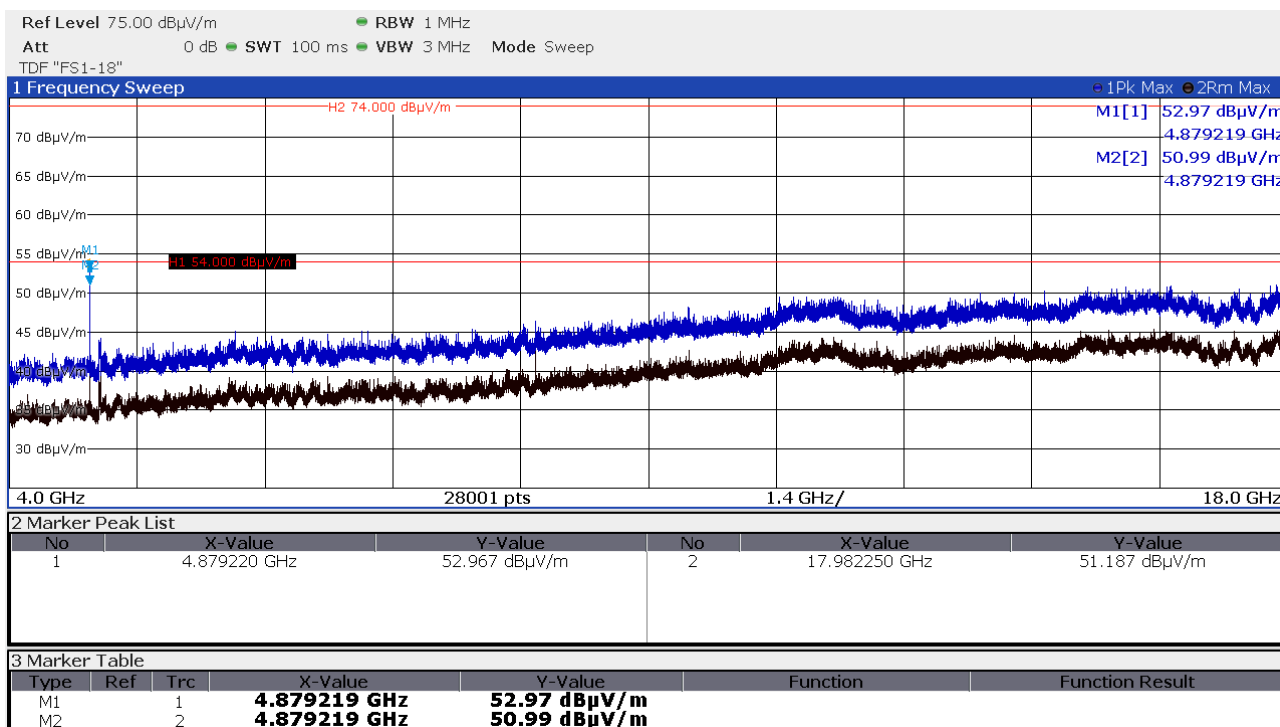
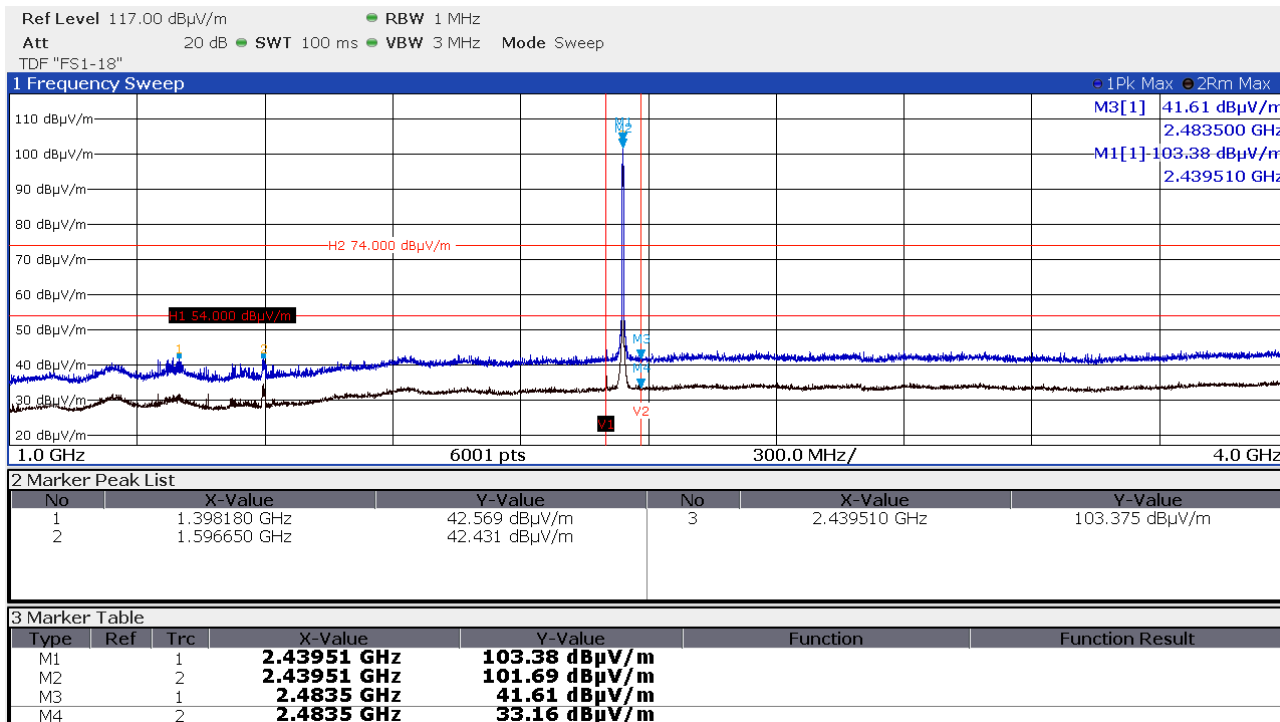
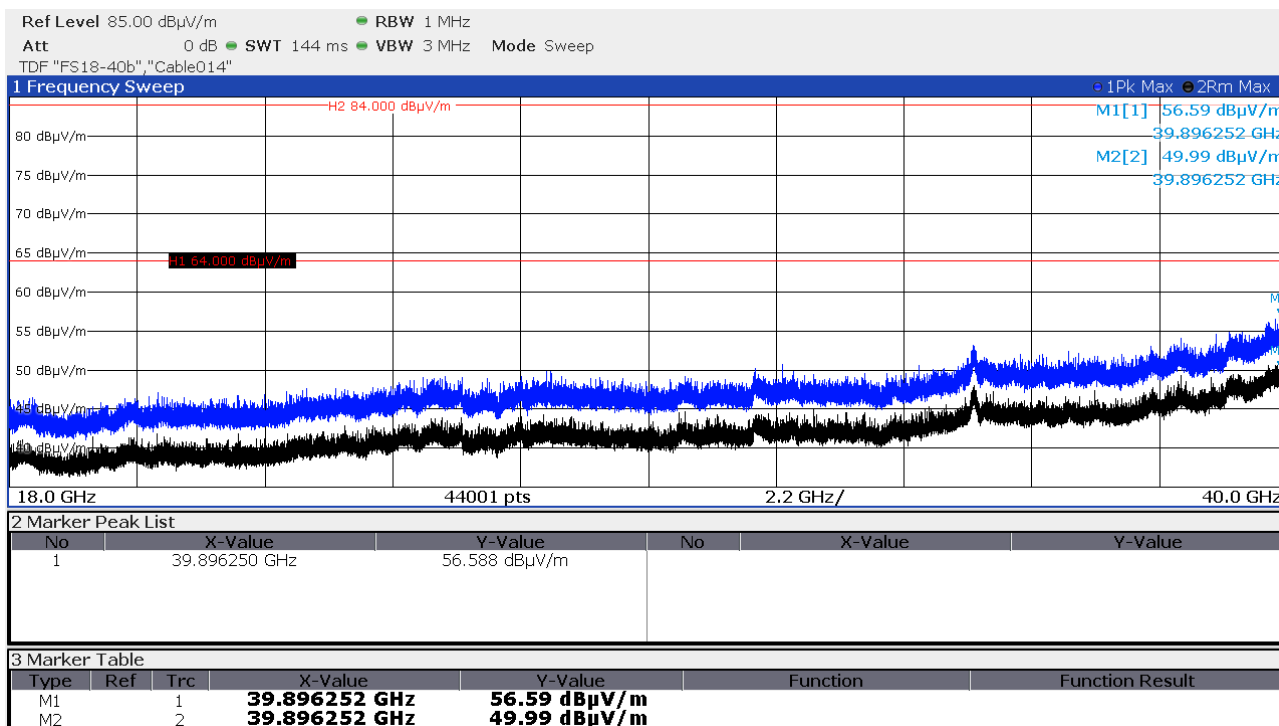
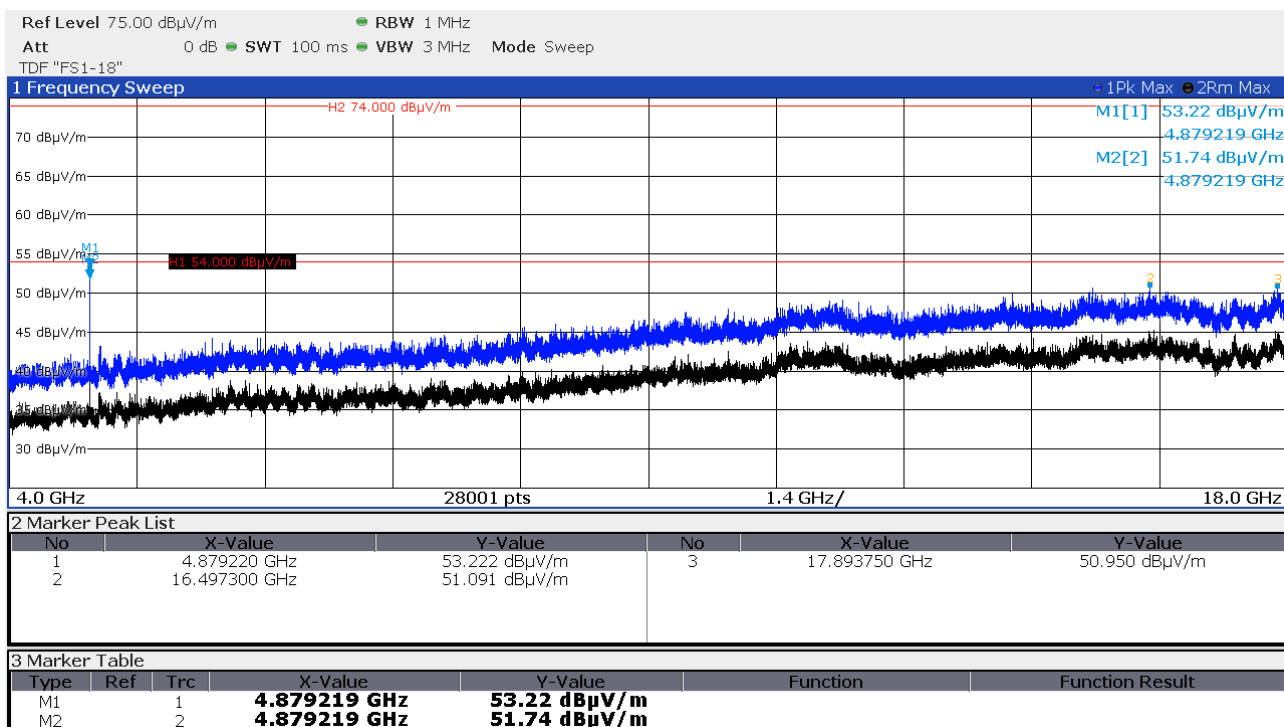
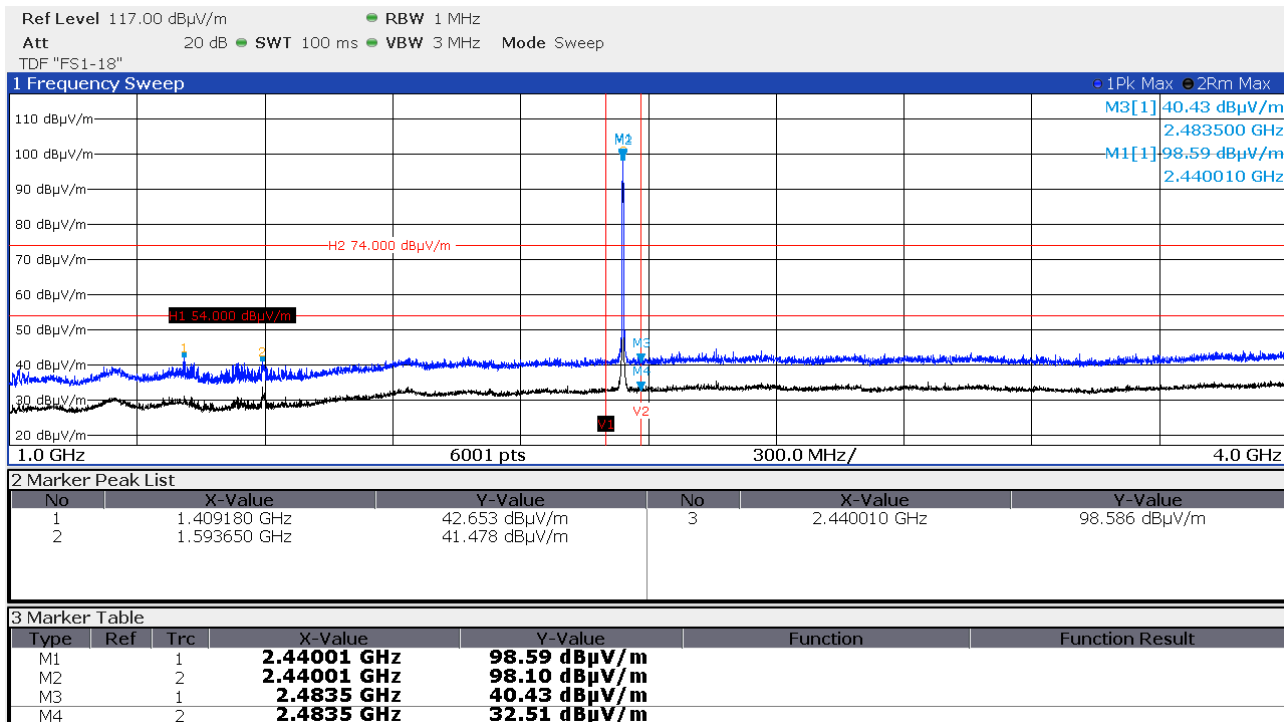


FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 500 kbps, CH17 (2440 MHz) horizontal polarisation, EUT-lying:


FCC ID: SDL-PR5XM

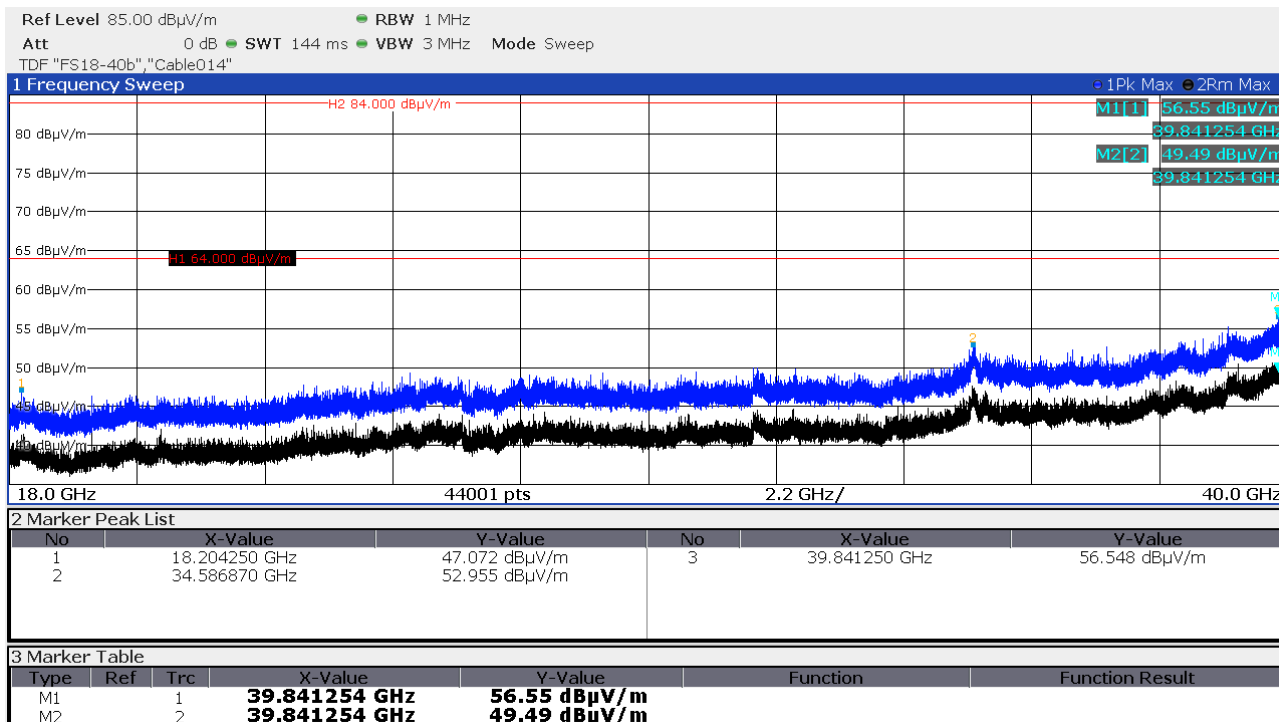
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 500 kbps, CH17 (2440 MHz) vertical polarisation, EUT-lying:


FCC ID: SDL-PR5XM

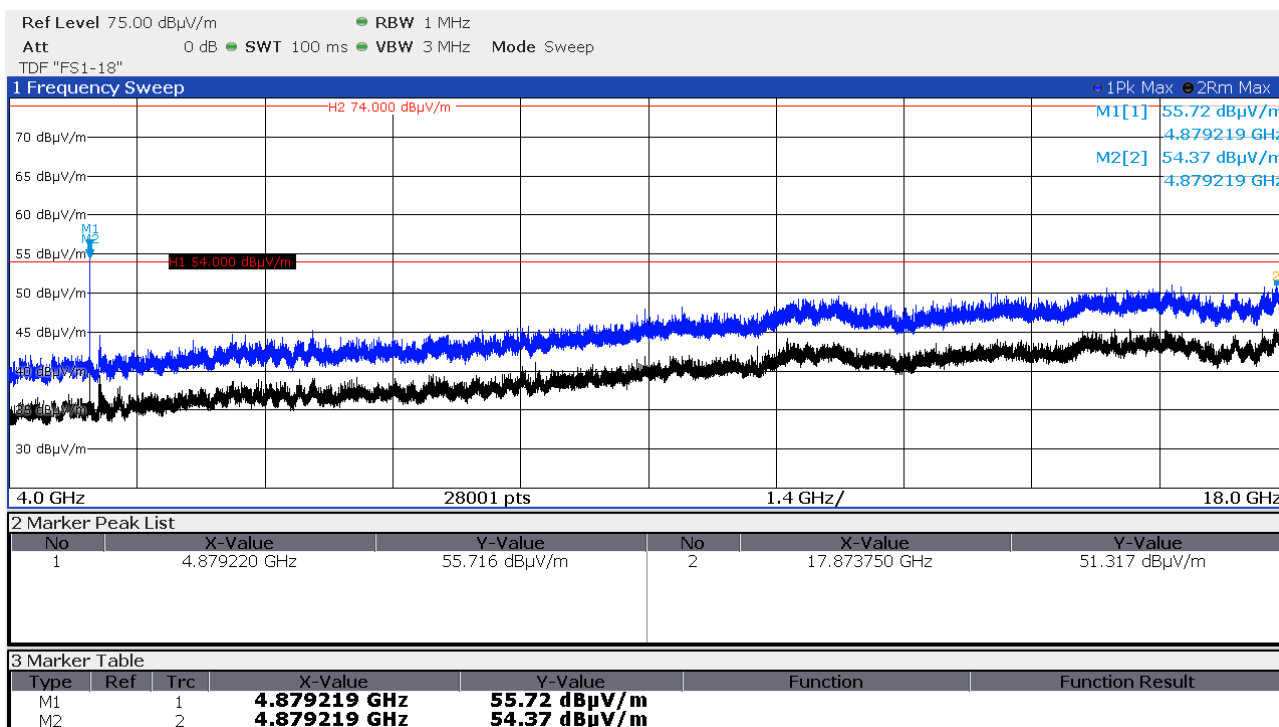
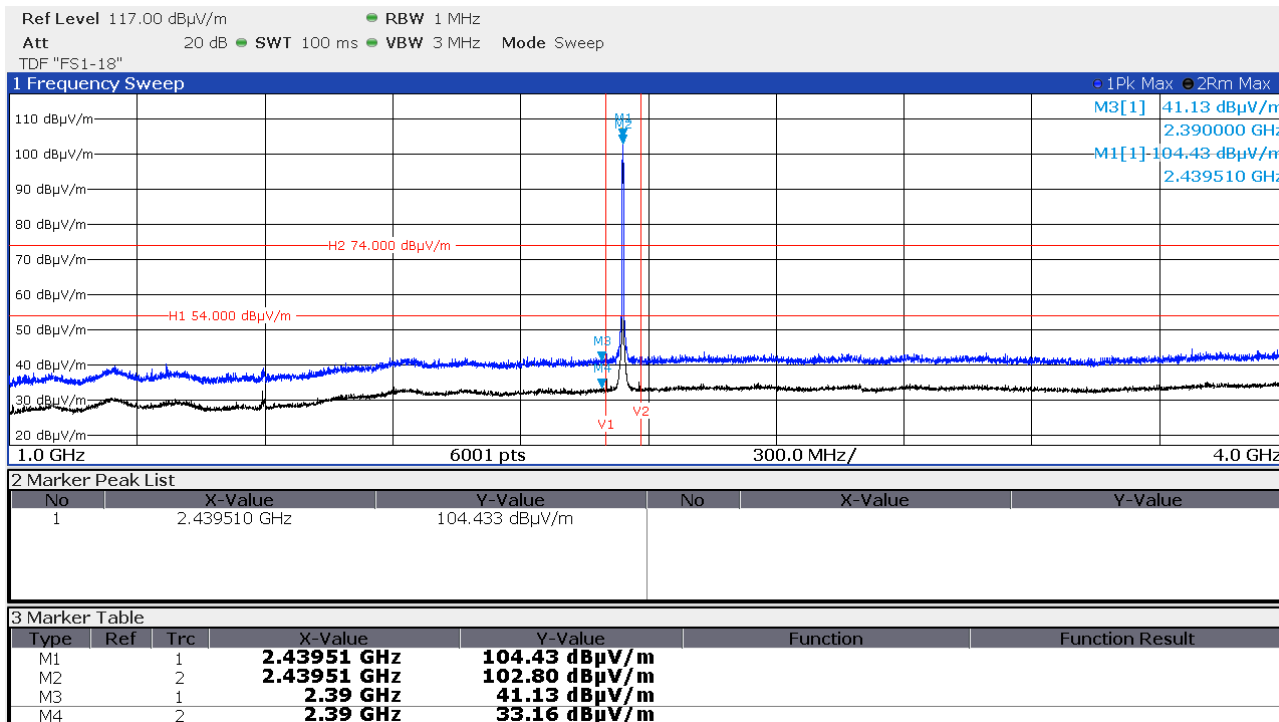
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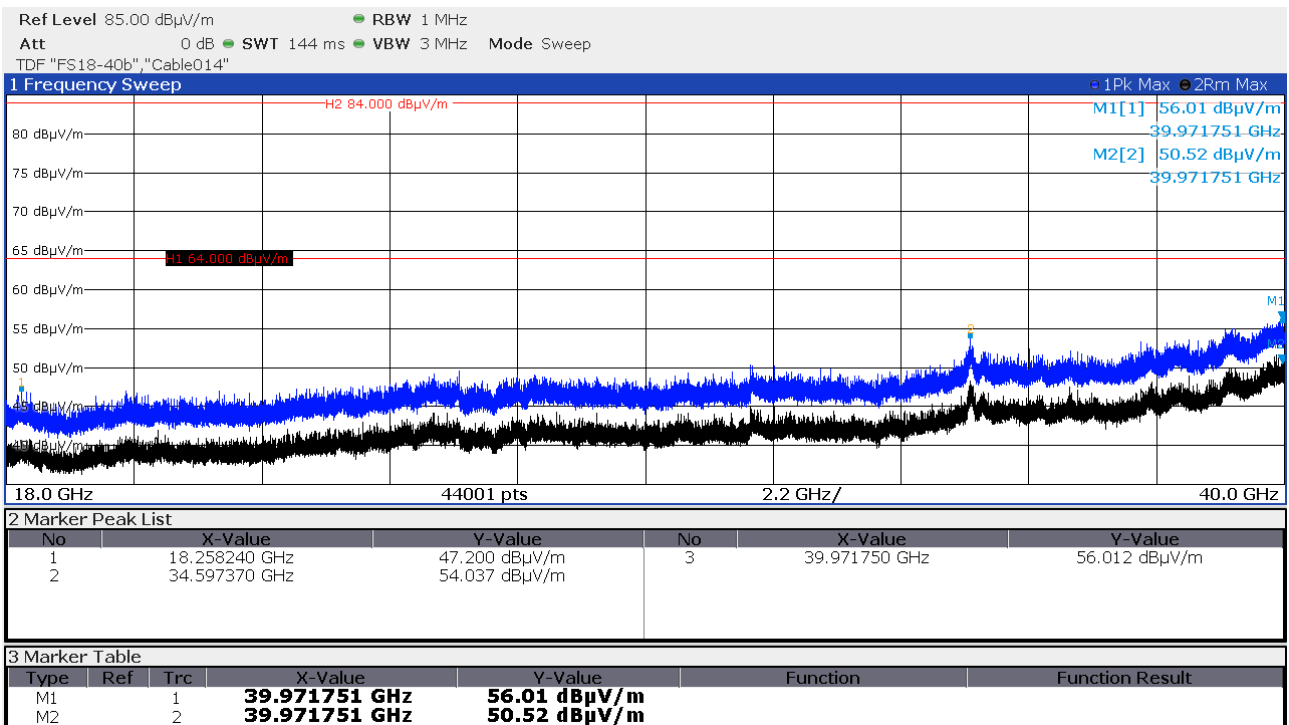
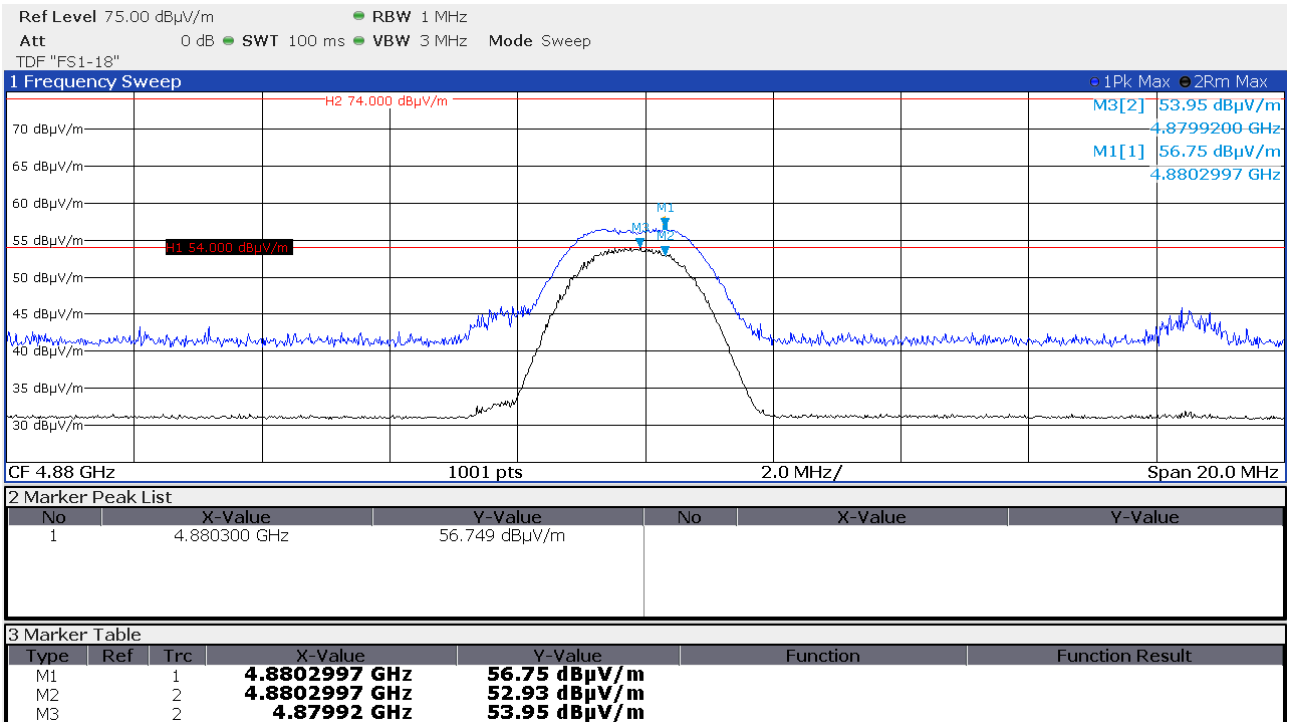
IC: 5228A-PR5XM

