channel	Centre frequency (MHz)	6 dB bandwidth (kHz)	Minimum limit (kHz)
37	2402	1170	500
17	2440	1180	500
39	2480	1180	500

99% OBW:

Channel	Centre frequency (MHz)	99 % bandwidth (kHz)
37	2402	2070.67
17	2440	2058.91
39	2480	2063.37

The requirements are **FULFILLED.**

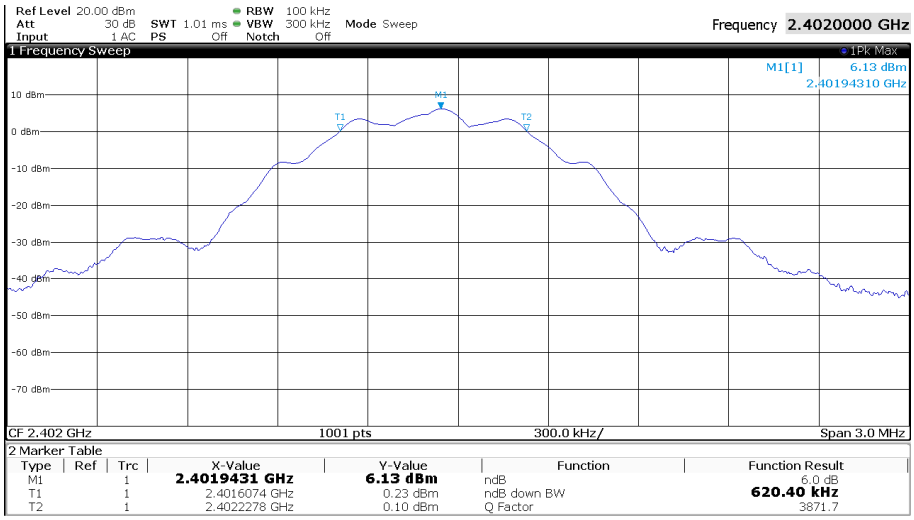
Remarks: For detailed test result please see the following test protocols.

-

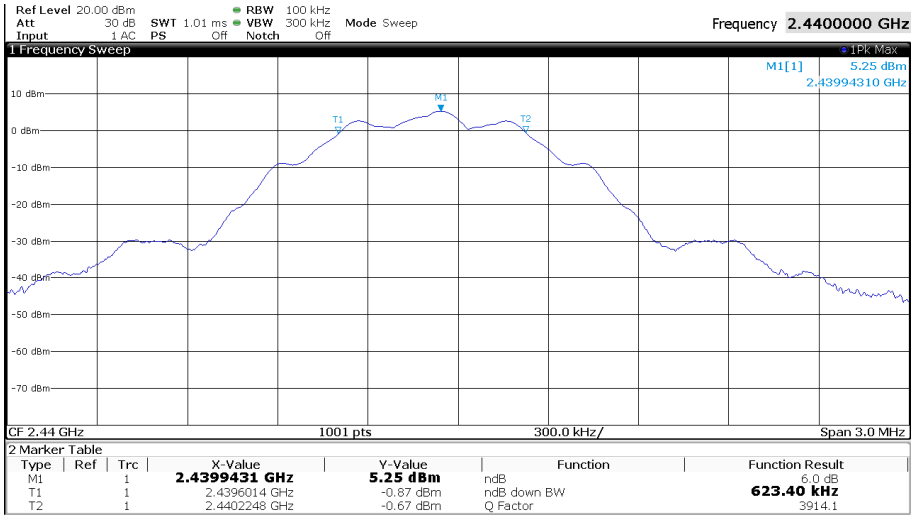
5.2.6 Test protocols EBW

Data rate 125 kbps

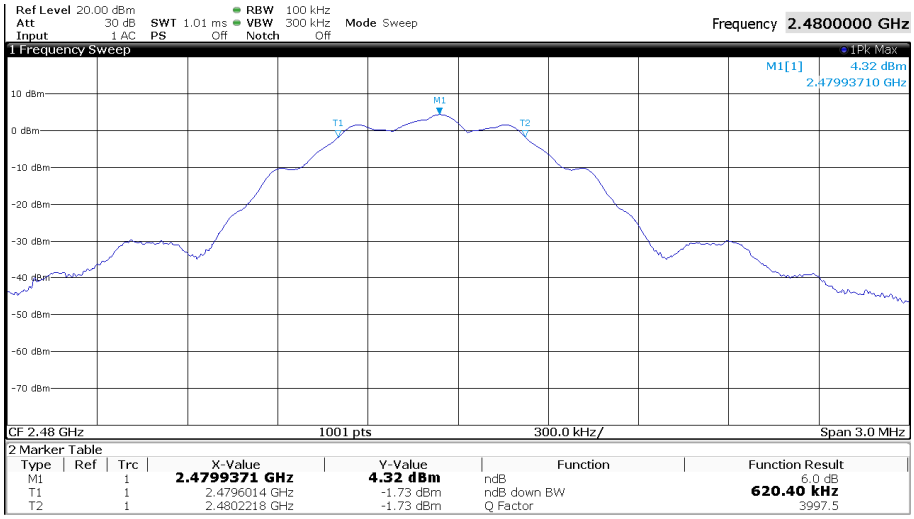
CH37 (2402 MHz):



CH17 (2440 MHz):



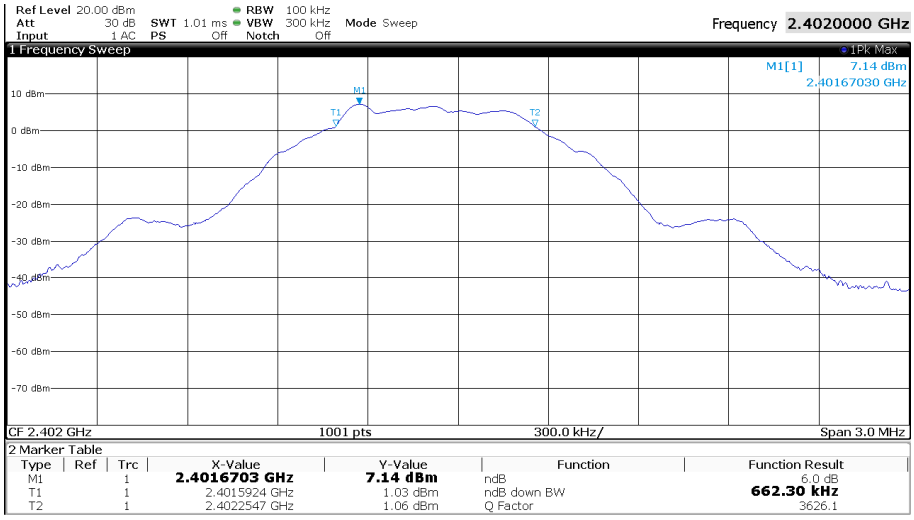
CH39 (2480 MHz):



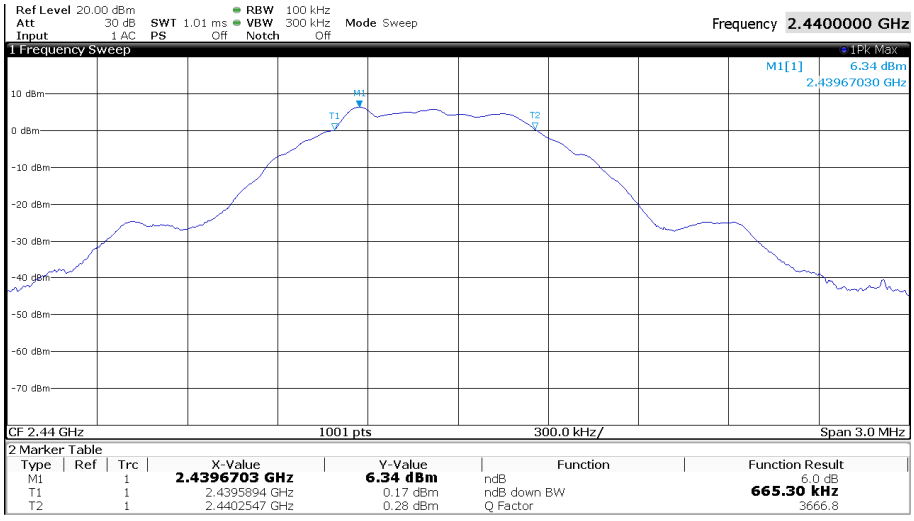
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 500 kbps

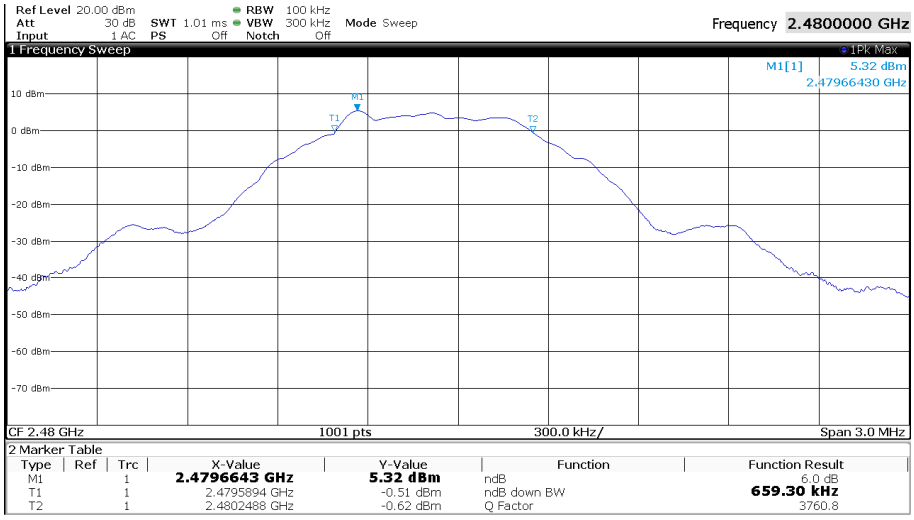
CH37 (2402 MHz):



CH17 (2440 MHz):



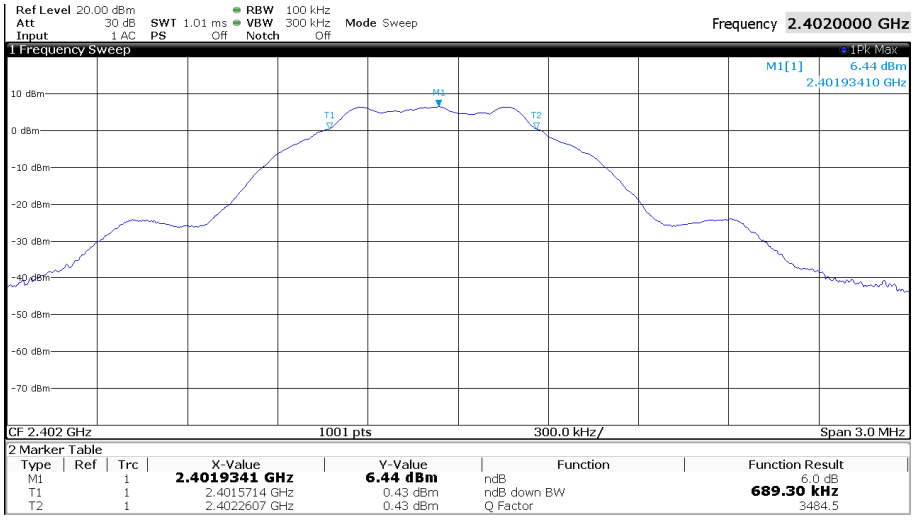
CH39 (2480 MHz):



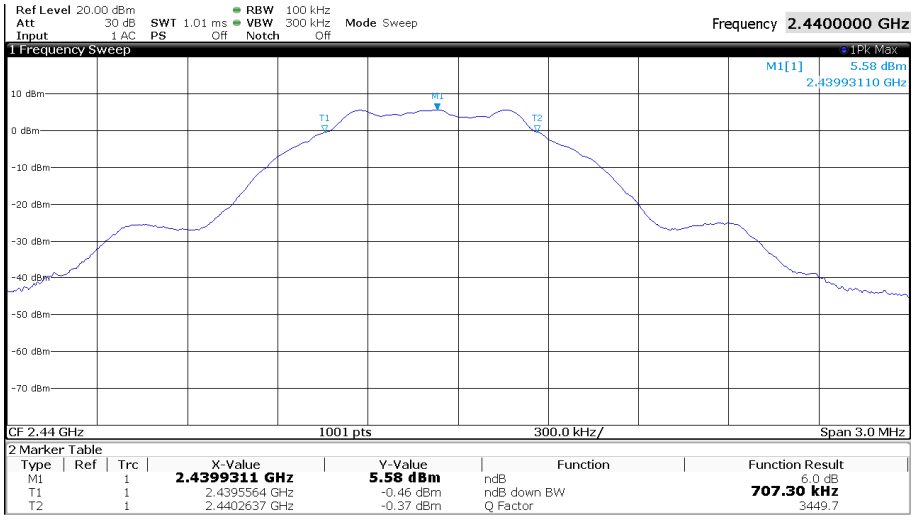
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 1 Mbps

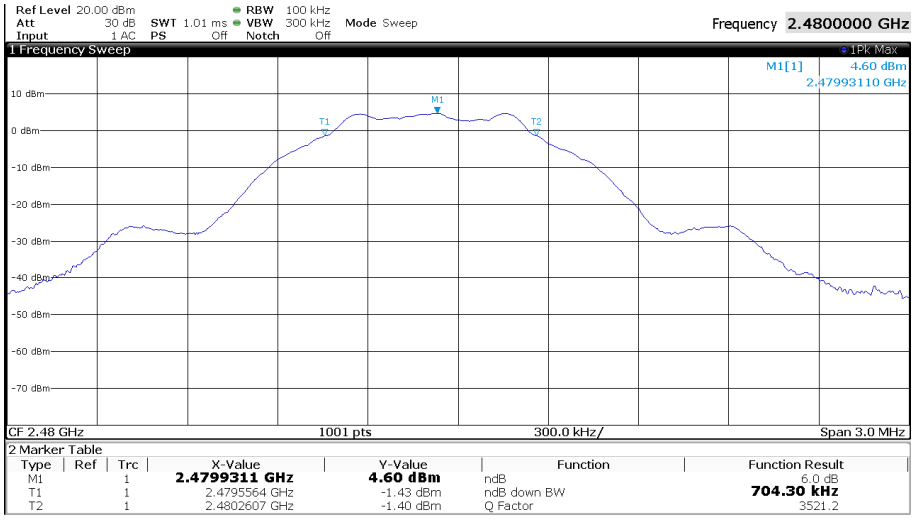
CH37 (2402 MHz):



CH17 (2440 MHz):



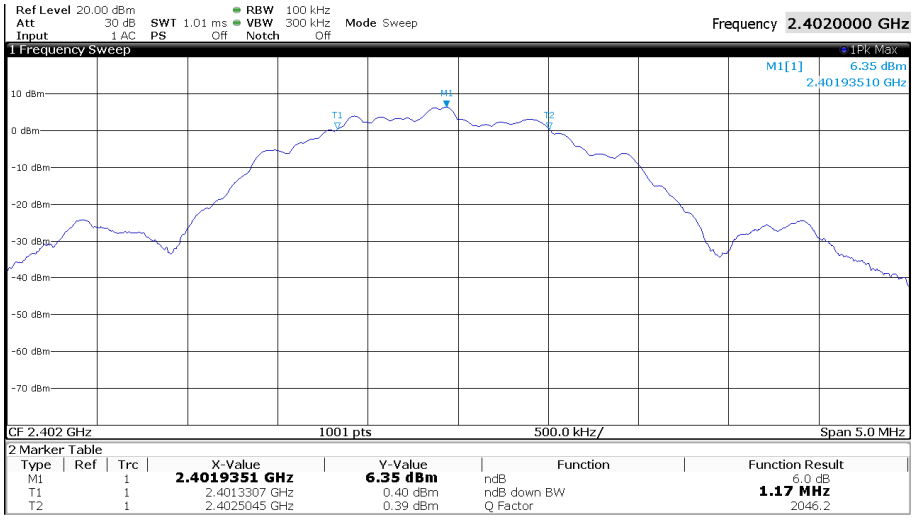
CH39 (2480 MHz):



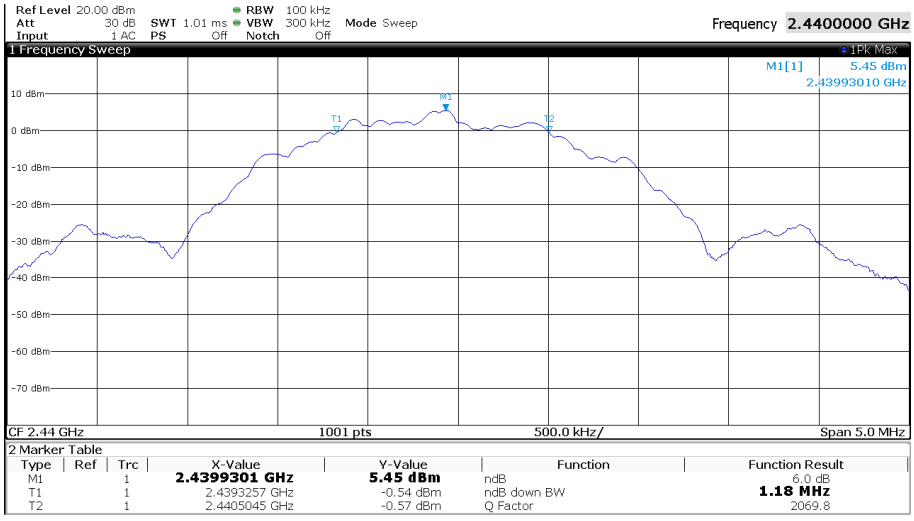
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 2 Mbps

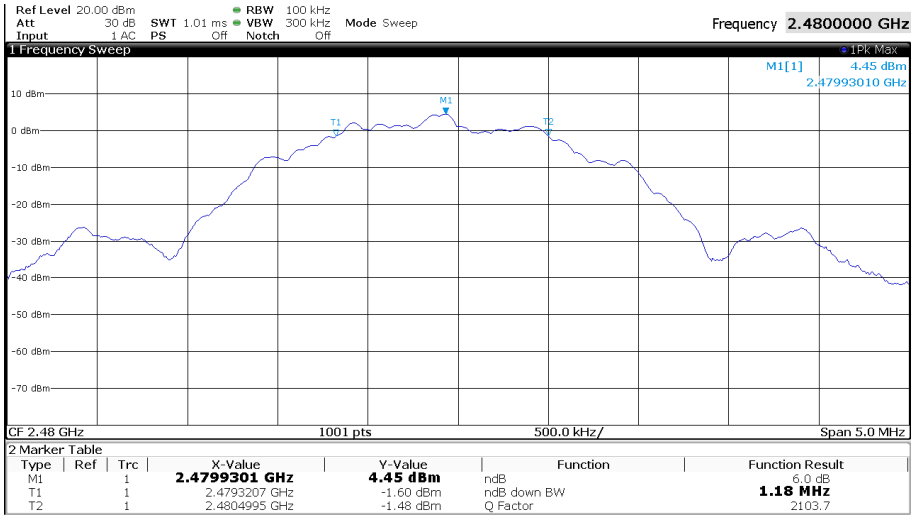
CH37 (2402 MHz):



CH17 (2440 MHz):



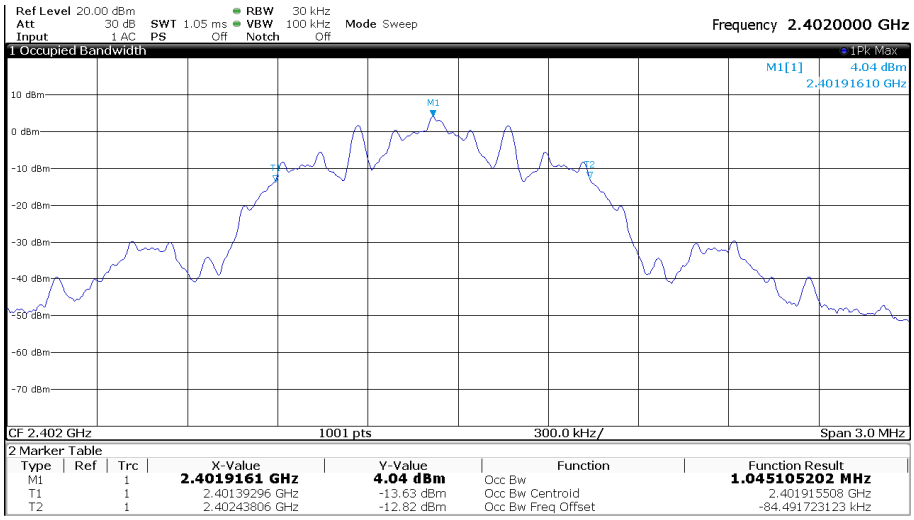
CH39 (2480 MHz):



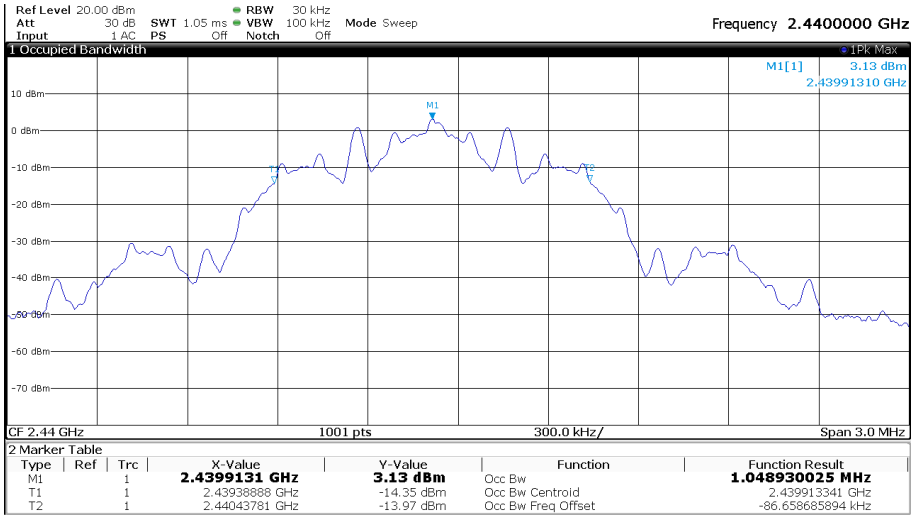
5.2.7 Test protocols OBW

Data rate 125 kbps

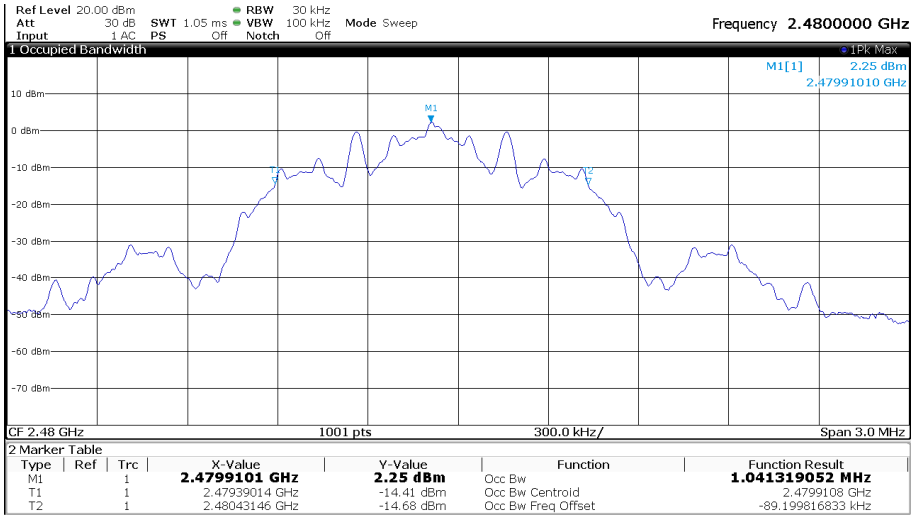
CH37 (2402 MHz):



CH17 (2440 MHz):



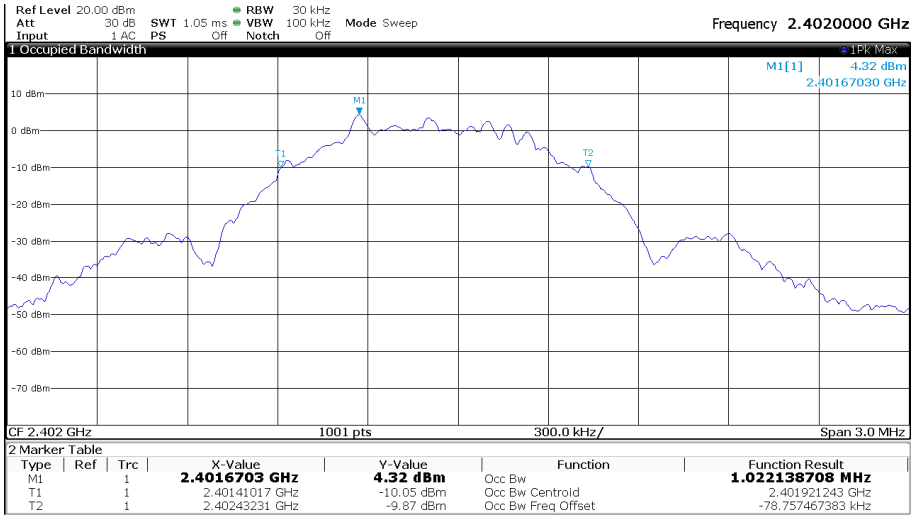
CH39 (2480 MHz):



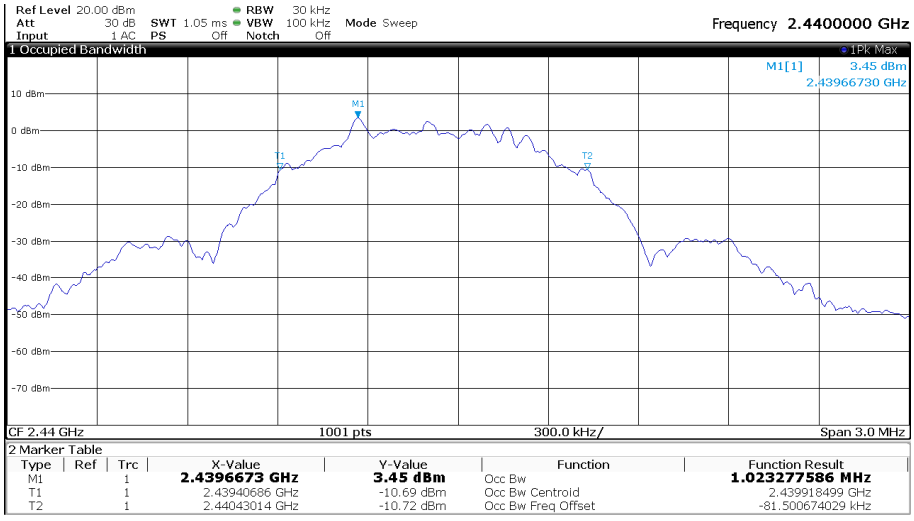
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 500 kbps

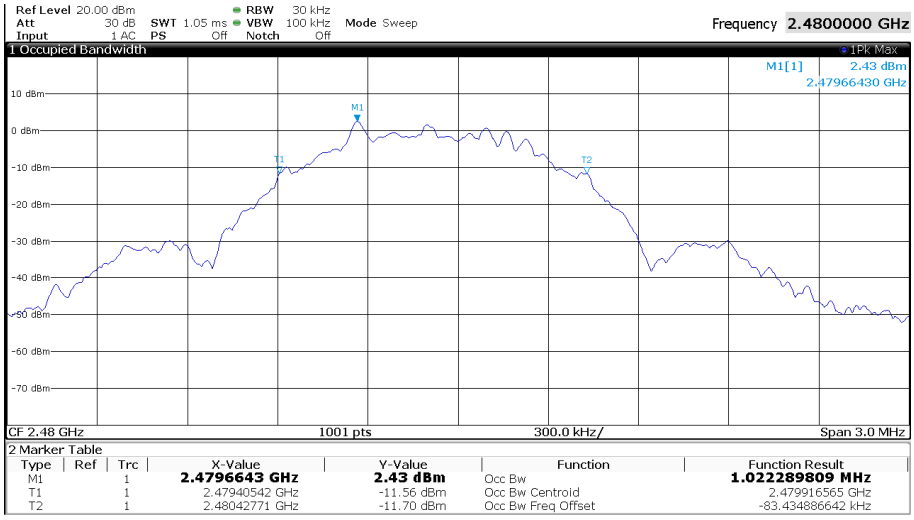
CH37 (2402 MHz):



CH17 (2440 MHz):



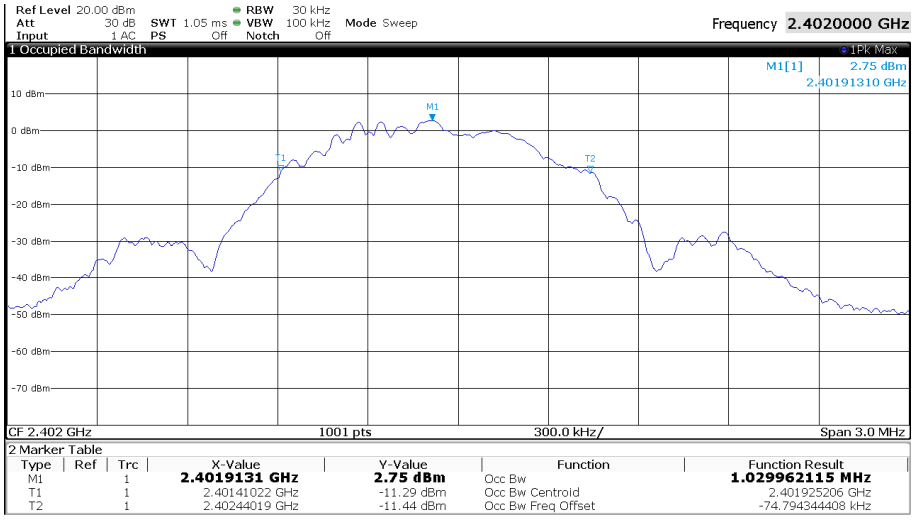
CH39 (2480 MHz):



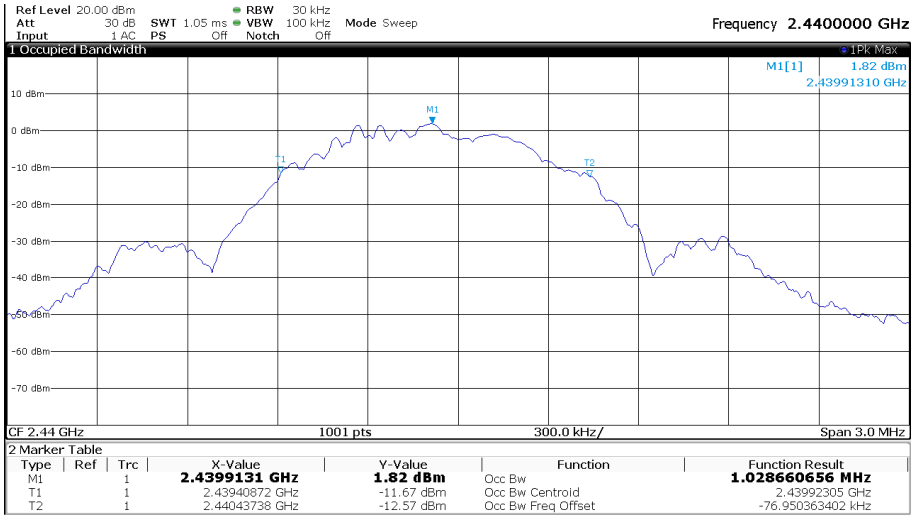
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 1 Mbps

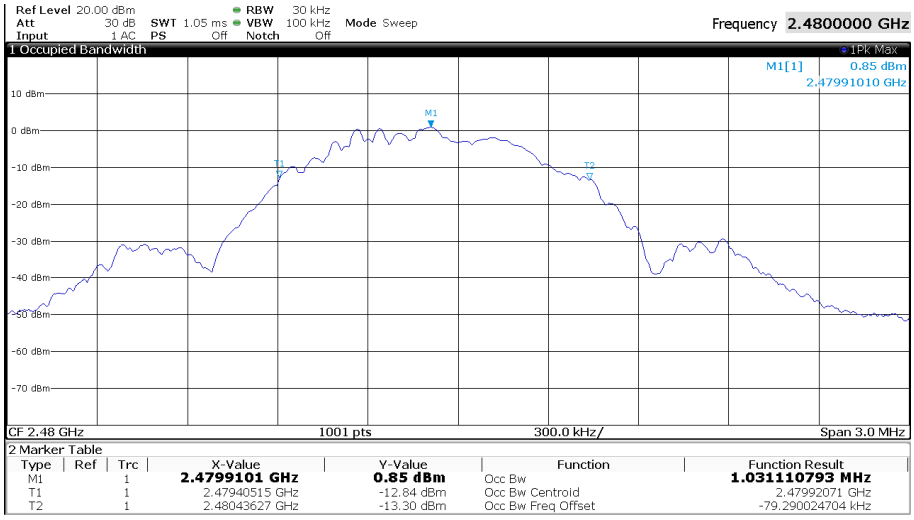
CH37 (2402 MHz):



CH17 (2440 MHz):



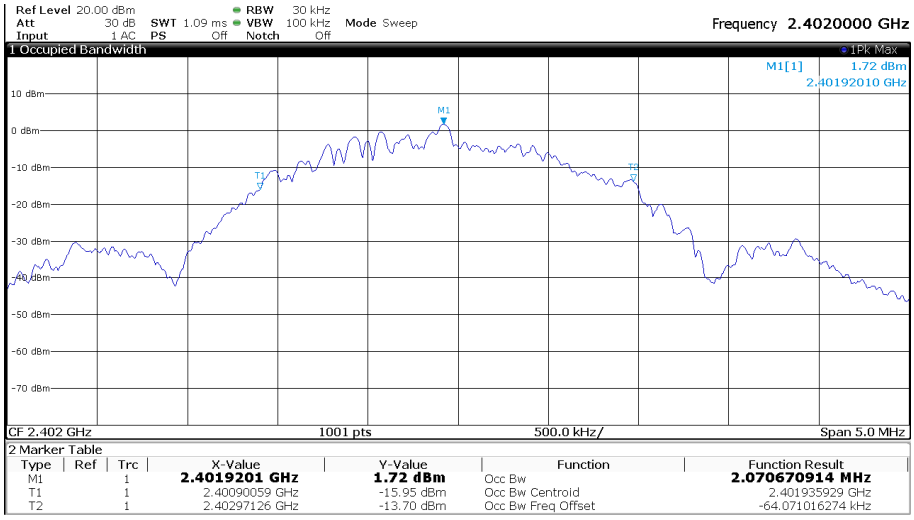
CH39 (2480 MHz):



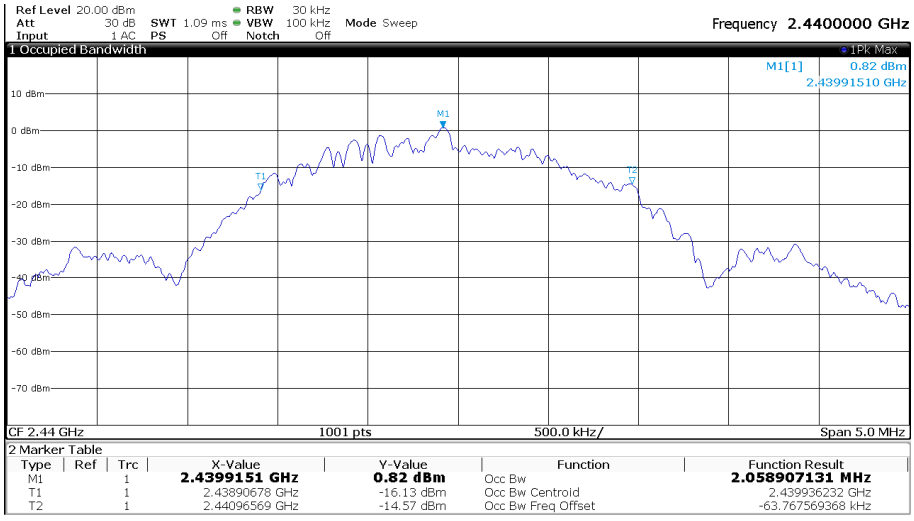
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 2 Mbps

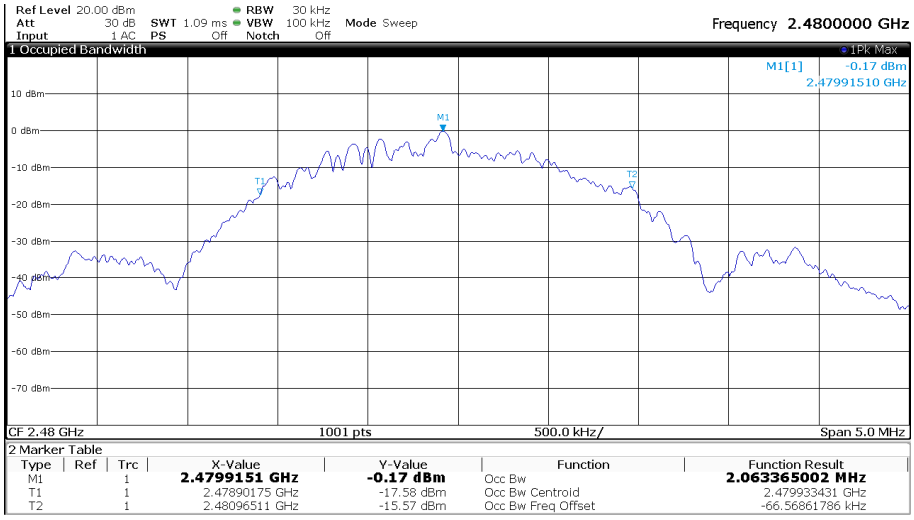
CH37 (2402 MHz):



CH17 (2440 MHz):



CH39 (2480 MHz):



5.3 Maximum peak conducted output power

For test instruments and accessories used see section 6 Part **CPC3**.

5.3.1 Description of the test location

Test location: Shielded Room S6

5.3.2 Photo documentation of the test set-up

For test setup photos see T44863-00 ATTACHMENT B

5.3.3 Applicable standard

According to FCC Part 15, Section 15.247(b)(3):
For systems using digital modulation in the 2400-2483.5 MHz band, the maximum peak output power of the transmitter shall not exceed 1 Watt. The limit is based on transmitting antennas of directional gain that do not exceed 6 dBi.

5.3.4 Description of Measurement

The maximum peak conducted output power is measured using a spectrum analyser following the procedure set out in KDB 558074, item 8.3.1. The EUT is set in TX continuous mode while measuring.

5.3.5 Test result

Data rate 125 kbps:

802.15.1, 125 kbps, TX		Test results conducted				
		P (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Margin (dB)
Lowest frequency: CH37 (2402 MHz)						
T_{nom}	V_{nom}	7.3	1.4	8.7	36.0	-27.4
Middle frequency: CH17 (2440 MHz)						
T_{nom}	V_{nom}	6.3	1.6	7.9	36.0	-28.1
Highest frequency: CH39 (2480 MHz)						
T_{nom}	V_{nom}	5.3	1.9	7.2	36.0	-28.8

Data rate 500 kbps:

802.15.1, 500 kbps, TX		Test results conducted				
		P (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Margin (dB)
Lowest frequency: CH37 (2402 MHz)						
T_{nom}	V_{nom}	7.3	1.4	8.7	36.0	-27.3
Middle frequency: CH17 (2440 MHz)						
T_{nom}	V_{nom}	6.4	1.6	8.0	36.0	-28.0
Highest frequency: CH39 (2480 MHz)						
T_{nom}	V_{nom}	5.4	1.9	7.3	36.0	-28.7

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 1 Mbps:

802.15.1, 1 Mbps, TX		Test results conducted				
		P (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Margin (dB)
Lowest frequency: CH37 (2402 MHz)						
T_{nom}	V_{nom}	7.3	1.4	8.7	36.0	-27.3
Middle frequency: CH17 (2440 MHz)						
T_{nom}	V_{nom}	6.4	1.6	8.0	36.0	-28.0
Highest frequency: CH39 (2480 MHz)						
T_{nom}	V_{nom}	5.4	1.9	7.3	36.0	-28.7

Data rate 2 Mbps:

802.15.1, 2 Mbps, TX		Test results conducted				
		P (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Margin (dB)
Lowest frequency: CH37 (2402 MHz)						
T_{nom}	V_{nom}	7.3	1.4	8.7	36.0	-27.3
Middle frequency: CH17 (2440 MHz)						
T_{nom}	V_{nom}	6.4	1.6	8.0	36.0	-28.0
Highest frequency: CH39 (2480 MHz)						
T_{nom}	V_{nom}	5.4	1.9	7.3	36.0	-28.7

Peak Power Limit according to FCC Part 15, Section 15.247(b)(3):

Frequency (MHz)	Peak Power Limit	
	(dBm)	(W)
902-928	36	4.0
2400-2483.5	**36**	**4.0**
5725-5850	36	4.0

The requirements are **FULFILLED.**

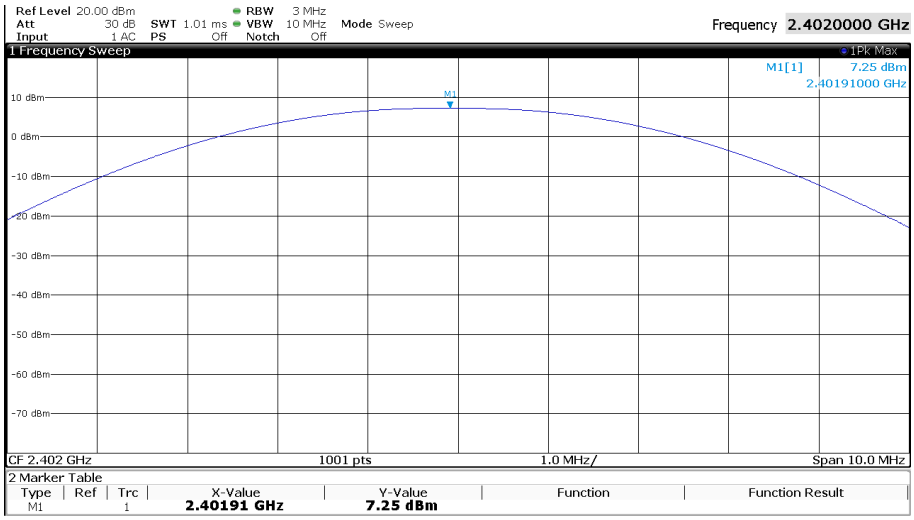
Remarks: For detailed test result please see the following test protocols.

-

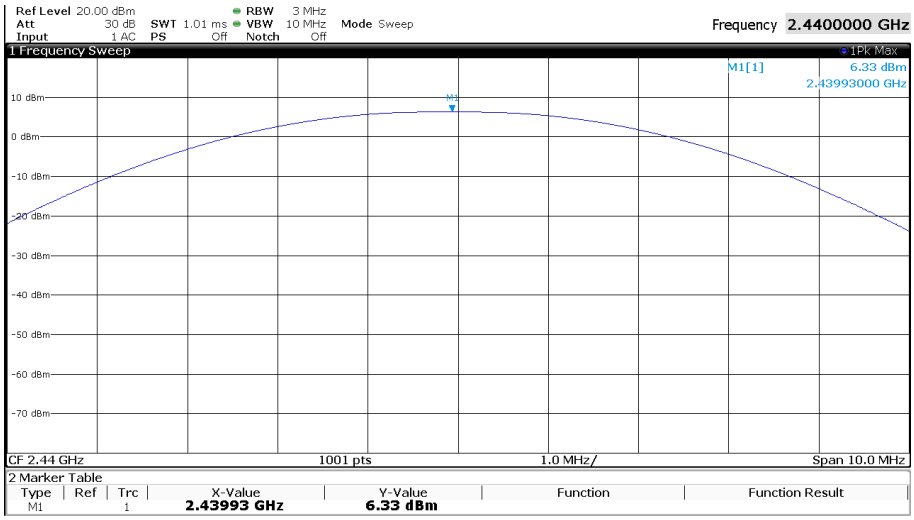
5.3.6 Test protocols

Data rate 125 kbps

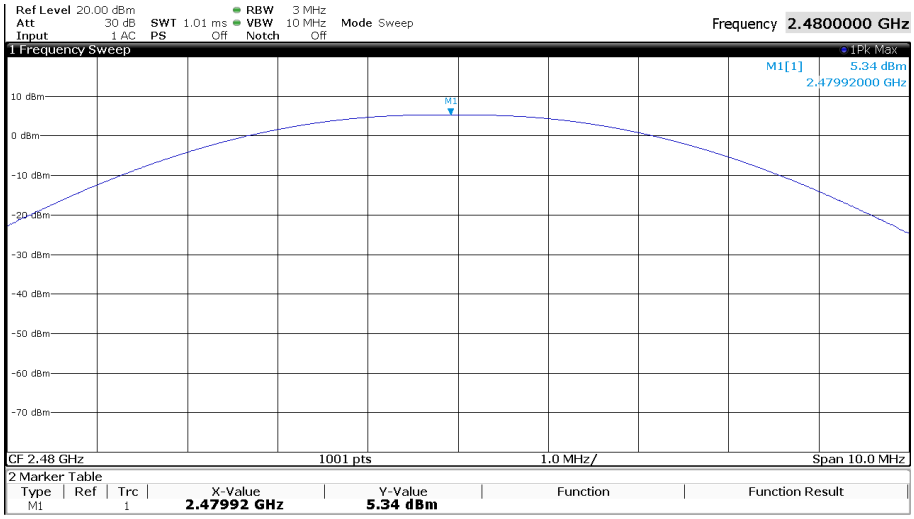
CH37 (2402 MHz):



CH17 (2440 MHz):



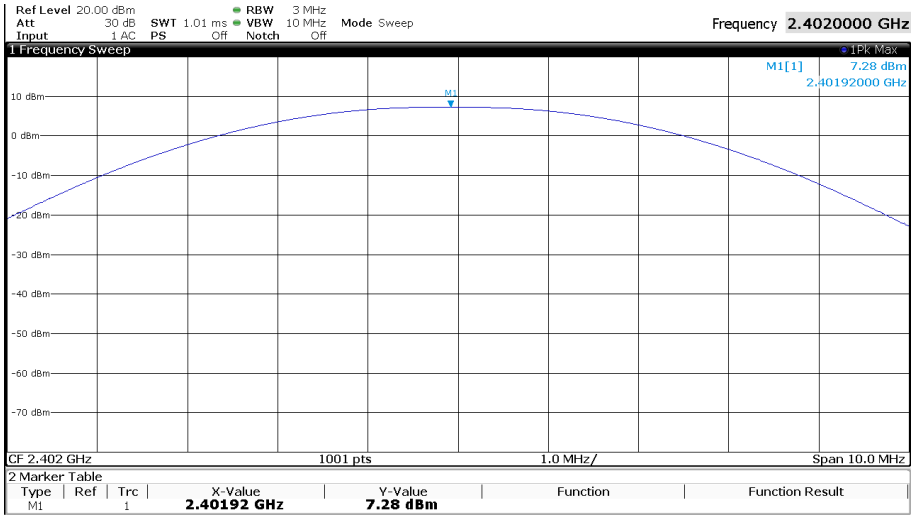
CH39 (2480 MHz):



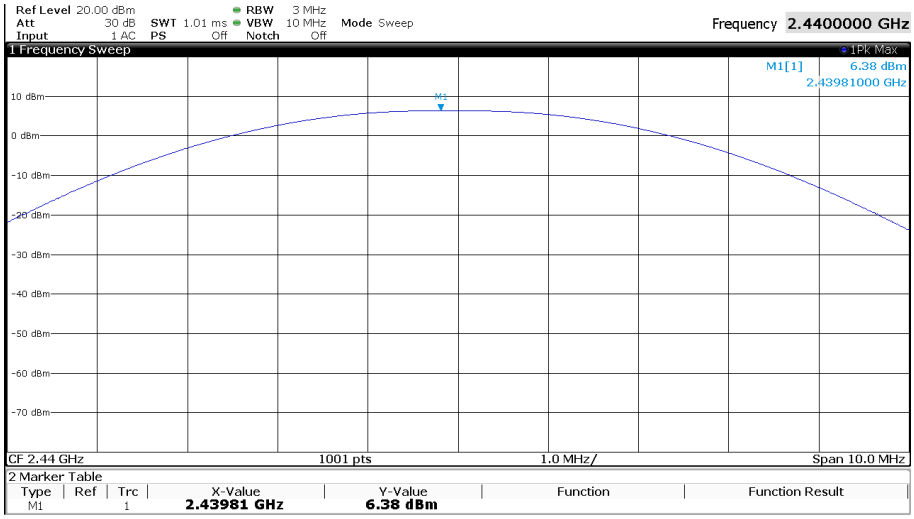
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 500 kbps

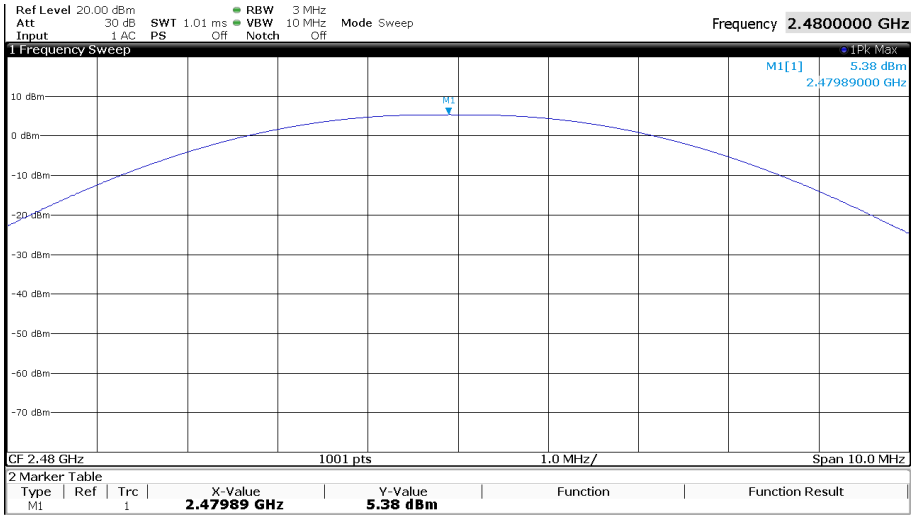
CH37 (2402 MHz):



CH17 (2440 MHz):



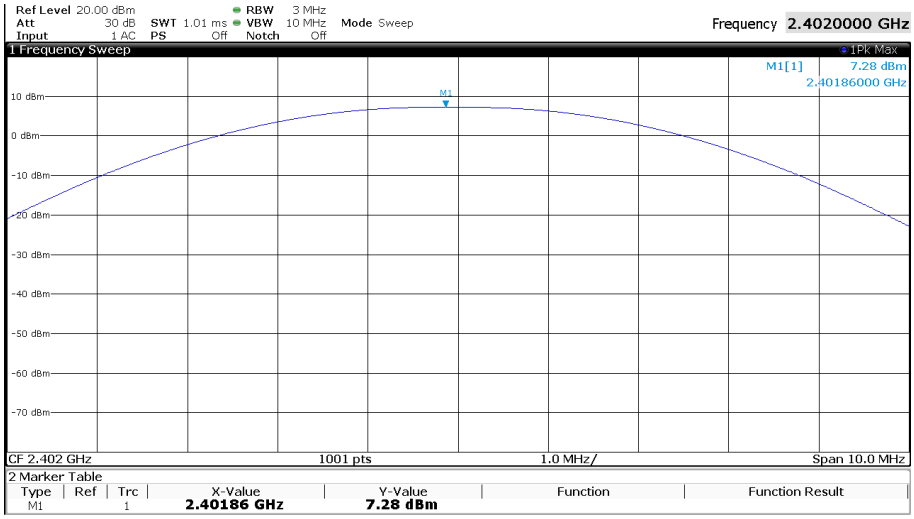
CH39 (2480 MHz):



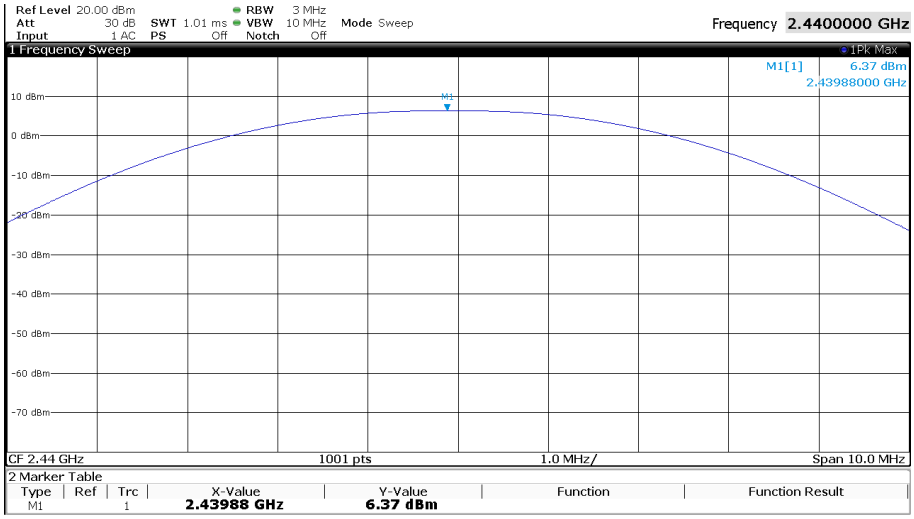
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 1 Mbps

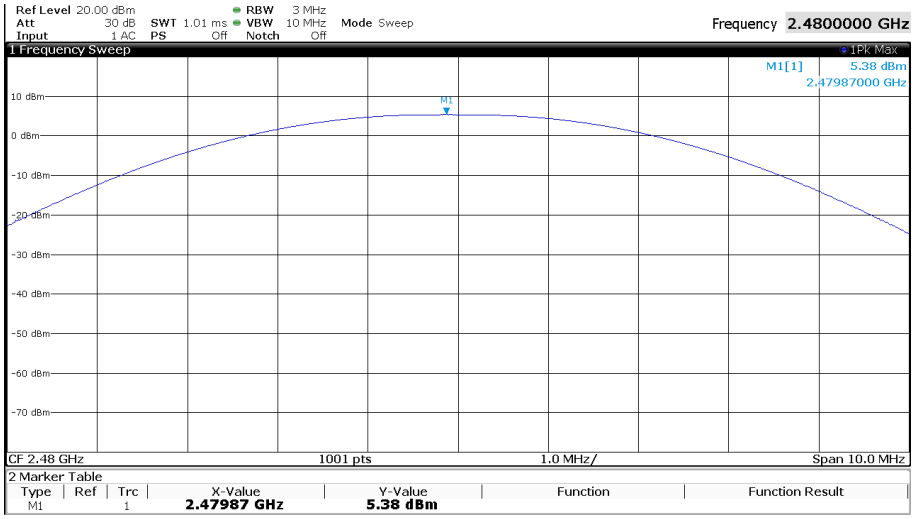
CH37 (2402 MHz):



CH17 (2440 MHz):



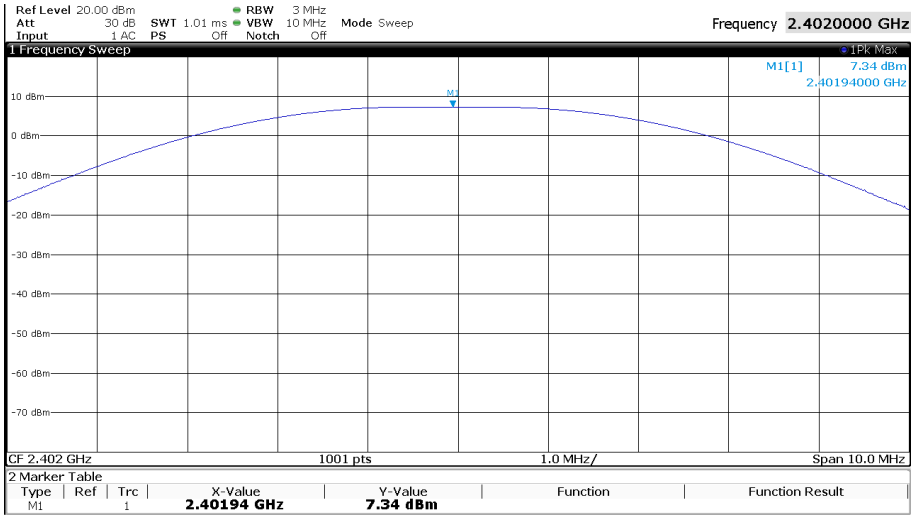
CH39 (2480 MHz):



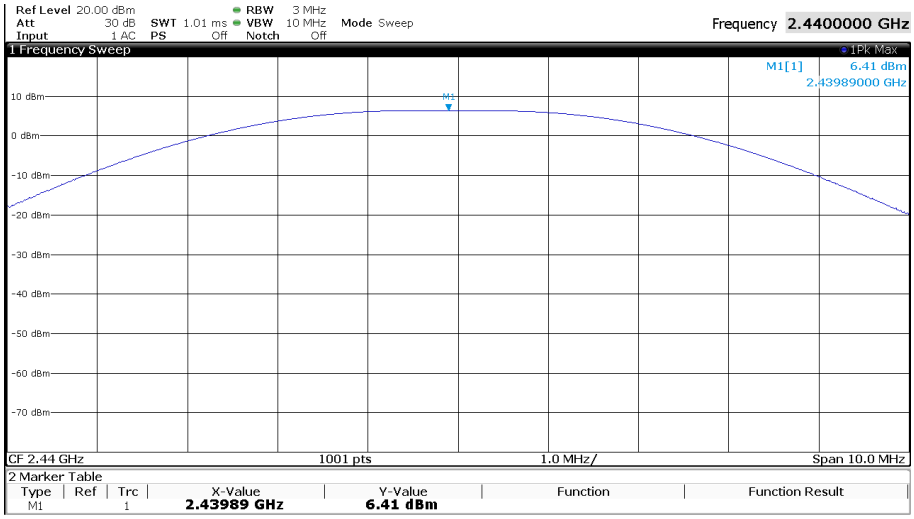
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 2 Mbps

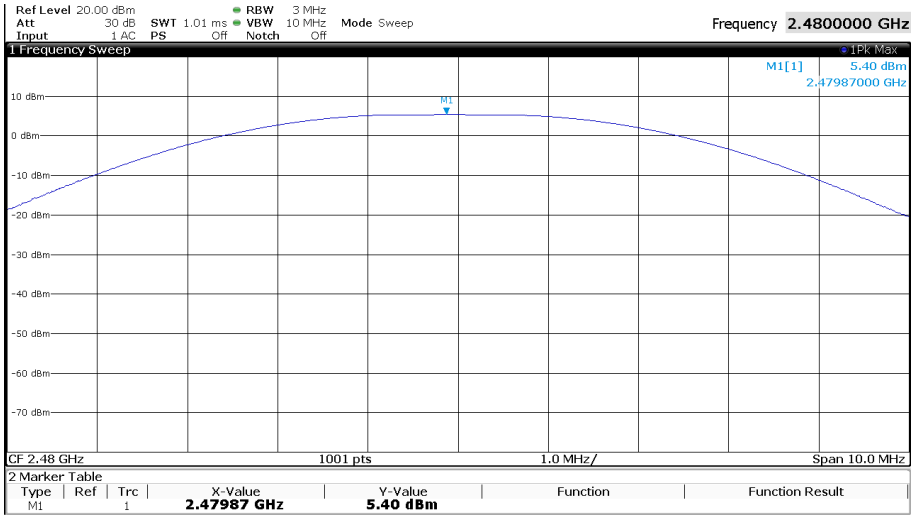
CH37 (2402 MHz):



CH17 (2440 MHz):



CH39 (2480 MHz):



5.4 Power spectral density

For test instruments and accessories used see section 6 Part **PSD**.