Data rate 500 kbps, CH17 (2440 MHz) horizontal polarisation, EUT-standing:



FCC ID: SDL-PR5XM

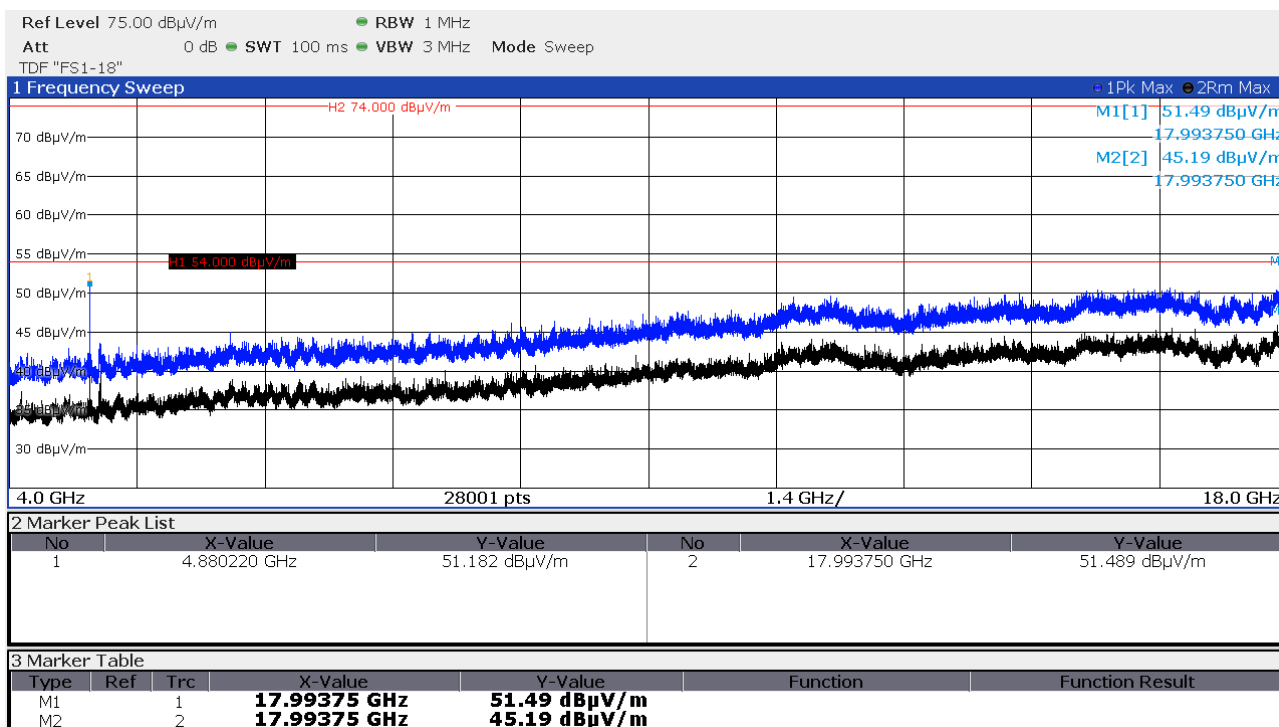
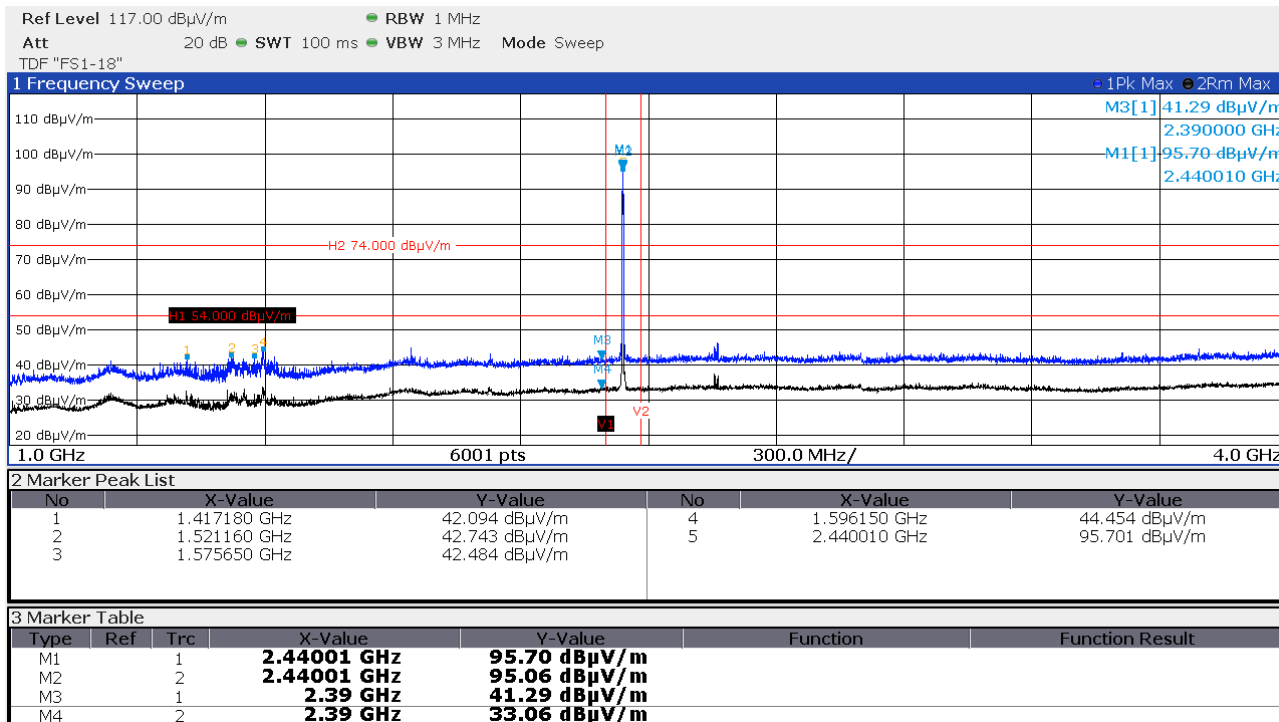
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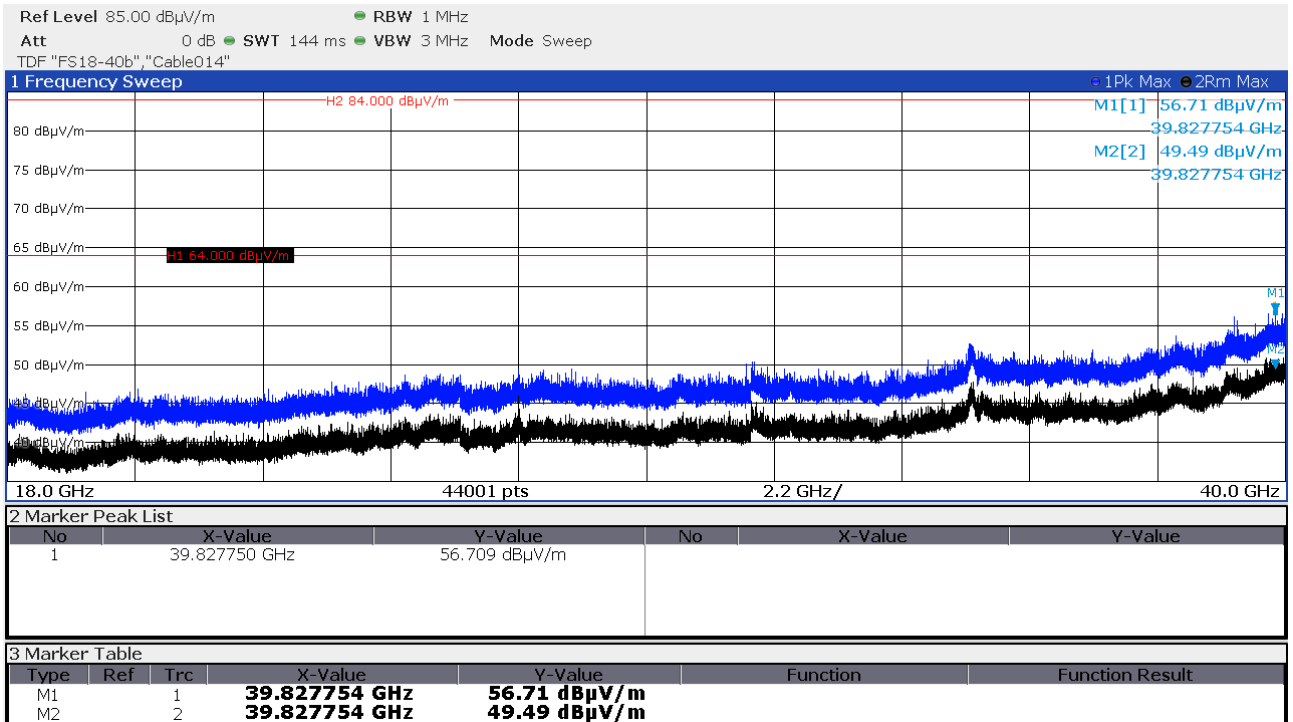
IC: 5228A-PR5XM

Data rate 500 kbps, CH17 (2440 MHz) vertical polarisation, EUT-standing:



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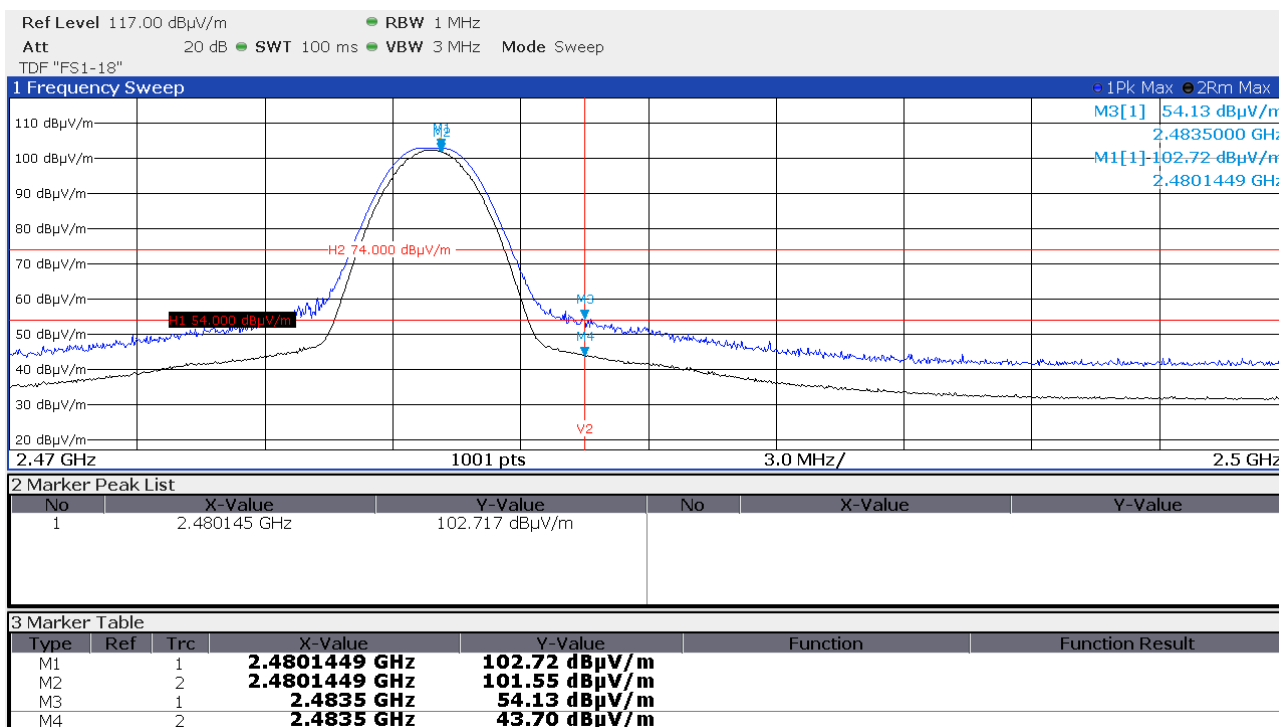
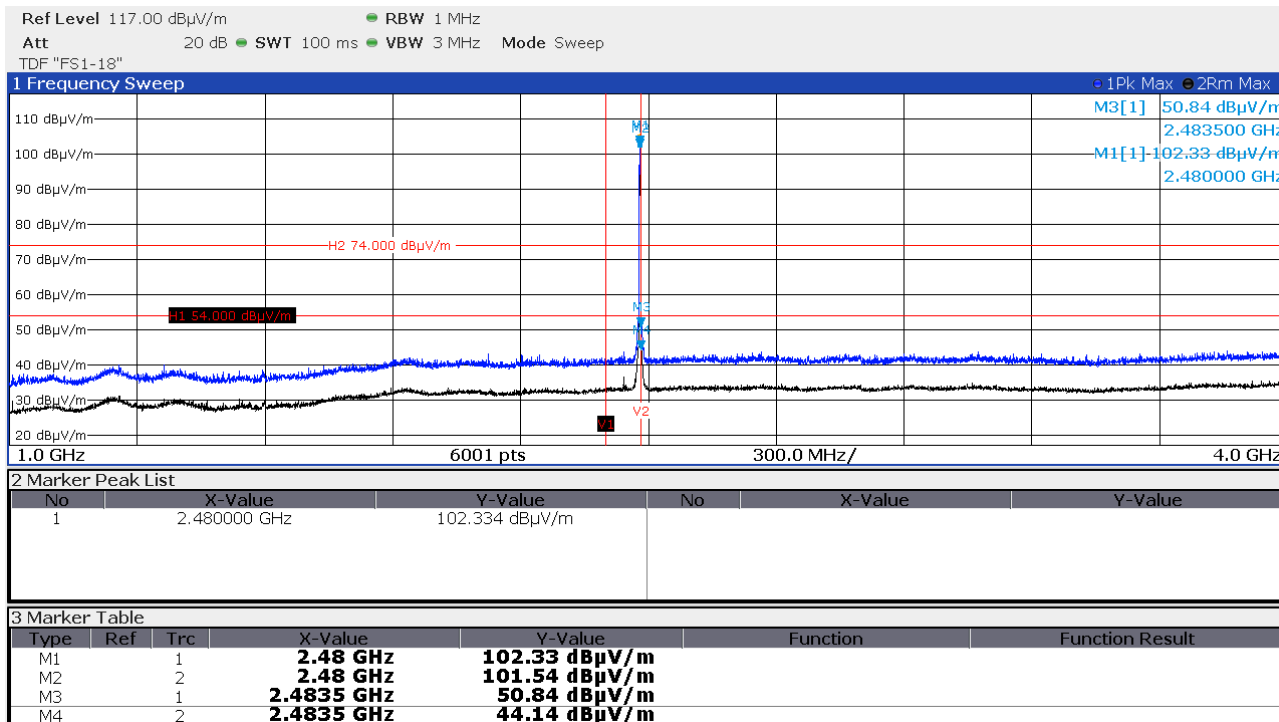
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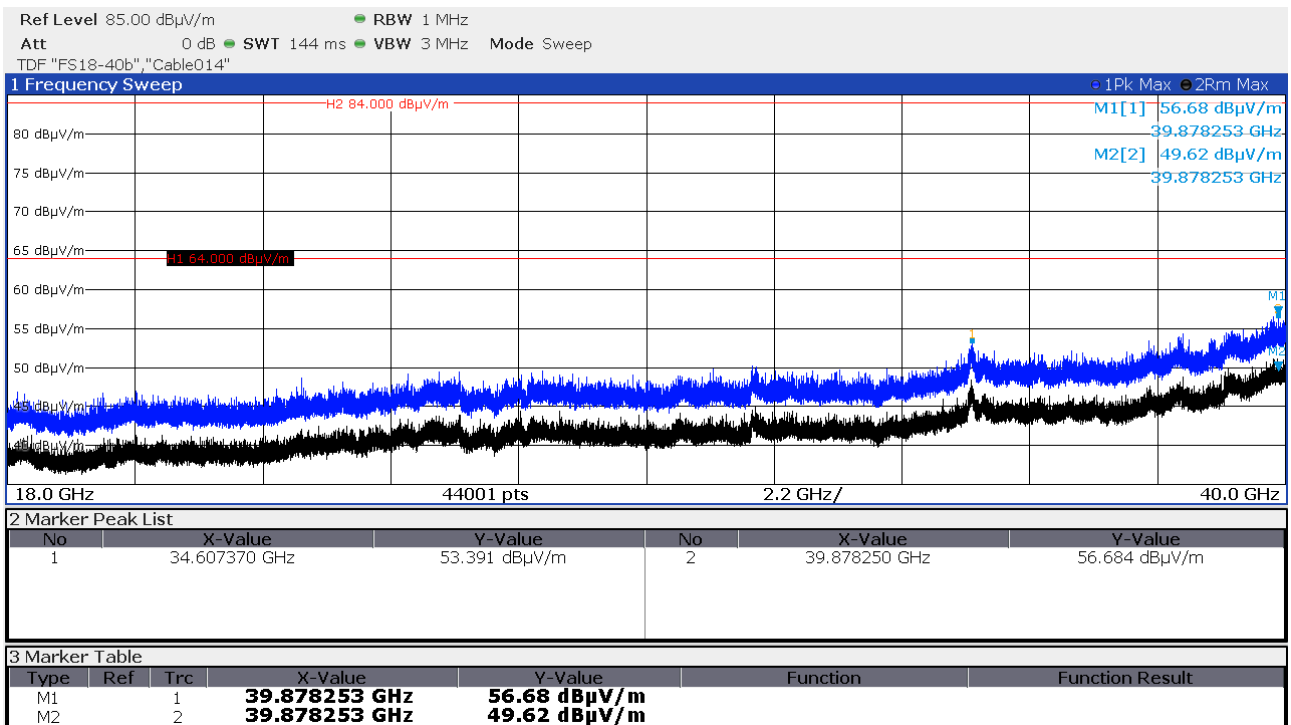
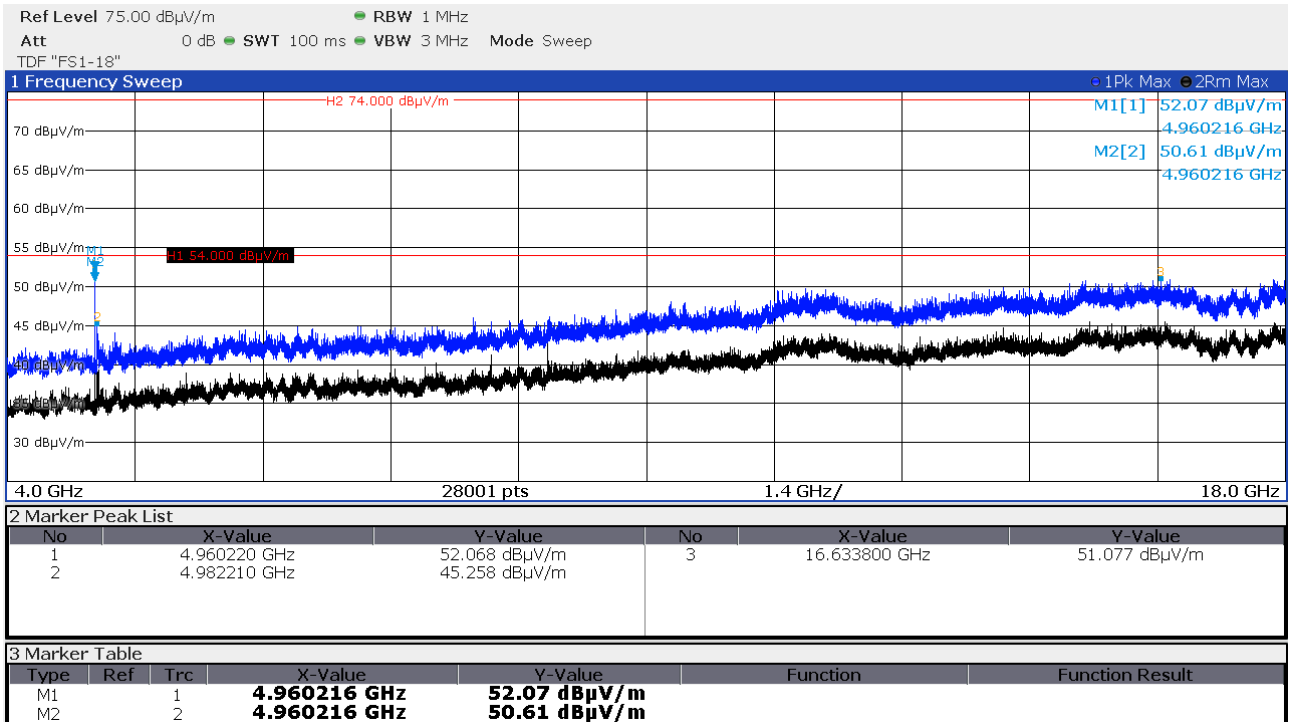


FCC ID: SDL-PR5XM

IC: 5228A-PR5XM

Data rate 500 kbps, CH39 (2480 MHz) horizontal polarisation, EUT-lying:

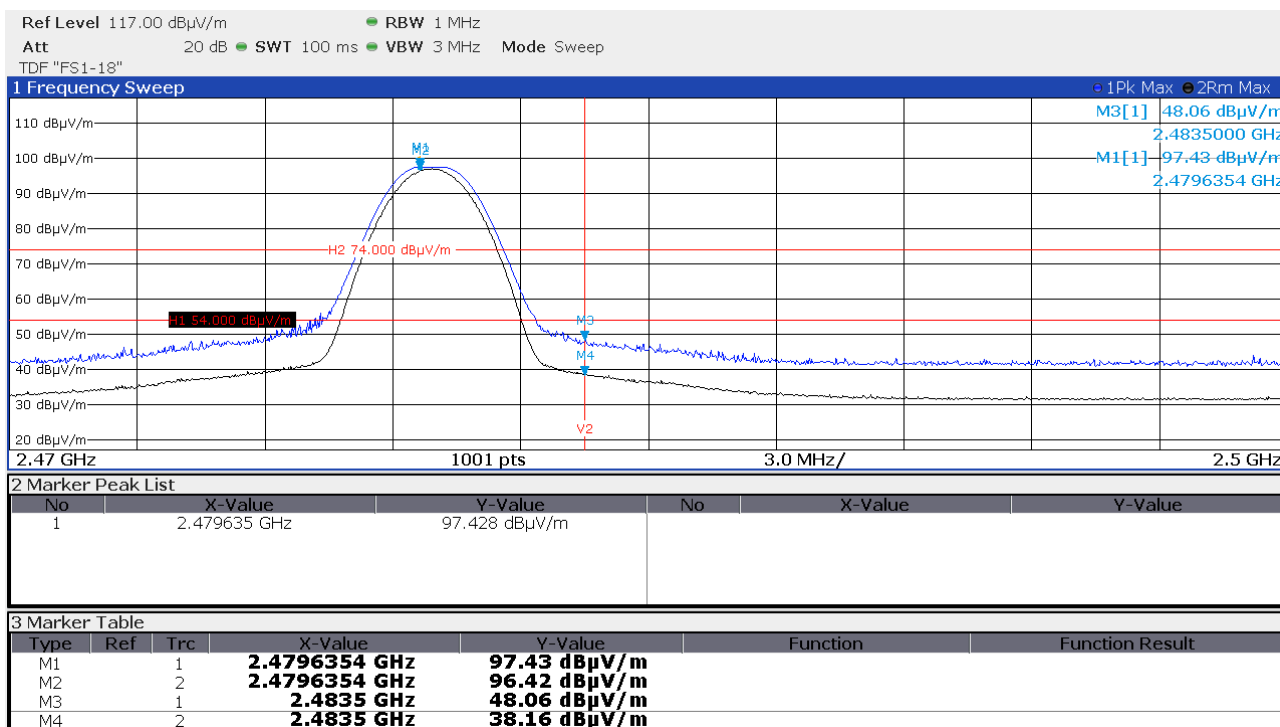
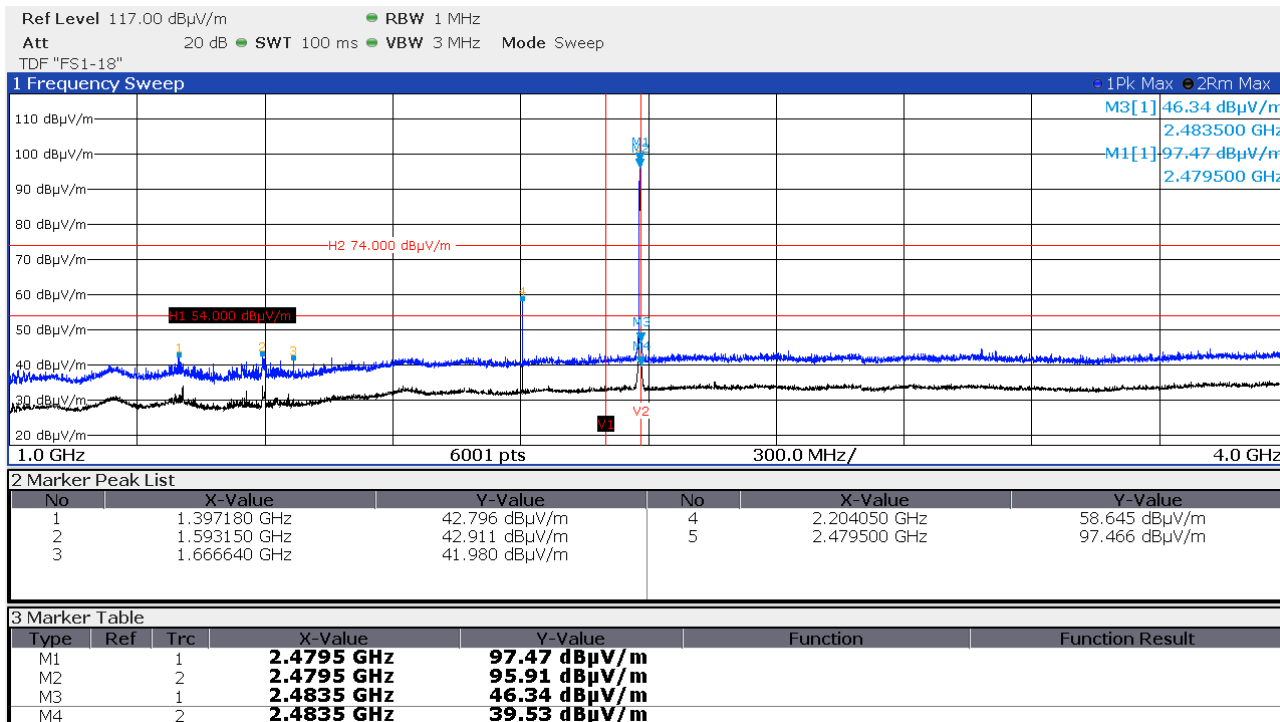