5.4.1 Description of the test location

Test location: Shielded Room S6

5.4.2 Photo documentation of the test set-up

For test setup photos see T44863-00 ATTACHMENT B

5.4.3 Applicable standard

According to FCC Part 15, Section 15.247(e):
For digitally modulated systems, the power spectral density radiated from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the radiated output power shall be used to determine the power spectral density.

5.4.4 Description of Measurement

The measurement is performed using the procedure 8.4 set out in KDB-558074. Therefore the PKPSD is measured conducted. The max peak was located and measured with the spectrum analyser and the marker set to peak.

Spectrum analyser settings:
RBW: 3 kHz, VBW: 10 kHz, Detector: Peak, Sweep time: Auto

5.4.5 Test result

Data rate 125 kbps:

802.15.1, 125 kbps, TX		Test results conducted				
		PD [Pmax] (dBm/3kHz)	Antenna Gain (dBi)	EIRP (dBm/3kHz)	EIRP Limit (dBm/3kHz)	Margin (dB)
Lowest frequency: CH37 (2402 MHz)						
T_{nom}	V_{nom}	1.0	1.4	2.4	14.0	-11.6
Middle frequency: CH17 (2440 MHz)						
T_{nom}	V_{nom}	0.3	1.6	1.9	14.0	-12.2
Highest frequency: CH39 (2480 MHz)						
T_{nom}	V_{nom}	-0.9	1.9	1.0	14.0	-13.0

Data rate 500 kbps:

802.15.1, 500 kbps, TX		Test results conducted				
		PD [Pmax] (dBm/3kHz)	Antenna Gain (dBi)	EIRP (dBm/3kHz)	EIRP Limit (dBm/3kHz)	Margin (dB)
Lowest frequency: CH37 (2402 MHz)						
T_{nom}	V_{nom}	0.8	1.4	2.2	14.0	-11.9
Middle frequency: CH17 (2440 MHz)						
T_{nom}	V_{nom}	0.0	1.6	1.6	14.0	-12.4
Highest frequency: CH39 (2480 MHz)						
T_{nom}	V_{nom}	-1.1	1.9	0.8	14.0	-13.2

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 1 Mbps:

802.15.1, 1 Mbps, TX		Test results conducted				
		PD [Pmax] (dBm/3kHz)	Antenna Gain (dBi)	EIRP (dBm/3kHz)	EIRP Limit (dBm/3kHz)	Margin (dB)
Lowest frequency: CH37 (2402 MHz)						
T_{nom}	V_{nom}	-7.8	1.4	-6.4	14.0	-20.4
Middle frequency: CH17 (2440 MHz)						
T_{nom}	V_{nom}	-8.7	1.6	-7.1	14.0	-21.1
Highest frequency: CH39 (2480 MHz)						
T_{nom}	V_{nom}	-9.7	1.9	-7.8	14.0	-21.8

Data rate 2 Mbps:

802.15.1, 2 Mbps, TX		Test results conducted				
		PD [Pmax] (dBm/3kHz)	Antenna Gain (dBi)	EIRP (dBm/3kHz)	EIRP Limit (dBm/3kHz)	Margin (dB)
Lowest frequency: CH37 (2402 MHz)						
T_{nom}	V_{nom}	-9.7	1.4	-8.3	14.0	-22.3
Middle frequency: CH17 (2440 MHz)						
T_{nom}	V_{nom}	-10.5	1.6	-8.9	14.0	-22.9
Highest frequency: CH39 (2480 MHz)						
T_{nom}	V_{nom}	-11.5	1.9	-9.6	14.0	-23.6

Power spectral density limit according to FCC Part 15, Section 15.247(e):

Frequency (MHz)	Power spectral density limit (EIRP) (dBm/3 kHz)
2400 - 2483.5	14

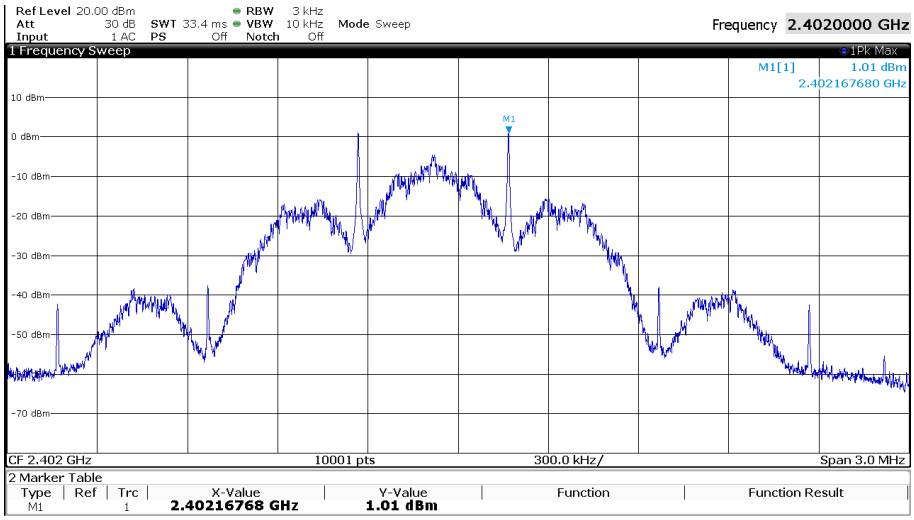
The requirements are **FULFILLED.**

Remarks: For detailed test result please see the following test protocols.

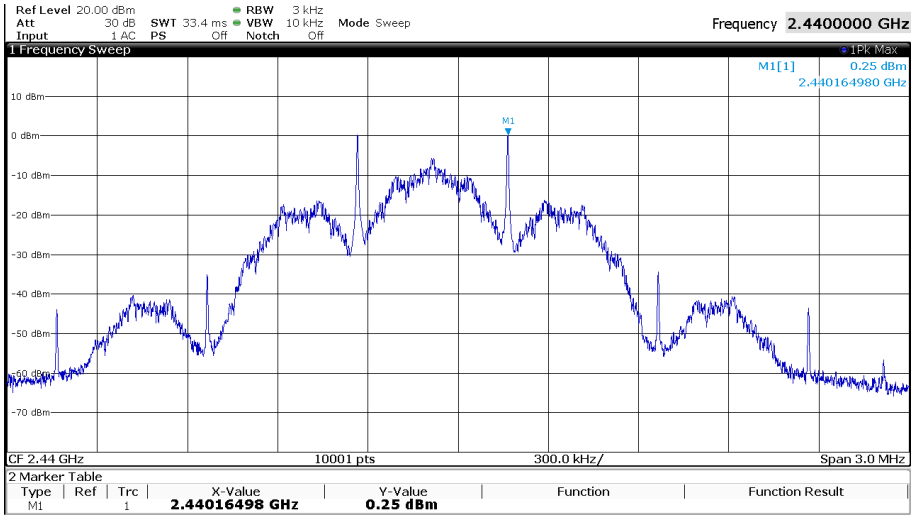
5.4.6 Test protocols

Data rate 125 kbps

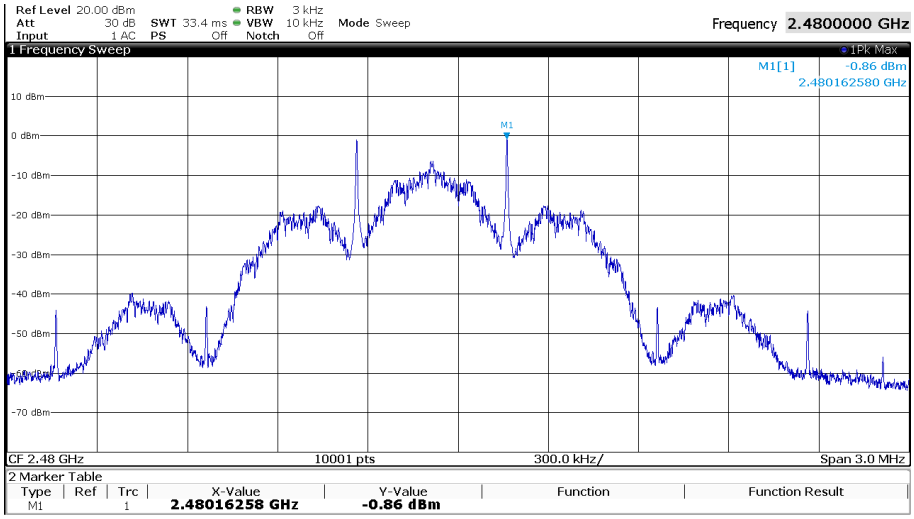
CH37 (2402 MHz):



CH17 (2440 MHz):



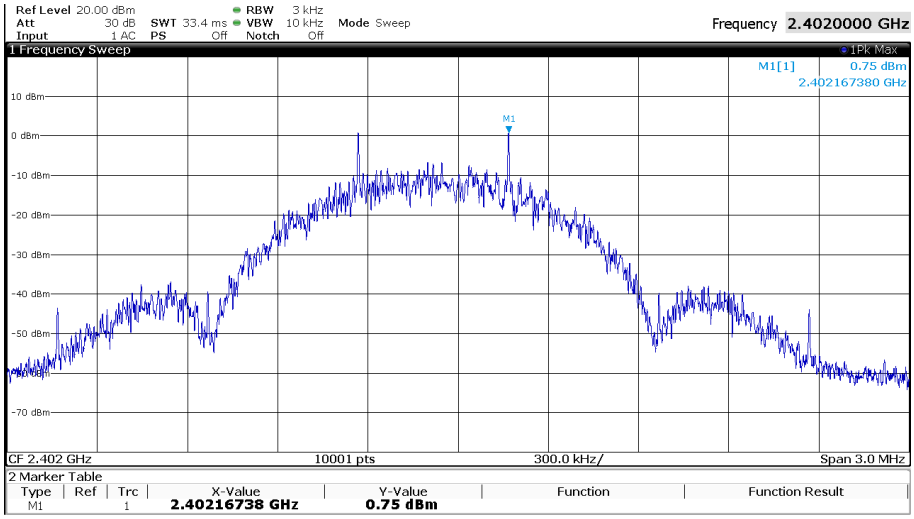
CH39 (2480 MHz):



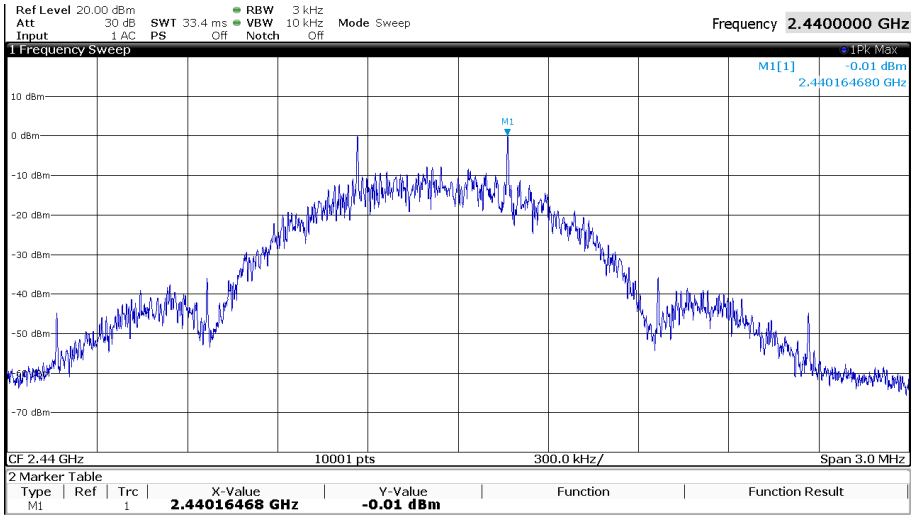
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 500 kbps

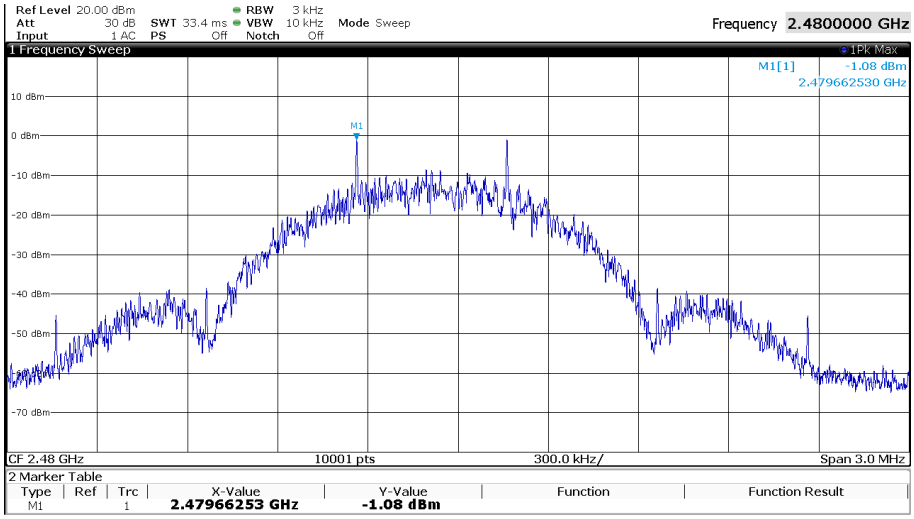
CH37 (2402 MHz):



CH17 (2440 MHz):



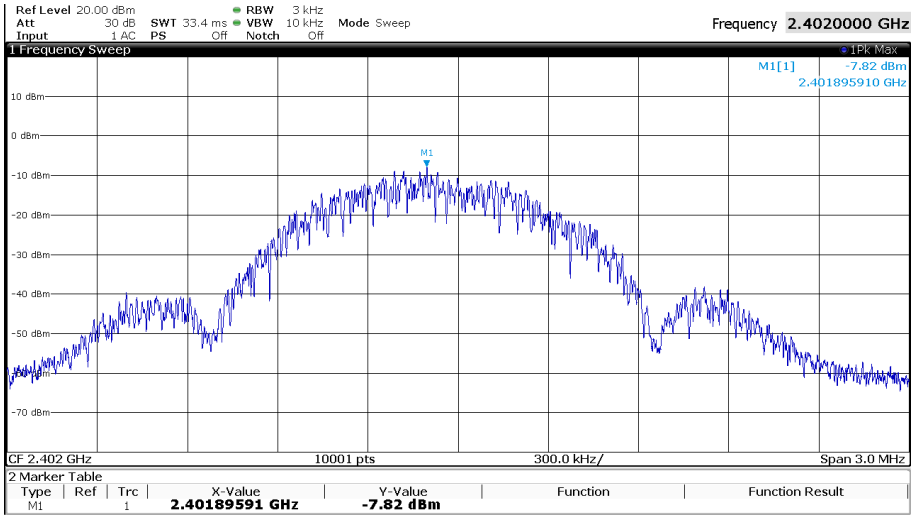
CH39 (2480 MHz):



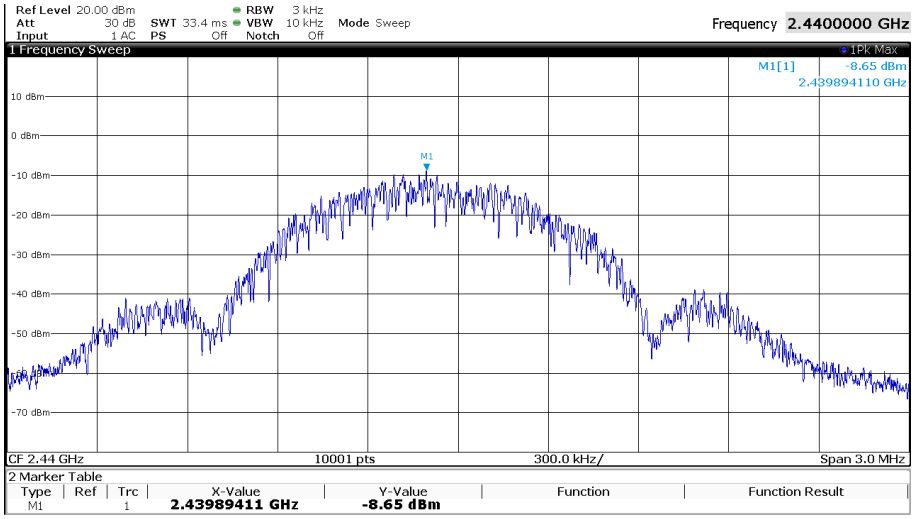
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 1 Mbps

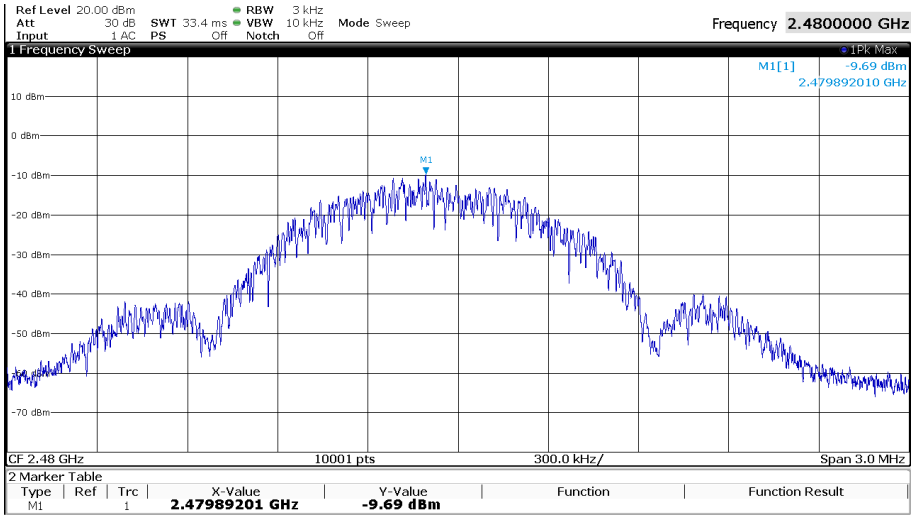
CH37 (2402 MHz):



CH17 (2440 MHz):



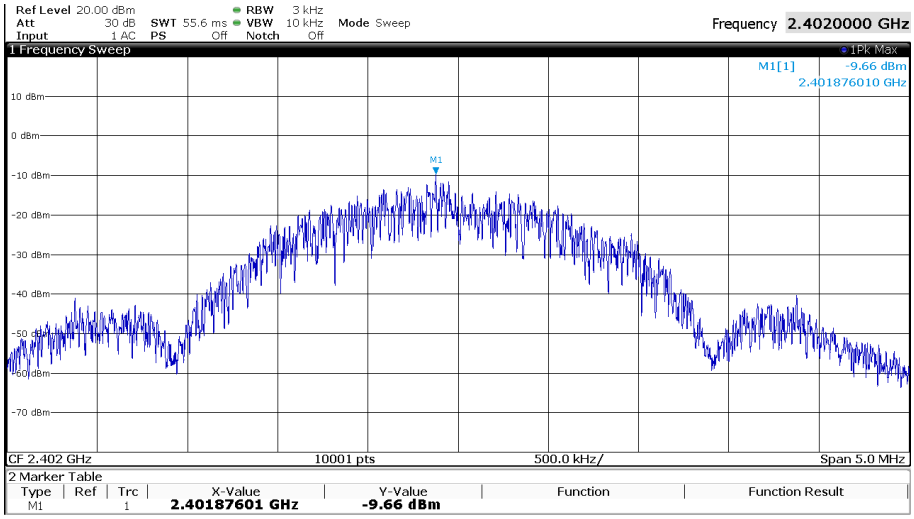
CH39 (2480 MHz):



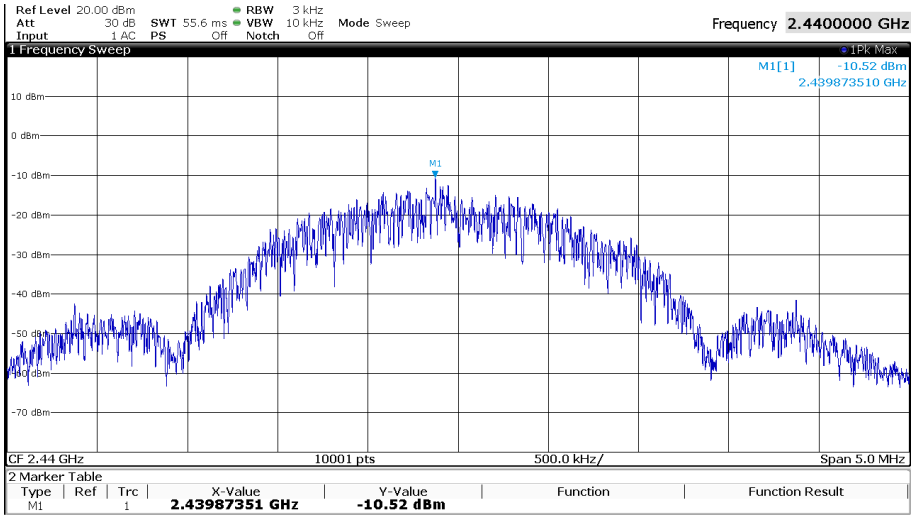
FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 2 Mbps

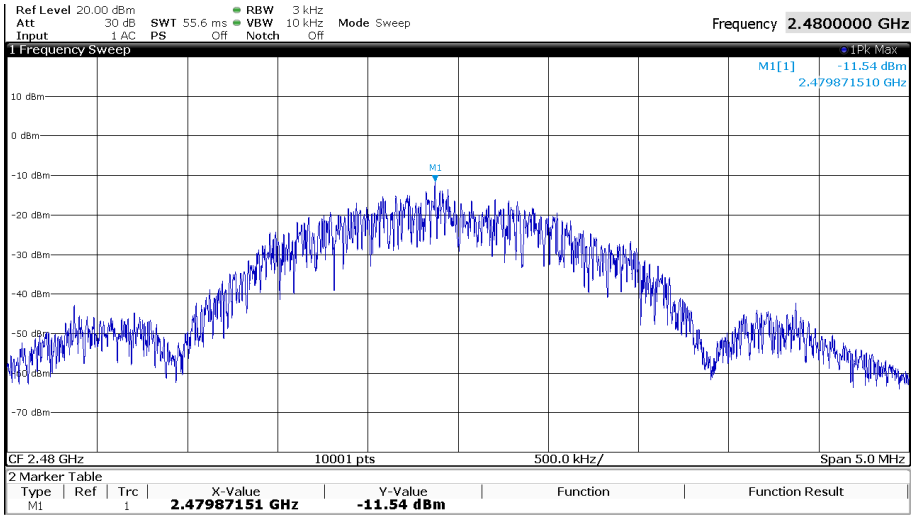
CH37 (2402 MHz):



CH17 (2440 MHz):



CH39 (2480 MHz):



5.5 Radiated emissions in restricted bands

For test instruments and accessories used see section 6 Part **SER 1**, **SER 2, SER 3**.

5.5.1 Description of the test location

Test location: OATS 1
Test location: Anechoic Chamber 1

Test distance: 3 m (9 kHz – 18 GHz)
Test distance: 1 m (18 GHz – 40 GHz)

5.5.2 Photo documentation of the test set-up

For test setup photos see T44863-00 ATTACHMENT B

5.5.3 Applicable standard

According to FCC Part 15, Section 15.205(a):
In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limit specified in Section 15.209(a).

5.5.4 Description of Measurement

The restricted bands are measured radiated. The span of the spectrum analyser is set wide enough to capture the restricted band and measure the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation. The restricted bands are measured falling emissions into it and the nearest restricted band are checked for emissions also the restricted band for the harmonics of the carrier. The measurement has been performed at 3 m. In the frequency range 9 kHz to 30 MHz the results have been compared to the limits defined at 30 m or 300 m distances according to FCC Part 15C, Section 15.31(f)(2) using an inverse linear distance extrapolation factor of 40 dB/decade.

Test receiver settings for SER1:
RBW: 200 Hz (9kHz – 150 kHz), 9 kHz (150 kHz – 30 MHz), Detector: Quasi peak (except for the bands 9 – 90 kHz and 110 – 490 kHz, where an average detector is used), Meas. Time: 1 s,

Test receiver settings for SER2:
RBW: 120 MHz, Detector: Quasi peak, Meas. Time: 1 s,

Spectrum analyser settings for SER3:
RBW: 1 MHz, VBW: 3 MHz, Detector: Max. peak, Trace: Max. hold, Sweep: Auto

5.5.5 Test result

Frequency range: 9 kHz - 30 MHz
Min. limit margin 29.8 dB at 500 kHz

Frequency range: 30 MHz - 1000 MHz
Min. limit margin 2.8 dB at 287.88 MHz

Frequency range: 1 GHz - 26 GHz
Max emission (Peak Detection) 61.90 dBµV/m at 2.4835 GHz
Max emission (Average Detection) 53.95 dBµV/m at 4.8799 GHz
Min. limit margin (Peak Detection) 12.1 dB at 2.4835 GHz
Min. limit margin (Average Detection) 0.05 dB at 4.8799 GHz

Radiated limits according to FCC Part 15 Section 15.209(a) for spurious emissions which fall in restricted bands:

Frequency	Field strength of spurious emissions		Measurement distance
(MHz)	(µV/m)	dB(µV/m)	(metres)
0.009-0.490	2400/F (kHz)		300
0.490-1.705	24000/F (kHz)		30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Restricted bands of operation:

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.41425 – 8.41475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4	3600 – 4400	Above 38.6

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

RSS-Gen, Table 6 – Restricted Frequency Bands

MHz	MHz	MHz	GHz
0.090 - 0.110	12.57675 - 12.57725	399.9 - 410	7.250 - 7.750
0.495 - 0.505	13.36 - 13.41	608 - 614	8.025 – 8.500
2.1735 - 2.1905	16.42 - 16.423	960 - 1427	9.0 - 9.2
3.020 - 3.026	16.69475 - 16.69525	1435 - 1626.5	9.3 - 9.5
4.125 - 4.128	16.80425 - 16.80475	1645.5 - 1646.5	10.6 - 12.7
4.17725 - 4.17775	25.5 - 25.67	1660 - 1710	13.25 - 13.4
4.20725 - 4.20775	37.5 - 38.25	1718.8 - 1722.2	14.47 - 14.5
5.677 - 5.683	73 - 74.6	2200 - 2300	15.35 - 16.2
6.215 - 6.218	74.8 - 75.2	2310 - 2390	17.7 - 21.4
6.26775 - 6.26825	108 – 138	2483.5 - 2500	22.01 - 23.12
6.31175 - 6.31225	149.9 - 150.05	2655 - 2900	23.6 - 24.0
8.291 - 8.294	156.52475 - 156.52525	3260 – 3267	31.2 - 31.8
8.362 - 8.366	156.7 - 156.9	3332 - 3339	36.43 - 36.5
8.37625 - 8.38675	162.0125 - 167.17	3345.8 - 3358	Above 38.6
8.41425 - 8.41475	167.72 - 173.2	3500 - 4400	
12.29 - 12.293	240 – 285	4500 - 5150	
12.51975 - 12.52025	322 - 335.4	5350 - 5460	

The requirements are **FULFILLED.**

Remarks: The measurement was performed up to the 10th harmonic. Pre -measurements showed that there is no influence of transmitting channel on the emissions in the frequency range 9 kHz to 30 MHz. For final measurement, only CH17 was measured in the frequency range 9 kHz to 30 MHz. During the final measurements, no emissions from the EUT in the frequency range 9 kHz to 30 MHz could have been detected. The given values only represent the noise floor. Pre-measurements showed no influence of the operating mode on the emissions in the frequency range 30 MHz – 1000 MHz. Therefore, only operation mode 1 Mbps has been measured. For detailed test results please see the following test protocols.

5.5.6 Test protocols radiated emissions

9 kHz ≤ f ≤ 30 MHz:

Frequency [kHz]	L: QP [dBµV]	Bandwidth [kHz]	Correct. [dB]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
500	23.8	9.0	20	43.8	73.6	29.8
2200	9.8	9.0	20	29.8	69.5	39.7
6250	6.4	9.0	20	26.4	69.5	43.1
11650	7.1	9.0	20	27.1	69.5	42.4
19850	5.8	9.0	20	25.8	69.5	43.7
26890	4.1	9.0	20	24.1	69.5	45.4

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

30 MHz ≤ f ≤ 1000 MHz:
Data rate 1 Mbps, CH37 (2402 MHz):

Frequency (MHz)	Reading Vert. (dBµV)	Reading Hor. (dBµV)	Correct. Vert. (dB)	Correct. Hor. (dB)	Level Vert. (dBµV/m)	Level Hor. (dBµV/m)	Limit (dBµV/m)	Dlimit (dB)
37.90	12.0	-5.5	14.3	13.1	26.3	7.6	40.0	-13.7
49.20	5.5	-4.0	15.2	14.1	20.7	10.1	40.0	-19.3
143.94	16.5	23.0	13.6	14.4	30.1	37.4	43.5	-6.1
215.80	24.0	3.0	12.0	12.6	36.0	15.6	43.5	-7.5
287.88	27.0	12.5	16.1	15.9	43.1	28.4	46.0	-2.9
889.70	0.0	-2.5	30.9	30.5	30.9	28.0	46.0	-15.1

Data rate 1 Mbps, CH19 (2440 MHz):

Frequency (MHz)	Reading Vert. (dBµV)	Reading Hor. (dBµV)	Correct. Vert. (dB)	Correct. Hor. (dB)	Level Vert. (dBµV/m)	Level Hor. (dBµV/m)	Limit (dBµV/m)	Dlimit (dB)
38.40	9.0	5.0	14.4	13.2	23.4	18.2	40.0	-16.6
49.20	8.0	-4.0	15.2	14.1	23.2	10.1	40.0	-16.8
143.94	16.3	21.1	13.6	14.4	29.9	35.5	43.5	-8.0
215.80	23.3	1.0	12.0	12.6	35.3	13.6	43.5	-8.2
287.88	10.5	26.9	16.1	15.9	26.6	42.8	46.0	-3.2
719.75	-1.0	6.0	27.5	27.0	26.5	33.0	46.0	-13.0

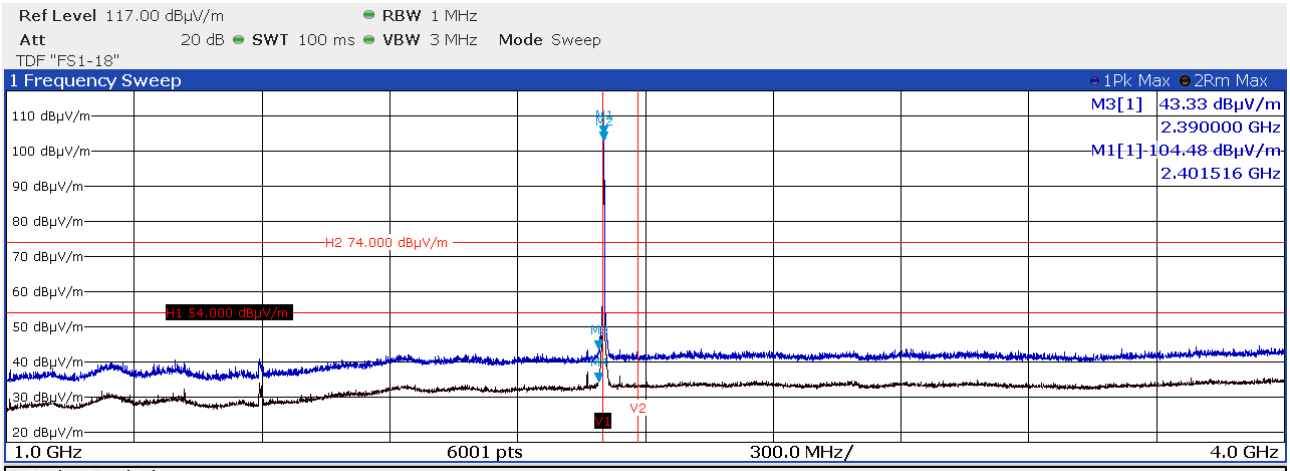
Data rate 1 Mbps, CH39 (2480 MHz):

Frequency (MHz)	Reading Vert. (dBµV)	Reading Hor. (dBµV)	Correct. Vert. (dB)	Correct. Hor. (dB)	Level Vert. (dBµV/m)	Level Hor. (dBµV/m)	Limit (dBµV/m)	Dlimit (dB)
38.40	9.0	4.5	14.4	13.2	23.4	17.7	40.0	-16.6
49.20	5.0	4.0	15.2	14.1	20.2	18.1	40.0	-19.8
143.94	16.0	21.2	13.6	14.4	29.6	35.6	43.5	-7.9
215.80	23.0	1.0	12.0	12.6	35.0	13.6	43.5	-8.5
287.88	13.4	27.3	16.1	15.9	29.5	43.2	46.0	-2.8
719.75	1.0	5.0	27.5	27.0	28.5	32.0	46.0	-14.0

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

1 GHz ≤ f ≤ 40 GHz

Data rate 125 kbps, CH37 (2402 MHz) horizontal polarisation, EUT-lying:

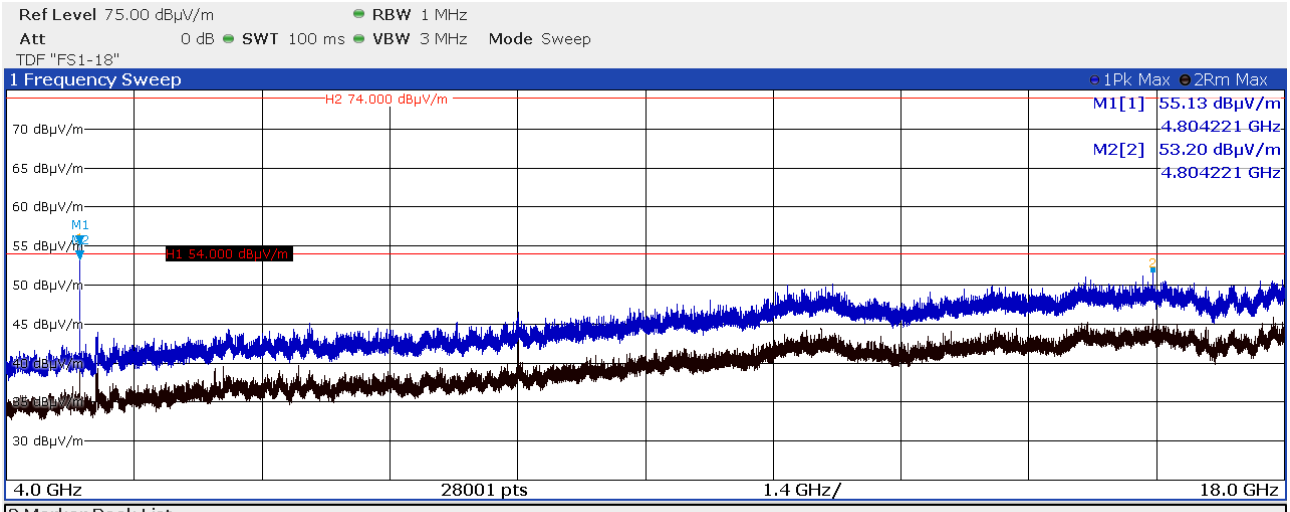


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	2.401520 GHz	104.477 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.401516 GHz**	**104.48 dBµV/m**		
M2		2	**2.401516 GHz**	**102.67 dBµV/m**		
M3		1	**2.39 GHz**	**43.33 dBµV/m**		
M4		2	**2.39 GHz**	**34.25 dBµV/m**		



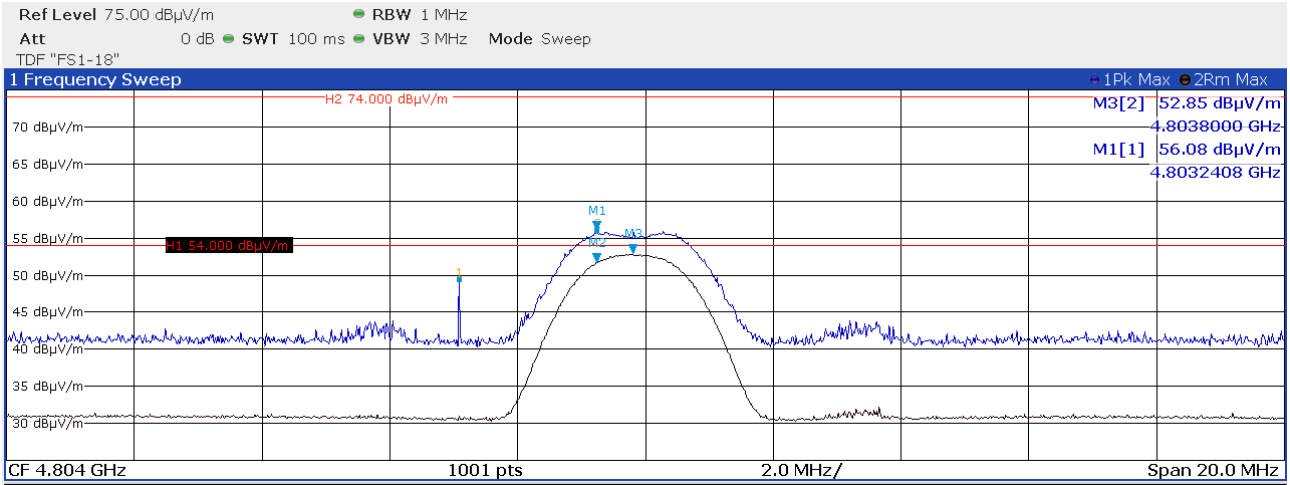
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.804220 GHz	55.127 dBµV/m	2	16.558800 GHz	51.962 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.804221 GHz**	**55.13 dBµV/m**		
M2		2	**4.804221 GHz**	**53.20 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

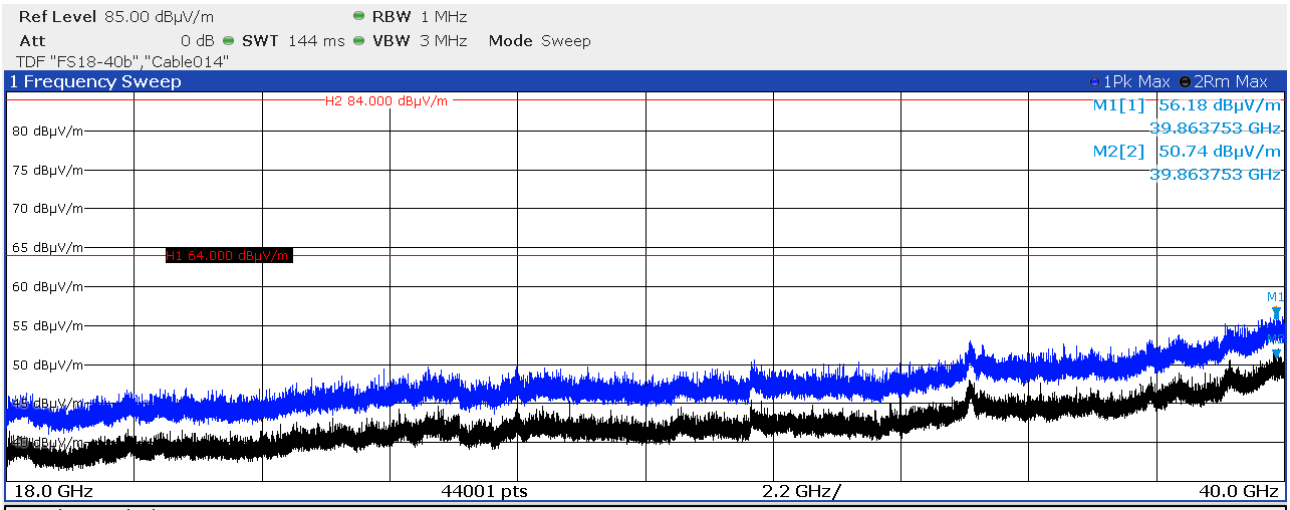


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.801083 GHz	49.380 dBµV/m	2	4.803241 GHz	56.084 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.8032408 GHz**	**56.08 dBµV/m**		
M2		2	**4.8032408 GHz**	**51.63 dBµV/m**		
M3		2	**4.8038 GHz**	**52.85 dBµV/m**		



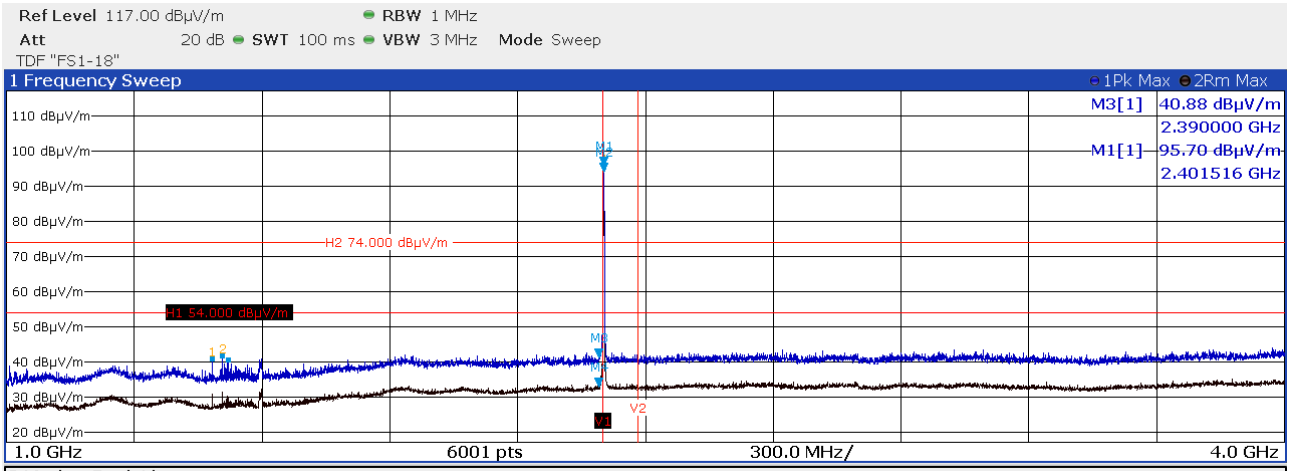
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	39.863750 GHz	56.176 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.863753 GHz**	**56.18 dBµV/m**		
M2		2	**39.863753 GHz**	**50.74 dBµV/m**		

Data rate 125 kbps, CH37 (2402 MHz) vertical polarisation, EUT-lying:

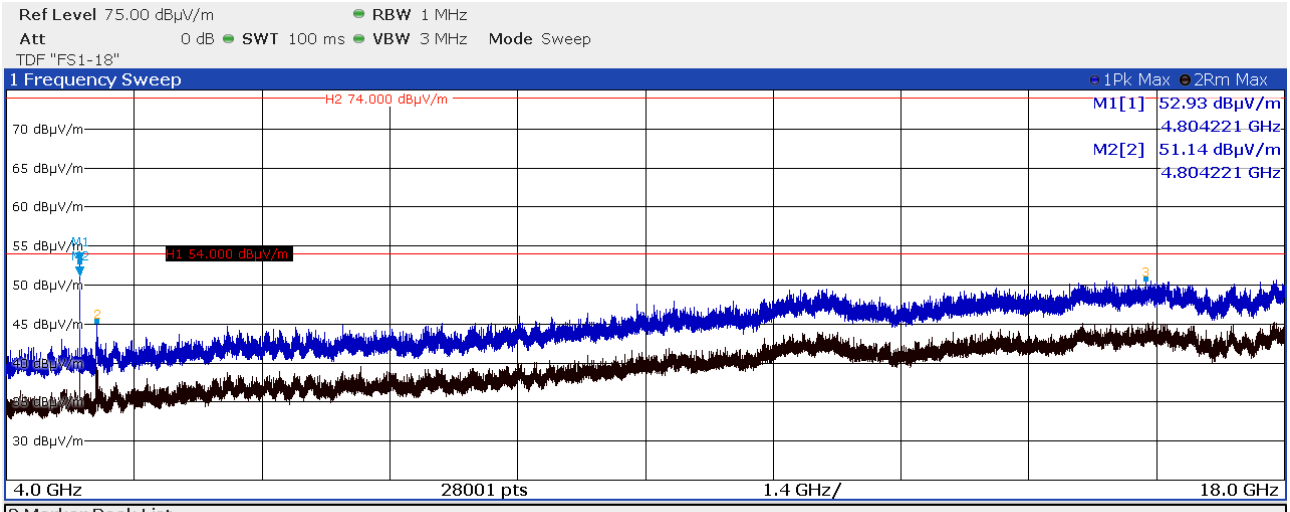


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.482670 GHz	40.663 dBµV/m	3	1.519660 GHz	40.365 dBµV/m
2	1.507170 GHz	41.468 dBµV/m	4	2.401520 GHz	95.697 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.401516 GHz**	**95.70 dBµV/m**		
M2		2	**2.401516 GHz**	**93.90 dBµV/m**		
M3		1	**2.39 GHz**	**40.88 dBµV/m**		
M4		2	**2.39 GHz**	**32.79 dBµV/m**		



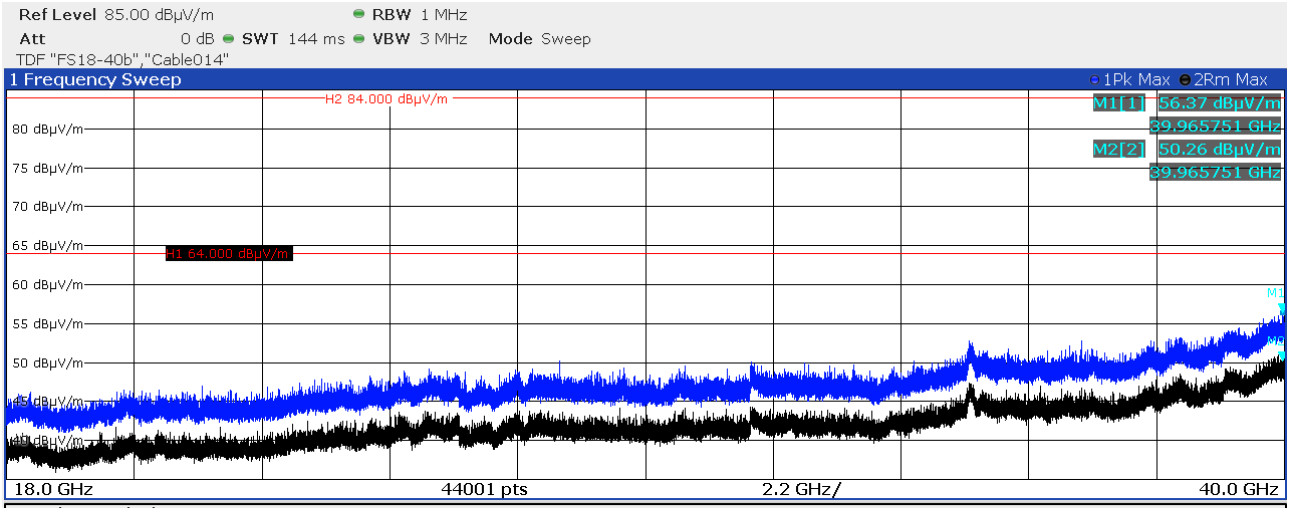
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.804220 GHz	52.927 dBµV/m	3	16.478800 GHz	50.831 dBµV/m
2	4.991710 GHz	45.360 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.804221 GHz**	**52.93 dBµV/m**		
M2		2	**4.804221 GHz**	**51.14 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**



2 Marker Peak List

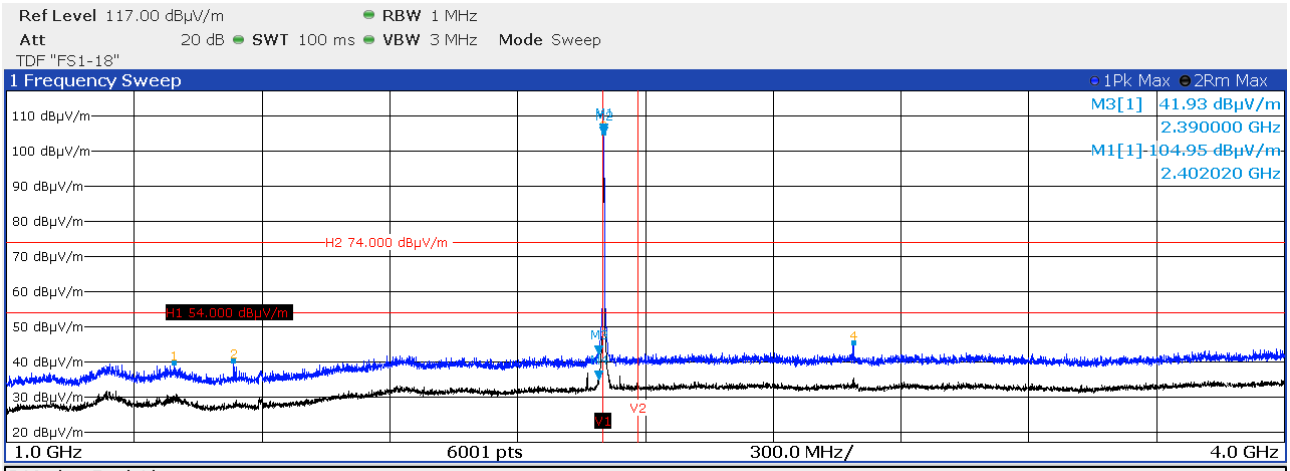
No	X-Value	Y-Value	No	X-Value	Y-Value
1	39.965750 GHz	56.366 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.965751 GHz**	**56.37 dBµV/m**		
M2		2	**39.965751 GHz**	**50.26 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 125 kbps, CH37 (2402 MHz) horizontal polarisation, EUT-standing:

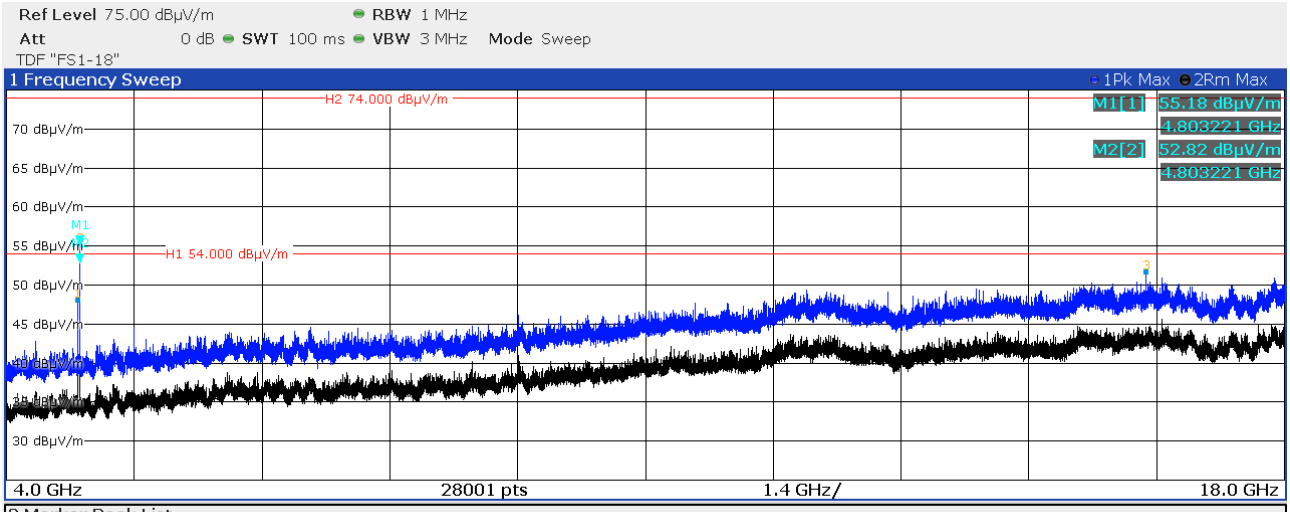


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.394180 GHz	39.468 dBµV/m	3	2.402020 GHz	104.955 dBµV/m
2	1.533660 GHz	40.111 dBµV/m	4	2.987920 GHz	45.398 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.40202 GHz**	**104.95 dBµV/m**		
M2		2	**2.40202 GHz**	**104.14 dBµV/m**		
M3		1	**2.39 GHz**	**41.93 dBµV/m**		
M4		2	**2.39 GHz**	**34.77 dBµV/m**		



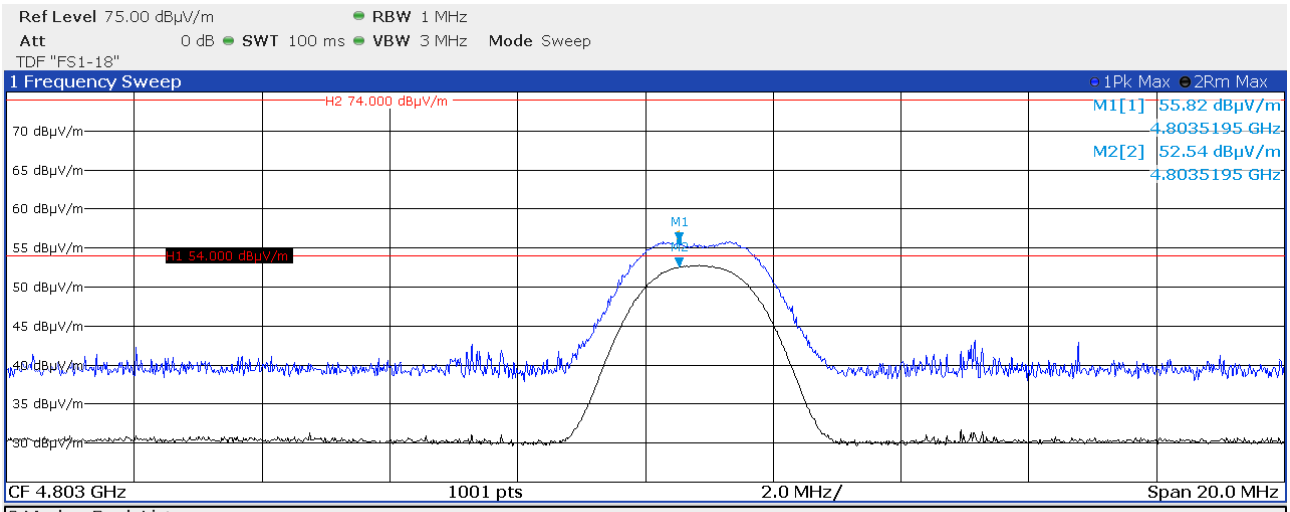
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.784220 GHz	48.033 dBµV/m	3	16.486800 GHz	51.623 dBµV/m
2	4.803220 GHz	55.185 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.803221 GHz**	**55.18 dBµV/m**		
M2		2	**4.803221 GHz**	**52.82 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