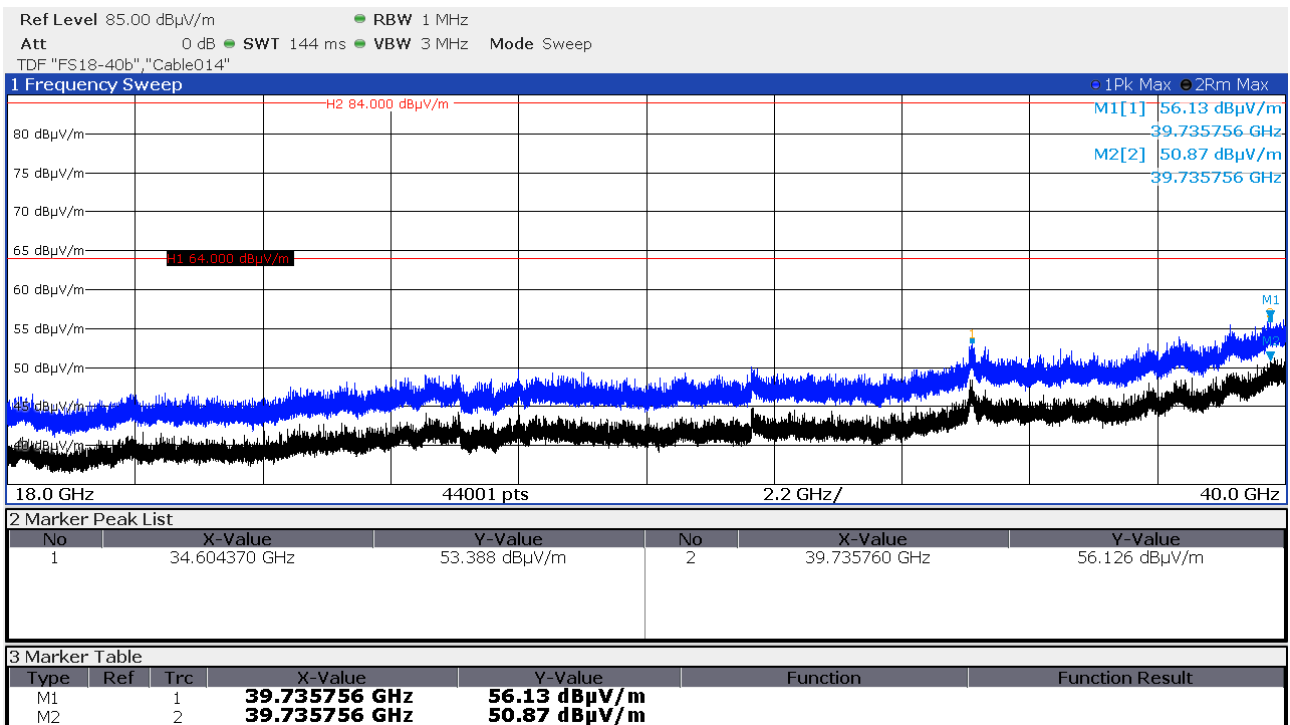
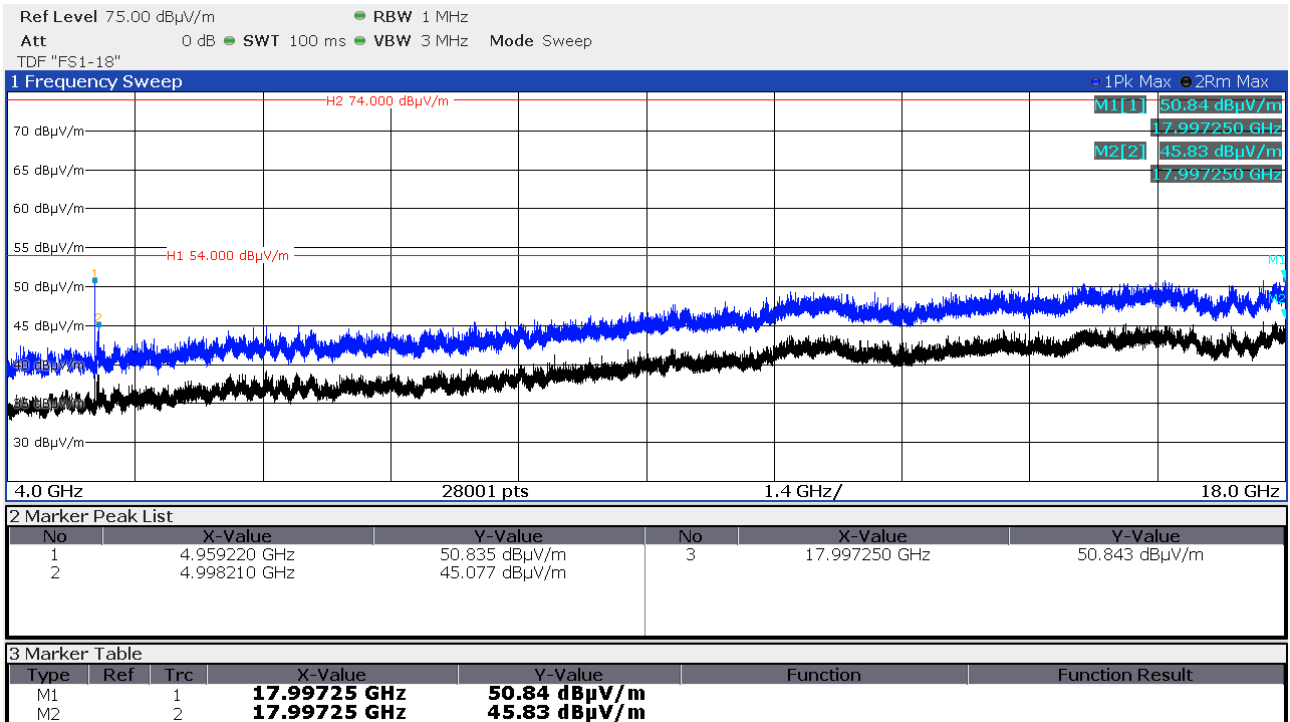
FCC ID: SDL-PR5XM
IC: 5228A-PR5XM


FCC ID: SDL-PR5XM

IC: 5228A-PR5XM

Data rate 500 kbps, CH39 (2480 MHz) vertical polarisation, EUT-lying:

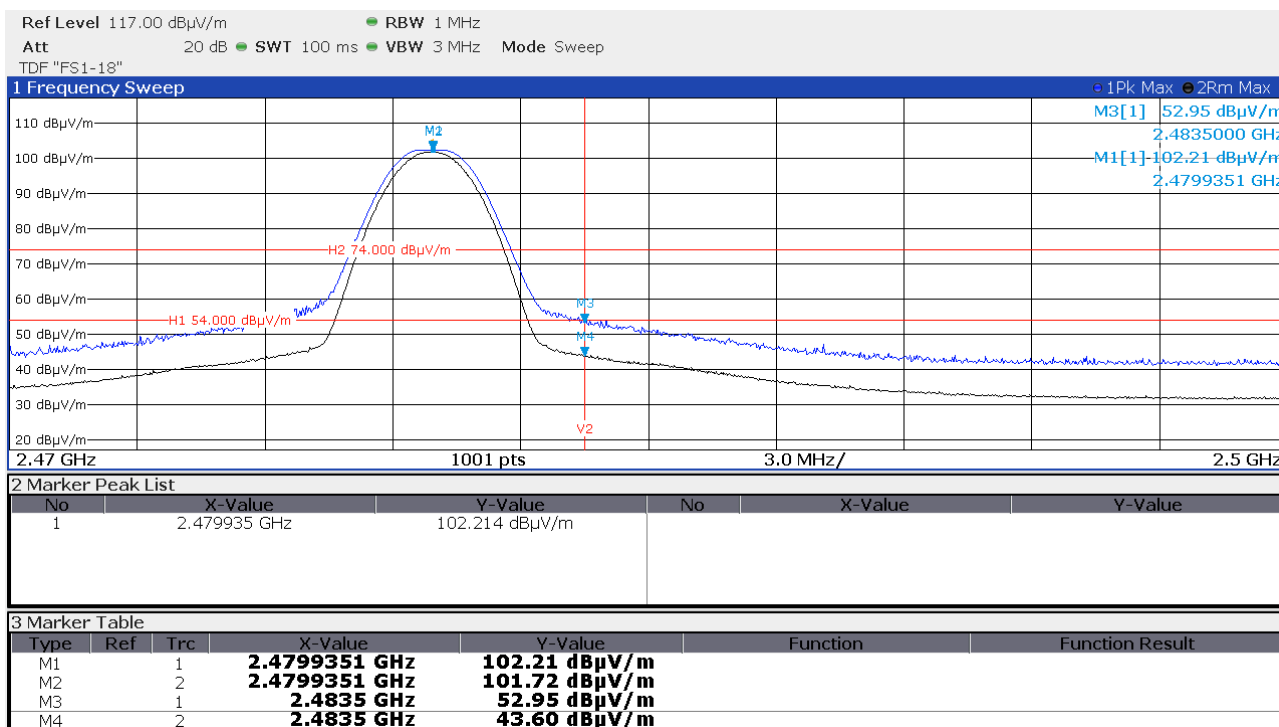
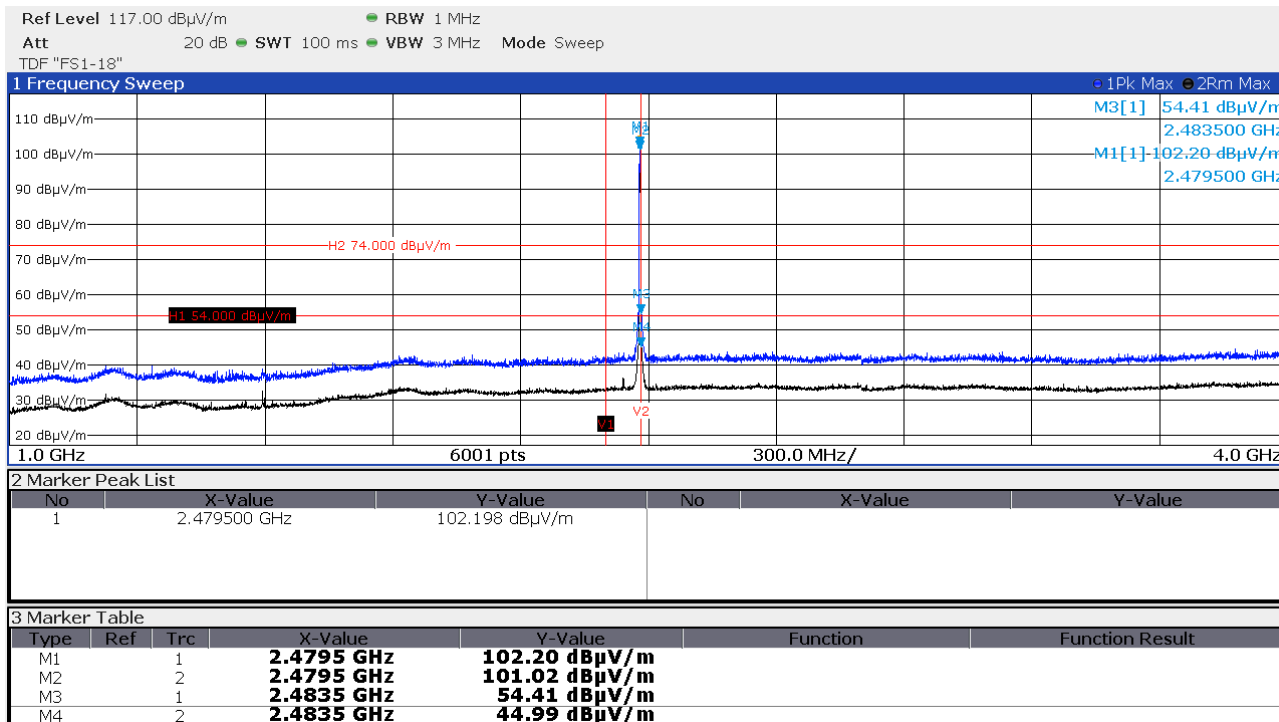


FCC ID: SDL-PR5XM
IC: 5228A-PR5XM


FCC ID: SDL-PR5XM

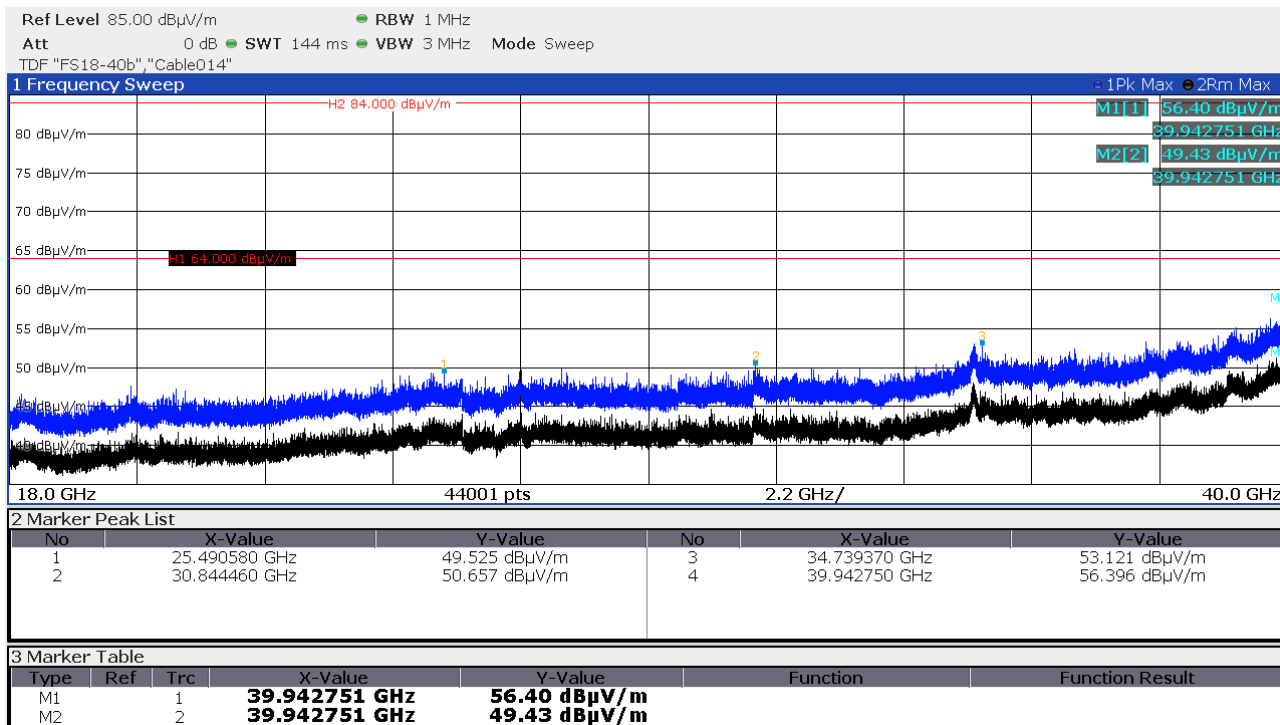
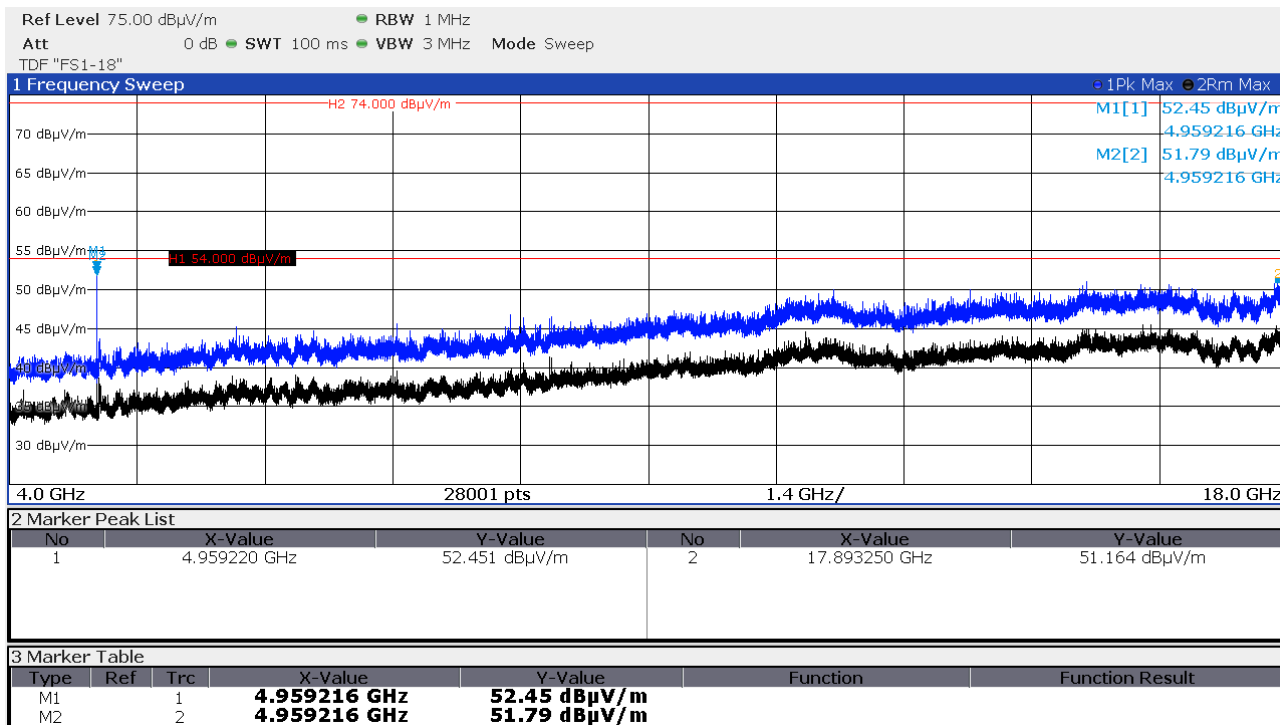
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Data rate 500 kbps, CH39 (2480 MHz) horizontal polarisation, EUT-standing:



FCC ID: SDL-PR5XM

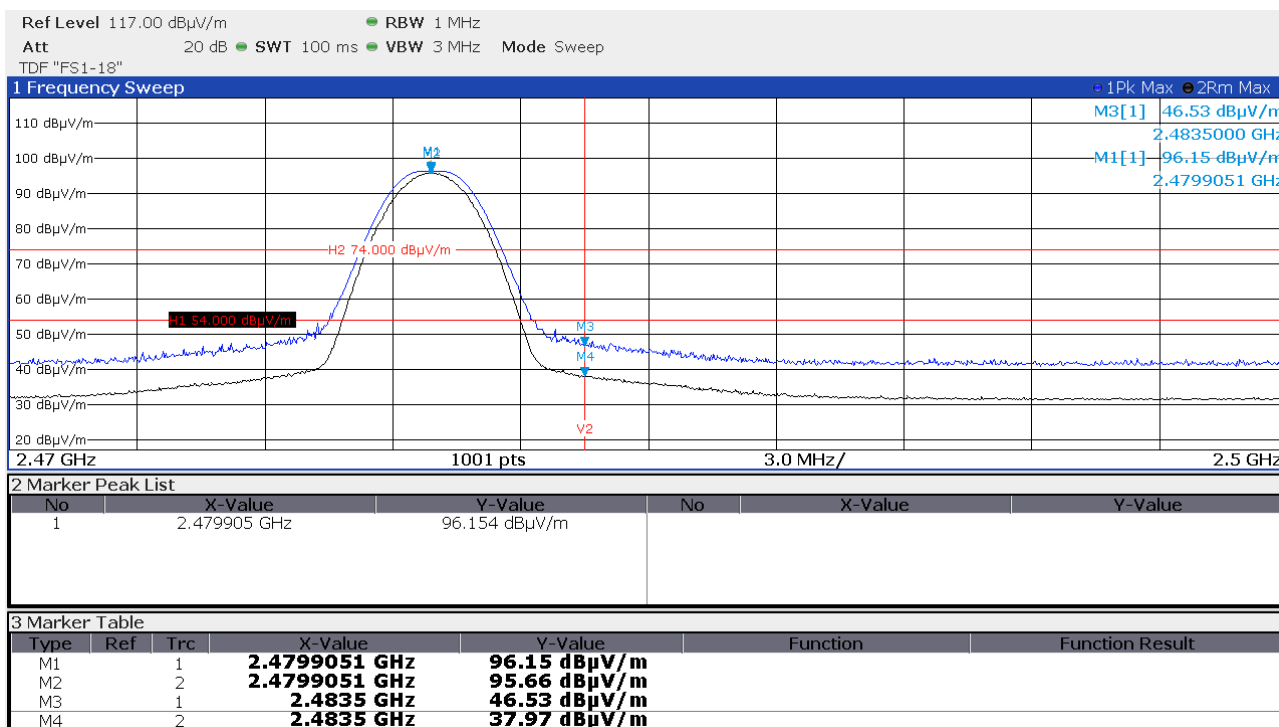
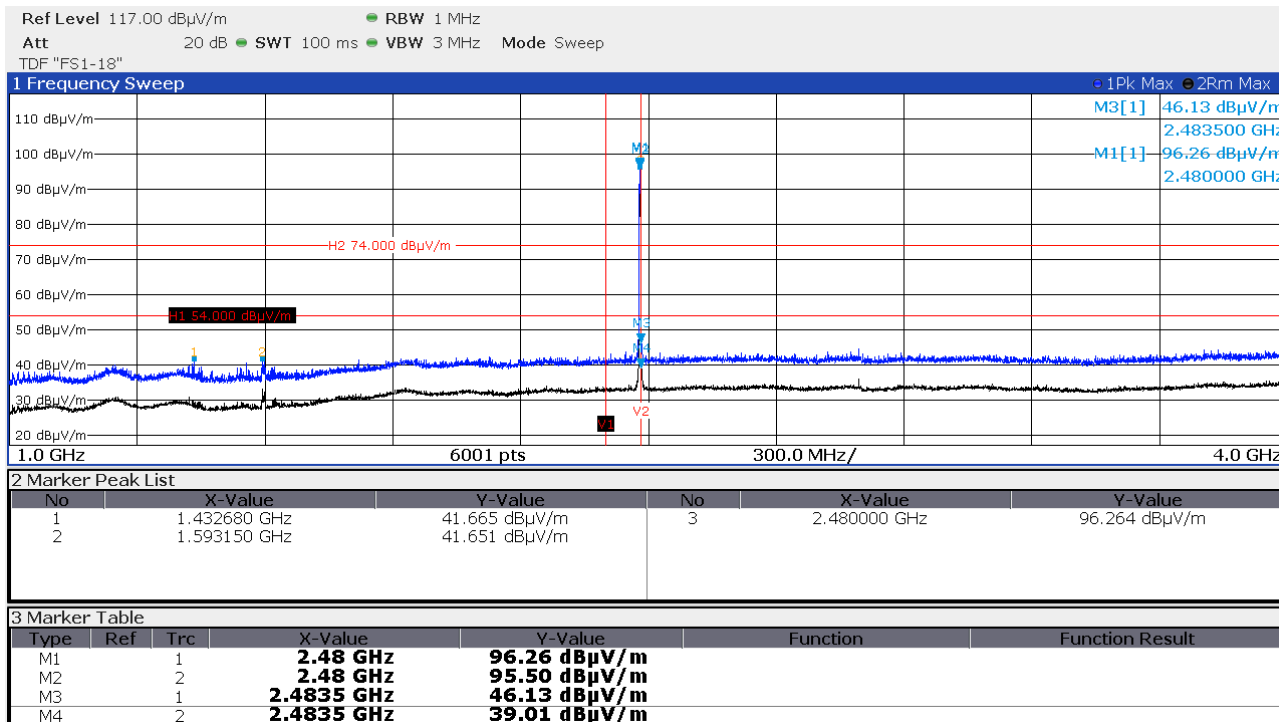
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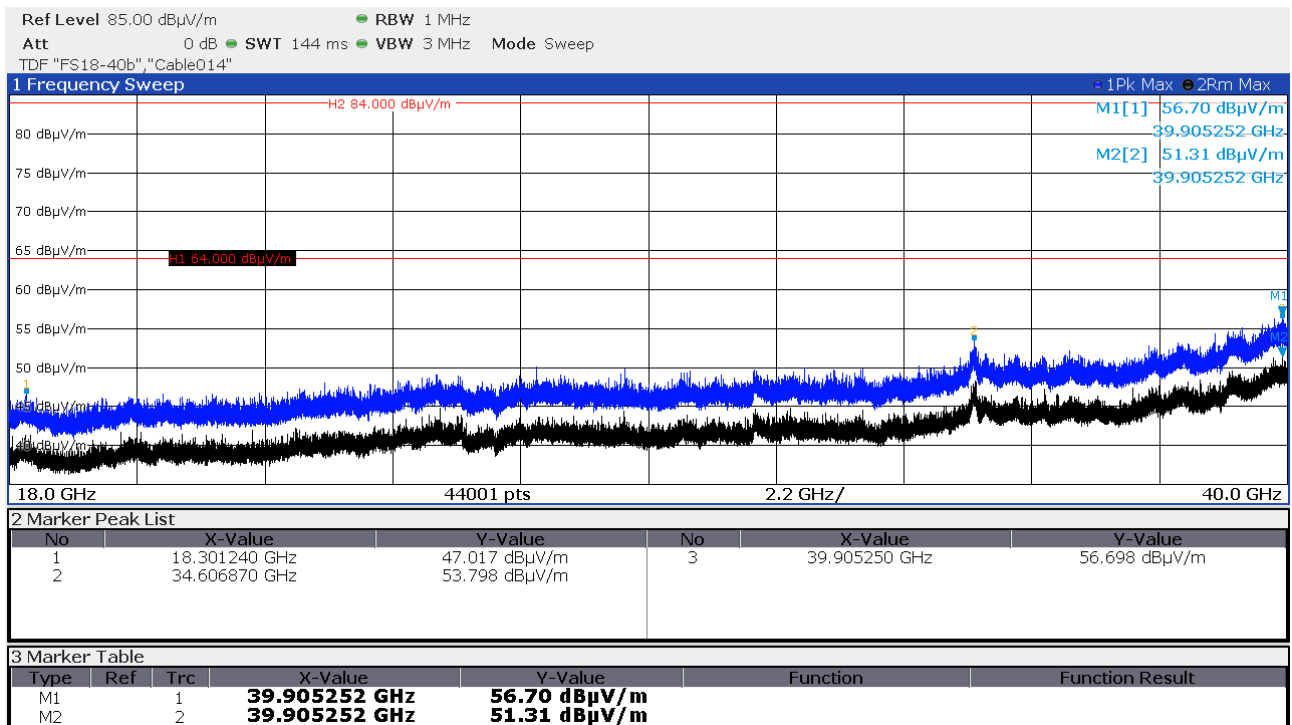
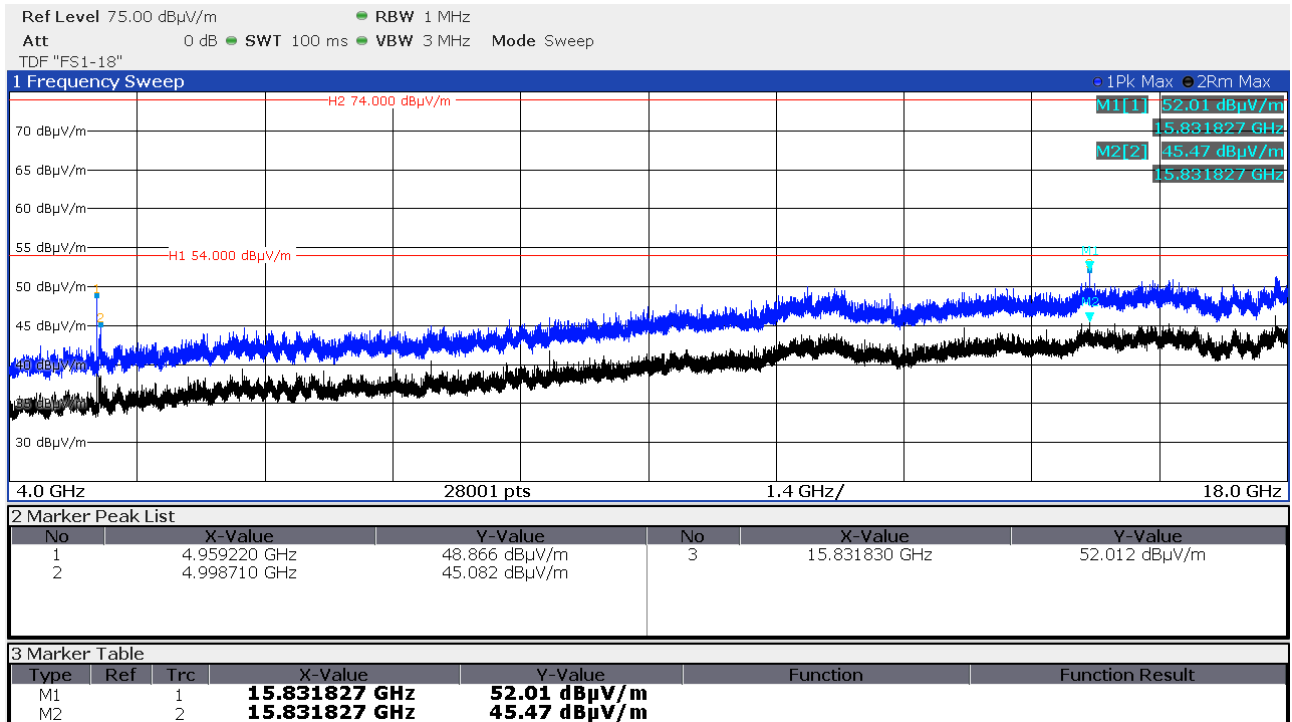
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Data rate 500 kbps, CH39 (2480 MHz) vertical polarisation, EUT-standing:



FCC ID: SDL-PR5XM

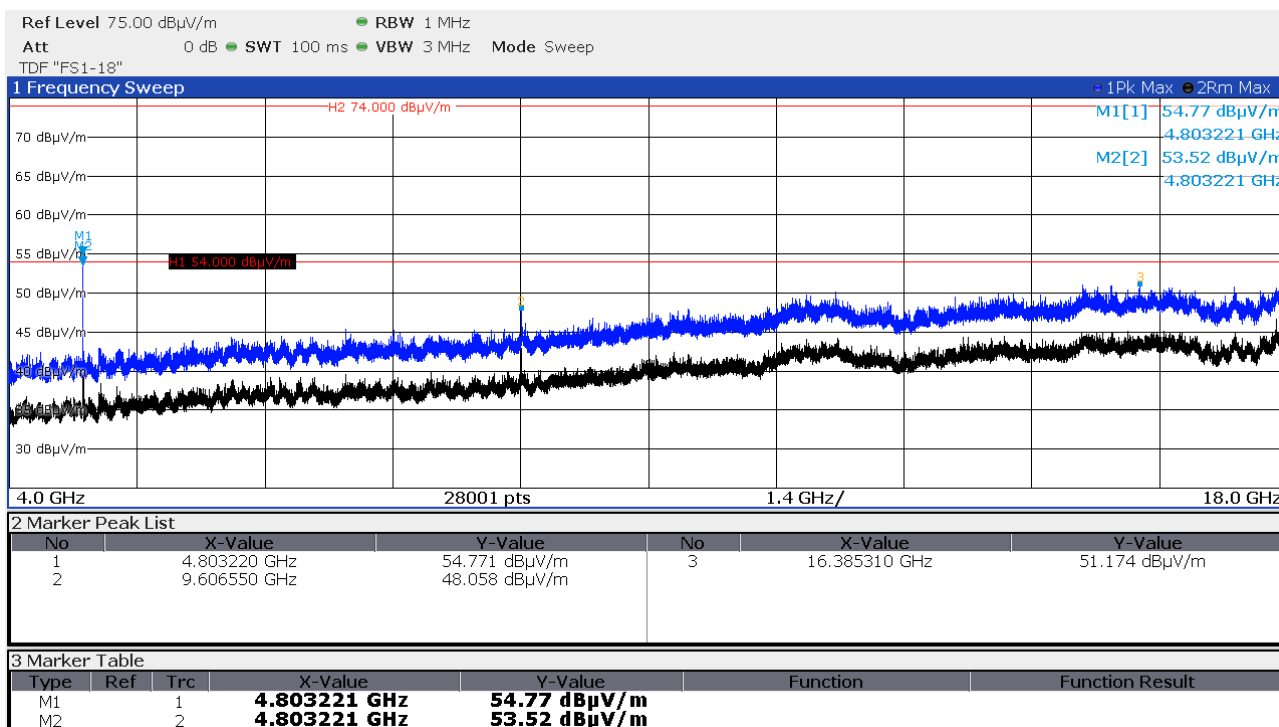
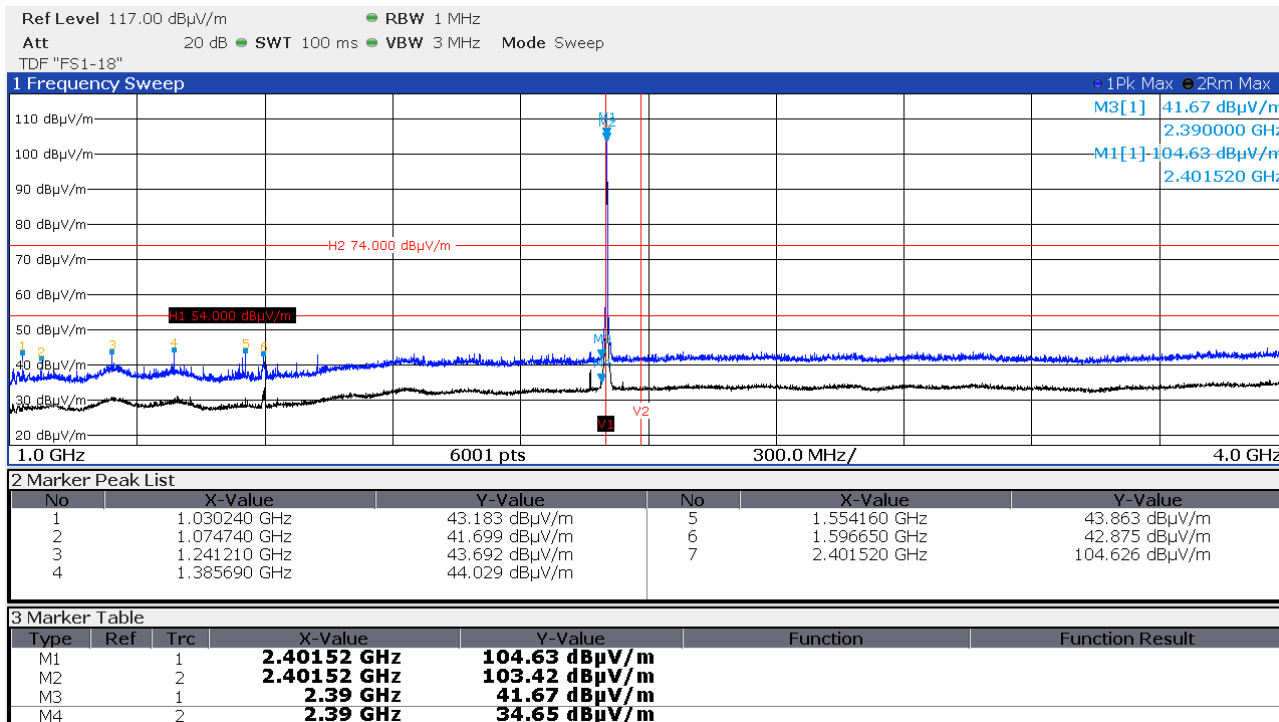
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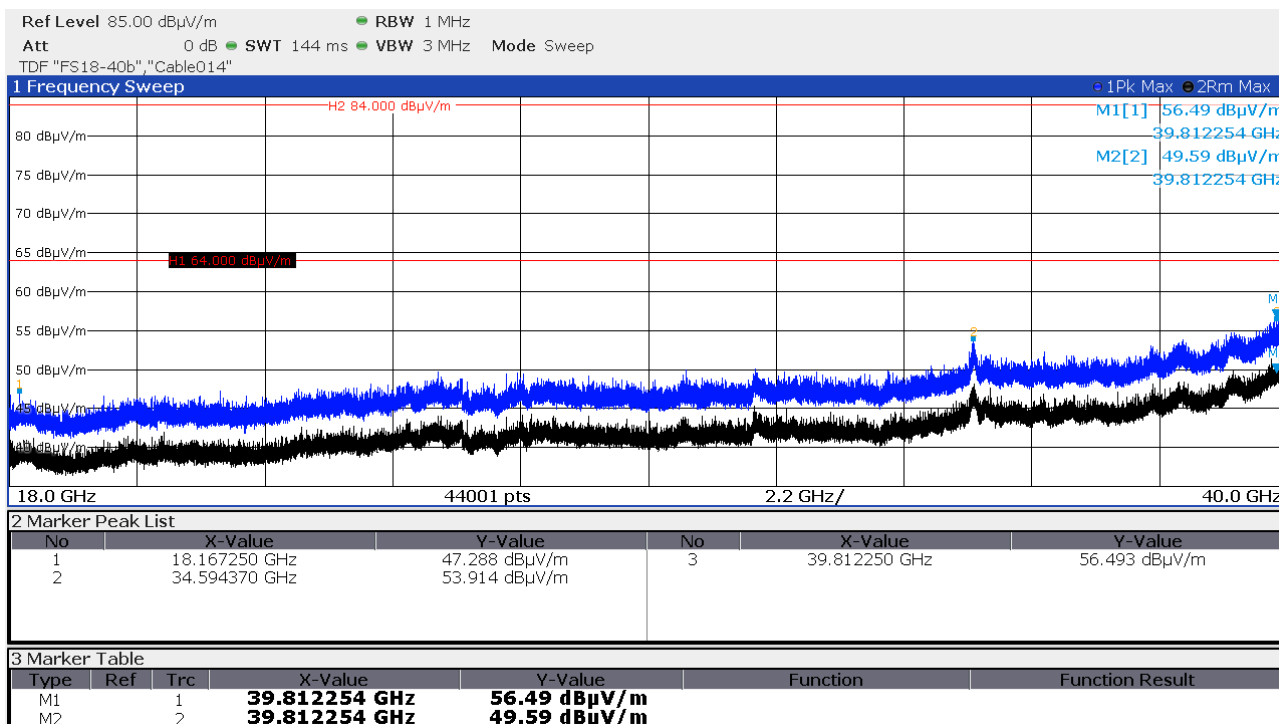
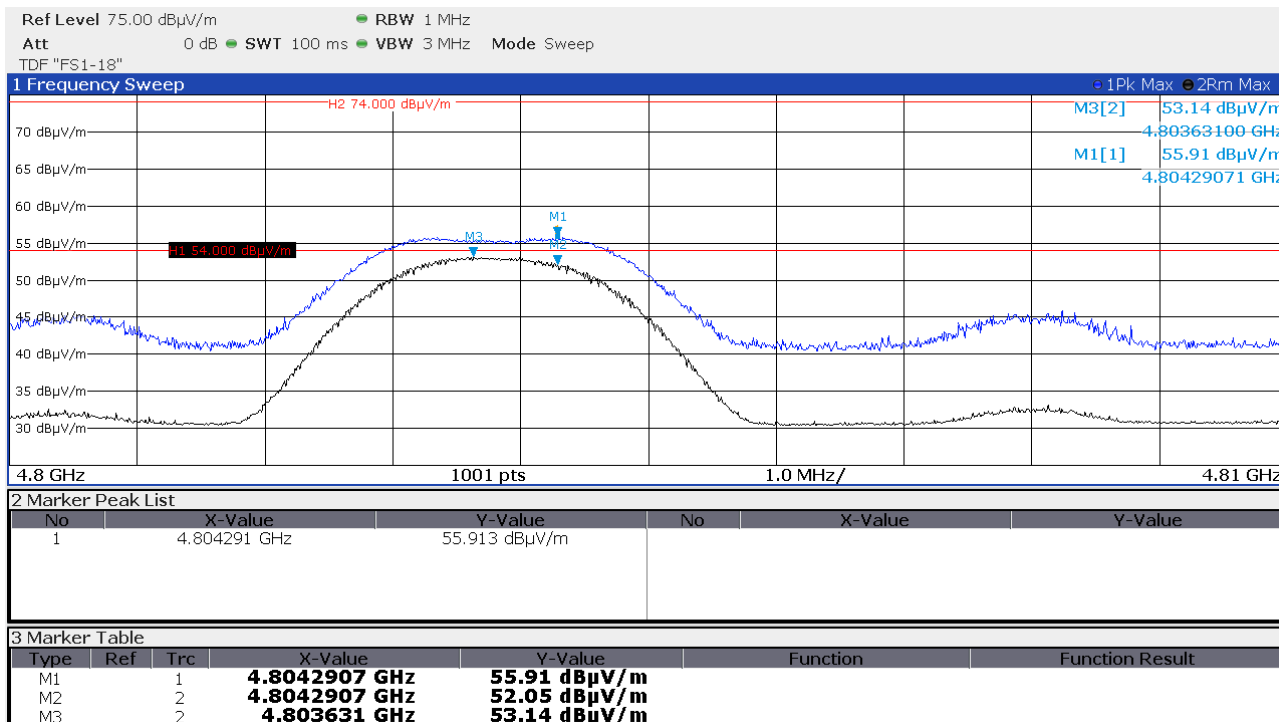
IC: 5228A-PR5XM

Data rate 1 Mbps, CH37 (2402 MHz) horizontal polarisation, EUT-lying:



FCC ID: SDL-PR5XM

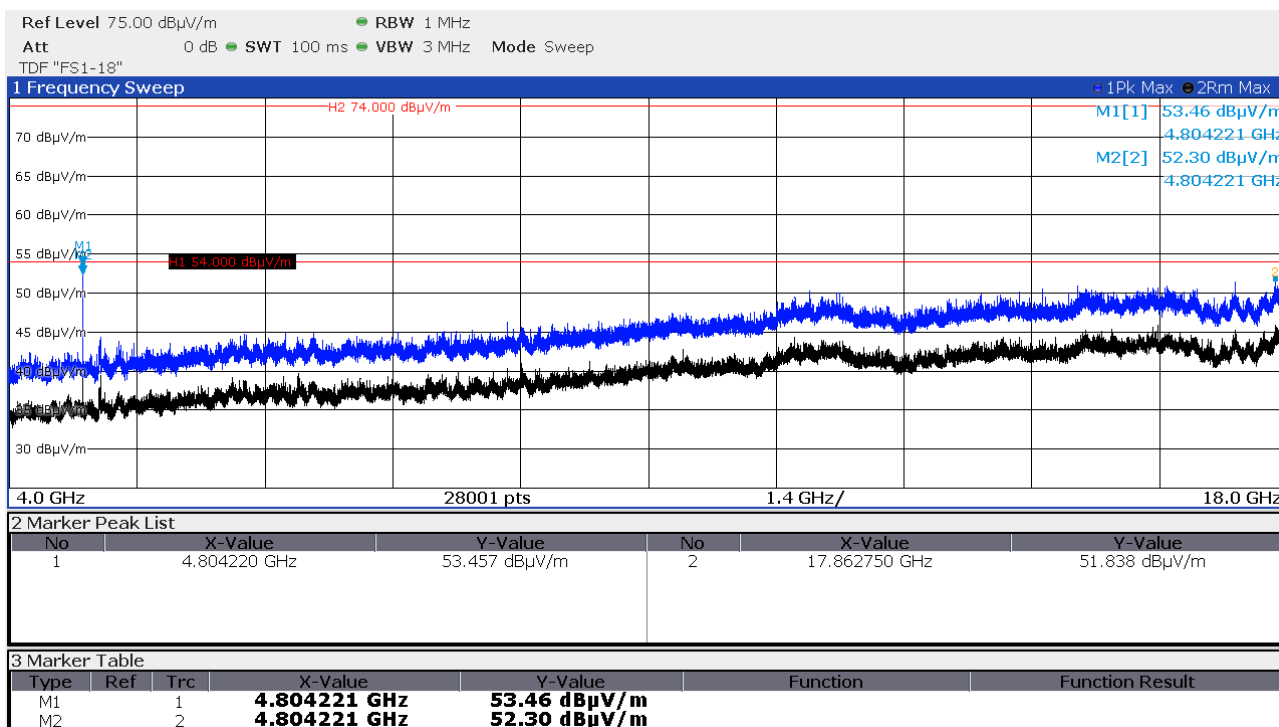
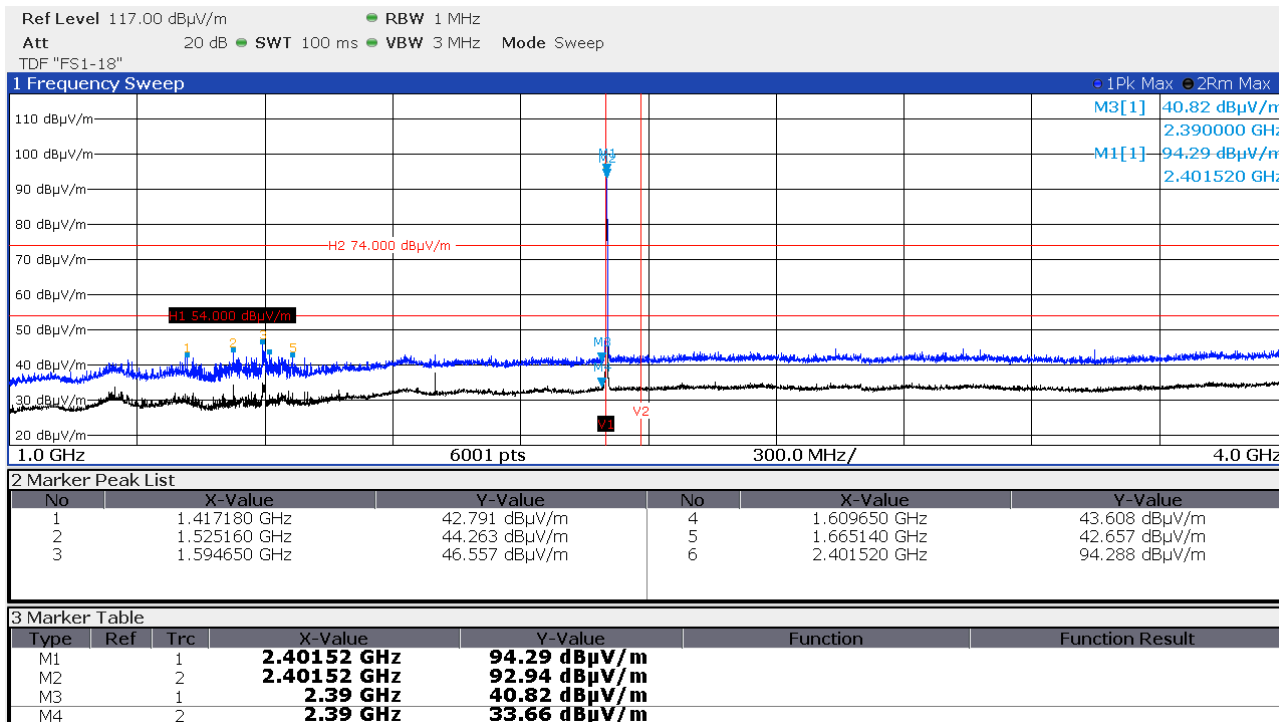
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM

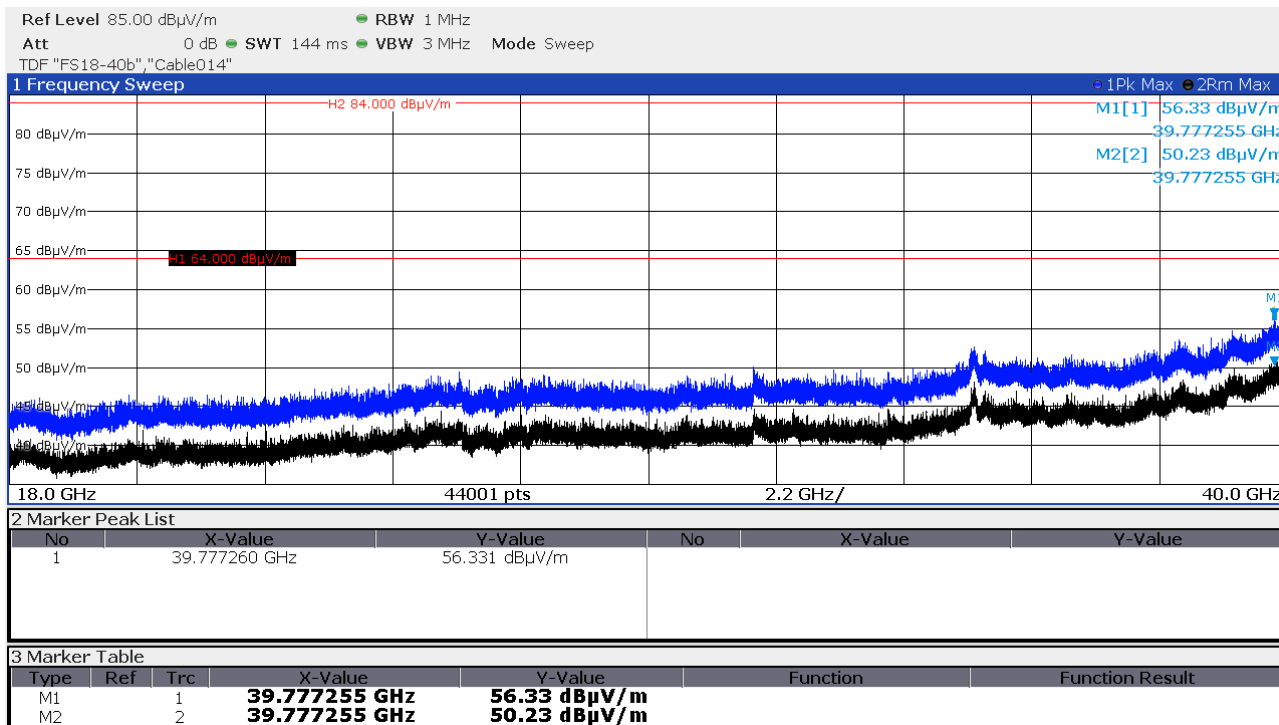
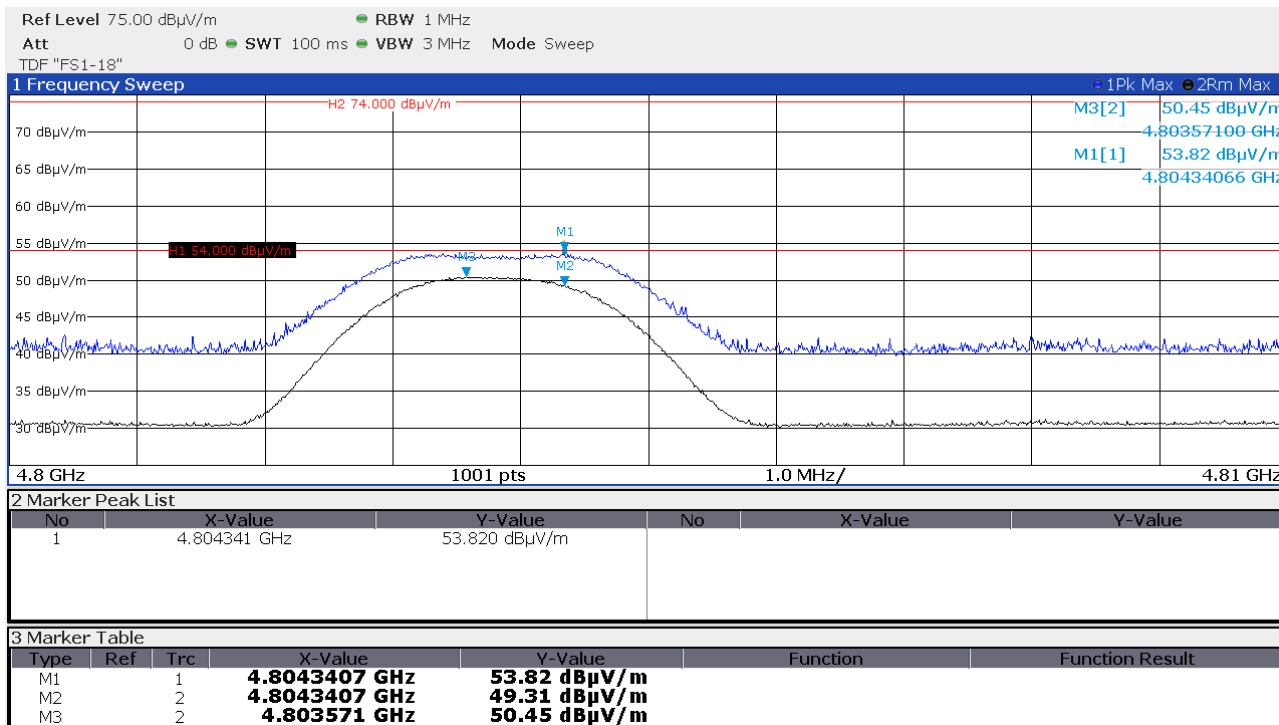
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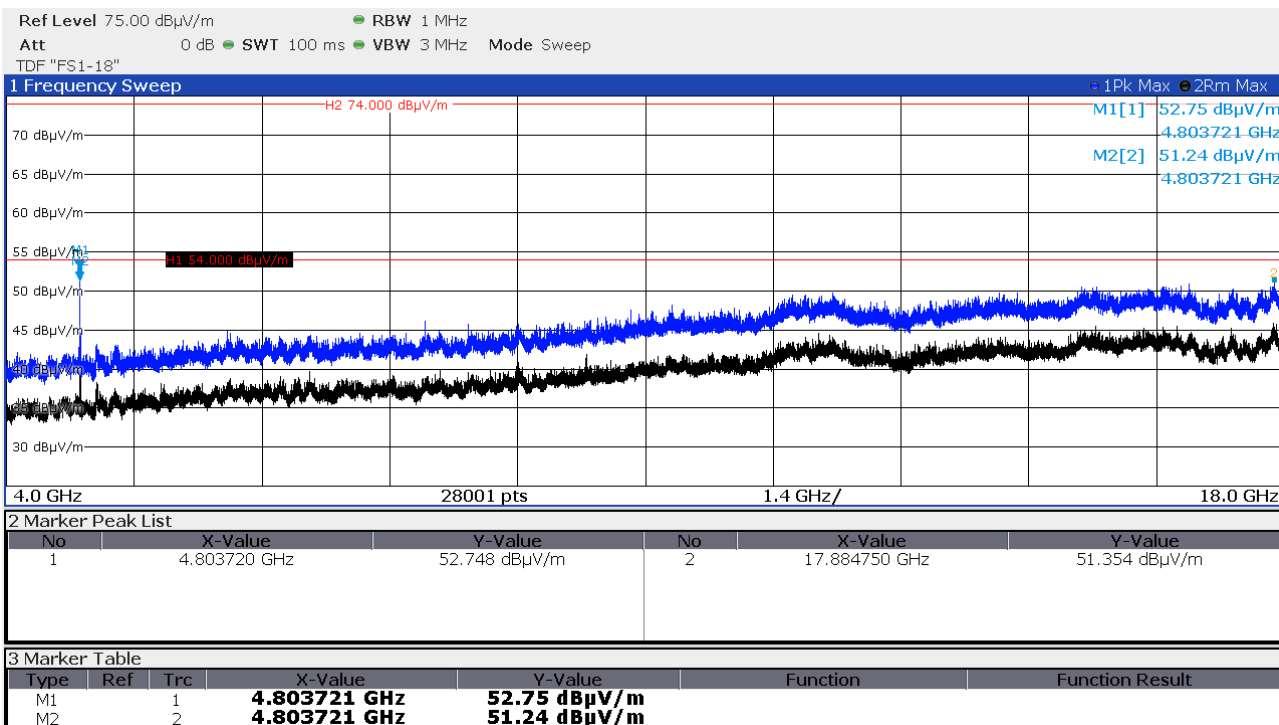
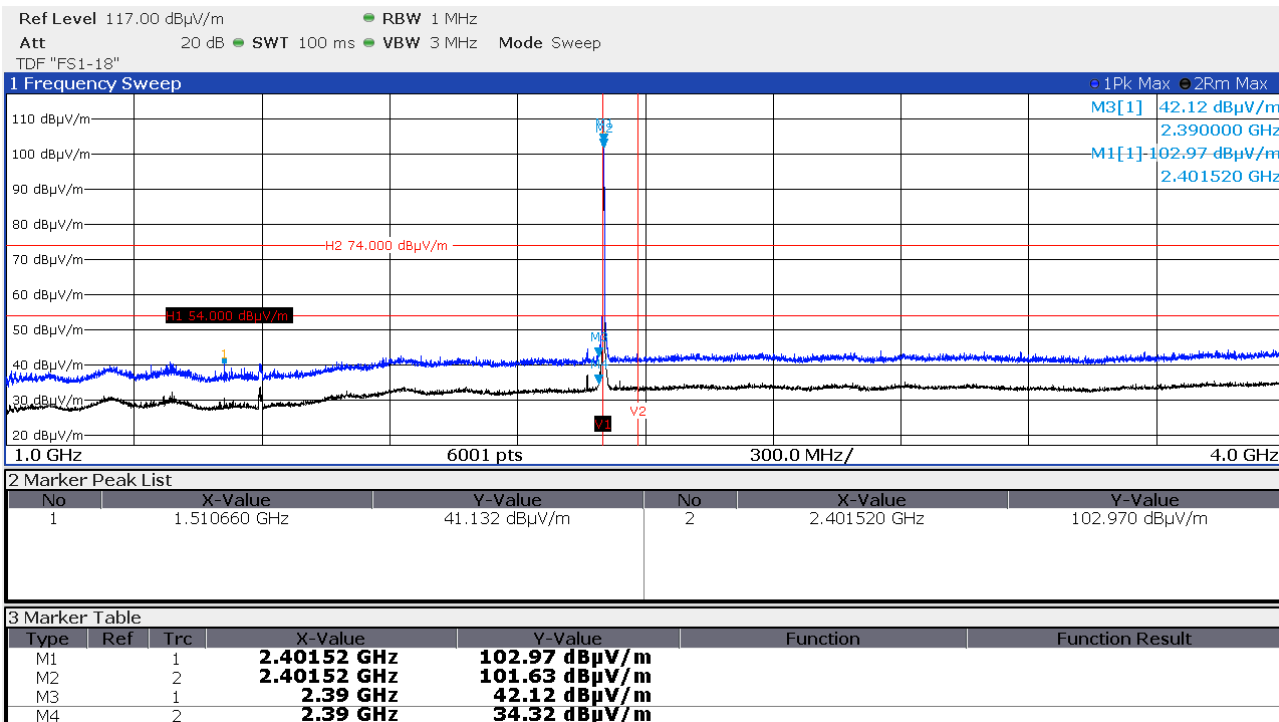
Data rate 1 Mbps, CH37 (2402 MHz) vertical polarisation, EUT-lying:



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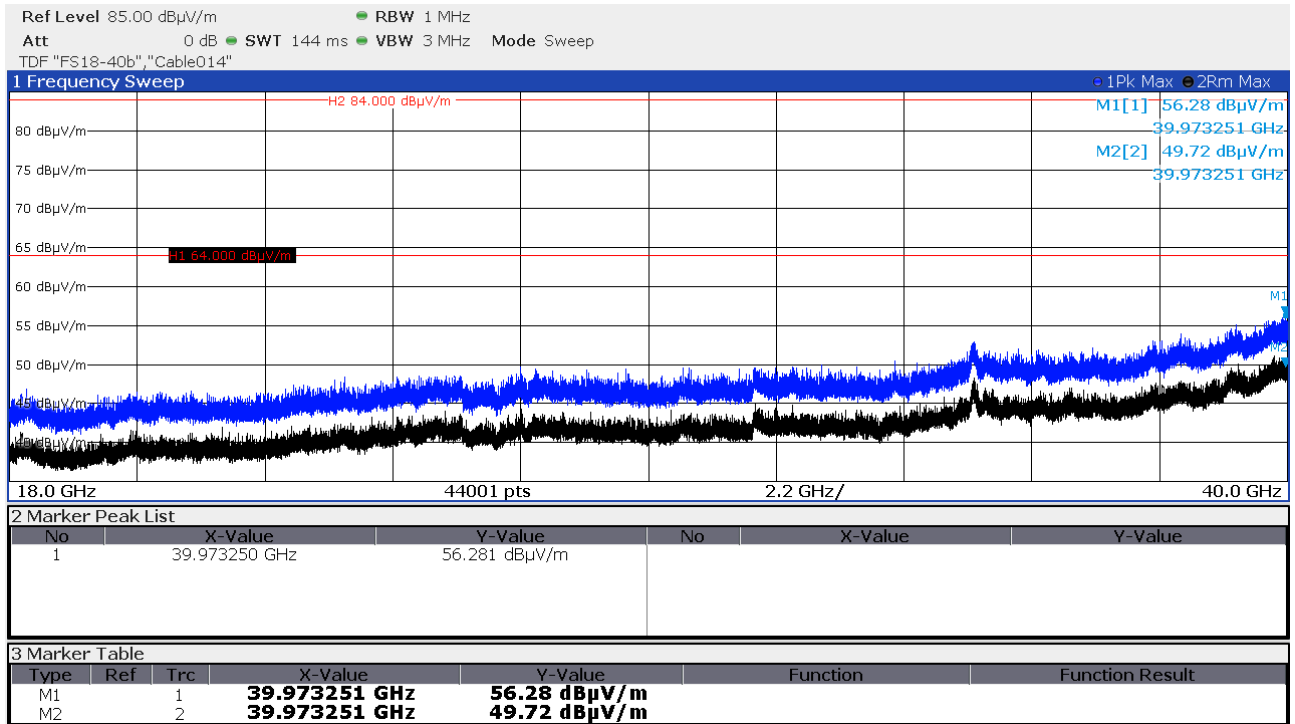
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 1 Mbps, CH37 (2402 MHz) horizontal polarisation, EUT-standing:


FCC ID: SDL-PR5XM

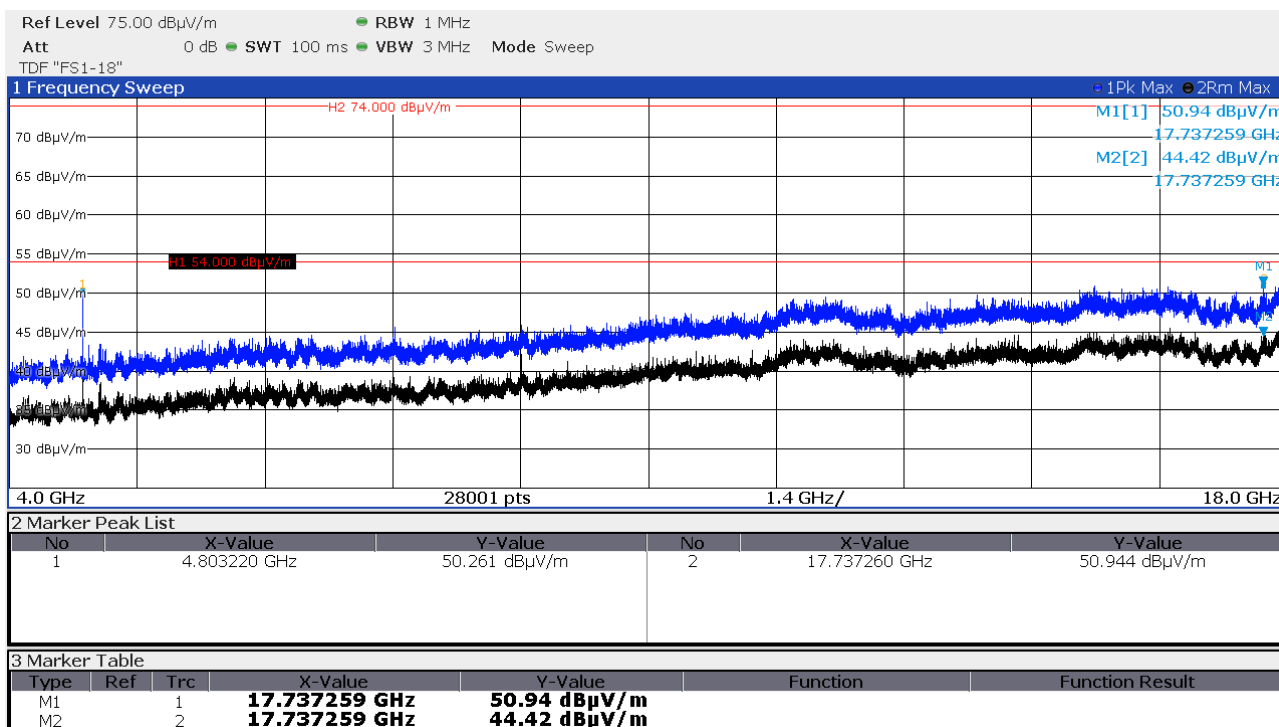
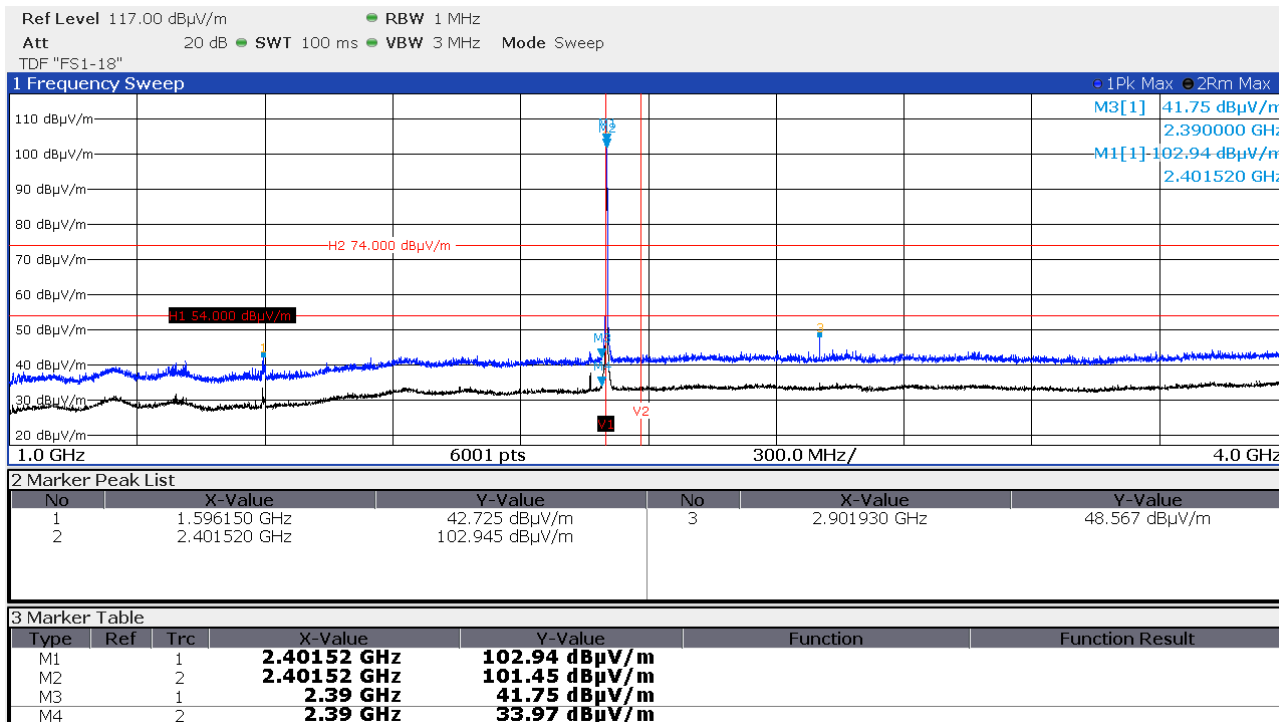
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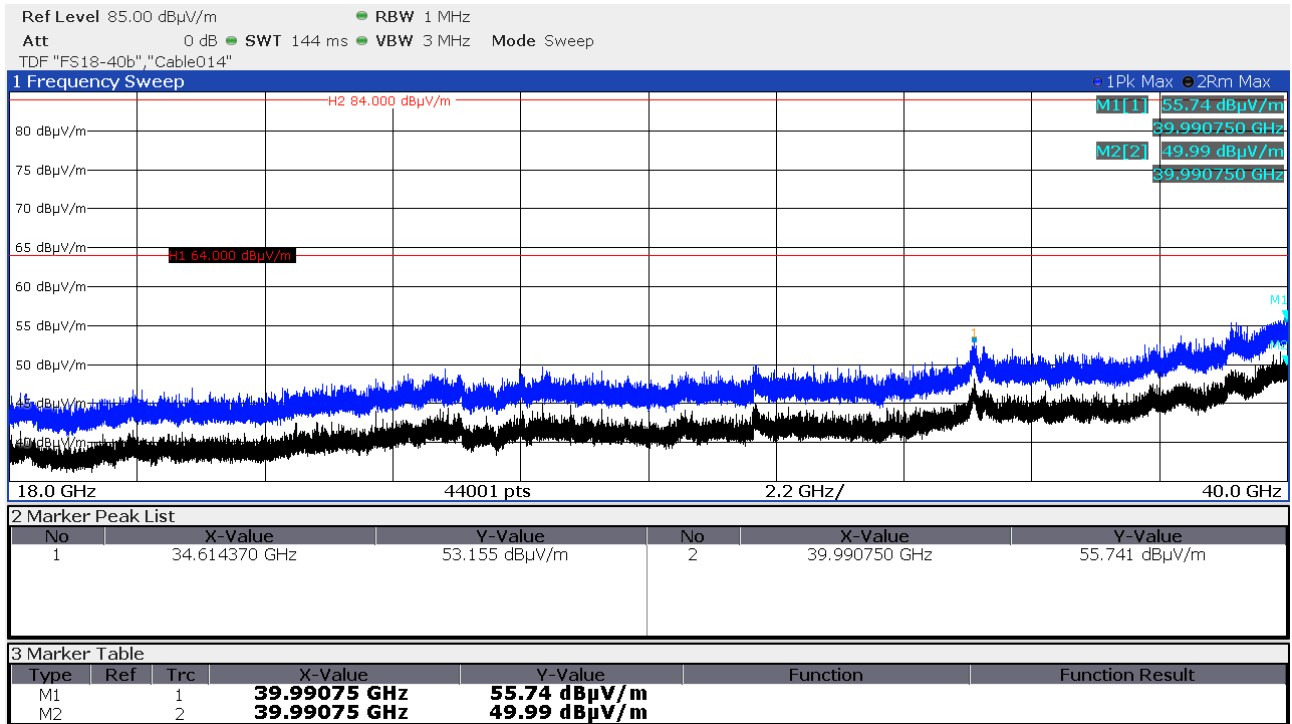


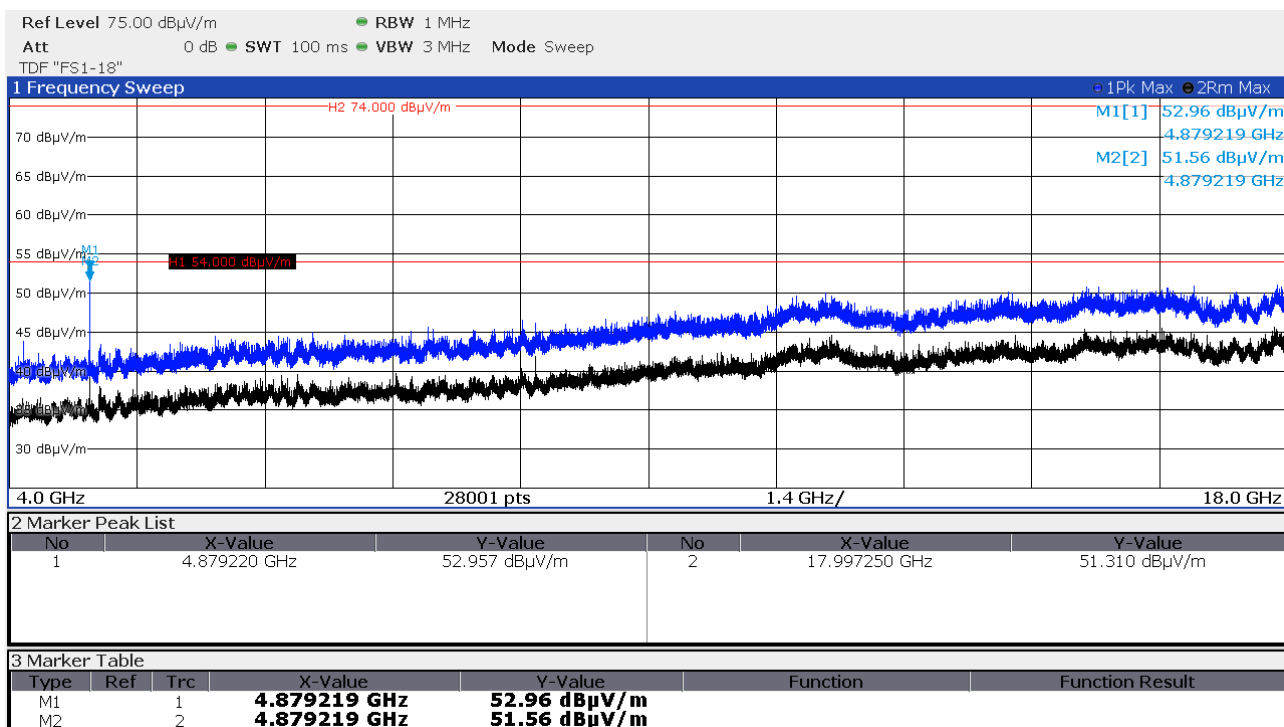
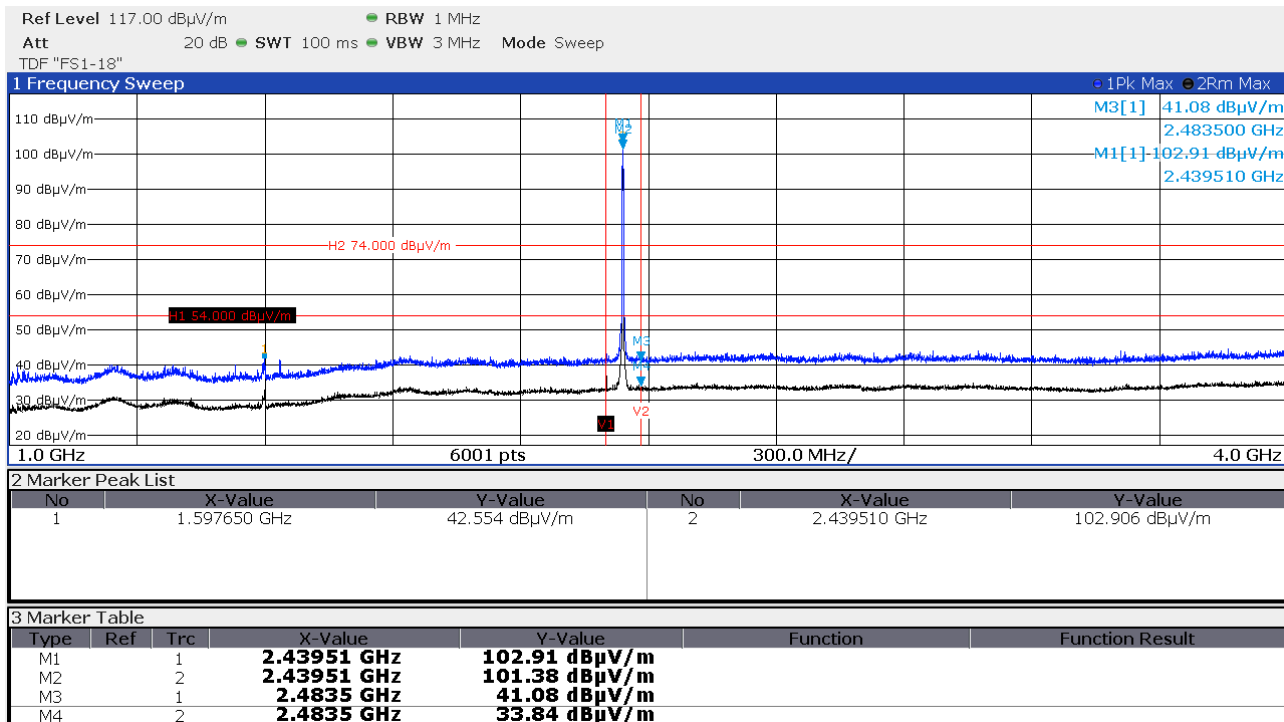
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IC: 5228A-PR5XM

Data rate 1 Mbps, CH37 (2402 MHz) vertical polarisation, EUT-standing:

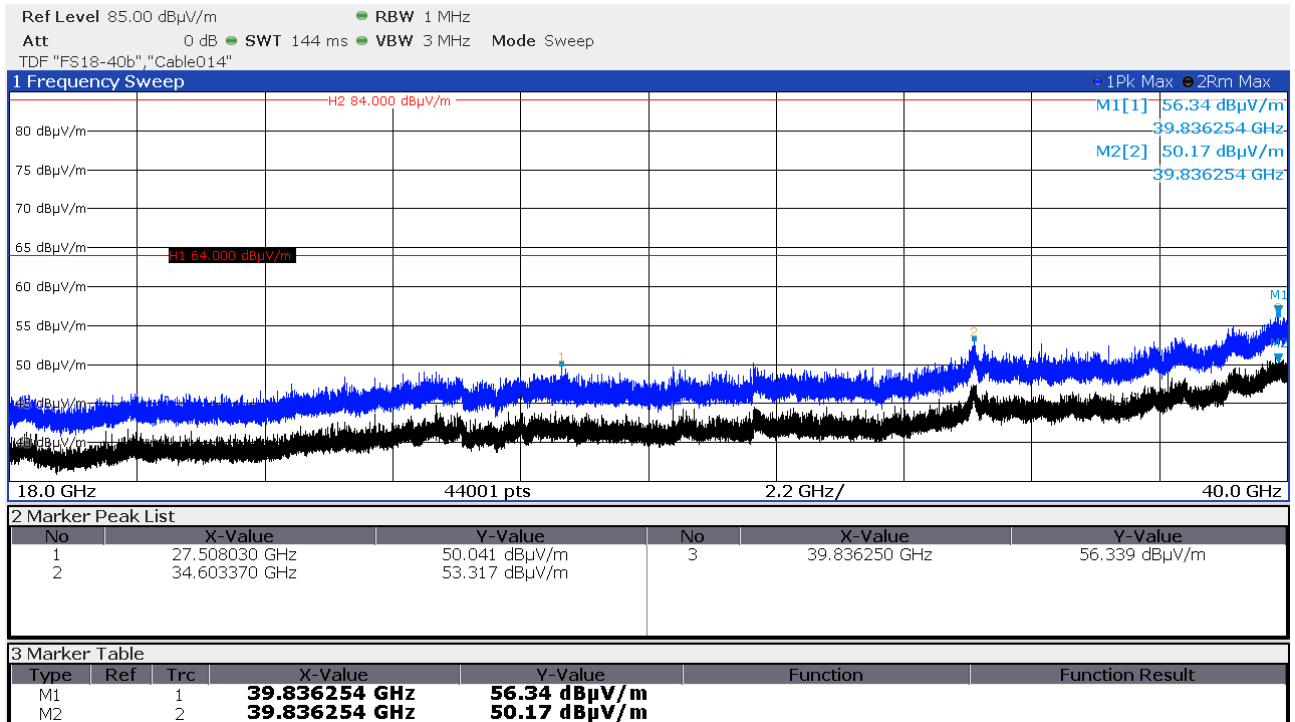


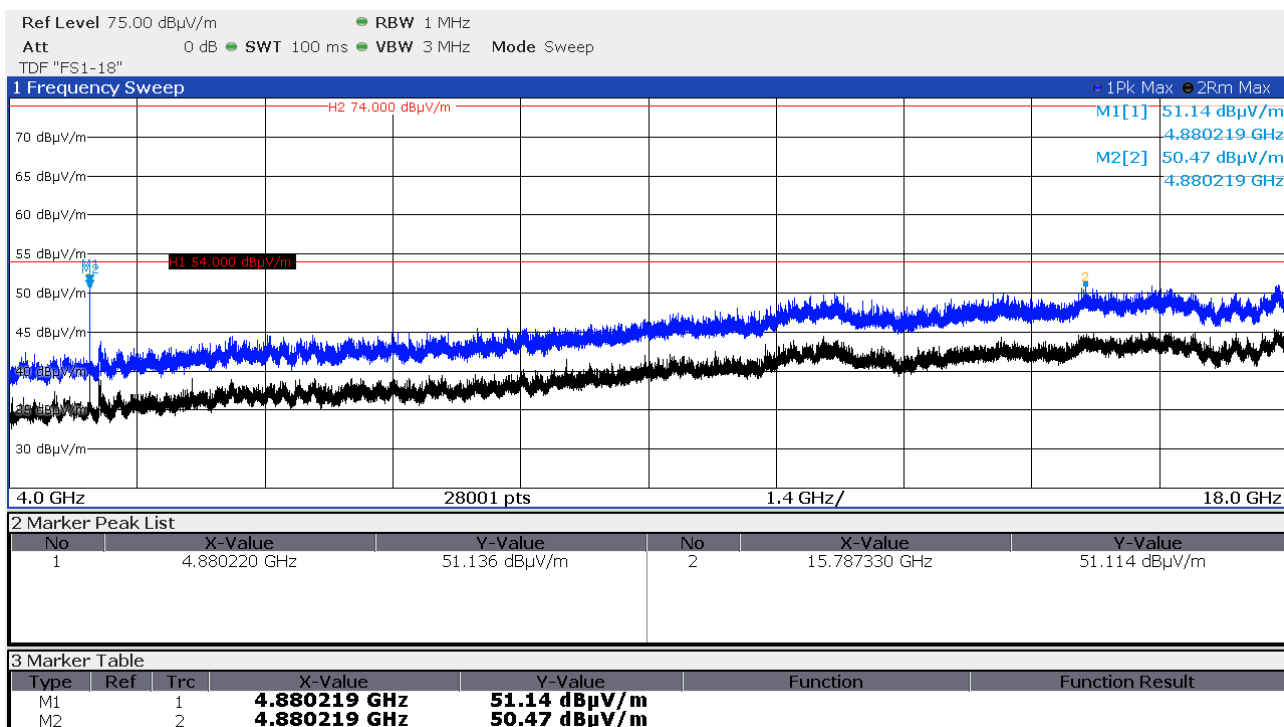
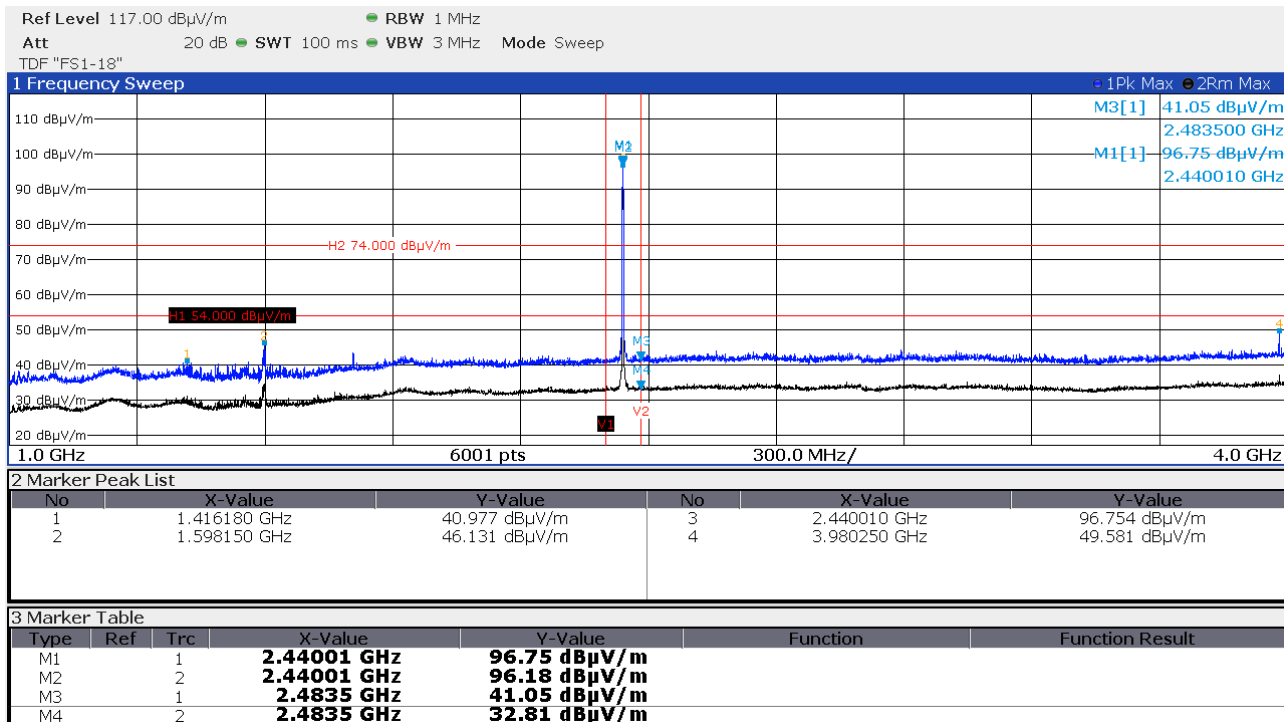
FCC ID: SDL-PR5XM
IC: 5228A-PR5XM


FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 1 Mbps, CH17 (2440 MHz) horizontal polarisation, EUT-lying:


FCC ID: SDL-PR5XM

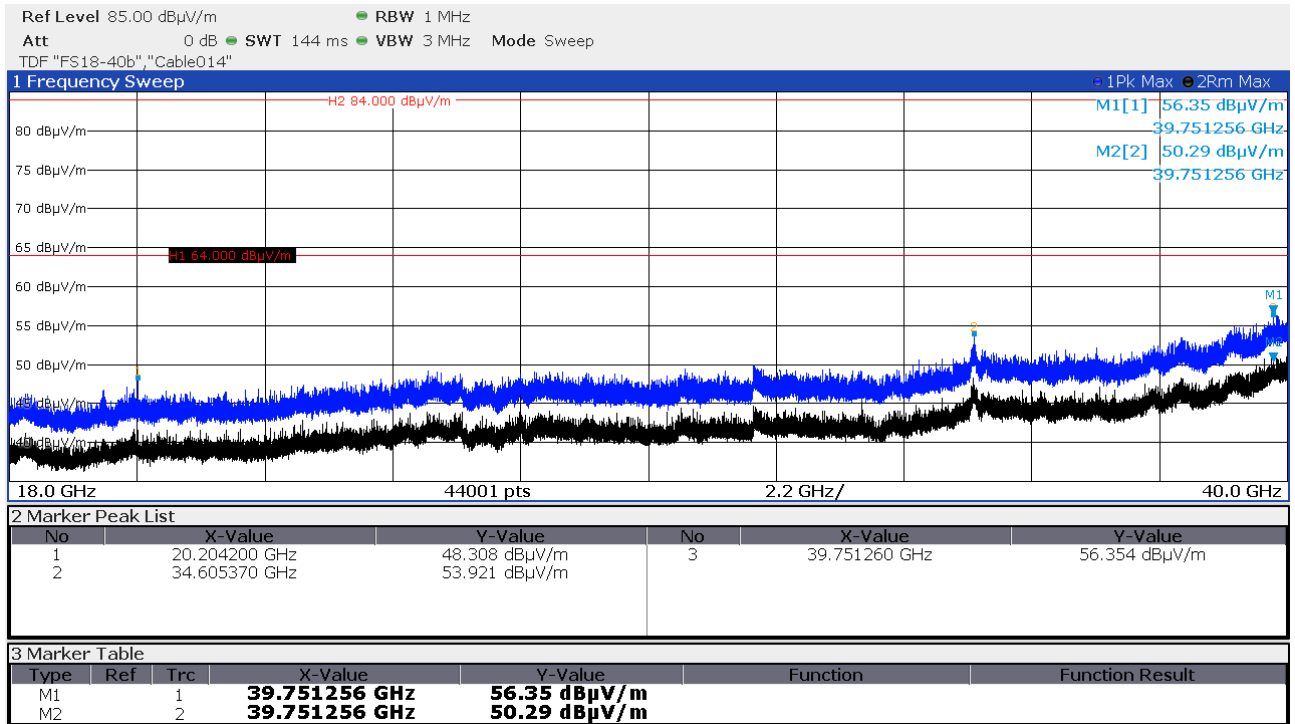
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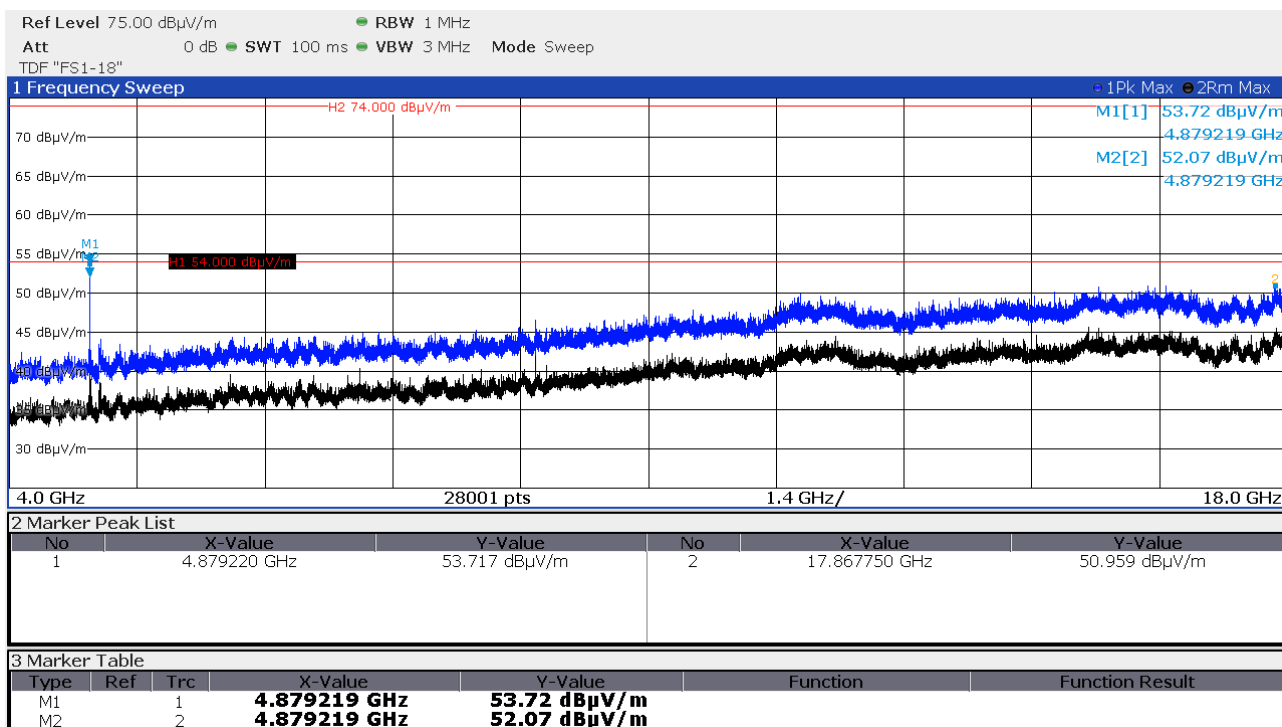
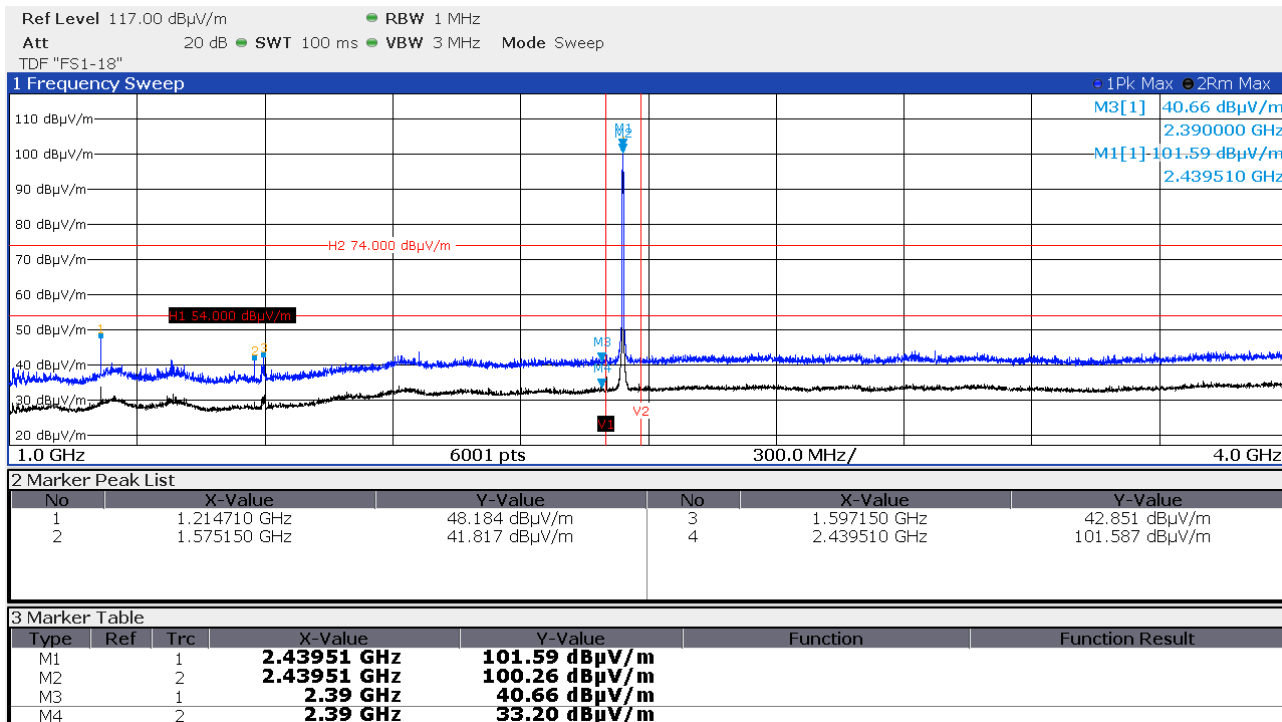


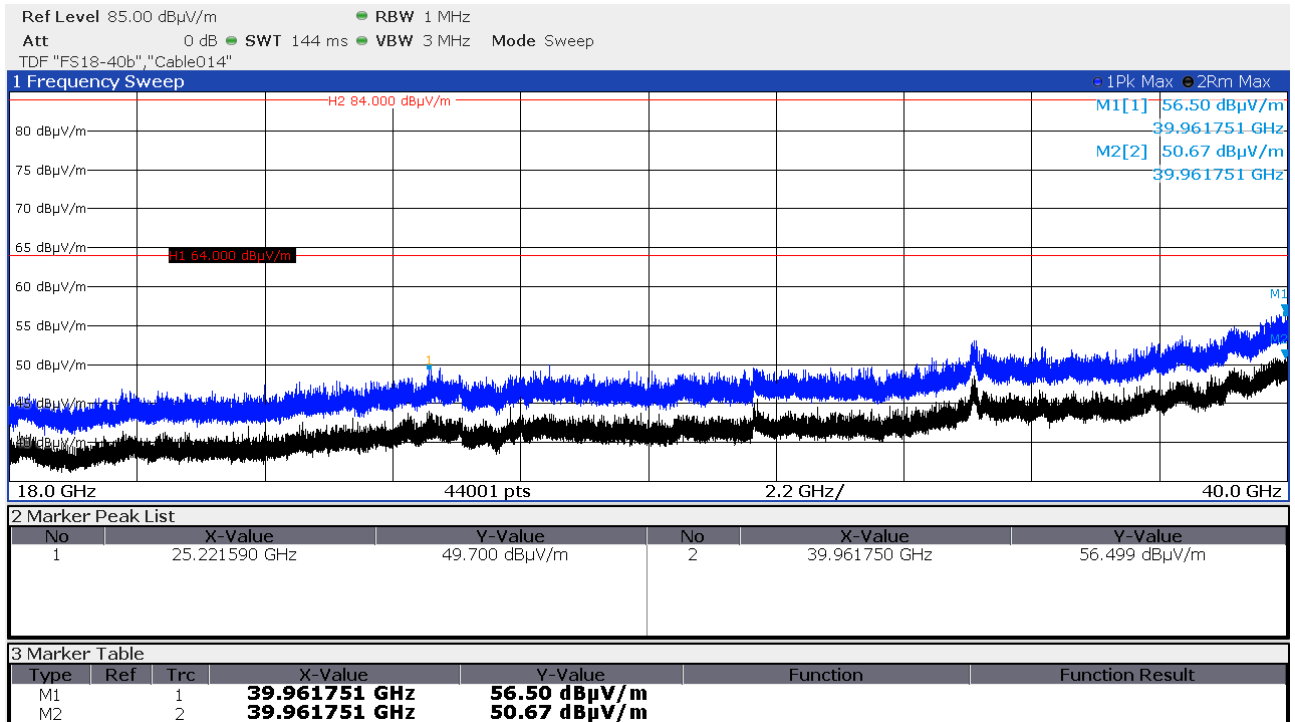
FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 1 Mbps, CH17 (2440 MHz) vertical polarisation, EUT-lying:


FCC ID: SDL-PR5XM

IC: 5228A-PR5XM



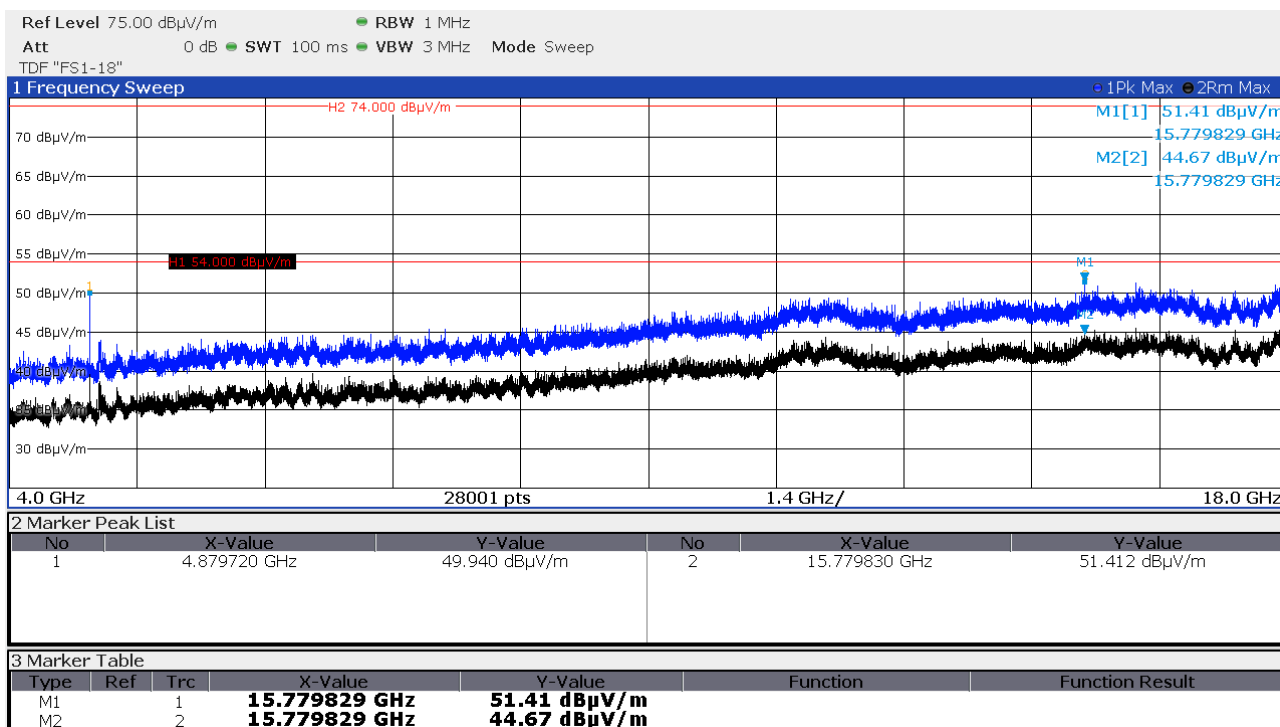
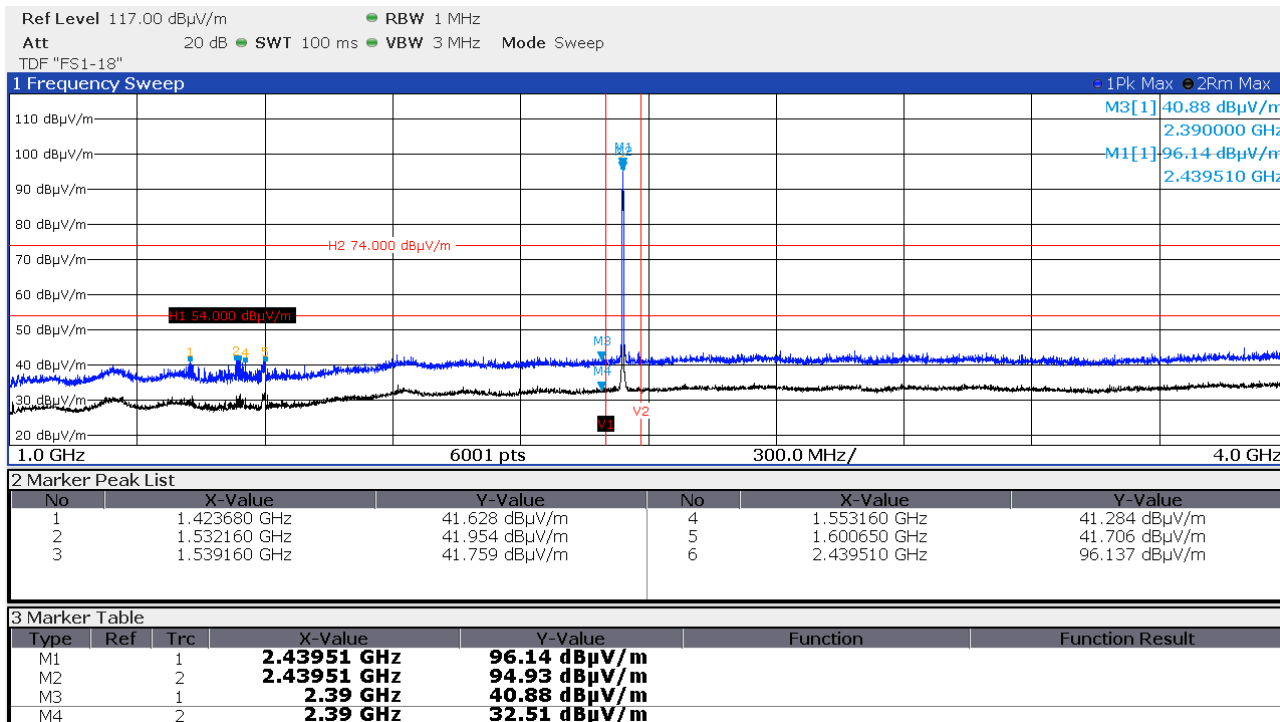
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FCC ID: SDL-PR5XM
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FCC ID: SDL-PR5XM

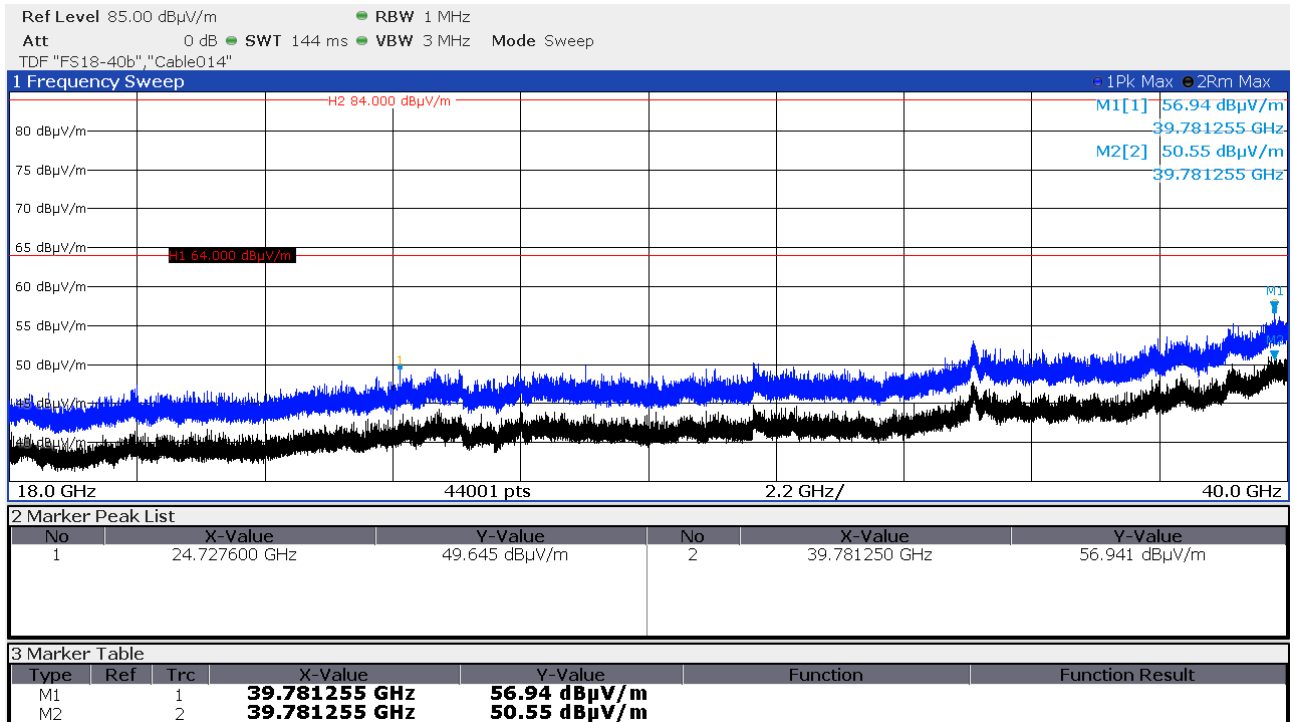
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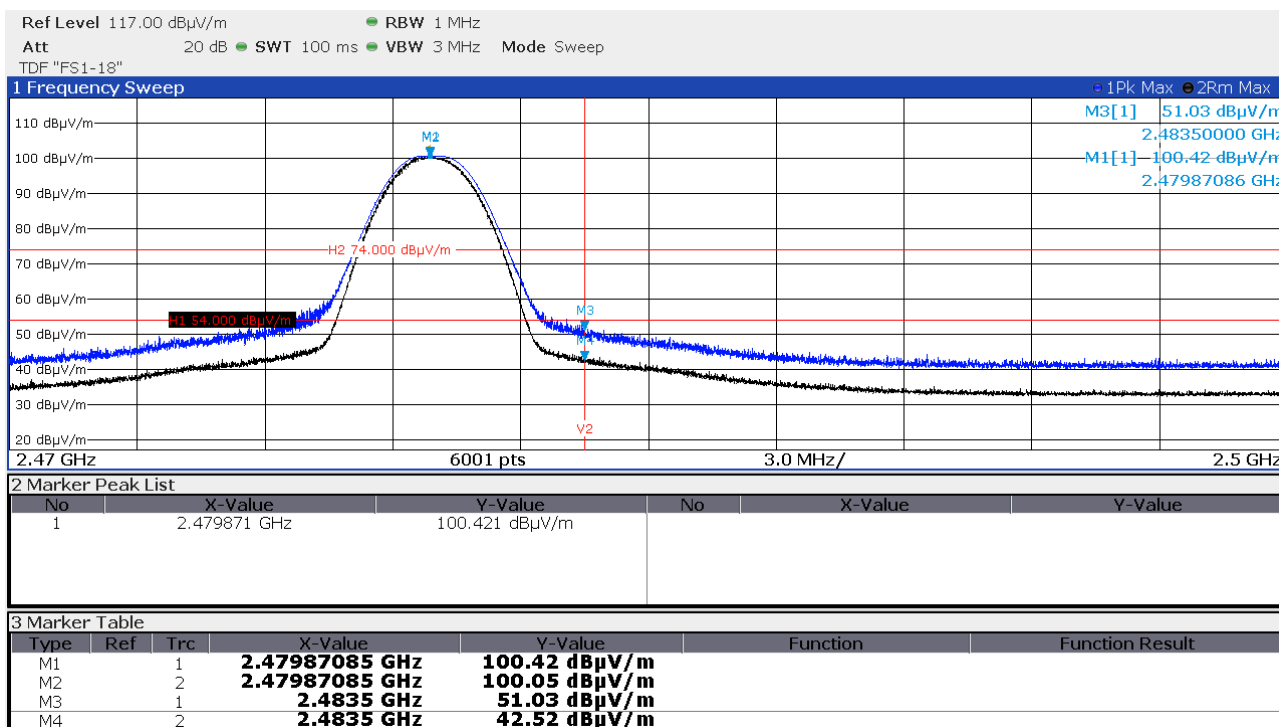
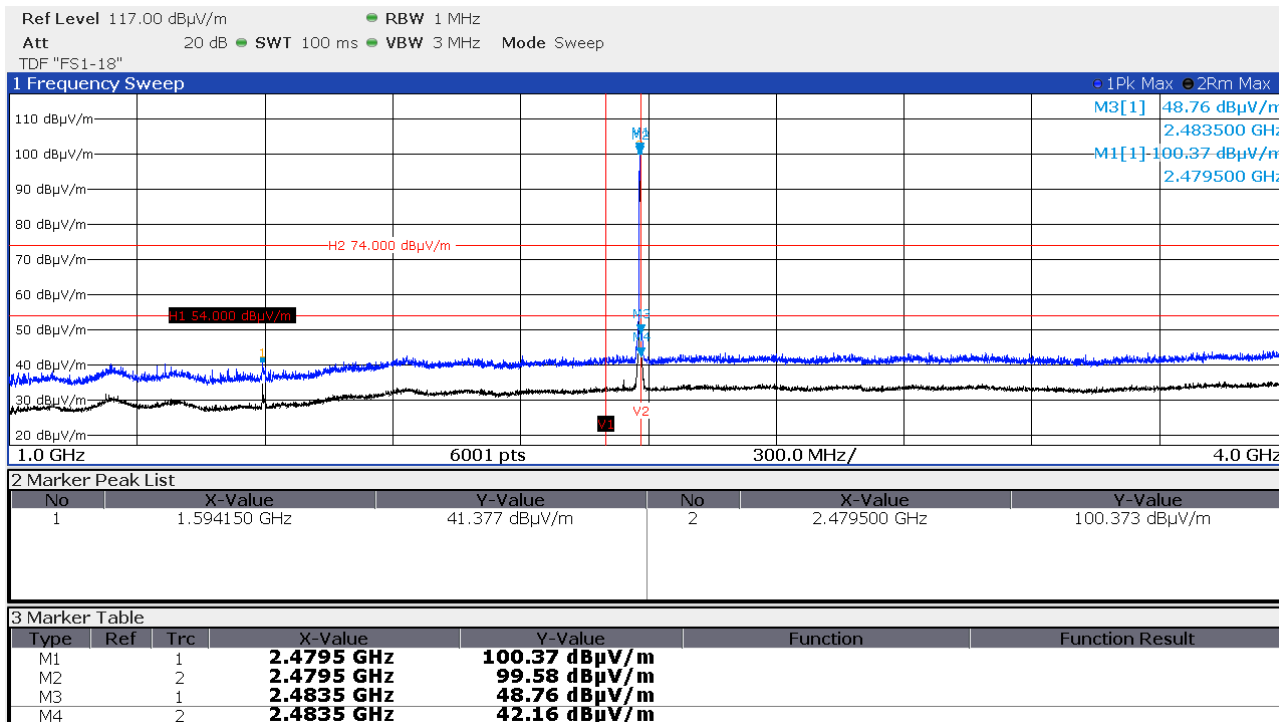
Data rate 1 Mbps, CH17 (2440 MHz) vertical polarisation, EUT-standing:



FCC ID: SDL-PR5XM

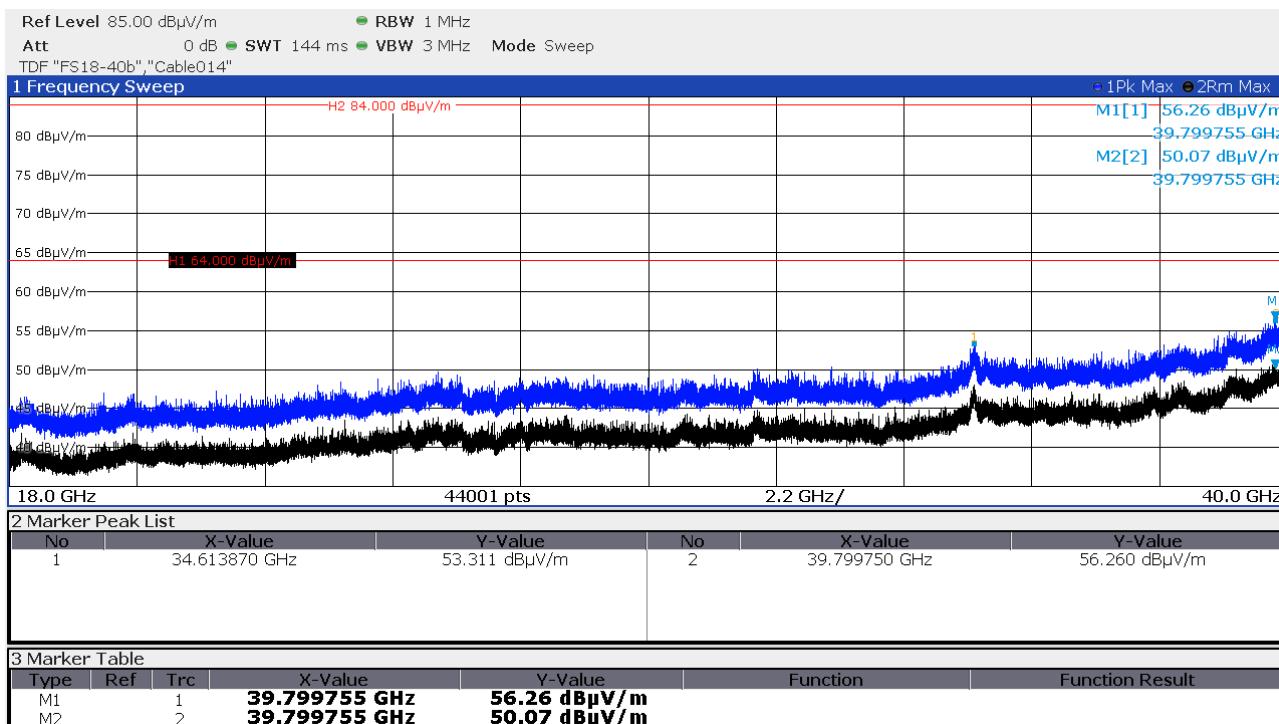
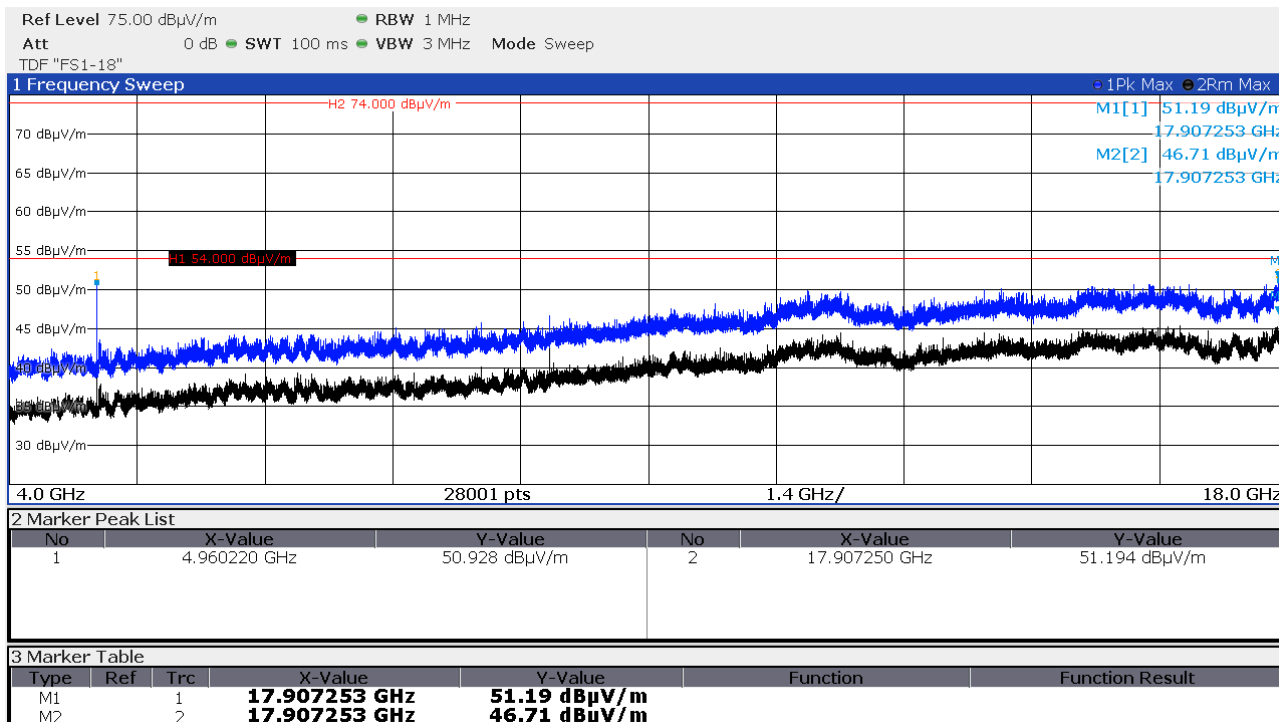
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 1 Mbps, CH39 (2480 MHz) horizontal polarisation, EUT-lying:


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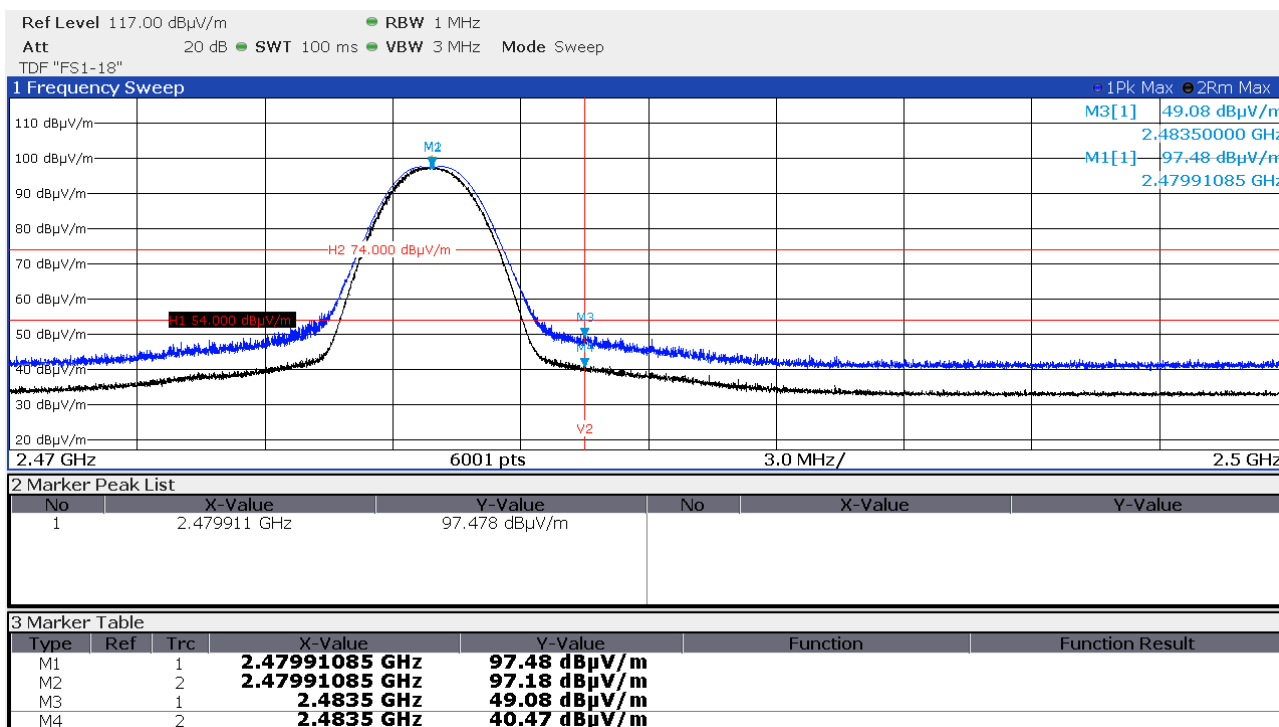
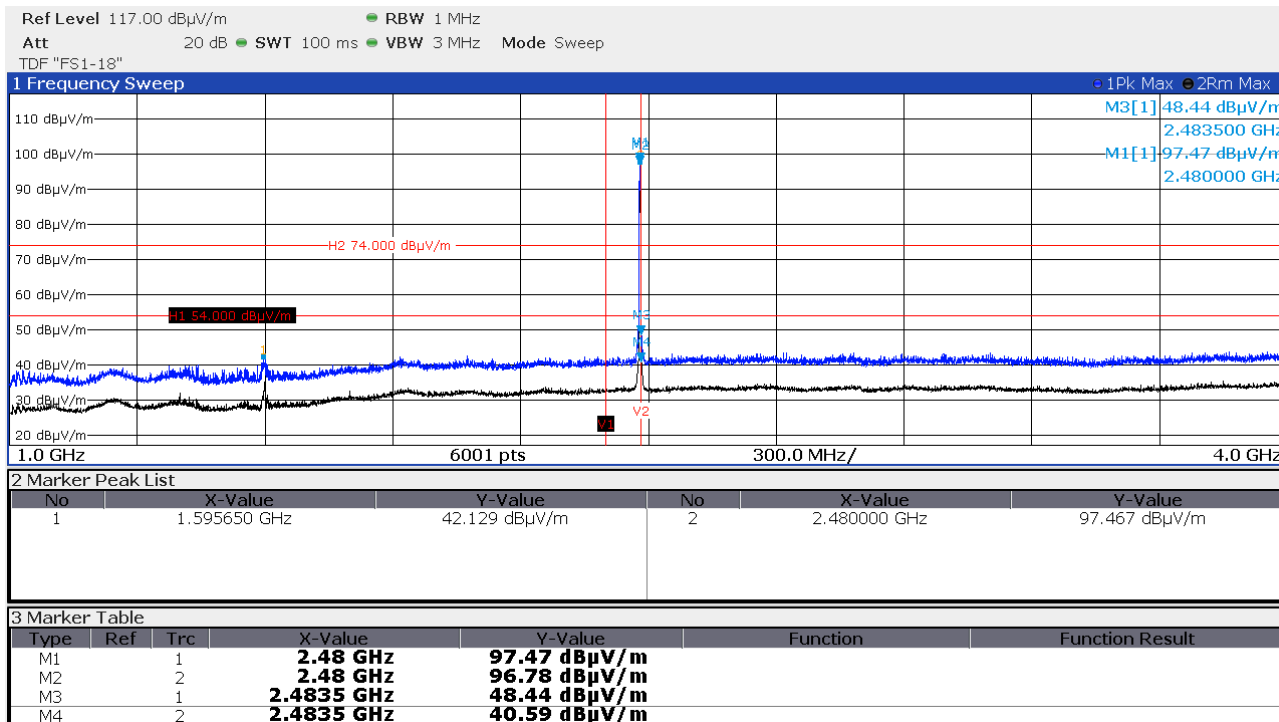
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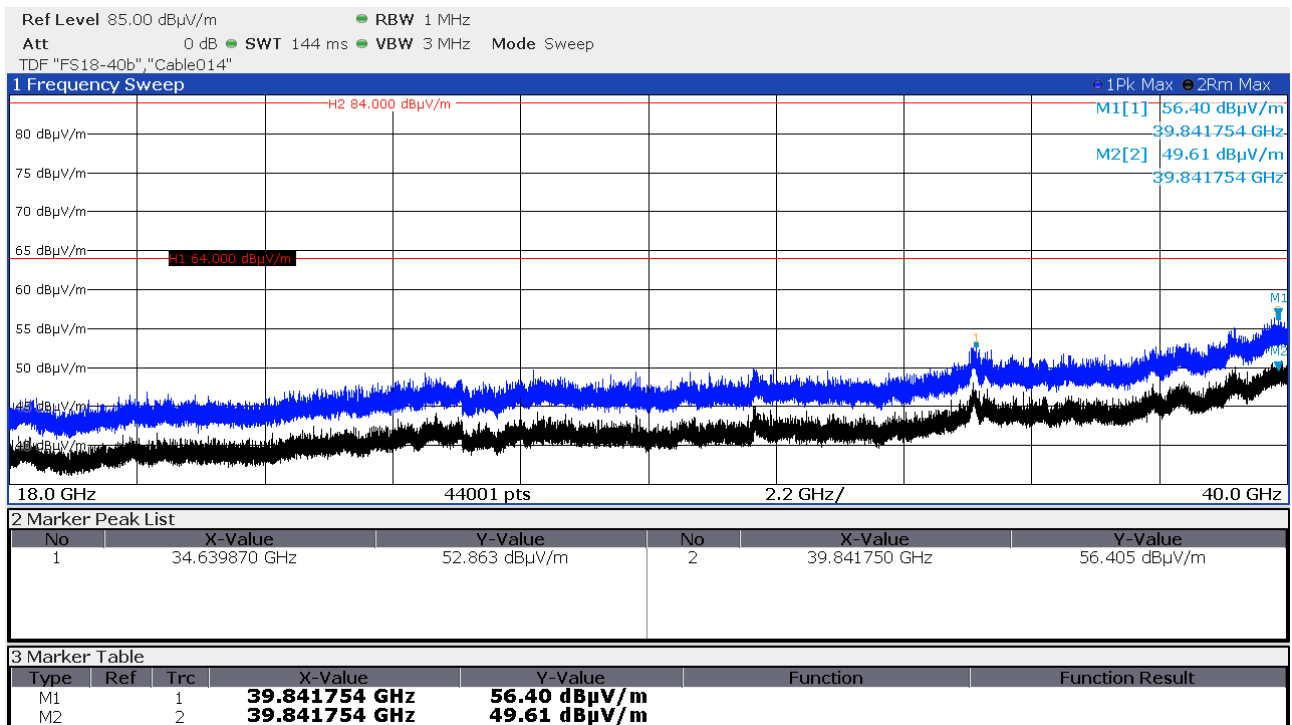
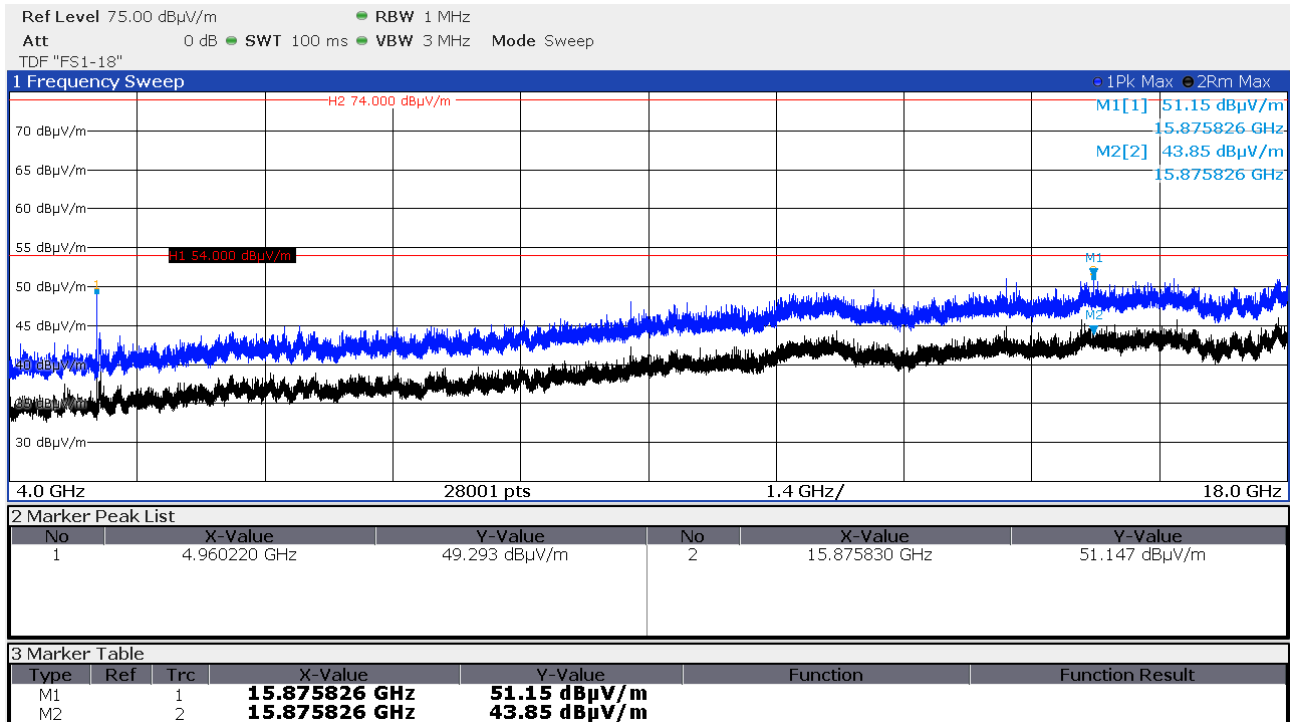
IC: 5228A-PR5XM

Data rate 1 Mbps, CH39 (2480 MHz) vertical polarisation, EUT-lying:



FCC ID: SDL-PR5XM

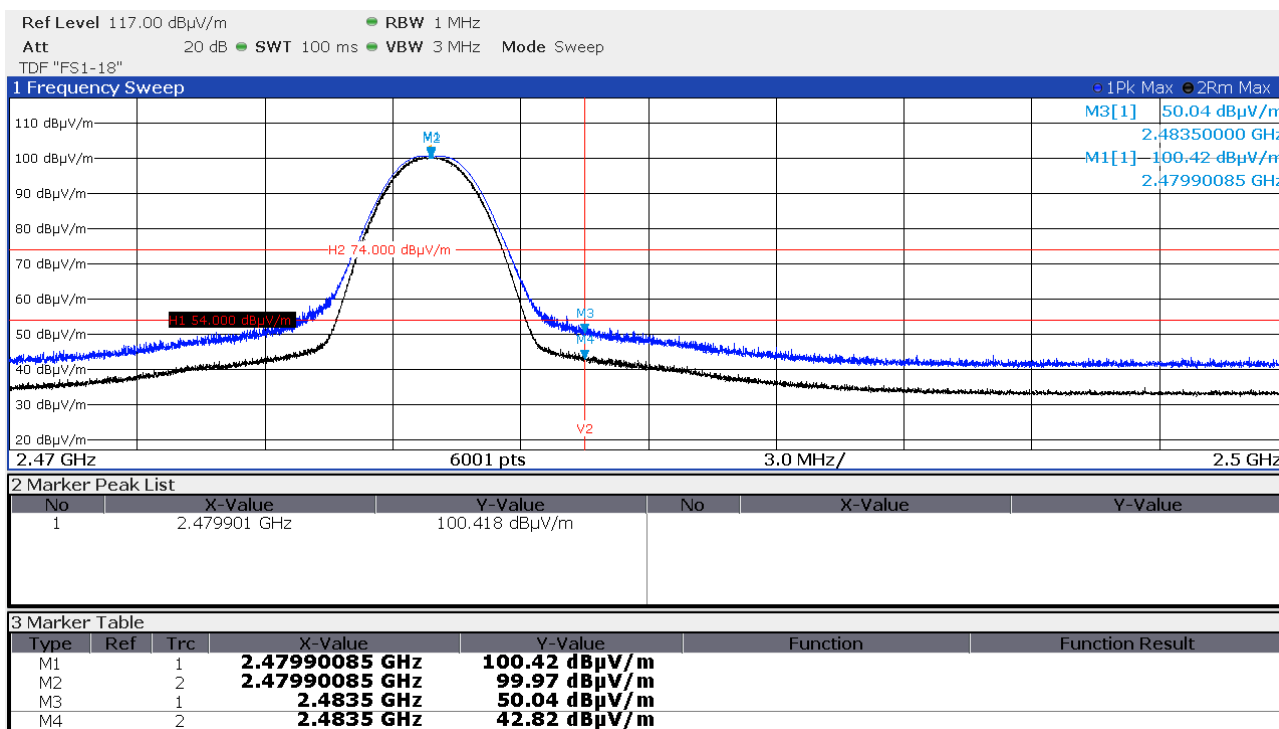
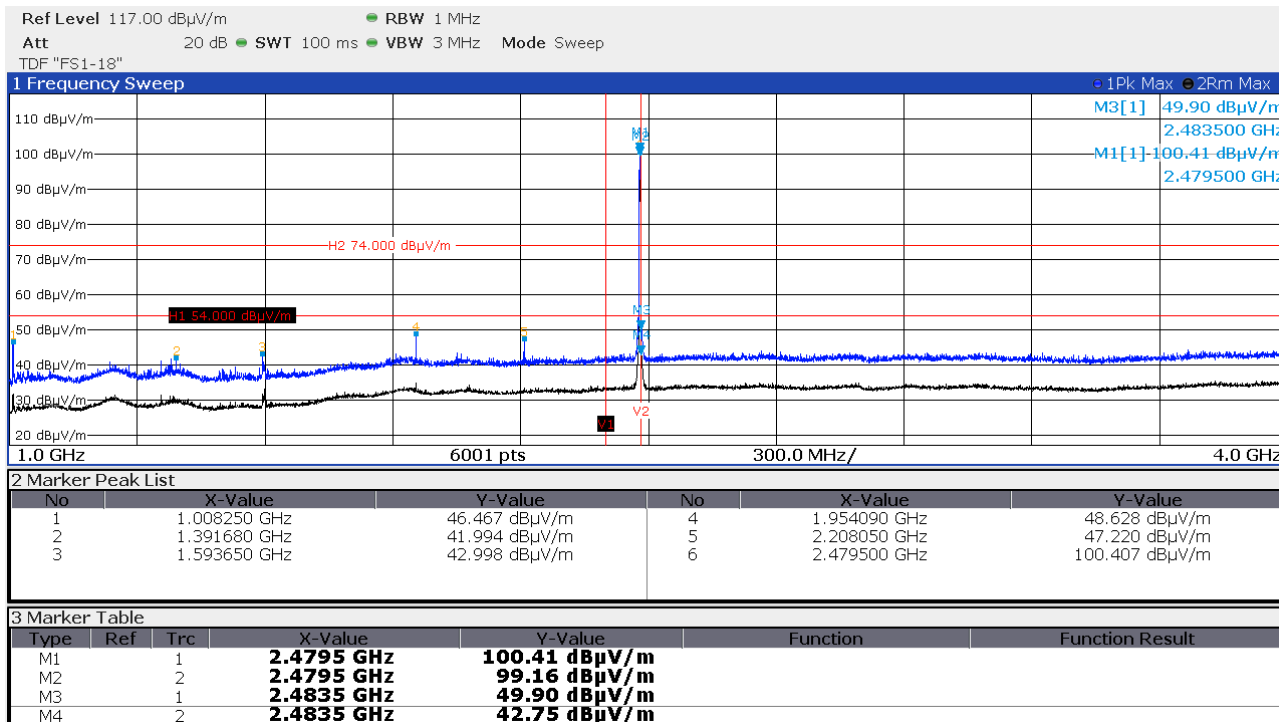
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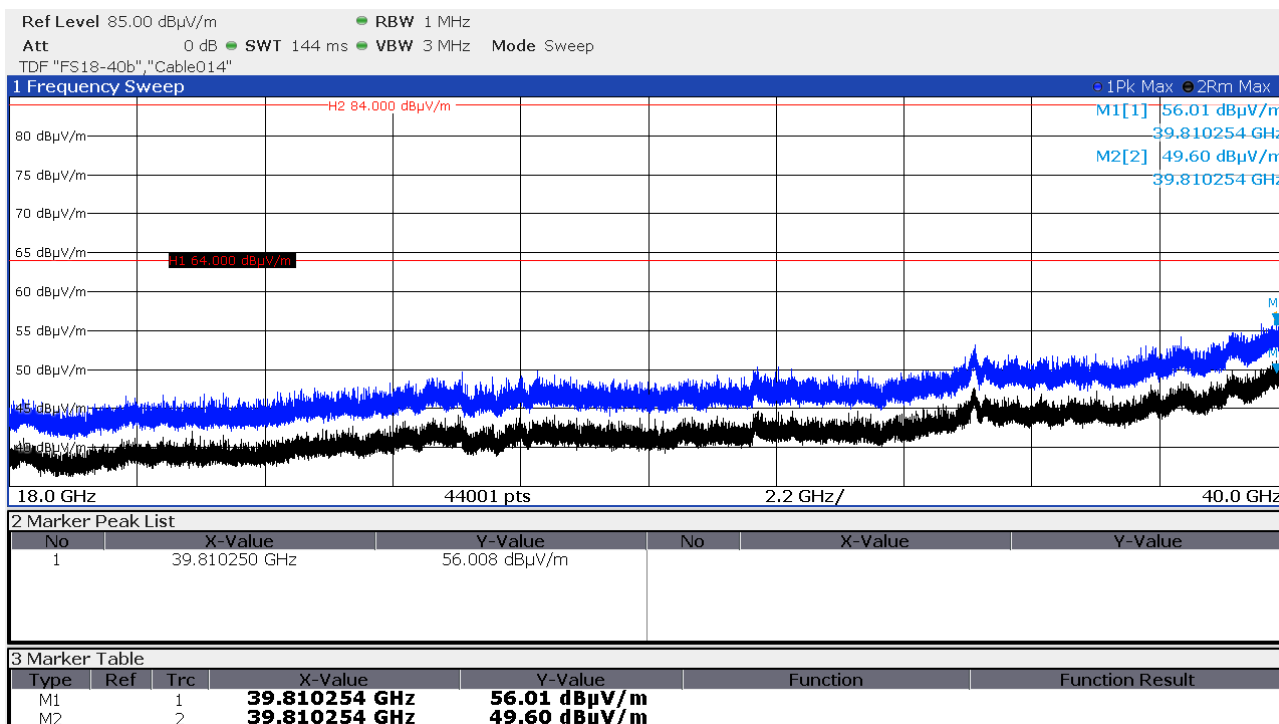
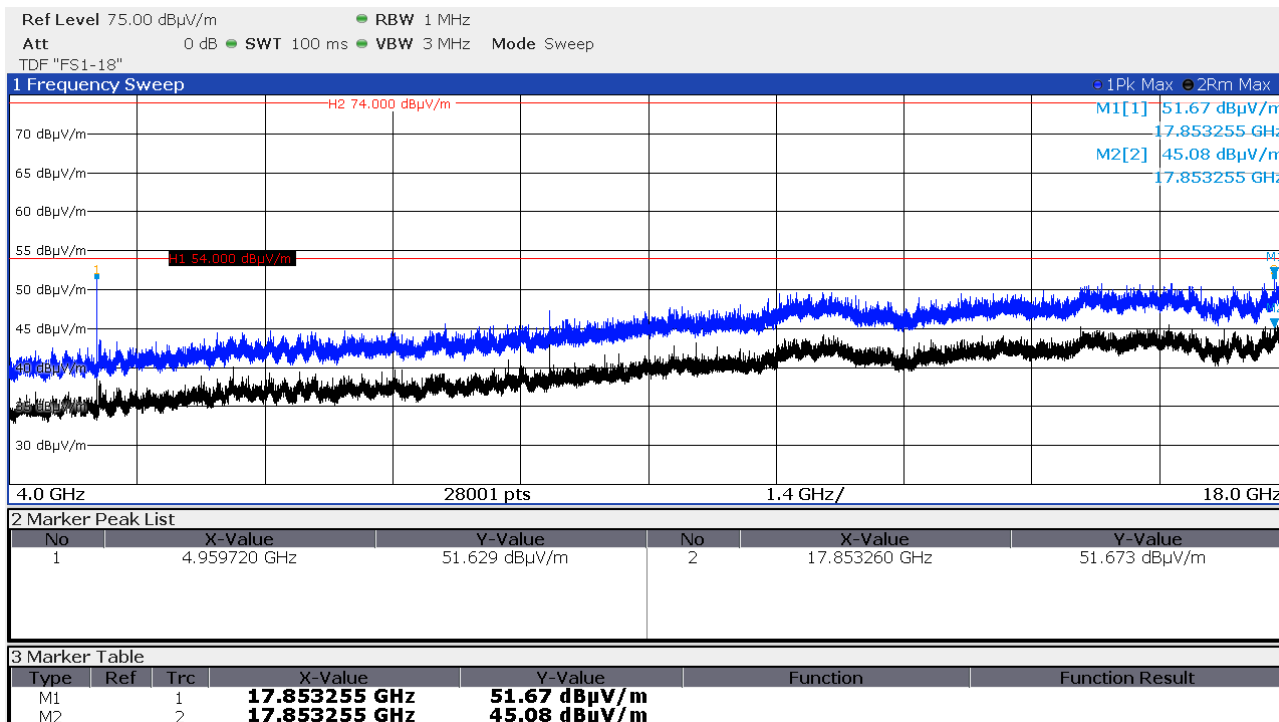
IC: 5228A-PR5XM