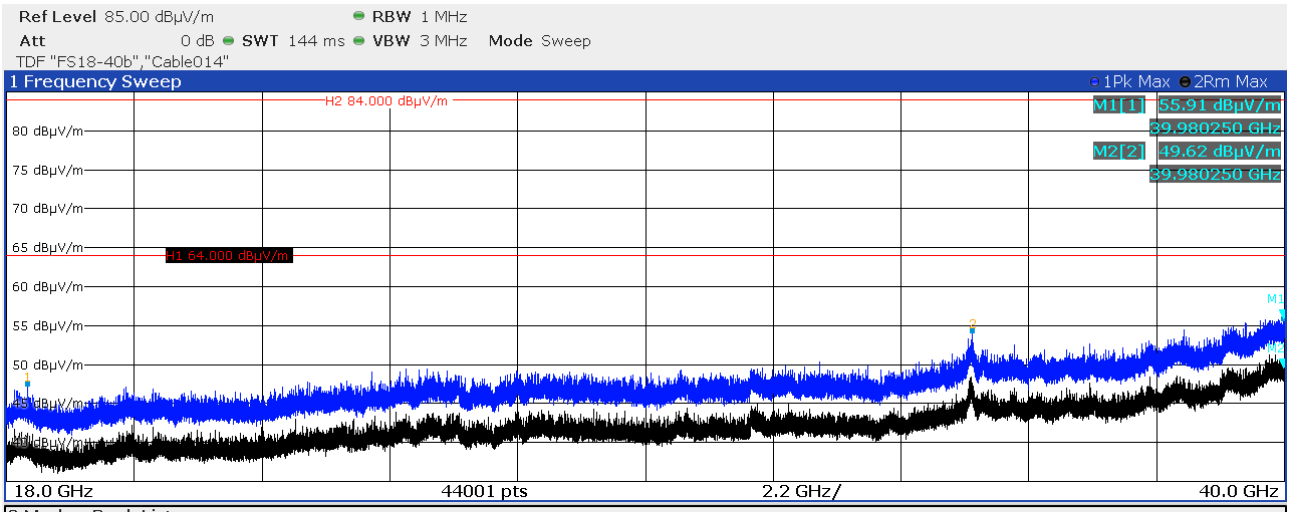


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.803519 GHz	55.821 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.8035195 GHz**	**55.82 dBµV/m**		
M2		2	**4.8035195 GHz**	**52.54 dBµV/m**		



2 Marker Peak List

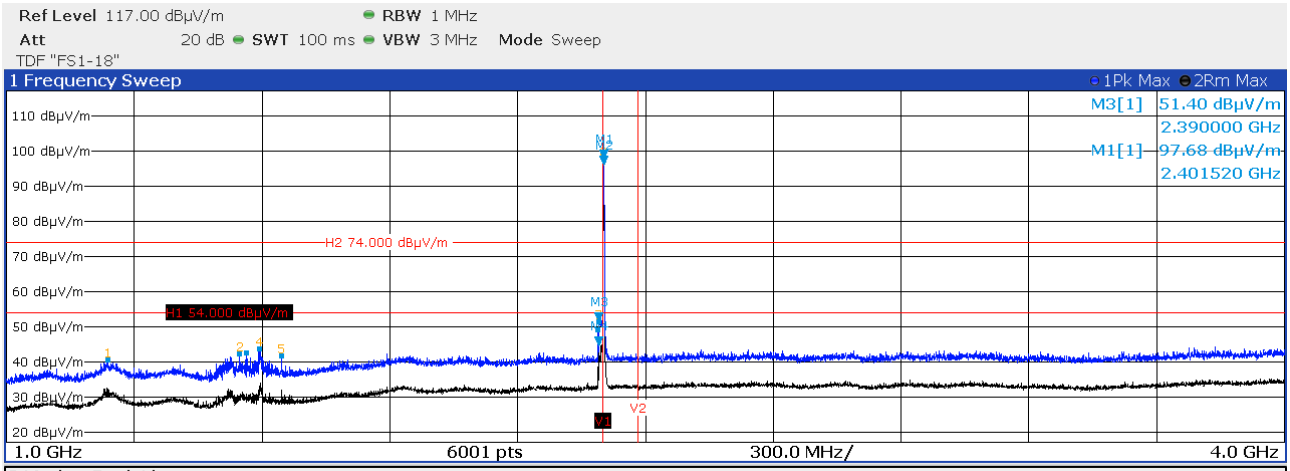
No	X-Value	Y-Value	No	X-Value	Y-Value
1	18.357740 GHz	47.463 dBµV/m	3	39.980250 GHz	55.906 dBµV/m
2	34.630370 GHz	54.312 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.98025 GHz**	**55.91 dBµV/m**		
M2		2	**39.98025 GHz**	**49.62 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 125 kbps, CH37 (2402 MHz) vertical polarisation, EUT-standing:

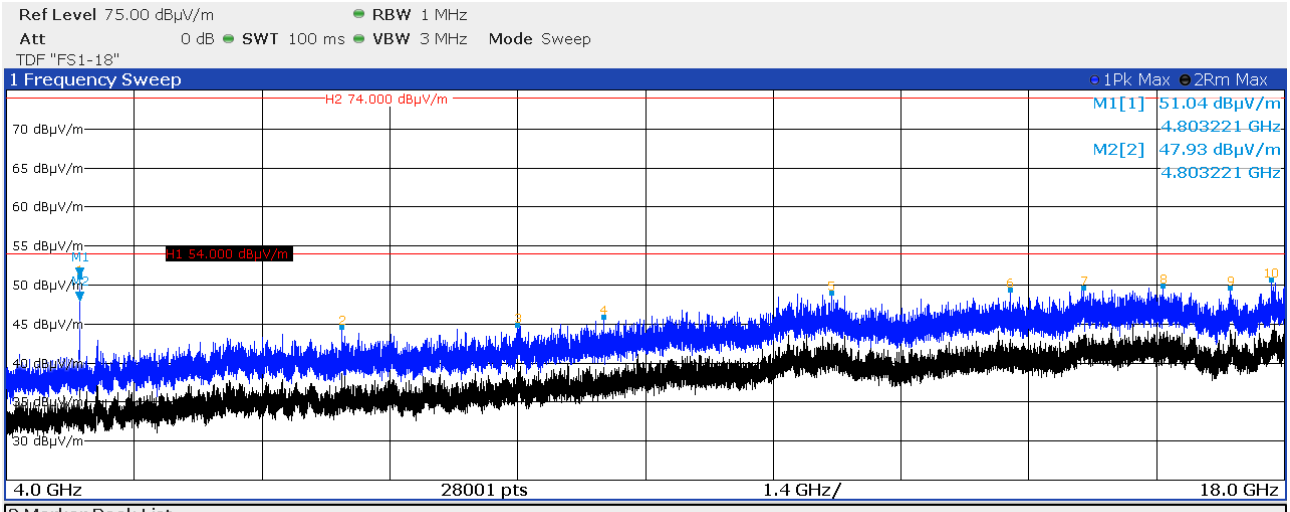


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.237710 GHz	40.555 dBµV/m	5	1.645640 GHz	41.559 dBµV/m
2	1.547660 GHz	42.050 dBµV/m	6	2.389020 GHz	49.078 dBµV/m
3	1.564160 GHz	42.338 dBµV/m	7	2.390020 GHz	51.396 dBµV/m
4	1.594150 GHz	43.627 dBµV/m	8	2.401520 GHz	97.676 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.40152 GHz**	**97.68 dBµV/m**		
M2		2	**2.40152 GHz**	**95.93 dBµV/m**		
M3		1	**2.39 GHz**	**51.40 dBµV/m**		
M4		2	**2.39 GHz**	**44.34 dBµV/m**		



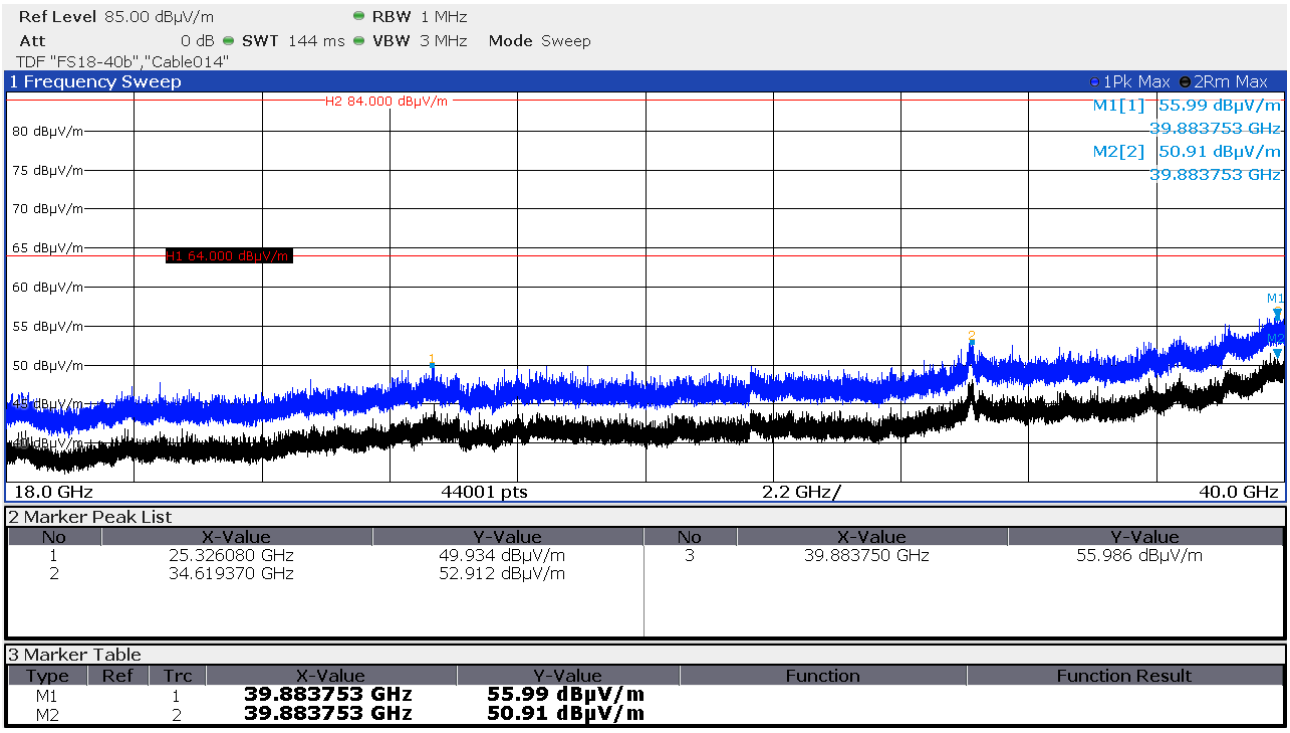
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.803220 GHz	51.039 dBµV/m	6	14.993860 GHz	49.329 dBµV/m
2	7.676620 GHz	44.591 dBµV/m	7	15.803330 GHz	49.556 dBµV/m
3	9.600050 GHz	44.880 dBµV/m	8	16.672800 GHz	49.899 dBµV/m
4	10.539520 GHz	45.883 dBµV/m	9	17.410770 GHz	49.637 dBµV/m
5	13.038430 GHz	48.962 dBµV/m	10	17.859760 GHz	50.634 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.803221 GHz**	**51.04 dBµV/m**		
M2		2	**4.803221 GHz**	**47.93 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**



2 Marker Peak List

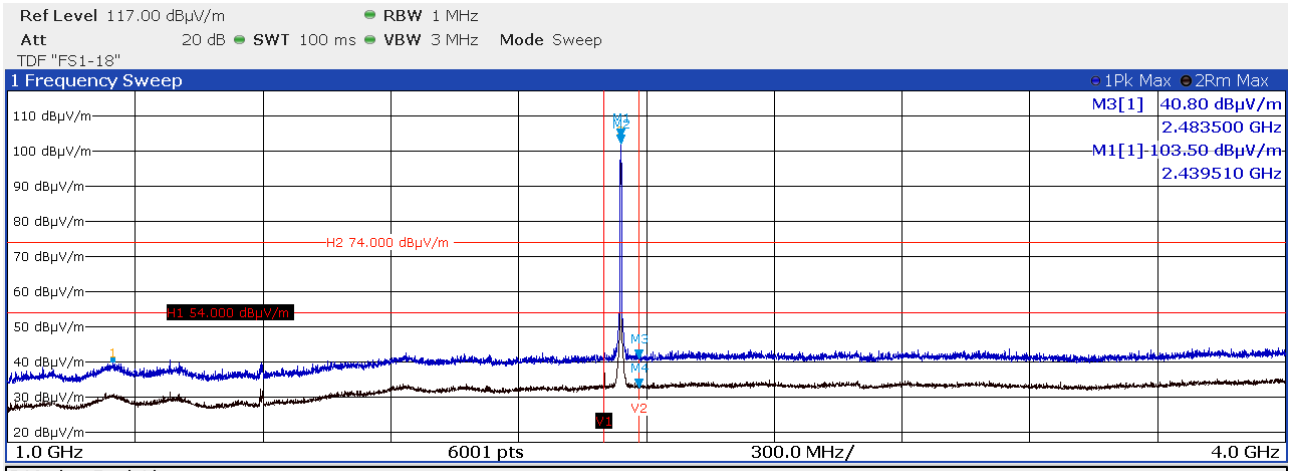
No	X-Value	Y-Value	No	X-Value	Y-Value
1	25.326080 GHz	49.934 dBµV/m	3	39.883750 GHz	55.986 dBµV/m
2	34.619370 GHz	52.912 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.883753 GHz**	**55.99 dBµV/m**		
M2		2	**39.883753 GHz**	**50.91 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 125 kbps, CH17 (2440 MHz) horizontal polarisation, EUT-lying:

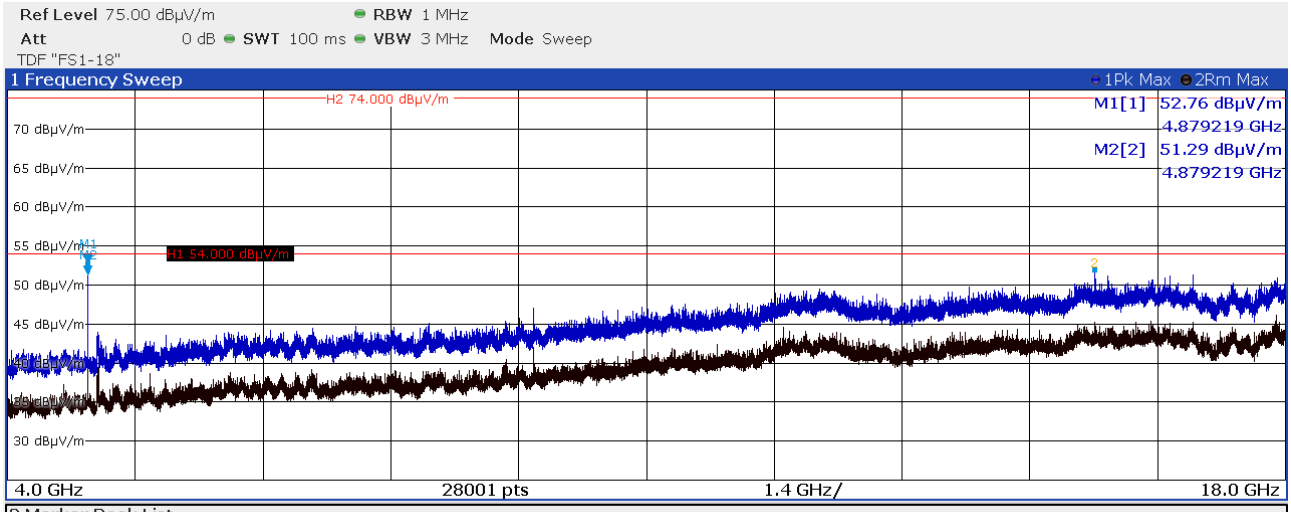


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.247710 GHz	40.377 dBµV/m	2	2.439510 GHz	103.504 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.43951 GHz**	**103.50 dBµV/m**		
M2		2	**2.43951 GHz**	**101.80 dBµV/m**		
M3		1	**2.4835 GHz**	**40.80 dBµV/m**		
M4		2	**2.4835 GHz**	**32.39 dBµV/m**		



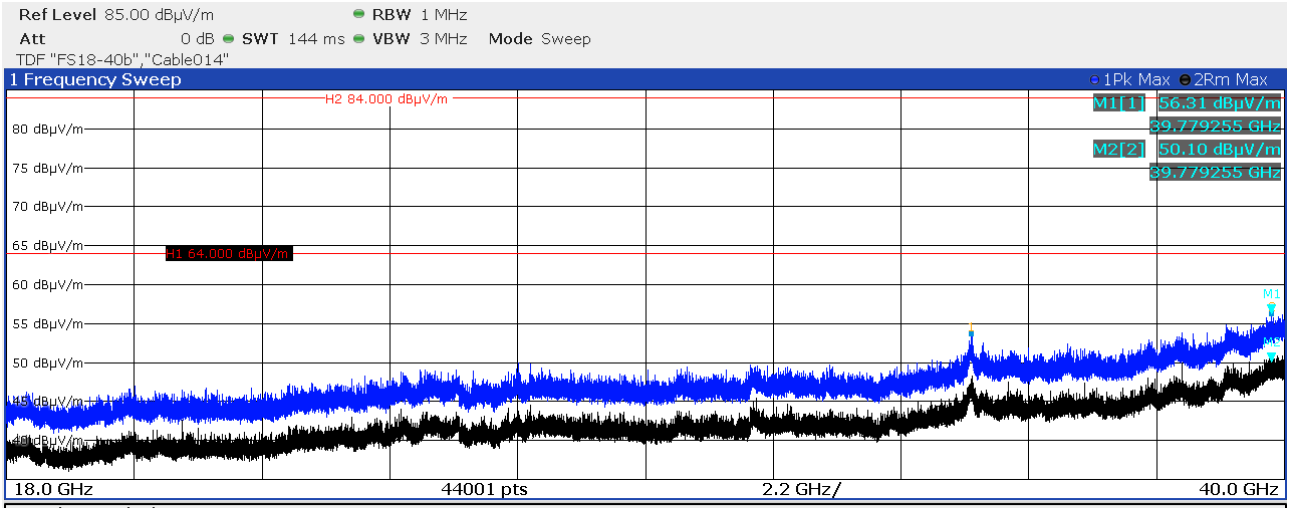
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.879220 GHz	52.759 dBµV/m	2	15.905320 GHz	51.951 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.879219 GHz**	**52.76 dBµV/m**		
M2		2	**4.879219 GHz**	**51.29 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**



2 Marker Peak List

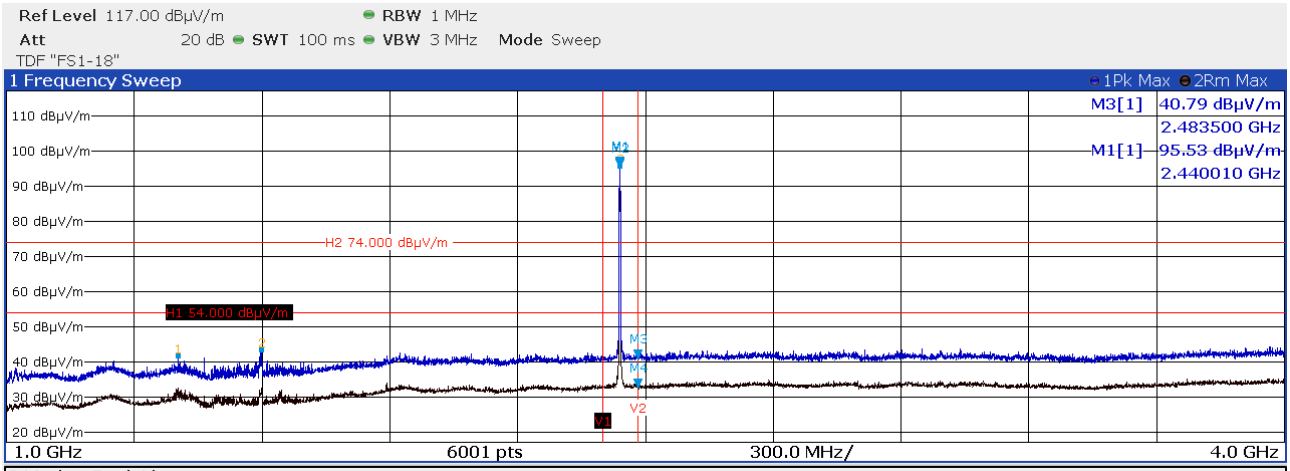
No	X-Value	Y-Value	No	X-Value	Y-Value
1	34.608370 GHz	53.655 dBµV/m	2	39.779260 GHz	56.306 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.779255 GHz**	**56.31 dBµV/m**		
M2		2	**39.779255 GHz**	**50.10 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 125 kbps, CH17 (2440 MHz) vertical polarisation, EUT-lying:

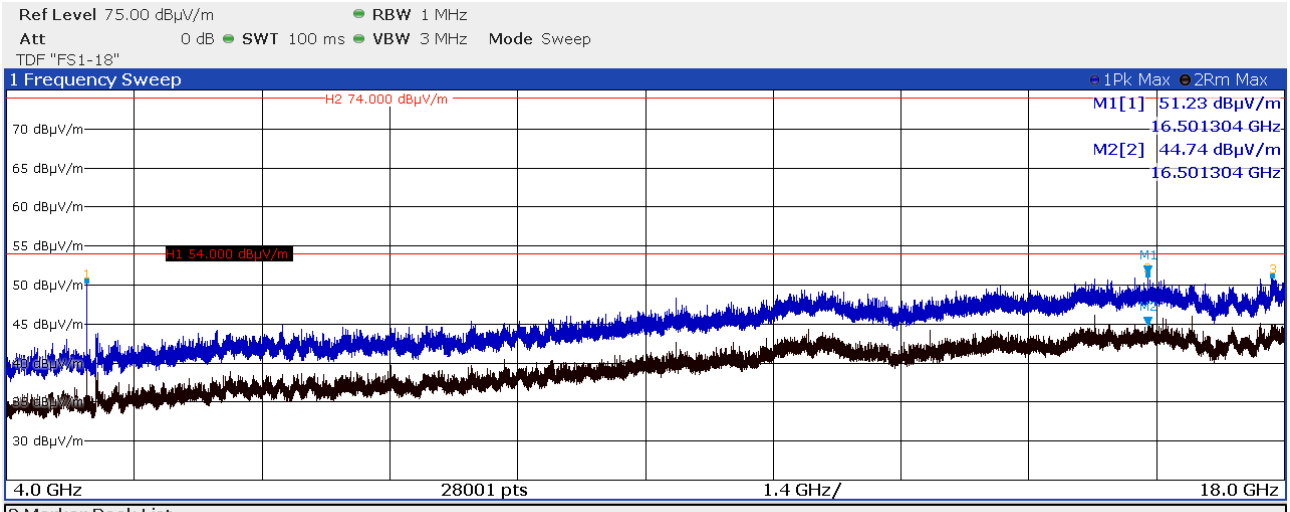


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.402180 GHz	41.554 dBµV/m	3	2.440010 GHz	95.531 dBµV/m
2	1.599150 GHz	43.221 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.44001 GHz**	**95.53 dBµV/m**		
M2		2	**2.44001 GHz**	**94.96 dBµV/m**		
M3		1	**2.4835 GHz**	**40.79 dBµV/m**		
M4		2	**2.4835 GHz**	**32.55 dBµV/m**		



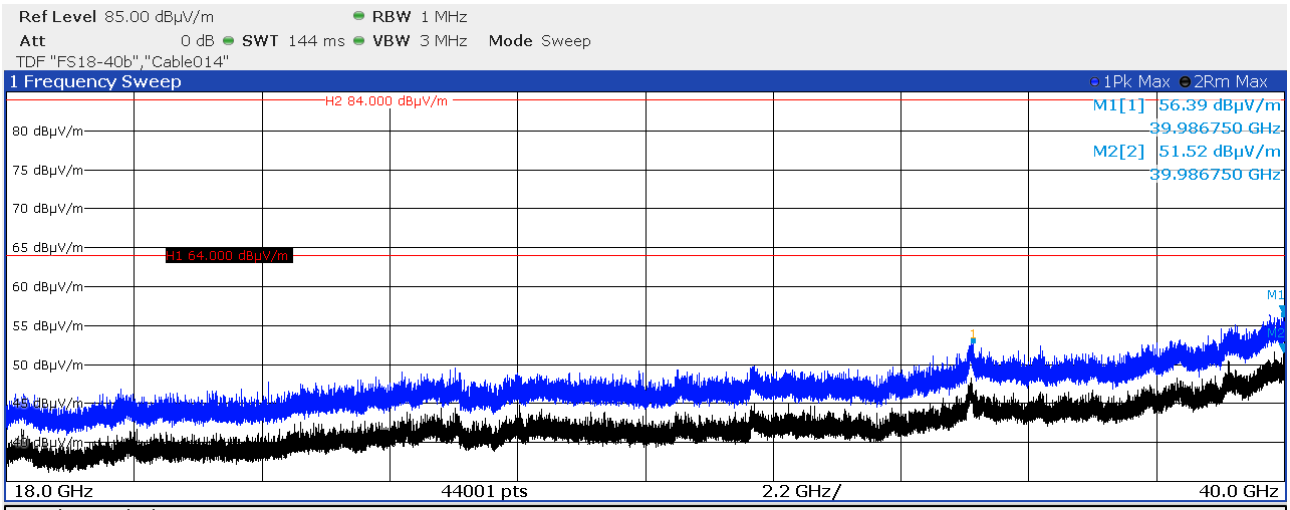
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.879220 GHz	50.575 dBµV/m	3	17.869750 GHz	51.162 dBµV/m
2	16.501300 GHz	51.232 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**16.501304 GHz**	**51.23 dBµV/m**		
M2		2	**16.501304 GHz**	**44.74 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**



2 Marker Peak List

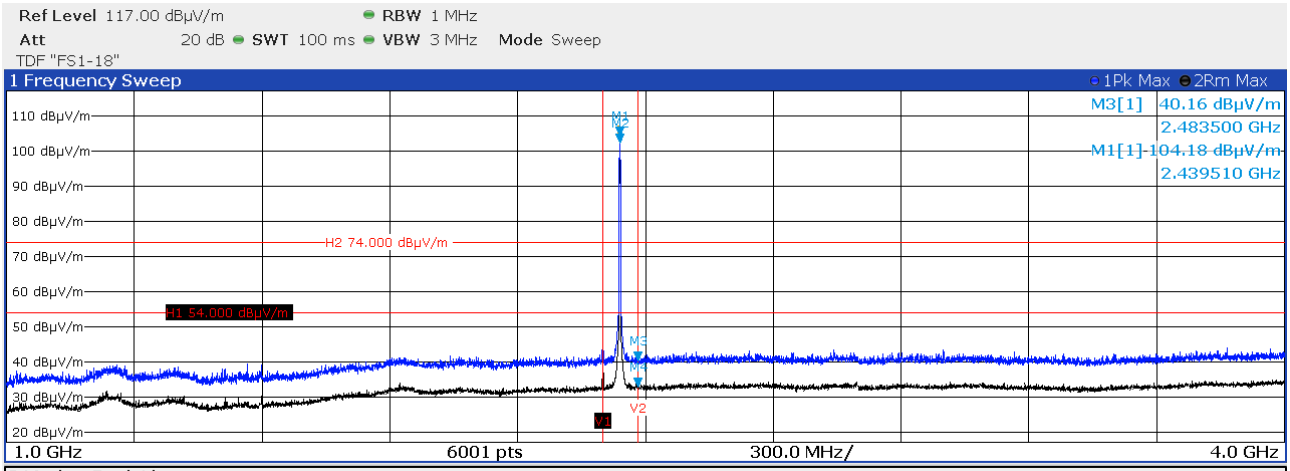
No	X-Value	Y-Value	No	X-Value	Y-Value
1	34.643370 GHz	52.982 dBµV/m	2	39.986750 GHz	56.392 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.98675 GHz**	**56.39 dBµV/m**		
M2		2	**39.98675 GHz**	**51.52 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 125 kbps, CH17 (2440 MHz) horizontal polarisation, EUT-standing:

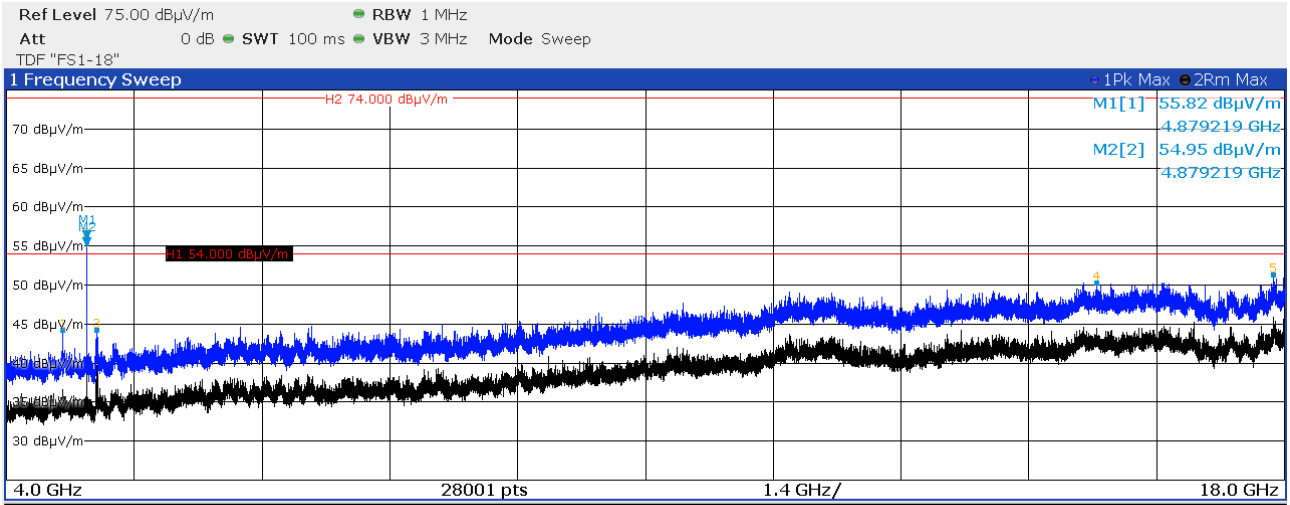


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	2.439510 GHz	104.176 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.43951 GHz**	**104.18 dBµV/m**		
M2		2	**2.43951 GHz**	**102.15 dBµV/m**		
M3		1	**2.4835 GHz**	**40.16 dBµV/m**		
M4		2	**2.4835 GHz**	**32.71 dBµV/m**		



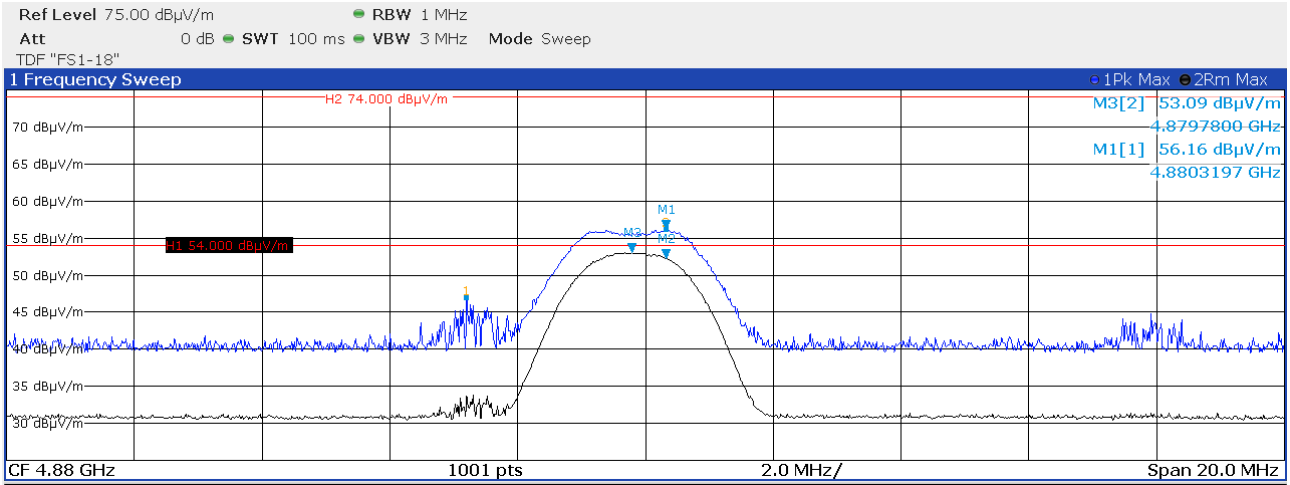
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.617230 GHz	44.174 dBµV/m	4	15.944320 GHz	50.309 dBµV/m
2	4.879220 GHz	55.817 dBµV/m	5	17.877250 GHz	51.275 dBµV/m
3	4.988210 GHz	44.162 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.879219 GHz**	**55.82 dBµV/m**		
M2		2	**4.879219 GHz**	**54.95 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

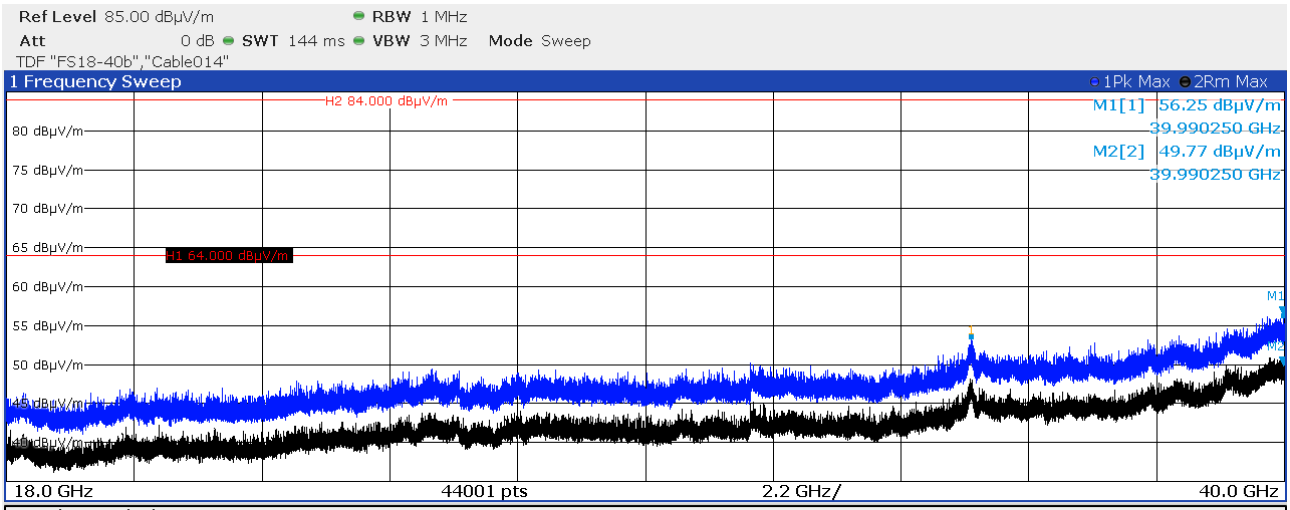


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.877203 GHz	46.995 dBµV/m	2	4.880320 GHz	56.156 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.8803197 GHz**	**56.16 dBµV/m**		
M2		2	**4.8803197 GHz**	**52.21 dBµV/m**		
M3		2	**4.87978 GHz**	**53.09 dBµV/m**		



2 Marker Peak List

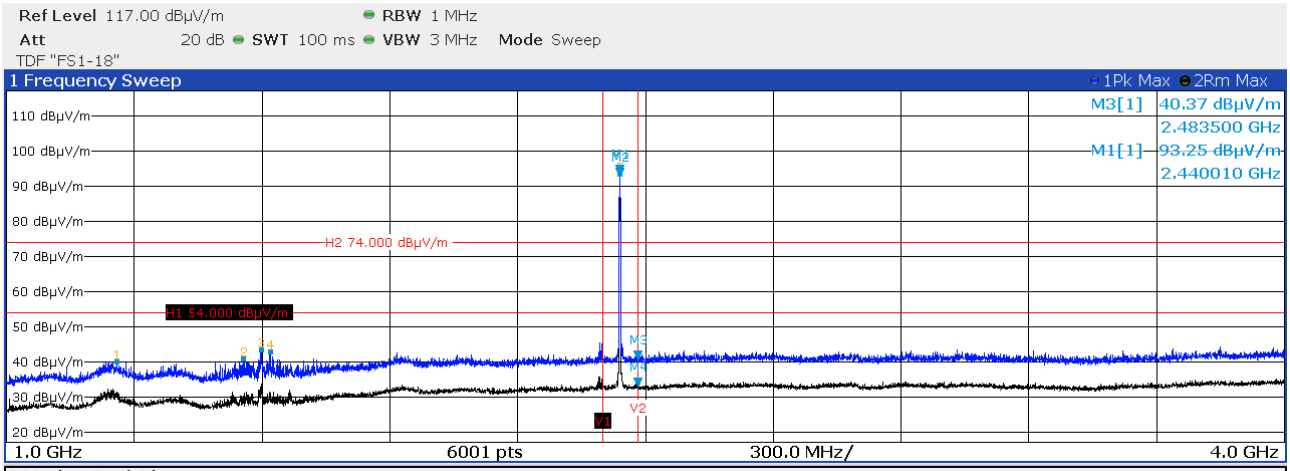
No	X-Value	Y-Value	No	X-Value	Y-Value
1	34.600870 GHz	53.561 dBµV/m	2	39.990250 GHz	56.245 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.99025 GHz**	**56.25 dBµV/m**		
M2		2	**39.99025 GHz**	**49.77 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 125 kbps, CH17 (2440 MHz) vertical polarisation, EUT-standing:

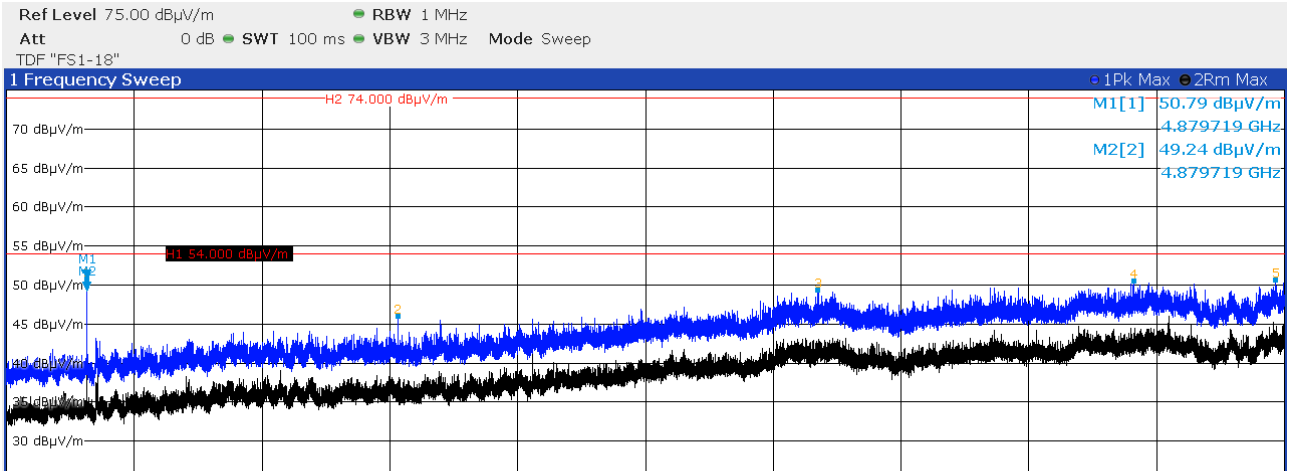


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.259710 GHz	39.748 dBµV/m	4	1.618650 GHz	42.594 dBµV/m
2	1.556660 GHz	40.645 dBµV/m	5	2.440010 GHz	93.251 dBµV/m
3	1.598150 GHz	43.324 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.44001 GHz**	**93.25 dBµV/m**		
M2		2	**2.44001 GHz**	**92.44 dBµV/m**		
M3		1	**2.4835 GHz**	**40.37 dBµV/m**		
M4		2	**2.4835 GHz**	**32.64 dBµV/m**		



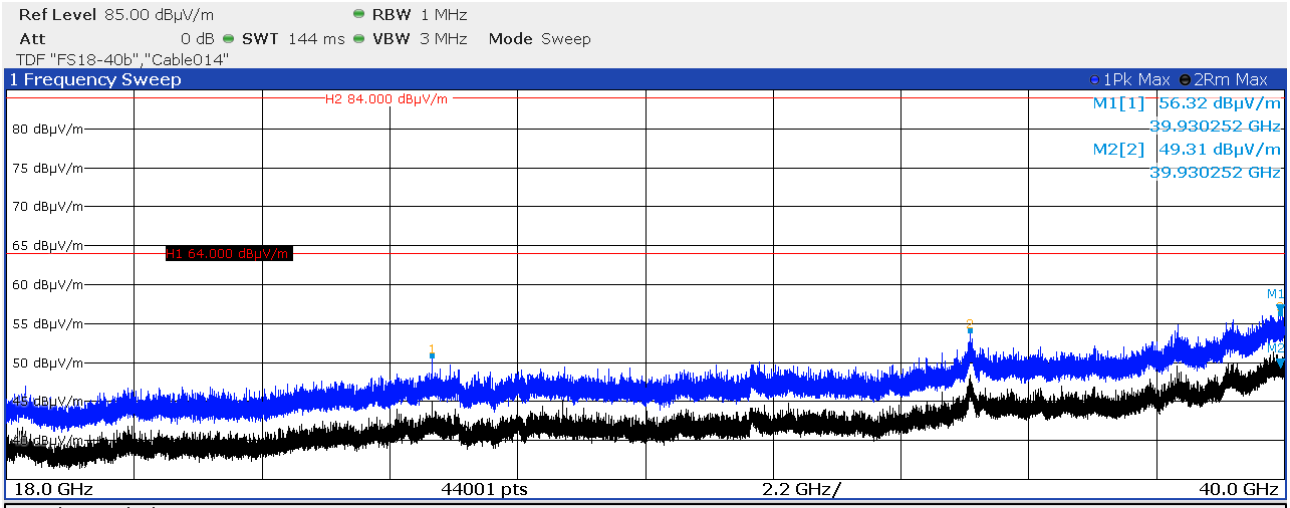
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.879720 GHz	50.794 dBµV/m	4	16.348810 GHz	50.456 dBµV/m
2	8.287100 GHz	45.945 dBµV/m	5	17.903250 GHz	50.669 dBµV/m
3	12.888930 GHz	49.363 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.879719 GHz**	**50.79 dBµV/m**		
M2		2	**4.879719 GHz**	**49.24 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**



2 Marker Peak List

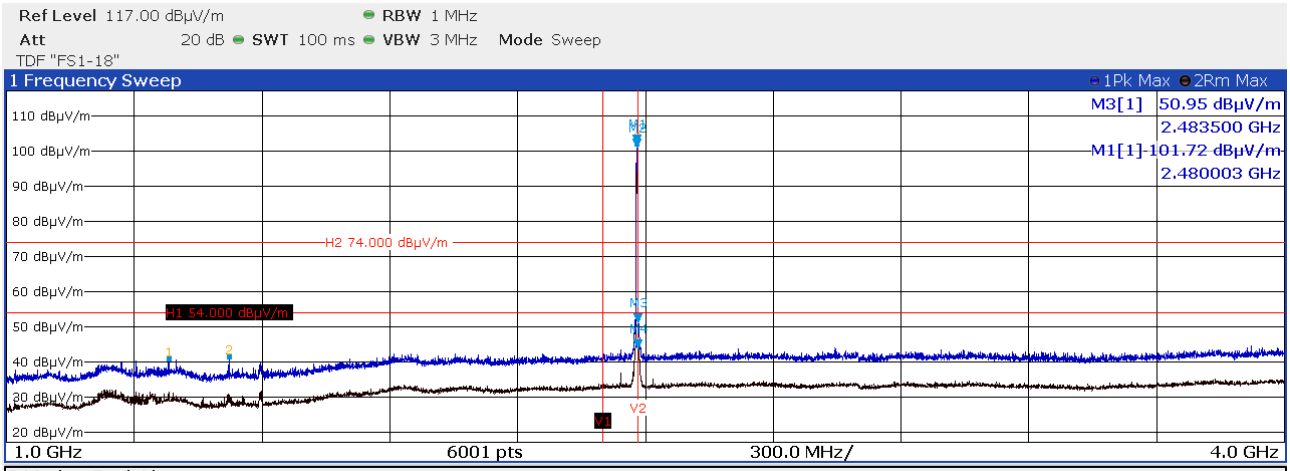
No	X-Value	Y-Value	No	X-Value	Y-Value
1	25.323580 GHz	50.840 dBµV/m	3	39.930250 GHz	56.324 dBµV/m
2	34.589870 GHz	54.124 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.930252 GHz**	**56.32 dBµV/m**		
M2		2	**39.930252 GHz**	**49.31 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 125 kbps, CH39 (2480 MHz) horizontal polarisation, EUT-lying:

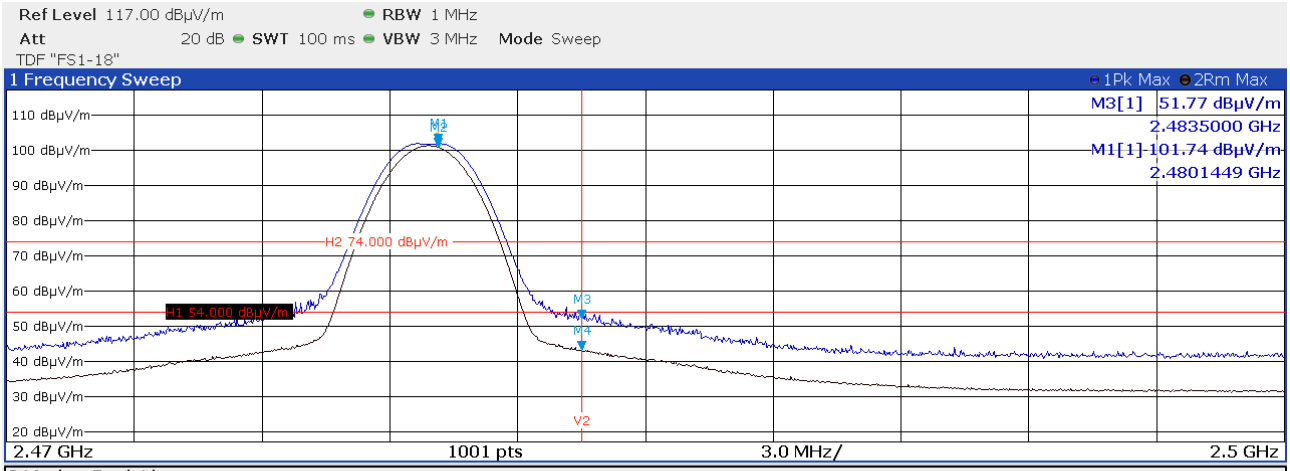


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.380690 GHz	40.579 dBµV/m	3	2.480000 GHz	101.719 dBµV/m
2	1.522660 GHz	41.159 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.480003 GHz**	**101.72 dBµV/m**		
M2		2	**2.480003 GHz**	**100.82 dBµV/m**		
M3		1	**2.4835 GHz**	**50.95 dBµV/m**		
M4		2	**2.4835 GHz**	**43.71 dBµV/m**		



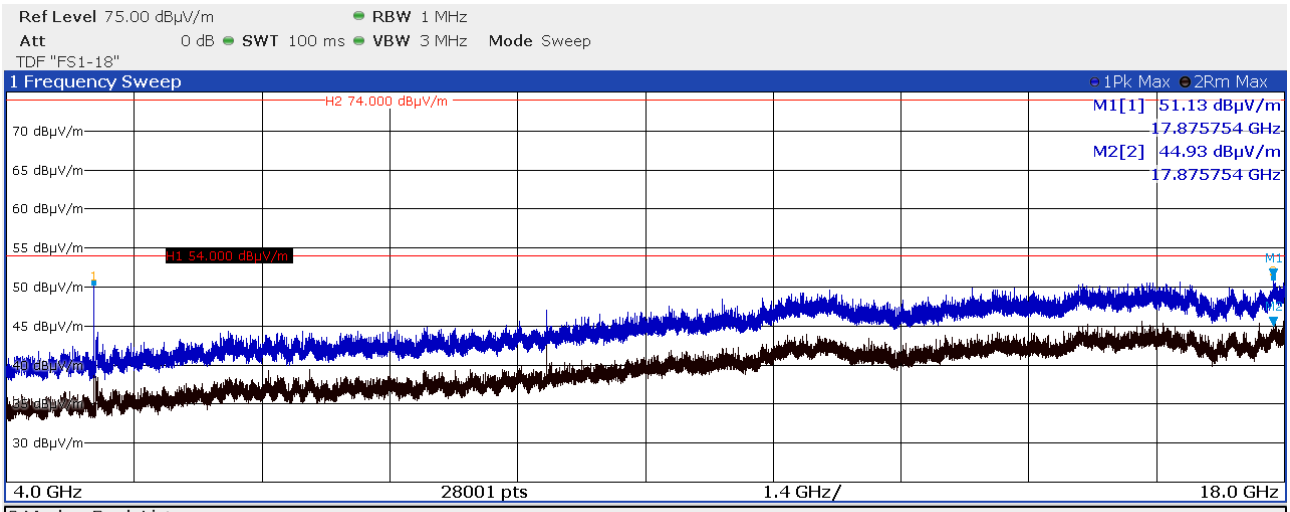
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	2.480145 GHz	101.737 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.4801449 GHz**	**101.74 dBµV/m**		
M2		2	**2.4801449 GHz**	**100.63 dBµV/m**		
M3		1	**2.4835 GHz**	**51.77 dBµV/m**		
M4		2	**2.4835 GHz**	**42.96 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

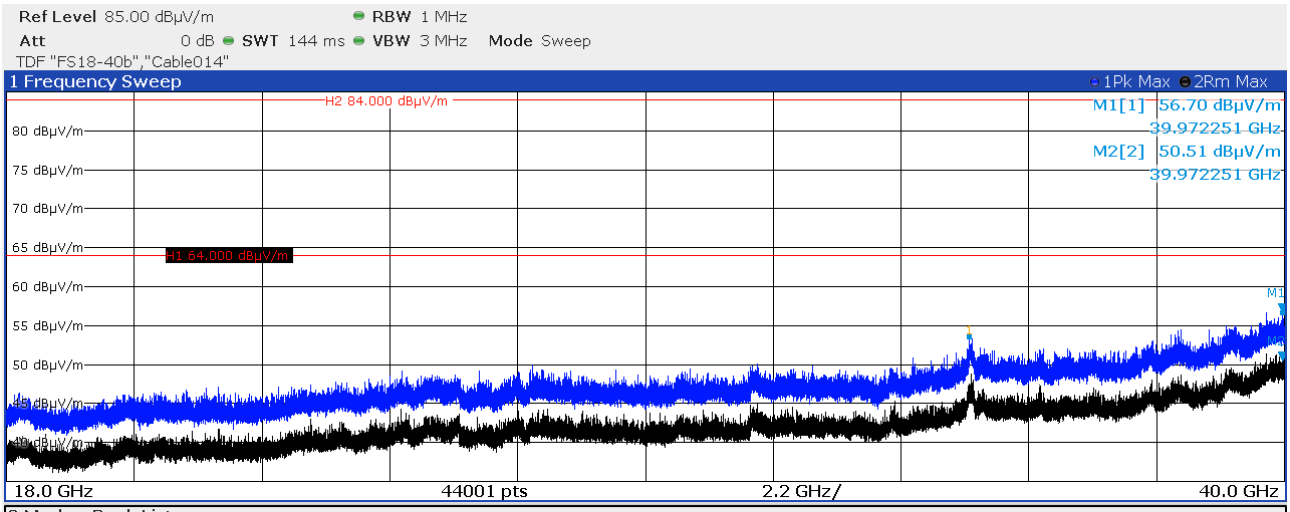


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.960220 GHz	50.474 dBµV/m	2	17.875750 GHz	51.134 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**17.875754 GHz**	**51.13 dBµV/m**		
M2		2	**17.875754 GHz**	**44.93 dBµV/m**		



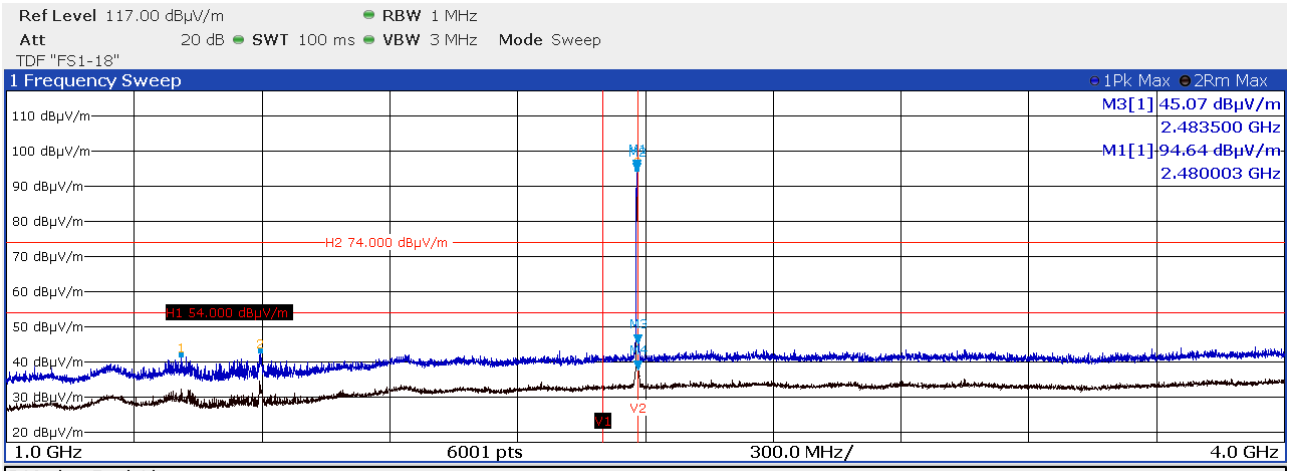
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	34.579370 GHz	53.536 dBµV/m	2	39.972250 GHz	56.702 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.972251 GHz**	**56.70 dBµV/m**		
M2		2	**39.972251 GHz**	**50.51 dBµV/m**		

Data rate 125 kbps, CH39 (2480 MHz) vertical polarisation, EUT-lying:

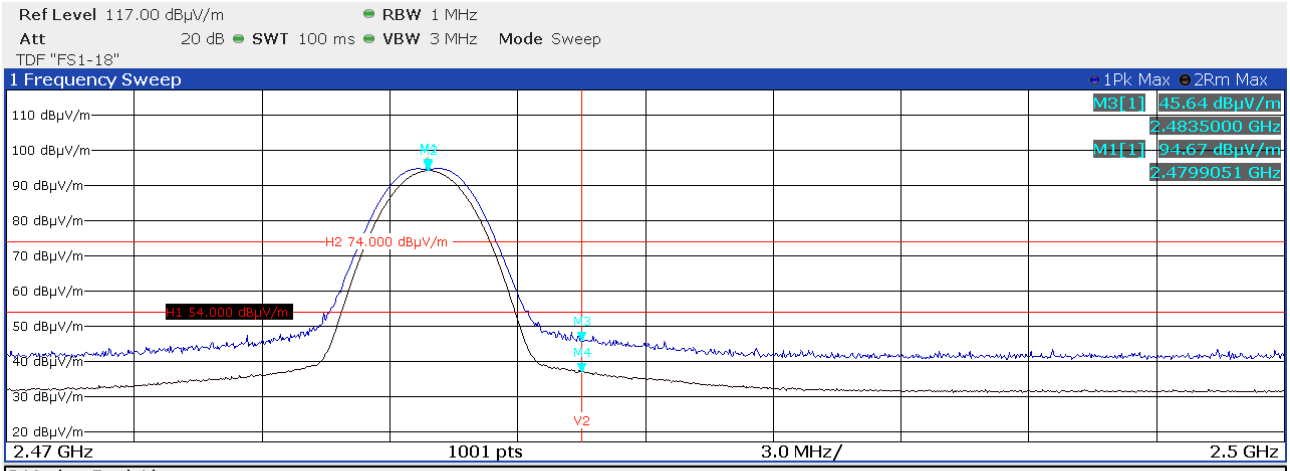


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.410680 GHz	41.950 dBµV/m	3	2.480000 GHz	94.643 dBµV/m
2	1.595150 GHz	42.931 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.480003 GHz**	**94.64 dBµV/m**		
M2		2	**2.480003 GHz**	**93.90 dBµV/m**		
M3		1	**2.4835 GHz**	**45.07 dBµV/m**		
M4		2	**2.4835 GHz**	**37.49 dBµV/m**		



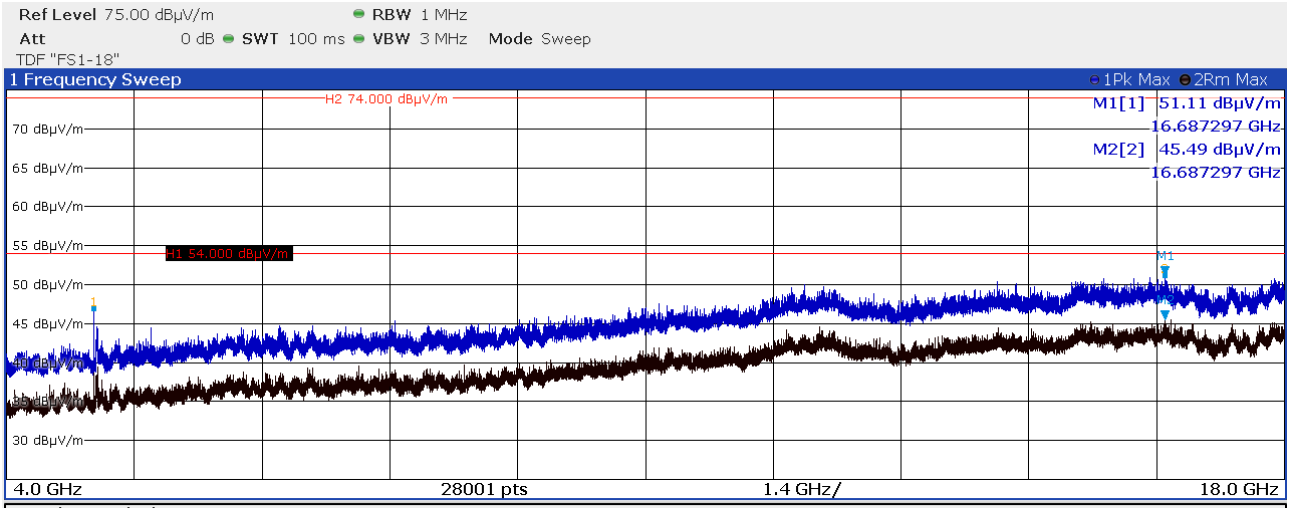
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	2.479905 GHz	94.667 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.4799051 GHz**	**94.67 dBµV/m**		
M2		2	**2.4799051 GHz**	**94.07 dBµV/m**		
M3		1	**2.4835 GHz**	**45.64 dBµV/m**		
M4		2	**2.4835 GHz**	**36.84 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

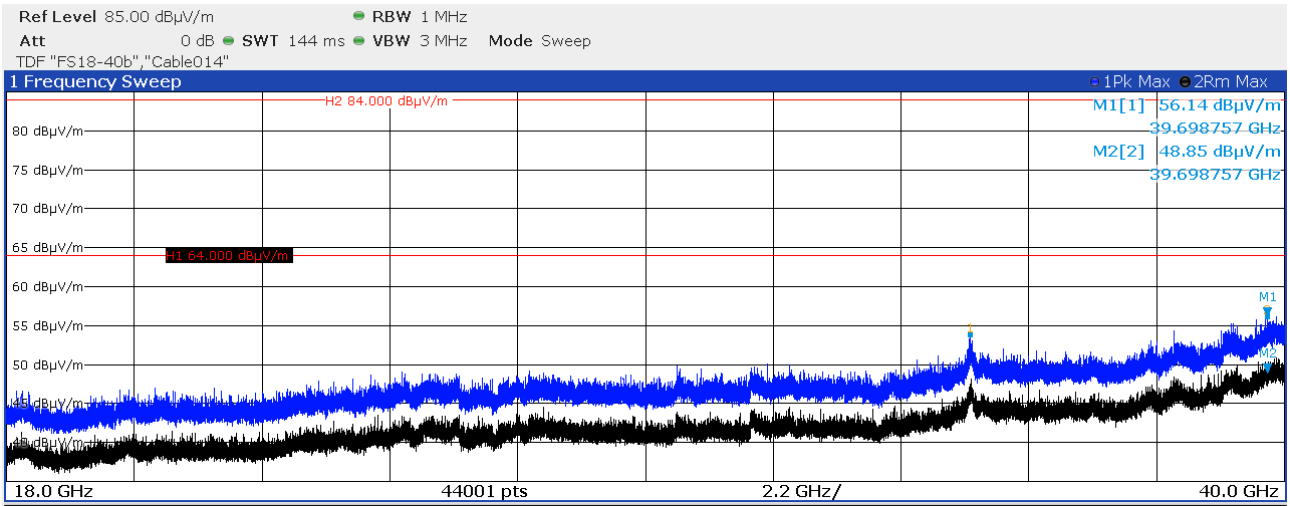


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.959220 GHz	46.872 dBµV/m	2	16.687300 GHz	51.109 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**16.687297 GHz**	**51.11 dBµV/m**		
M2		2	**16.687297 GHz**	**45.49 dBµV/m**		



2 Marker Peak List

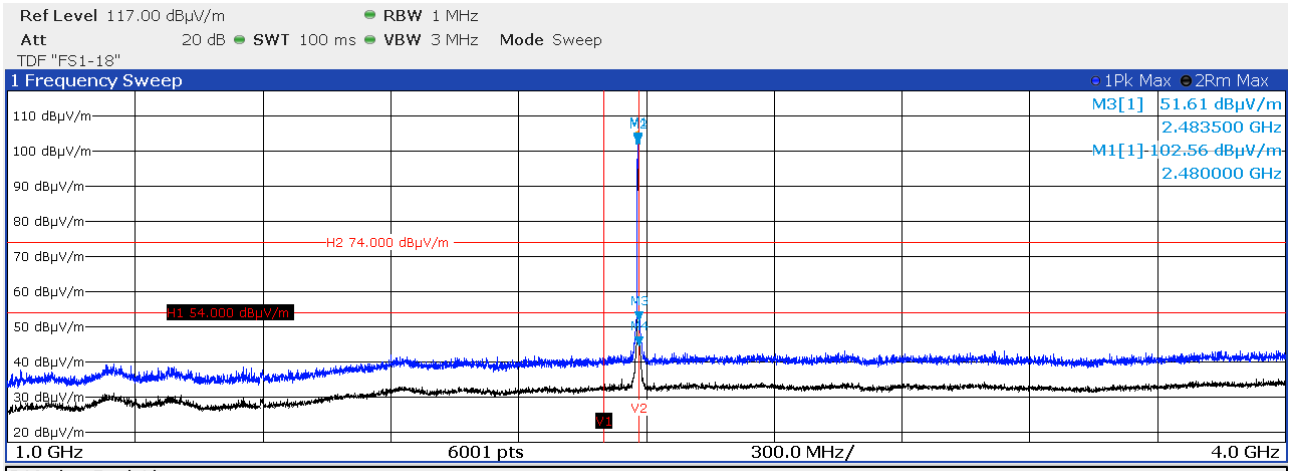
No	X-Value	Y-Value	No	X-Value	Y-Value
1	34.596370 GHz	53.860 dBµV/m	2	39.698760 GHz	56.136 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.698757 GHz**	**56.14 dBµV/m**		
M2		2	**39.698757 GHz**	**48.85 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 125 kbps, CH39 (2480 MHz) horizontal polarisation, EUT-standing:

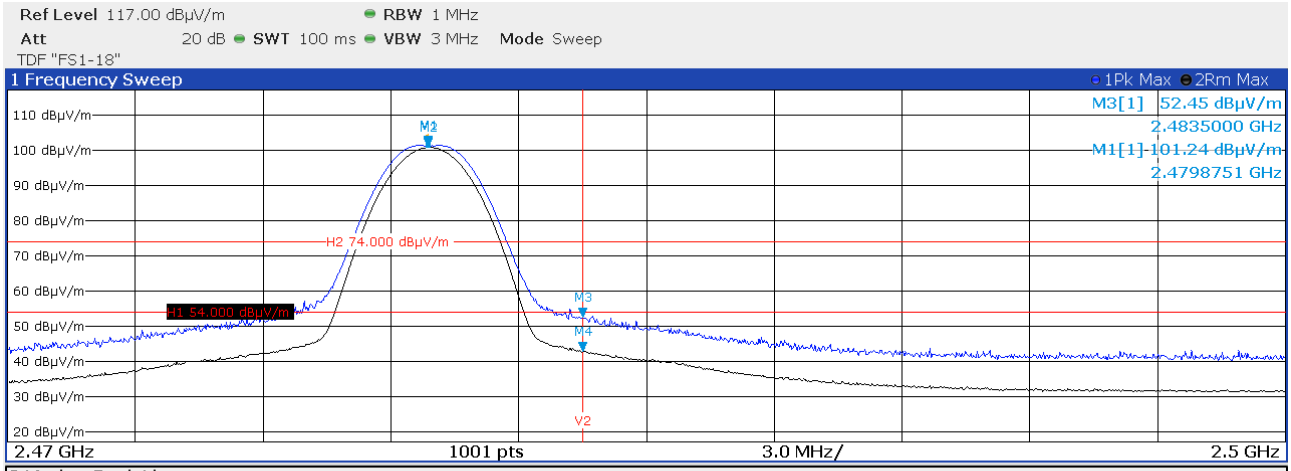


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	2.480000 GHz	102.565 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.48 GHz**	**102.56 dBµV/m**		
M2		2	**2.48 GHz**	**101.95 dBµV/m**		
M3		1	**2.4835 GHz**	**51.61 dBµV/m**		
M4		2	**2.4835 GHz**	**44.55 dBµV/m**		



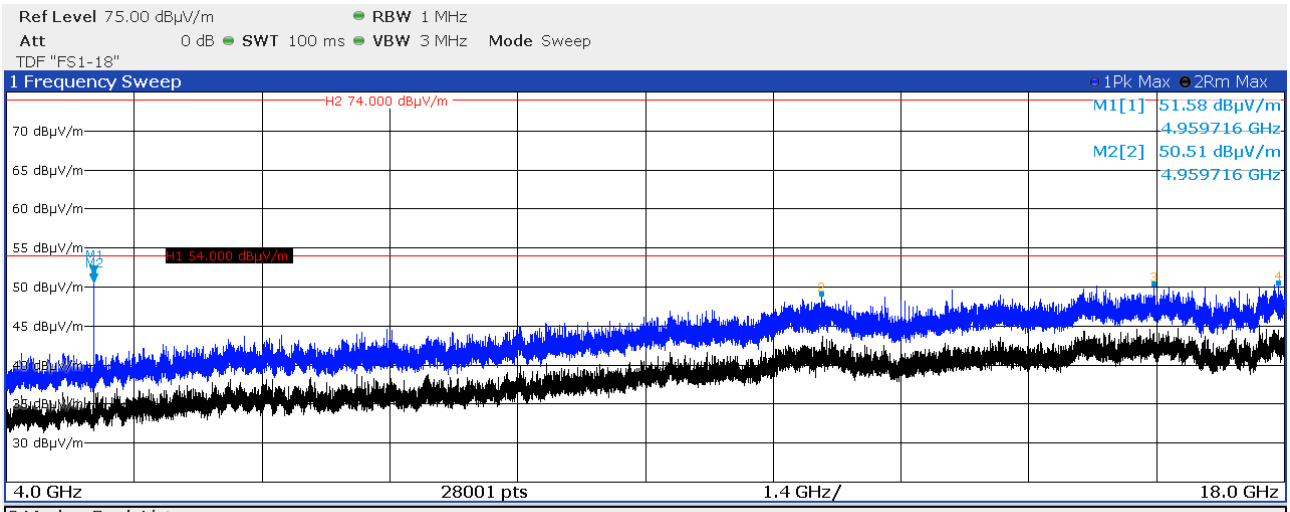
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	2.479875 GHz	101.236 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.4798751 GHz**	**101.24 dBµV/m**		
M2		2	**2.4798751 GHz**	**100.68 dBµV/m**		
M3		1	**2.4835 GHz**	**52.45 dBµV/m**		
M4		2	**2.4835 GHz**	**42.65 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

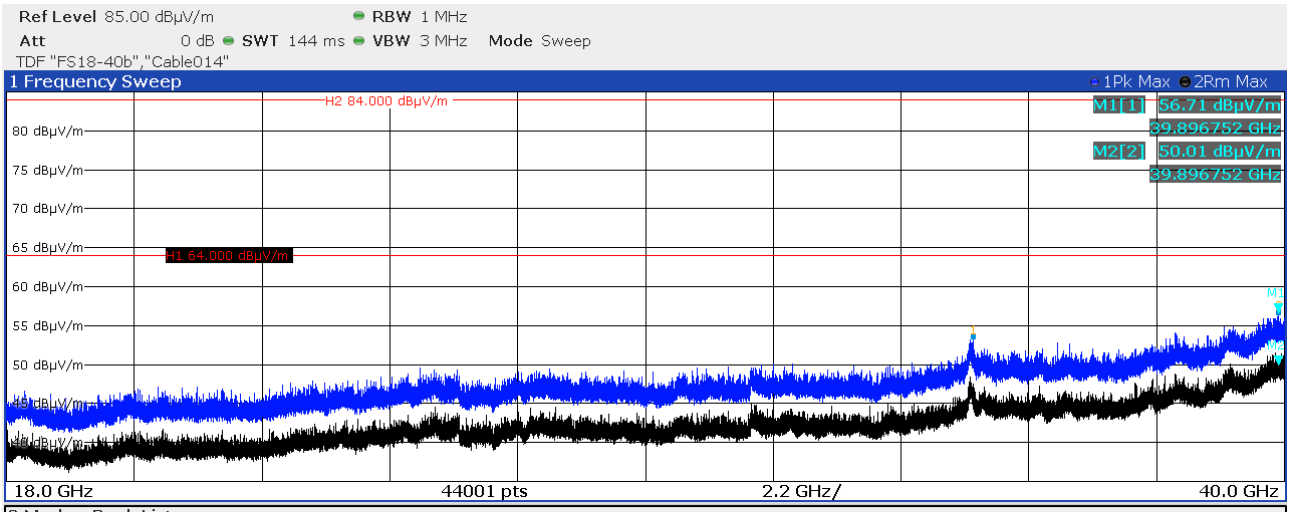


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.959720 GHz	51.583 dBµV/m	3	16.570300 GHz	50.423 dBµV/m
2	12.928930 GHz	49.133 dBµV/m	4	17.938250 GHz	50.569 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.959716 GHz**	**51.58 dBµV/m**		
M2		2	**4.959716 GHz**	**50.51 dBµV/m**		



2 Marker Peak List

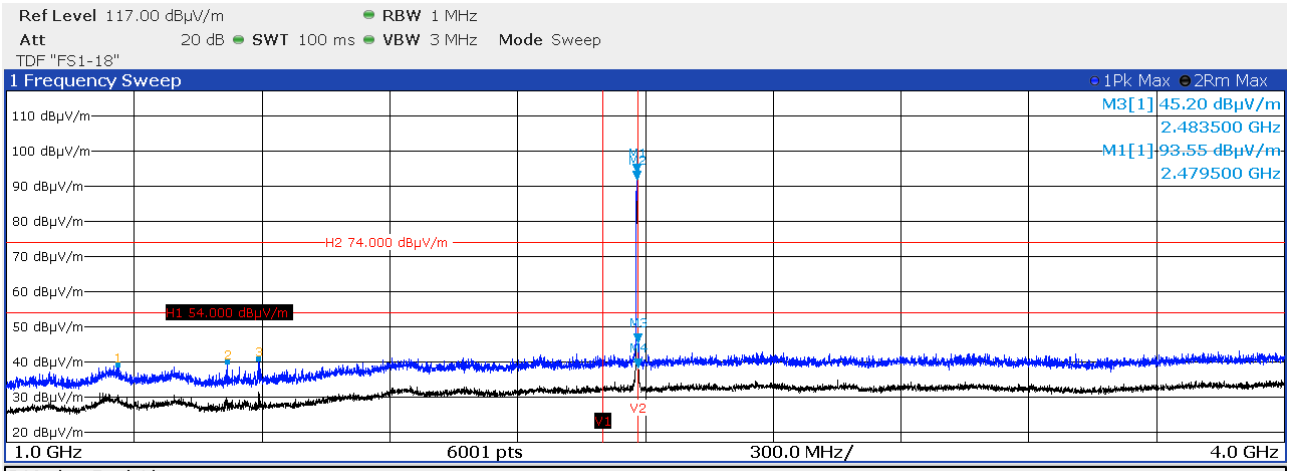
No	X-Value	Y-Value	No	X-Value	Y-Value
1	34.634370 GHz	53.530 dBµV/m	2	39.896750 GHz	56.712 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.896752 GHz**	**56.71 dBµV/m**		
M2		2	**39.896752 GHz**	**50.01 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 125 kbps, CH39 (2480 MHz) vertical polarisation, EUT-standing:

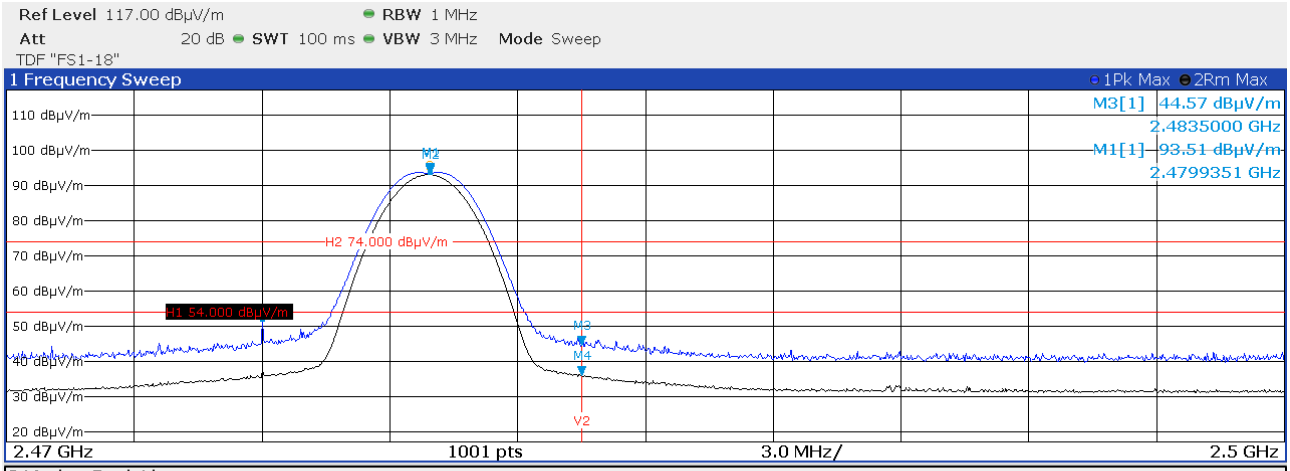


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.260710 GHz	38.981 dBµV/m	3	1.592650 GHz	40.613 dBµV/m
2	1.518660 GHz	39.744 dBµV/m	4	2.479500 GHz	93.547 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.4795 GHz**	**93.55 dBµV/m**		
M2		2	**2.4795 GHz**	**91.58 dBµV/m**		
M3		1	**2.4835 GHz**	**45.20 dBµV/m**		
M4		2	**2.4835 GHz**	**38.01 dBµV/m**		



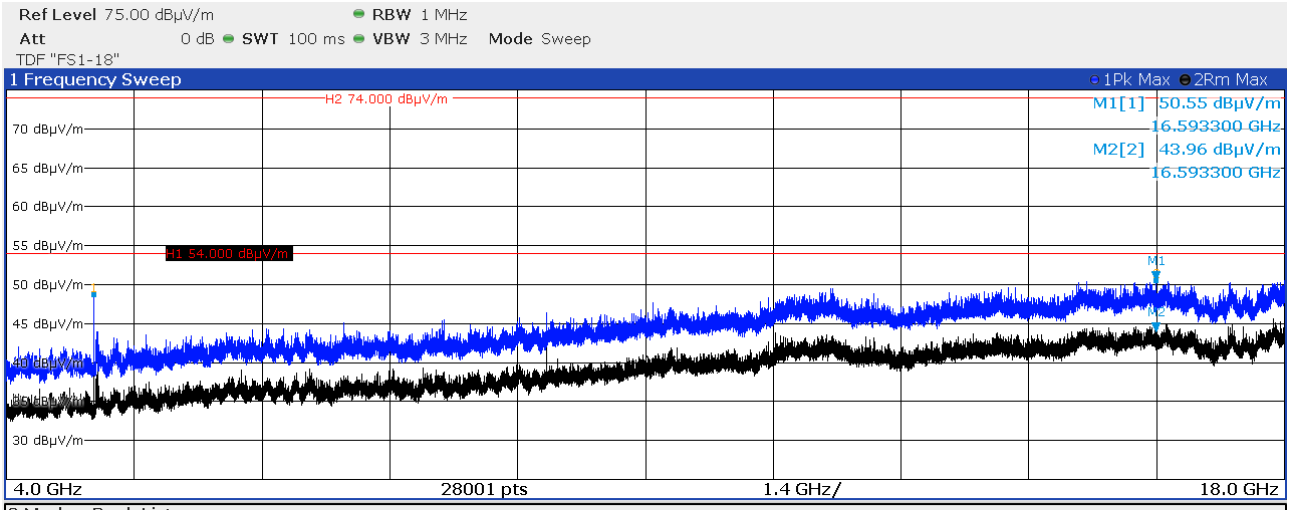
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	2.476009 GHz	51.774 dBµV/m	2	2.479935 GHz	93.511 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.4799351 GHz**	**93.51 dBµV/m**		
M2		2	**2.4799351 GHz**	**92.92 dBµV/m**		
M3		1	**2.4835 GHz**	**44.57 dBµV/m**		
M4		2	**2.4835 GHz**	**35.79 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

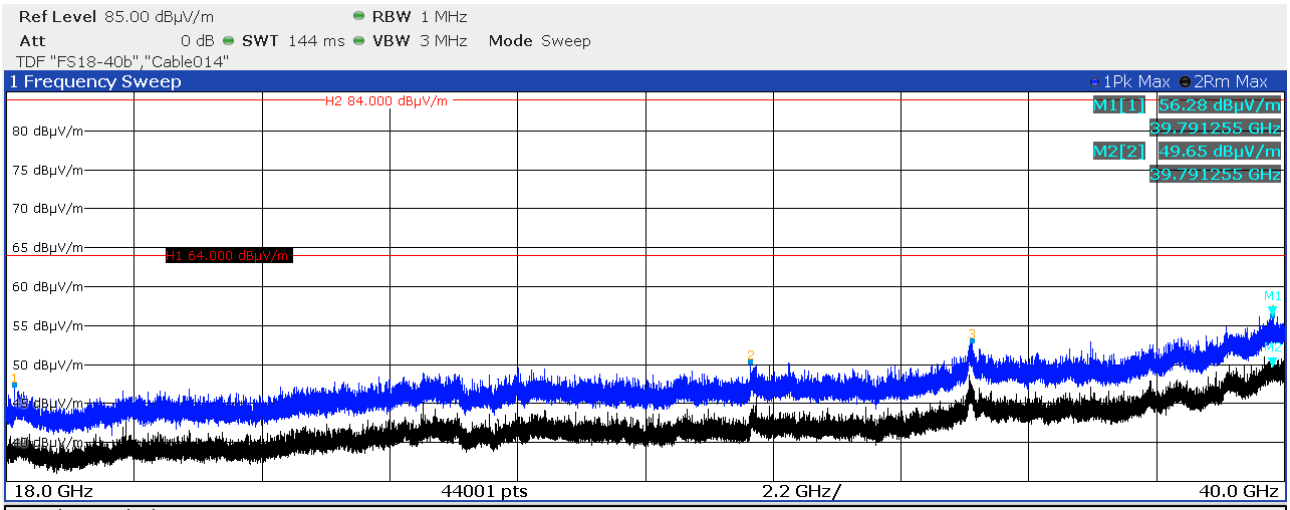


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.960220 GHz	48.735 dBµV/m	2	16.593300 GHz	50.546 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**16.5933 GHz**	**50.55 dBµV/m**		
M2		2	**16.5933 GHz**	**43.96 dBµV/m**		



2 Marker Peak List

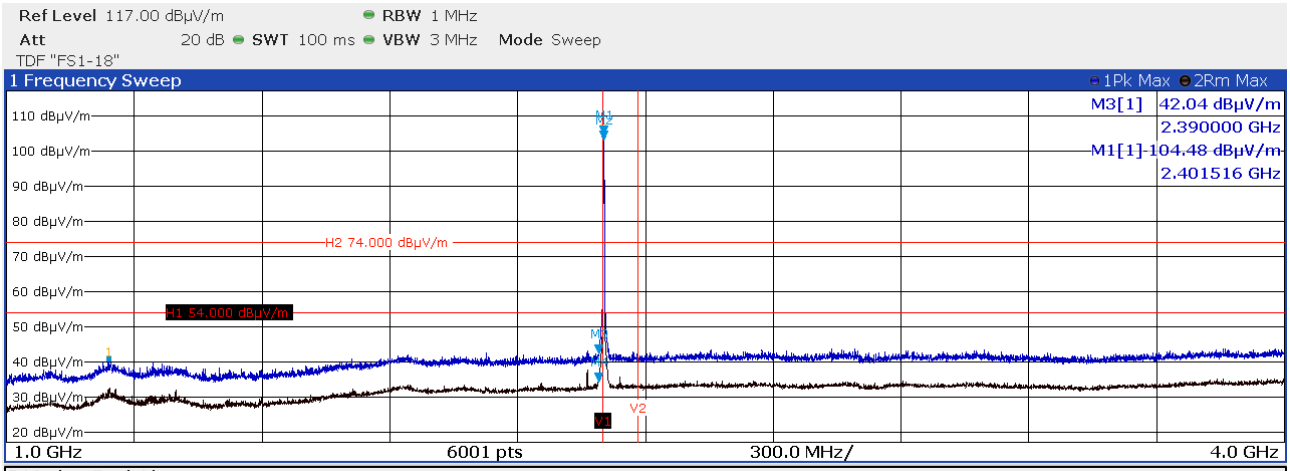
No	X-Value	Y-Value	No	X-Value	Y-Value
1	18.144750 GHz	47.350 dBµV/m	3	34.624870 GHz	52.994 dBµV/m
2	30.808460 GHz	50.335 dBµV/m	4	39.791250 GHz	56.278 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.791255 GHz**	**56.28 dBµV/m**		
M2		2	**39.791255 GHz**	**49.65 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 500 kbps, CH37 (2402 MHz) horizontal polarisation, EUT-lying:

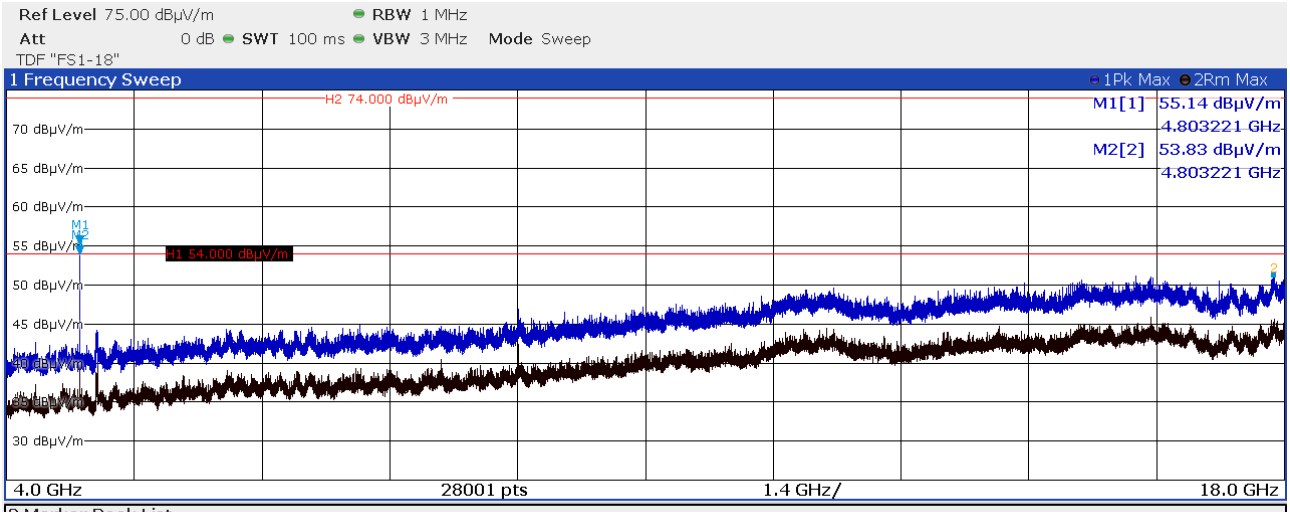


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.239210 GHz	40.708 dBµV/m	2	2.401520 GHz	104.483 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.401516 GHz**	**104.48 dBµV/m**		
M2		2	**2.401516 GHz**	**102.90 dBµV/m**		
M3		1	**2.39 GHz**	**42.04 dBµV/m**		
M4		2	**2.39 GHz**	**34.18 dBµV/m**		



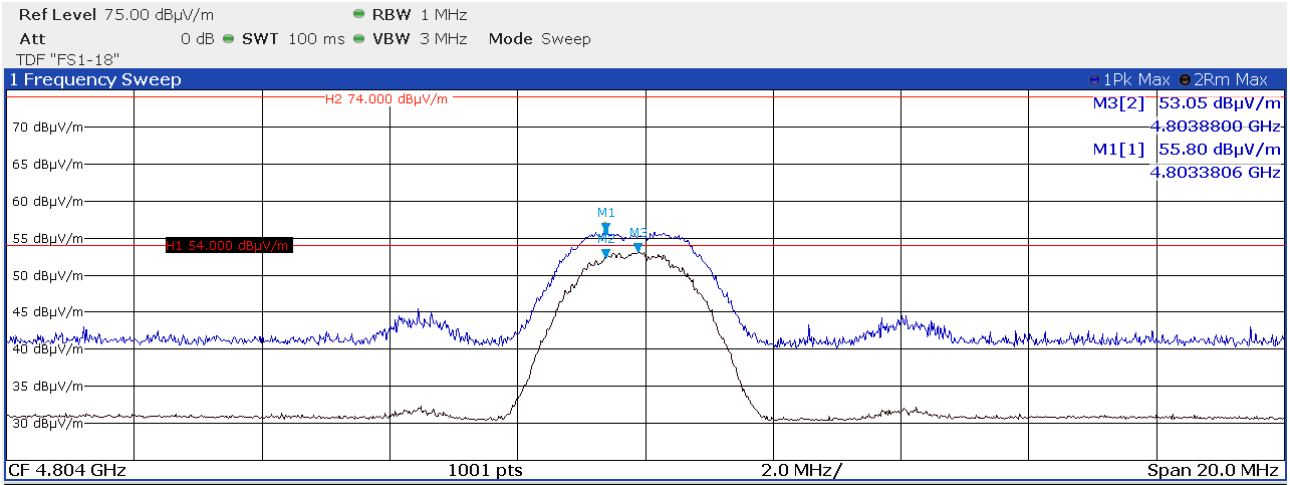
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.803220 GHz	55.142 dBµV/m	2	17.882250 GHz	51.339 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.803221 GHz**	**55.14 dBµV/m**		
M2		2	**4.803221 GHz**	**53.83 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

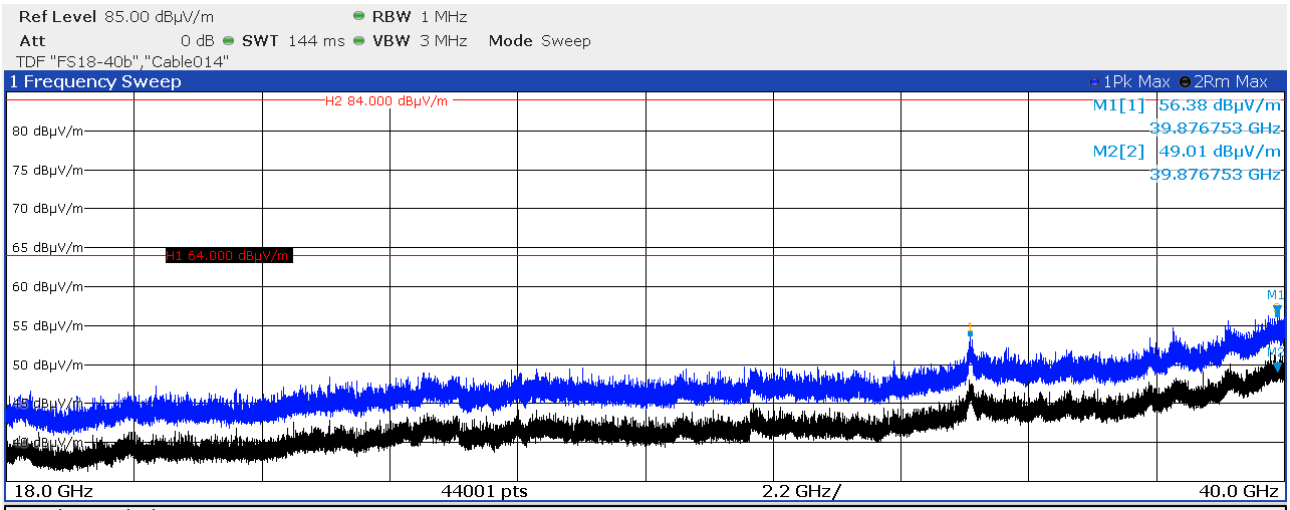


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.803381 GHz	55.804 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.8033806 GHz**	**55.80 dBµV/m**		
M2		2	**4.8033806 GHz**	**52.30 dBµV/m**		
M3		2	**4.80388 GHz**	**53.05 dBµV/m**		



2 Marker Peak List

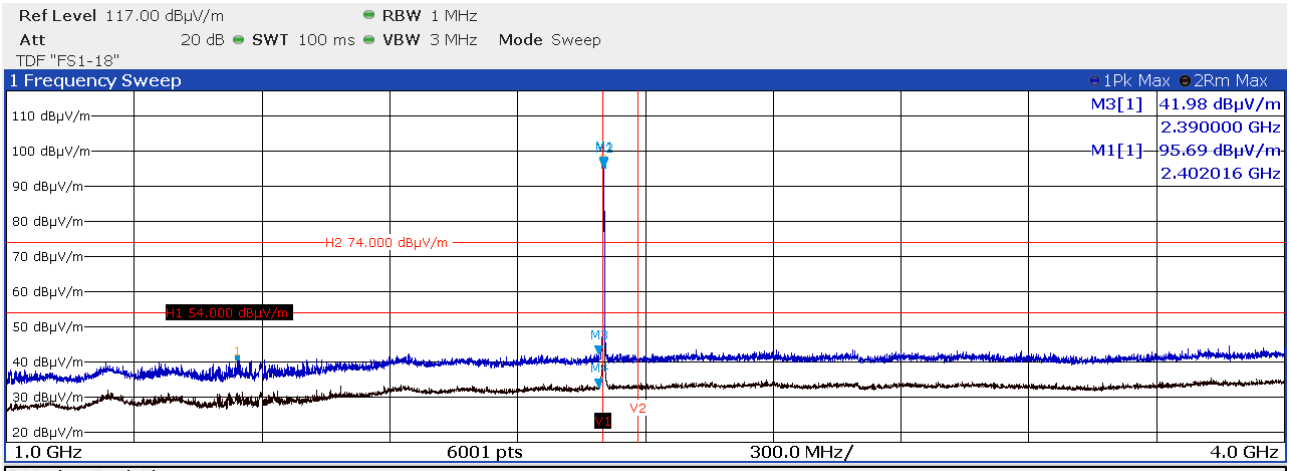
No	X-Value	Y-Value	No	X-Value	Y-Value
1	34.595870 GHz	53.978 dBµV/m	2	39.876750 GHz	56.382 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.876753 GHz**	**56.38 dBµV/m**		
M2		2	**39.876753 GHz**	**49.01 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 500 kbps, CH37 (2402 MHz) vertical polarisation, EUT-lying:

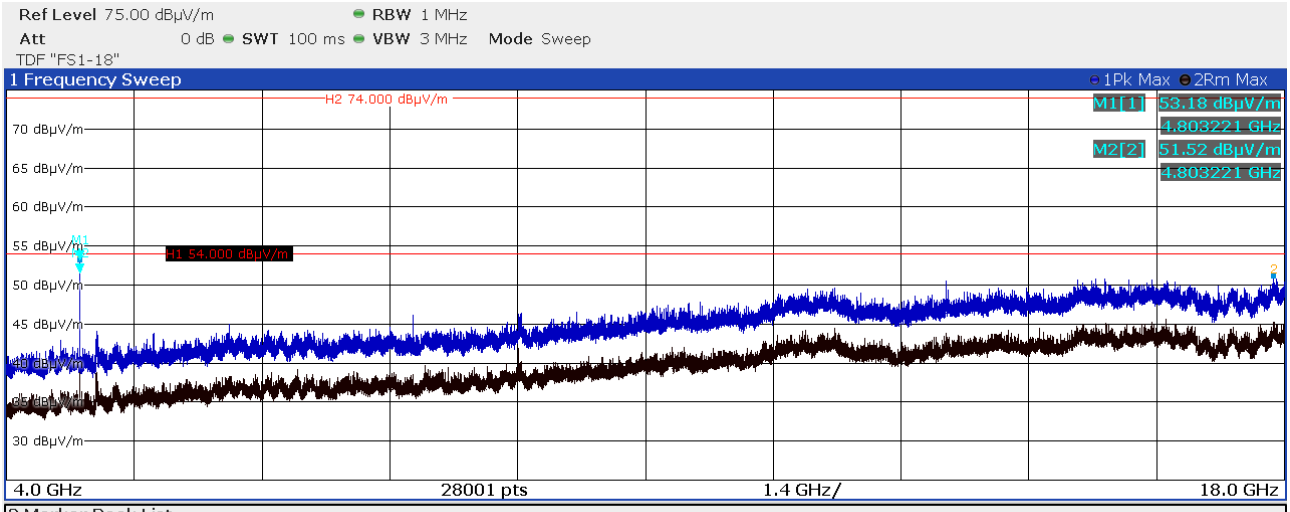


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.542160 GHz	41.088 dBµV/m	2	2.402020 GHz	95.691 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.402016 GHz**	**95.69 dBµV/m**		
M2		2	**2.402016 GHz**	**94.99 dBµV/m**		
M3		1	**2.39 GHz**	**41.98 dBµV/m**		
M4		2	**2.39 GHz**	**32.39 dBµV/m**		



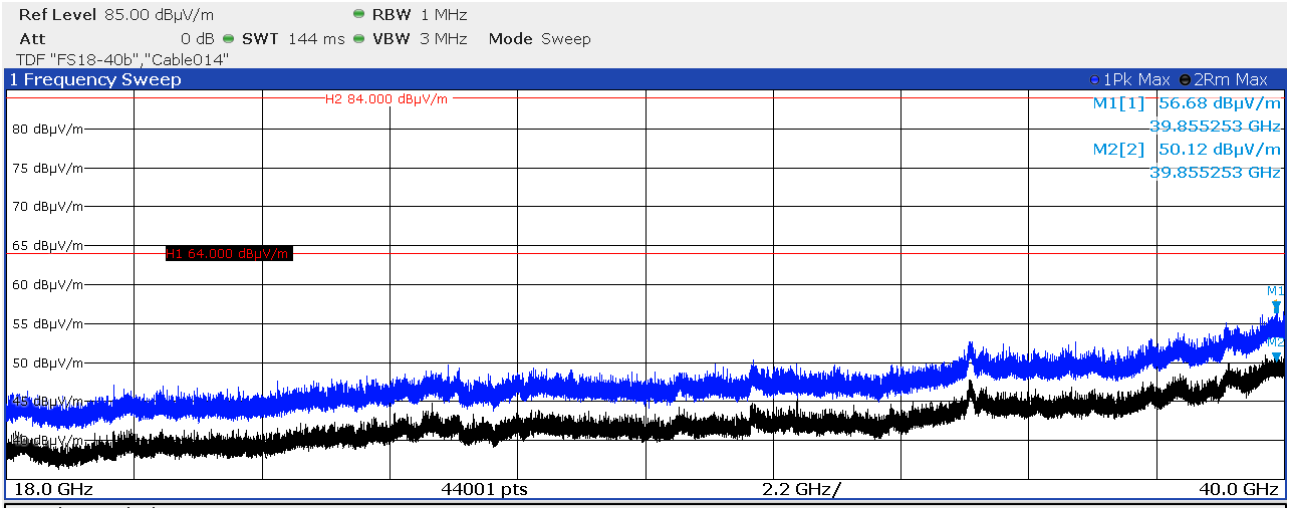
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.803220 GHz	53.181 dBµV/m	2	17.883250 GHz	51.109 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.803221 GHz**	**53.18 dBµV/m**		
M2		2	**4.803221 GHz**	**51.52 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**



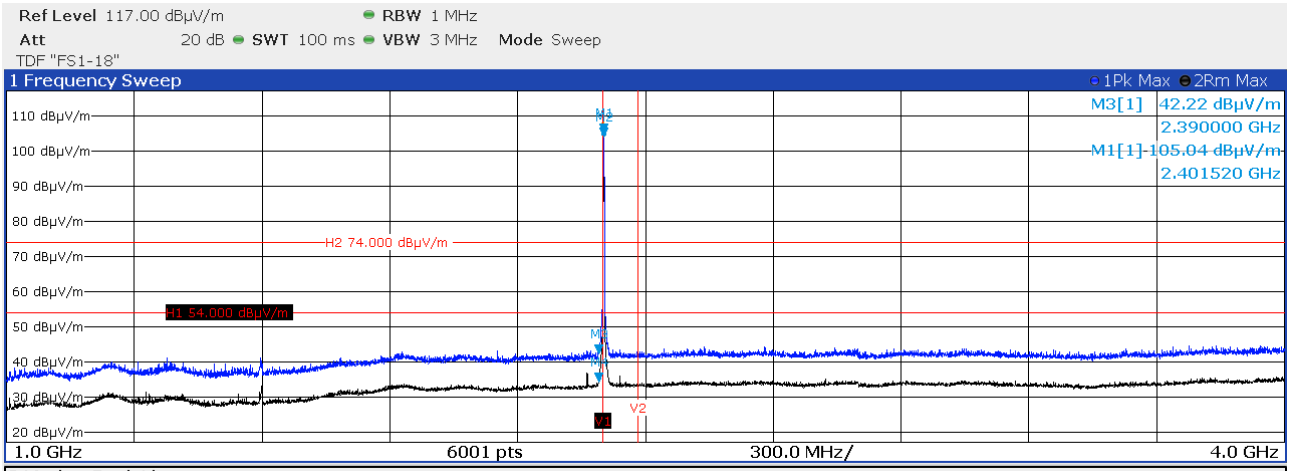
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	39.855250 GHz	56.684 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.855253 GHz**	**56.68 dBµV/m**		
M2		2	**39.855253 GHz**	**50.12 dBµV/m**		

Data rate 500 kbps, CH37 (2402 MHz) horizontal polarisation, EUT-standing:

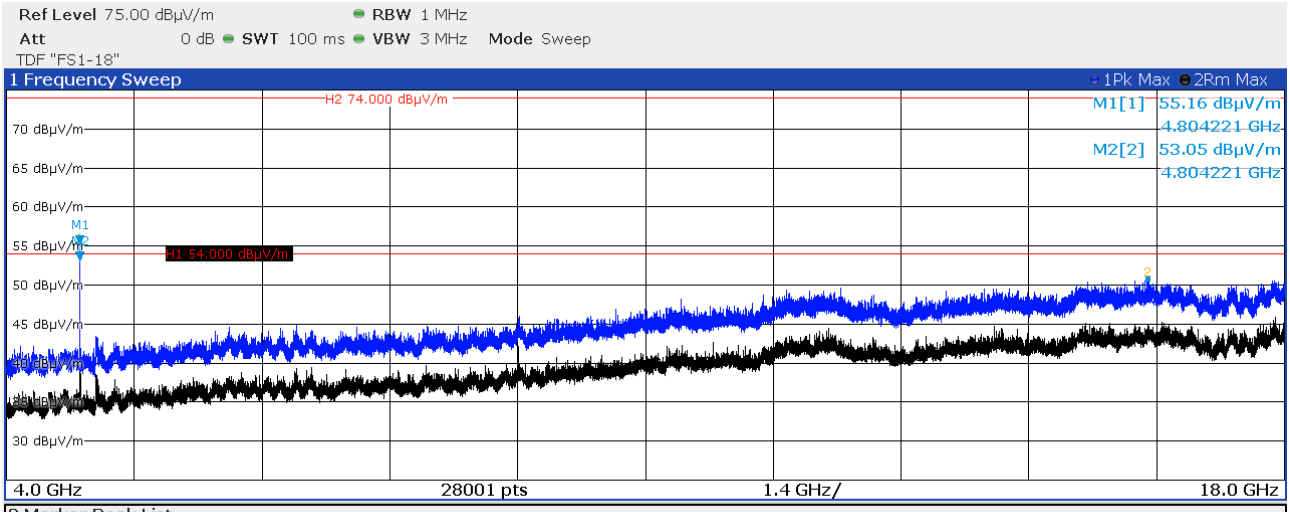


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	2.401520 GHz	105.042 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.40152 GHz**	**105.04 dBµV/m**		
M2		2	**2.40152 GHz**	**103.97 dBµV/m**		
M3		1	**2.39 GHz**	**42.22 dBµV/m**		
M4		2	**2.39 GHz**	**34.24 dBµV/m**		



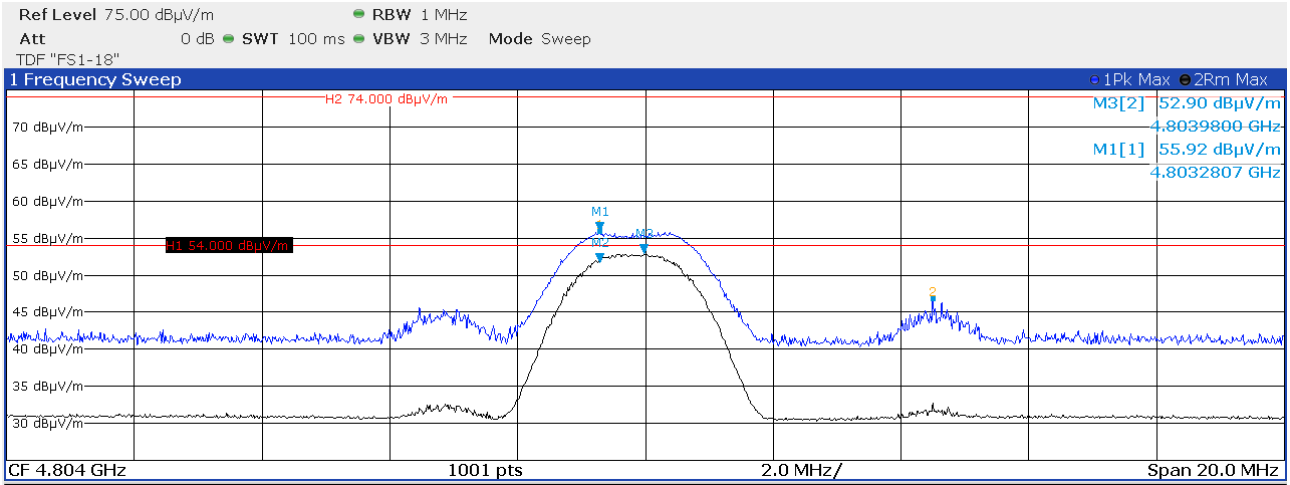
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.804220 GHz	55.162 dBµV/m	2	16.499800 GHz	50.788 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.804221 GHz**	**55.16 dBµV/m**		
M2		2	**4.804221 GHz**	**53.05 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

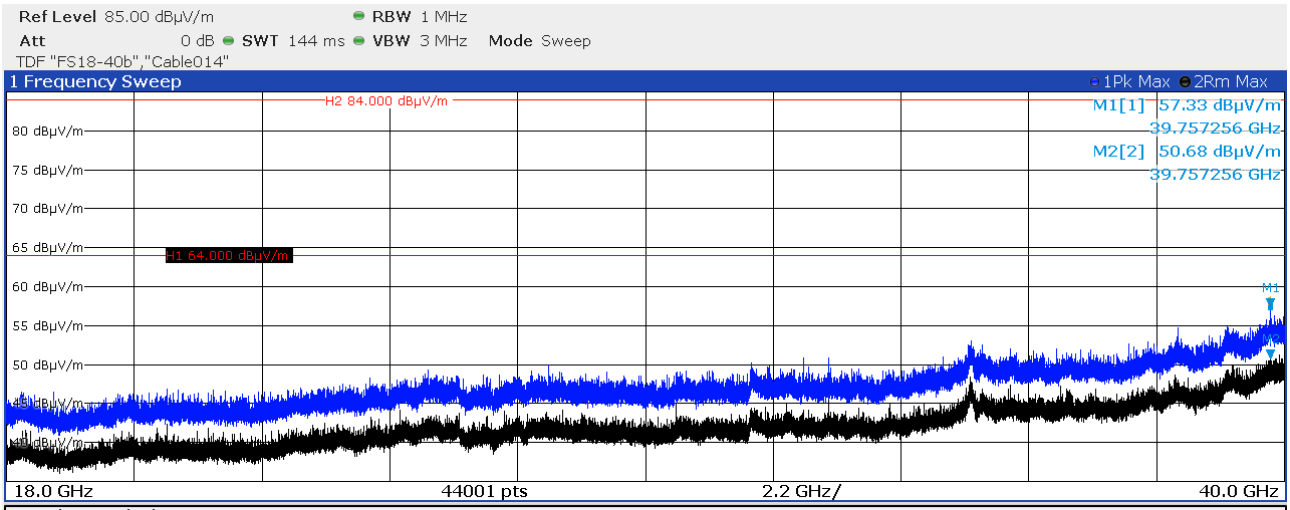


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.803281 GHz	55.917 dBµV/m	2	4.808496 GHz	46.797 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.8032807 GHz**	**55.92 dBµV/m**		
M2		2	**4.8032807 GHz**	**51.75 dBµV/m**		
M3		2	**4.80398 GHz**	**52.90 dBµV/m**		



2 Marker Peak List

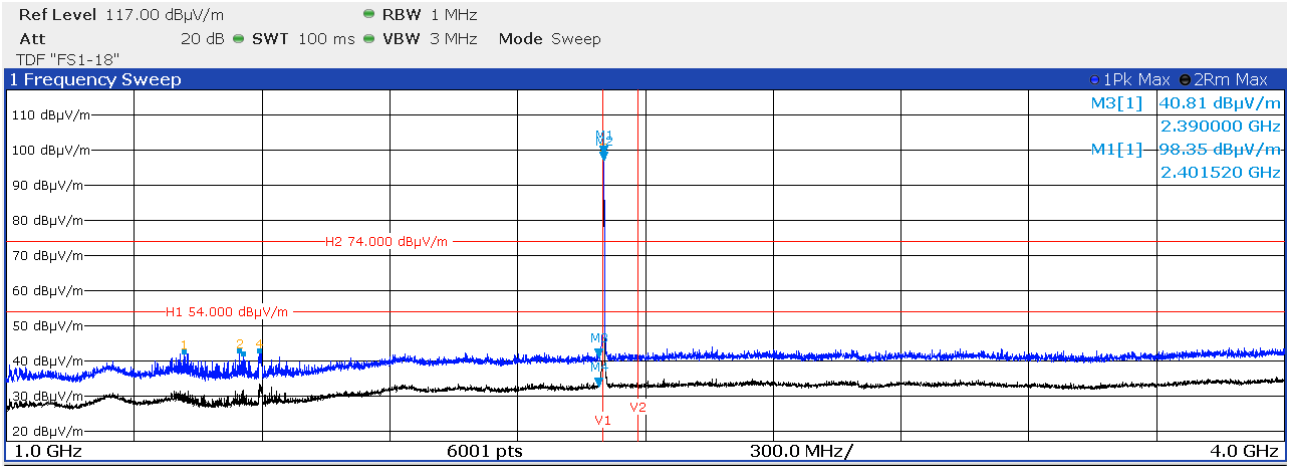
No	X-Value	Y-Value	No	X-Value	Y-Value
1	39.757260 GHz	57.327 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.757256 GHz**	**57.33 dBµV/m**		
M2		2	**39.757256 GHz**	**50.68 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**

Data rate 500 kbps, CH37 (2402 MHz) vertical polarisation, EUT-standing:

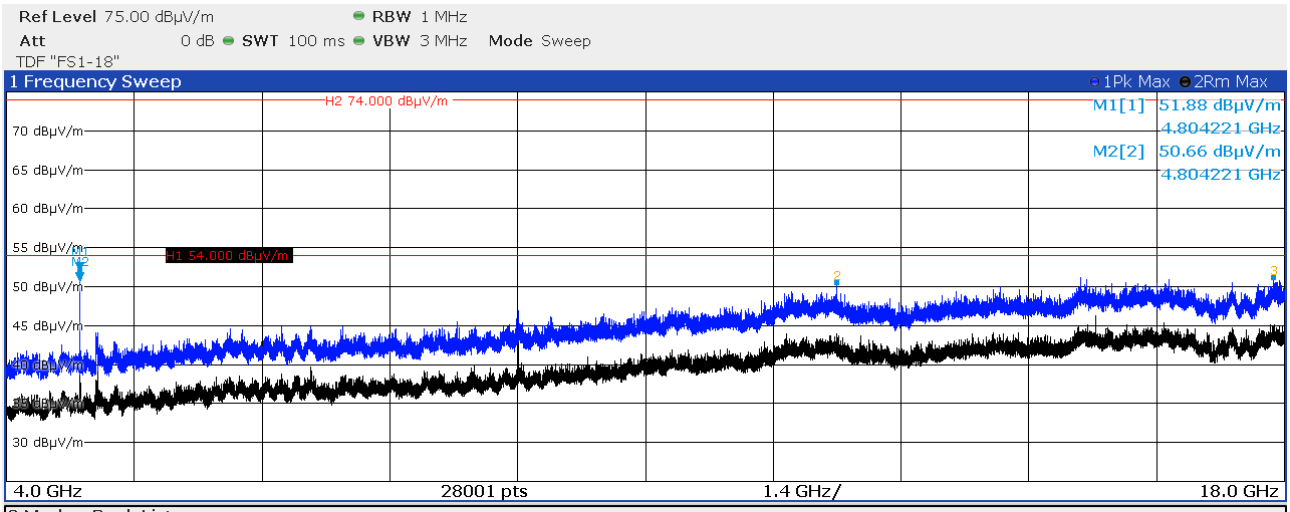


2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.416180 GHz	42.443 dBµV/m	4	1.593150 GHz	42.848 dBµV/m
2	1.547660 GHz	42.660 dBµV/m	5	2.401520 GHz	98.354 dBµV/m
3	1.556660 GHz	41.923 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**2.40152 GHz**	**98.35 dBµV/m**		
M2		2	**2.40152 GHz**	**96.61 dBµV/m**		
M3		1	**2.39 GHz**	**40.81 dBµV/m**		
M4		2	**2.39 GHz**	**32.36 dBµV/m**		



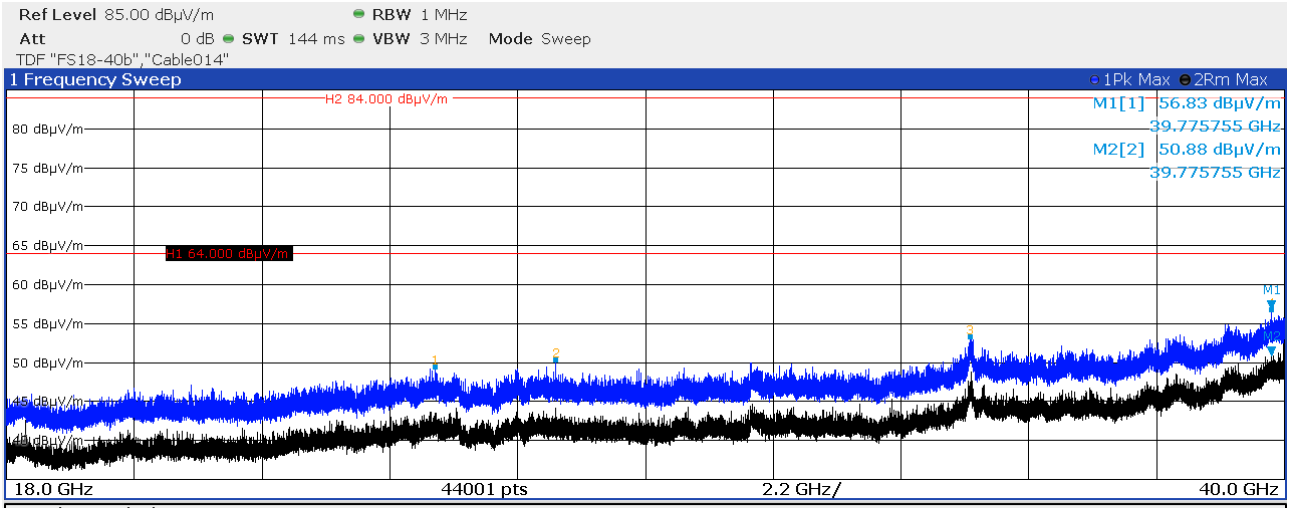
2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	4.804220 GHz	51.877 dBµV/m	3	17.884250 GHz	51.115 dBµV/m
2	13.095930 GHz	50.543 dBµV/m			

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**4.804221 GHz**	**51.88 dBµV/m**		
M2		2	**4.804221 GHz**	**50.66 dBµV/m**		

FCC ID: SDL-PR5XM **IC: 5228A-PR5XM**



2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	25.378580 GHz	49.419 dBµV/m	3	34.589870 GHz	53.249 dBµV/m
2	27.456040 GHz	50.331 dBµV/m	4	39.775760 GHz	56.832 dBµV/m

3 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**39.775755 GHz**	**56.83 dBµV/m**		
M2		2	**39.775755 GHz**	**50.88 dBµV/m**		