Data rate 1 Mbps, CH39 (2480 MHz) horizontal polarisation, EUT-standing:



FCC ID: SDL-PR5XM

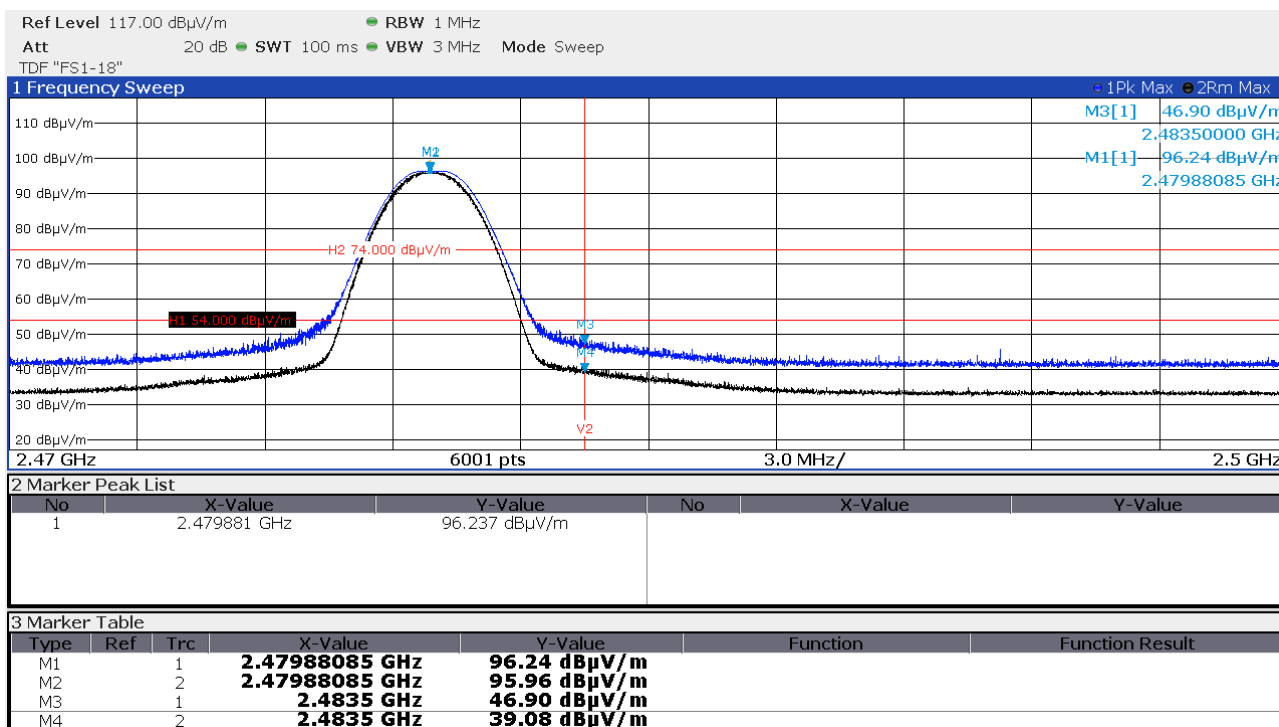
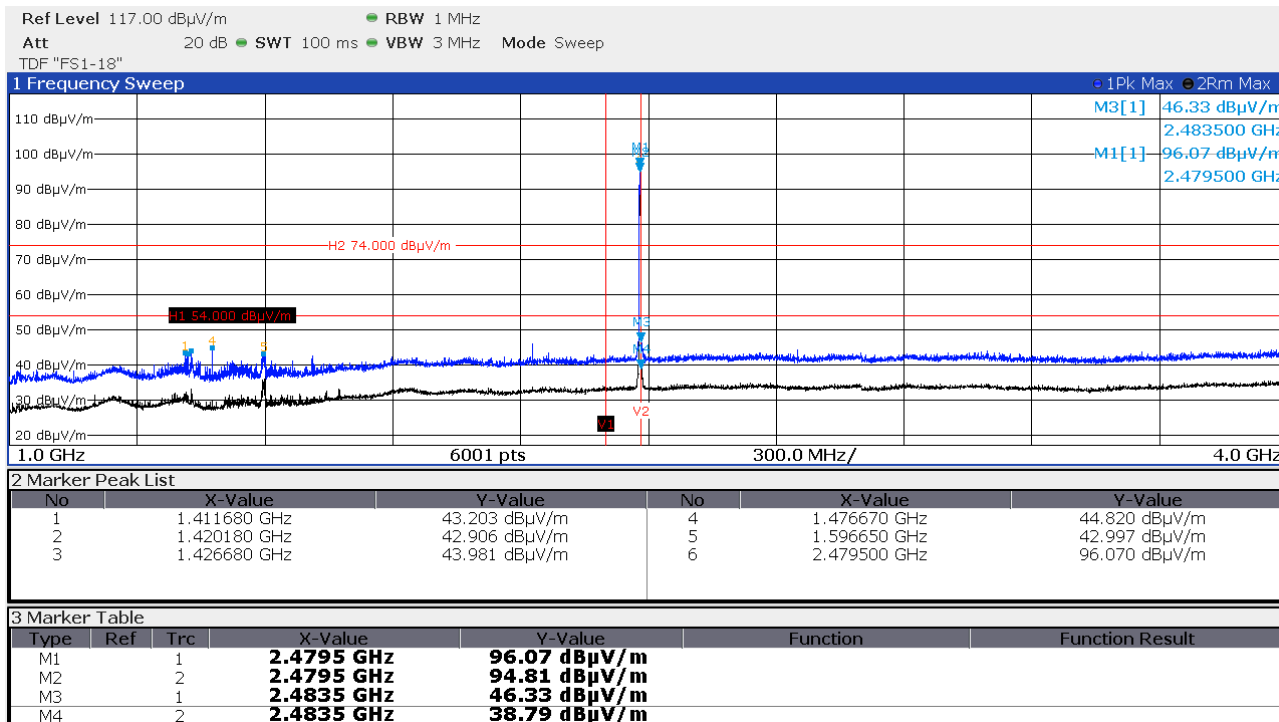
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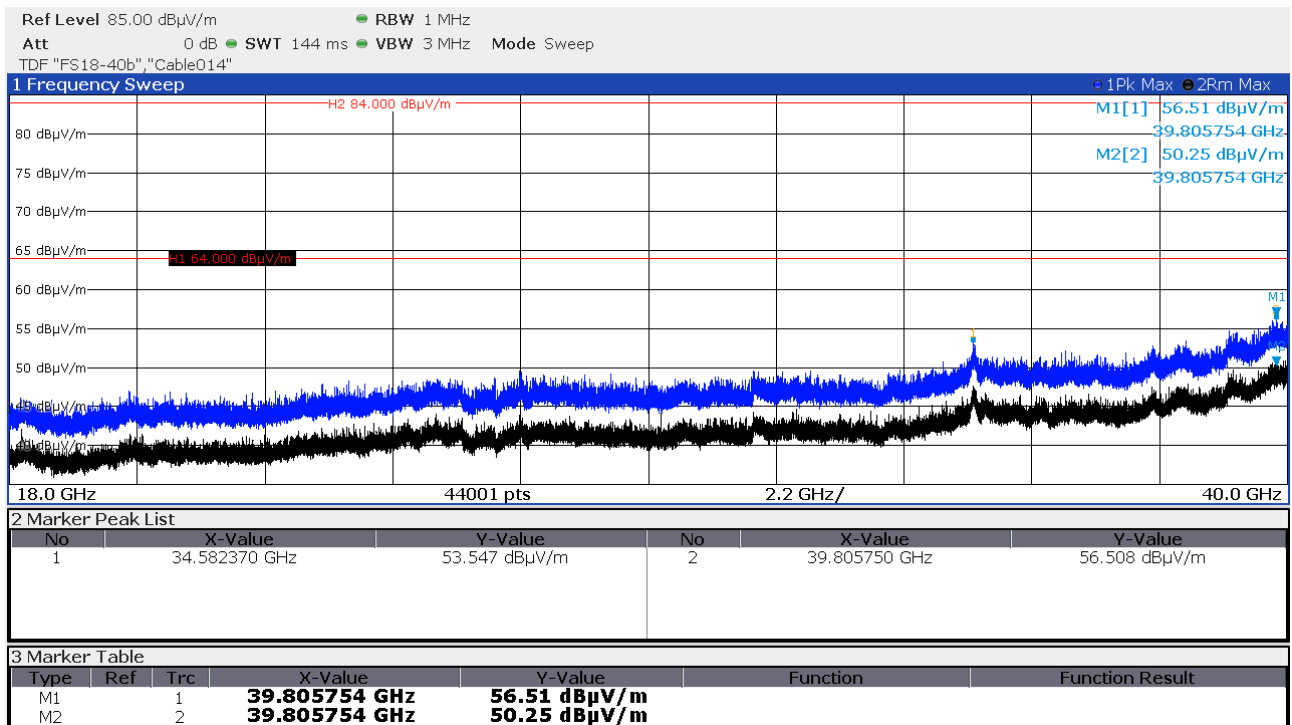
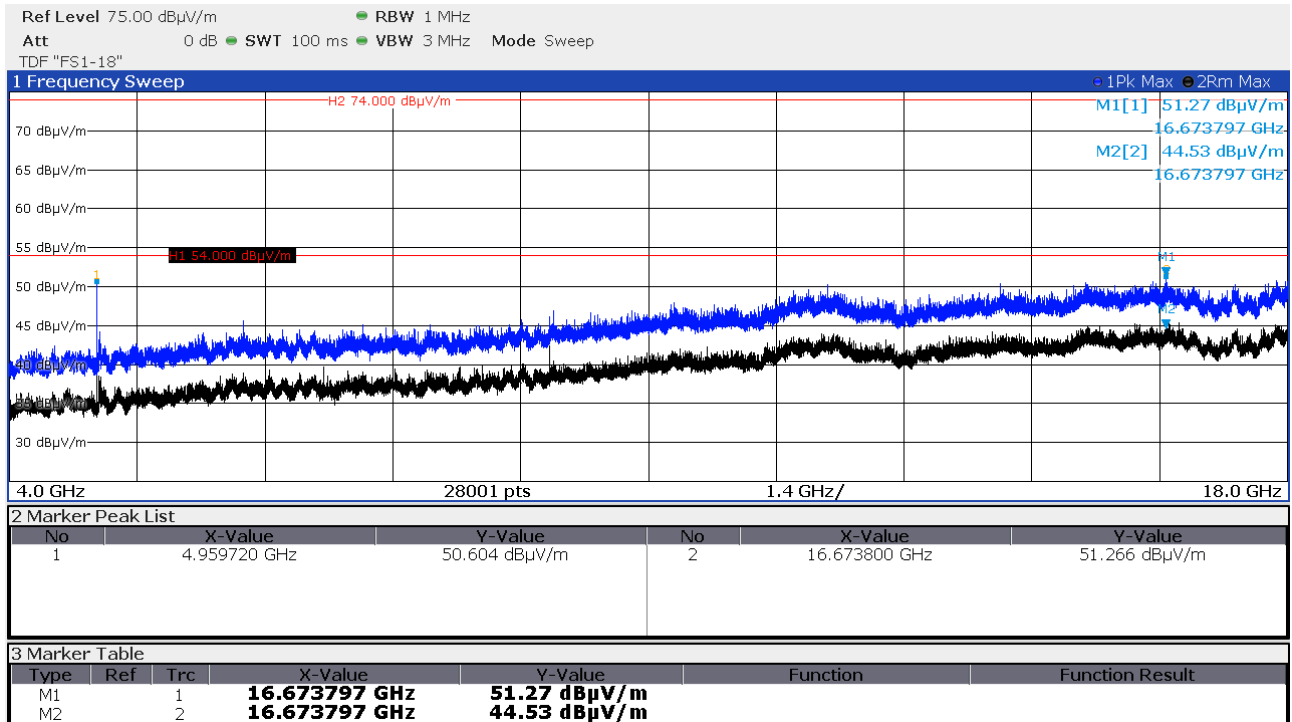
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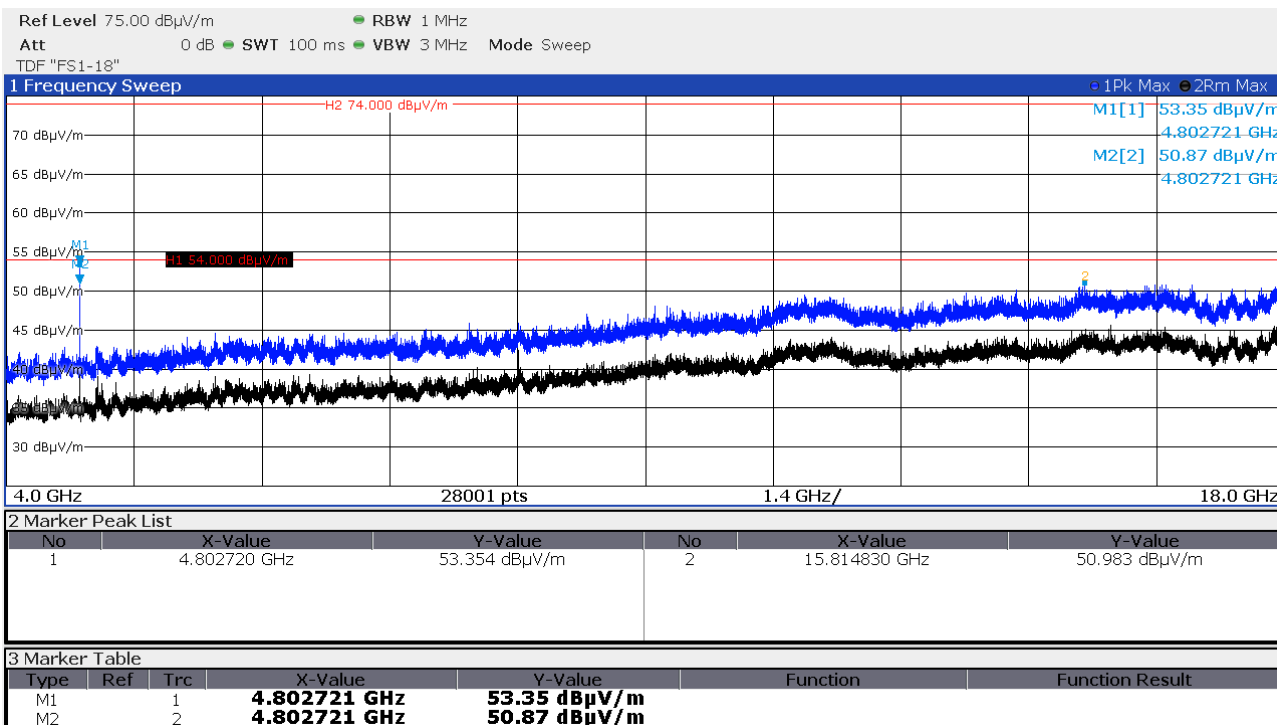
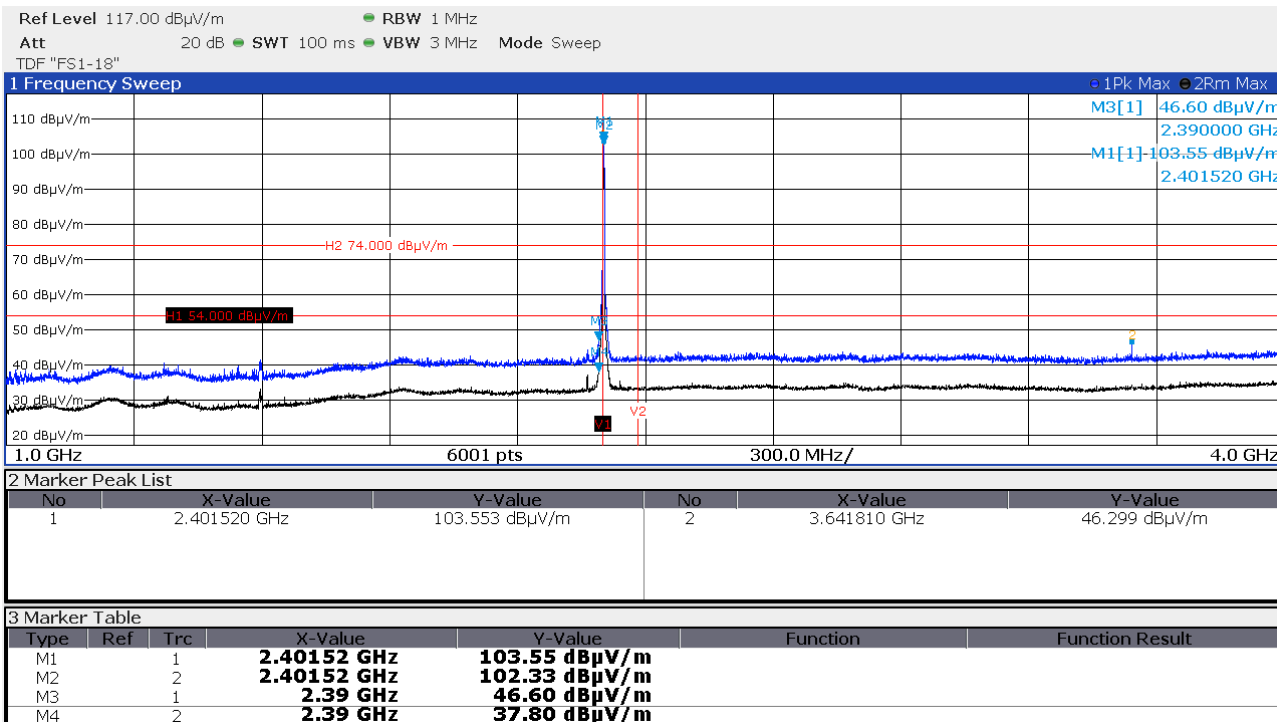
Data rate 1 Mbps, CH39 (2480 MHz) vertical polarisation, EUT-standing:



FCC ID: SDL-PR5XM

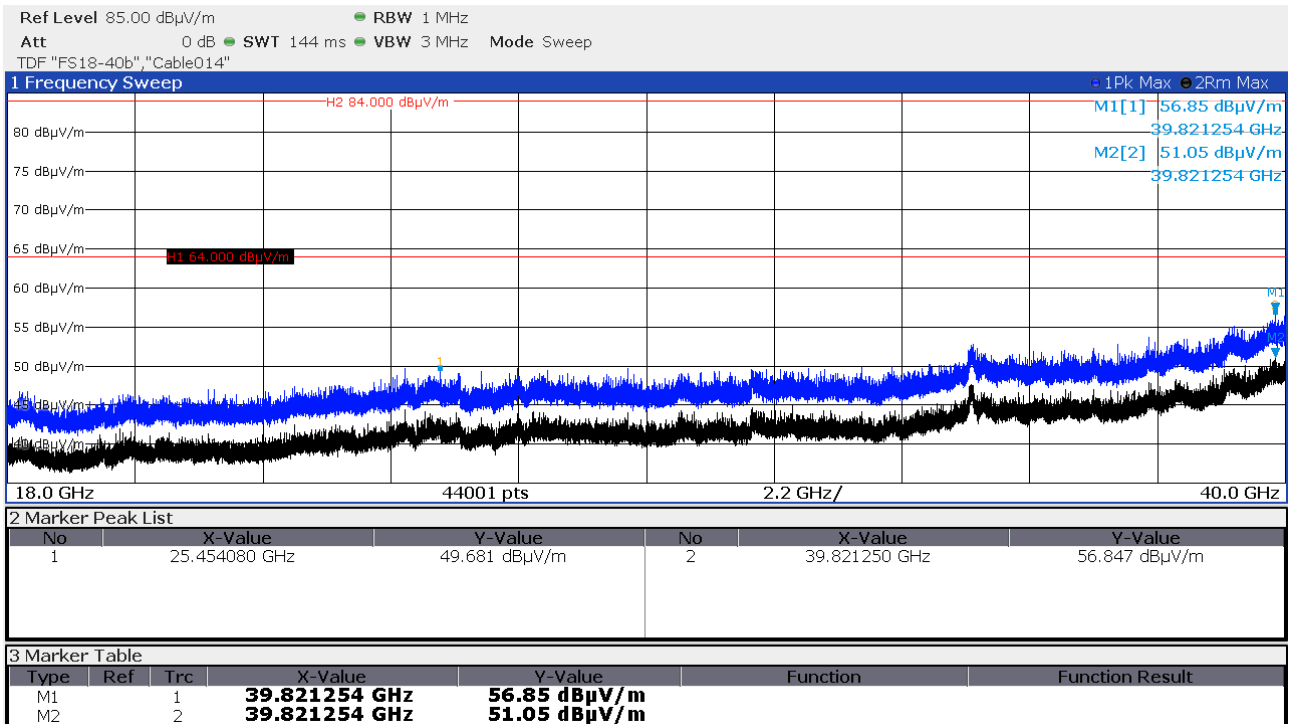
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 2 Mbps, CH37 (2402 MHz) horizontal polarisation, EUT-lying:


FCC ID: SDL-PR5XM

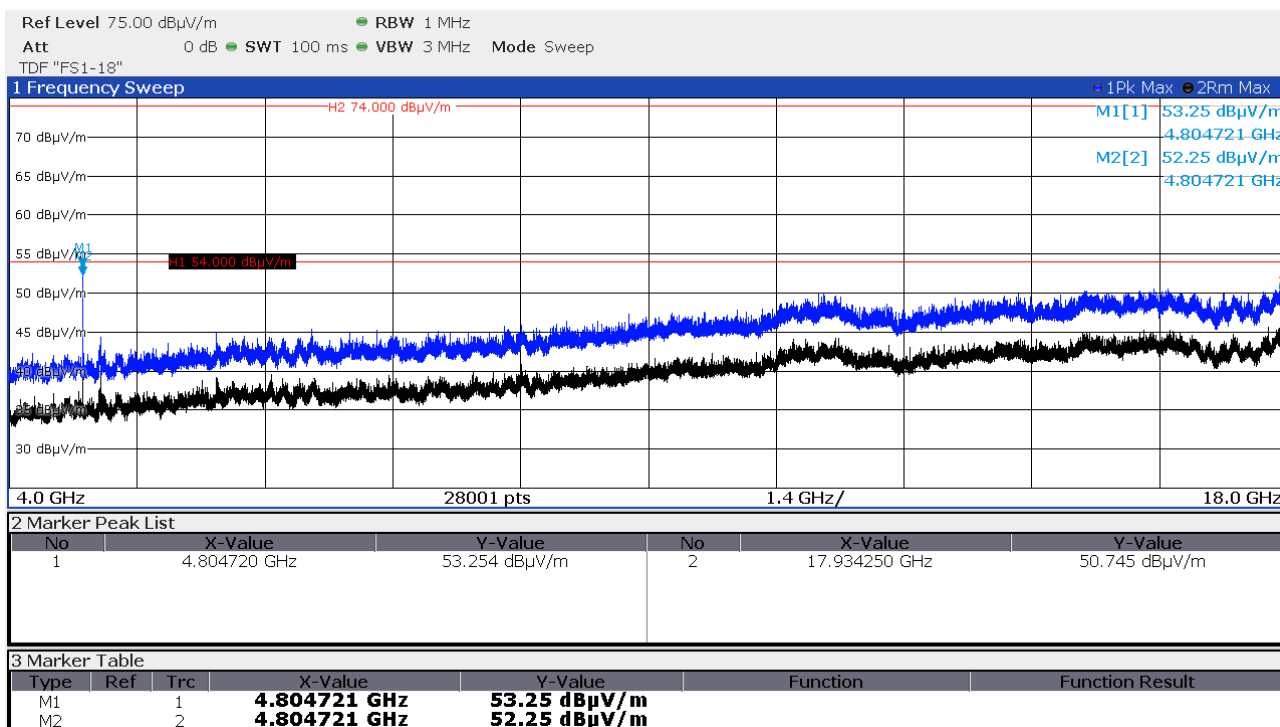
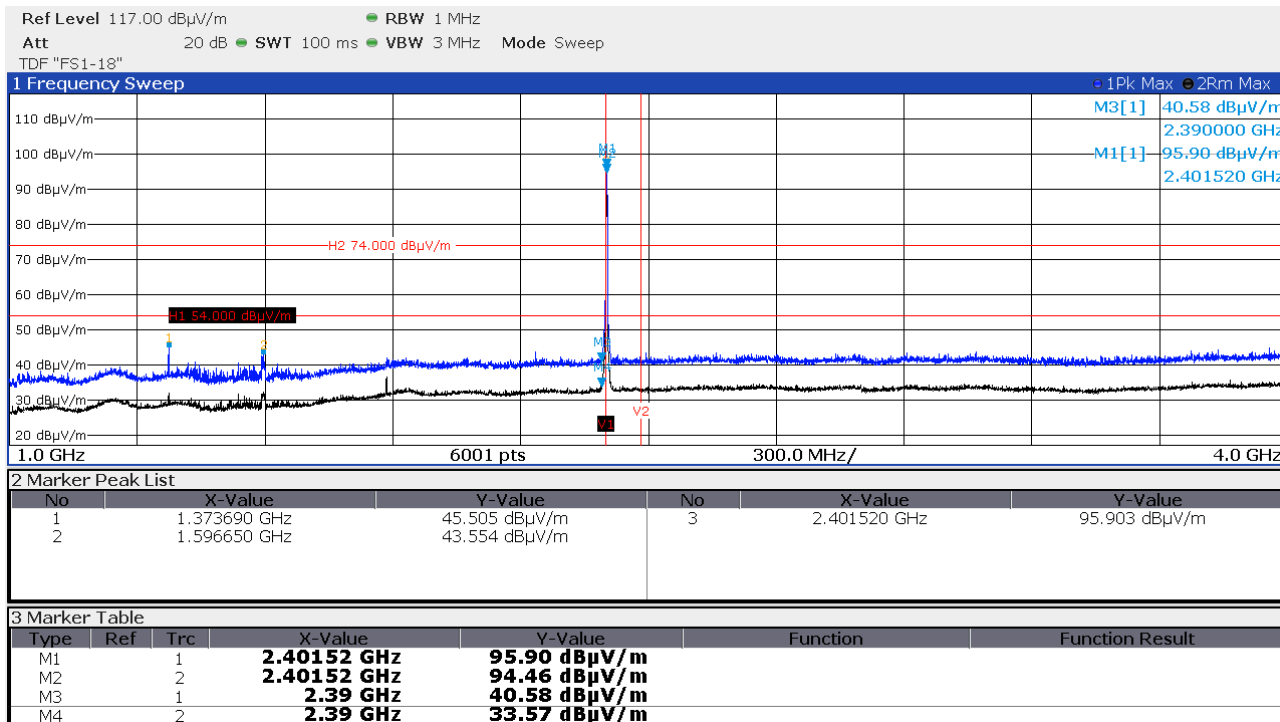
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM

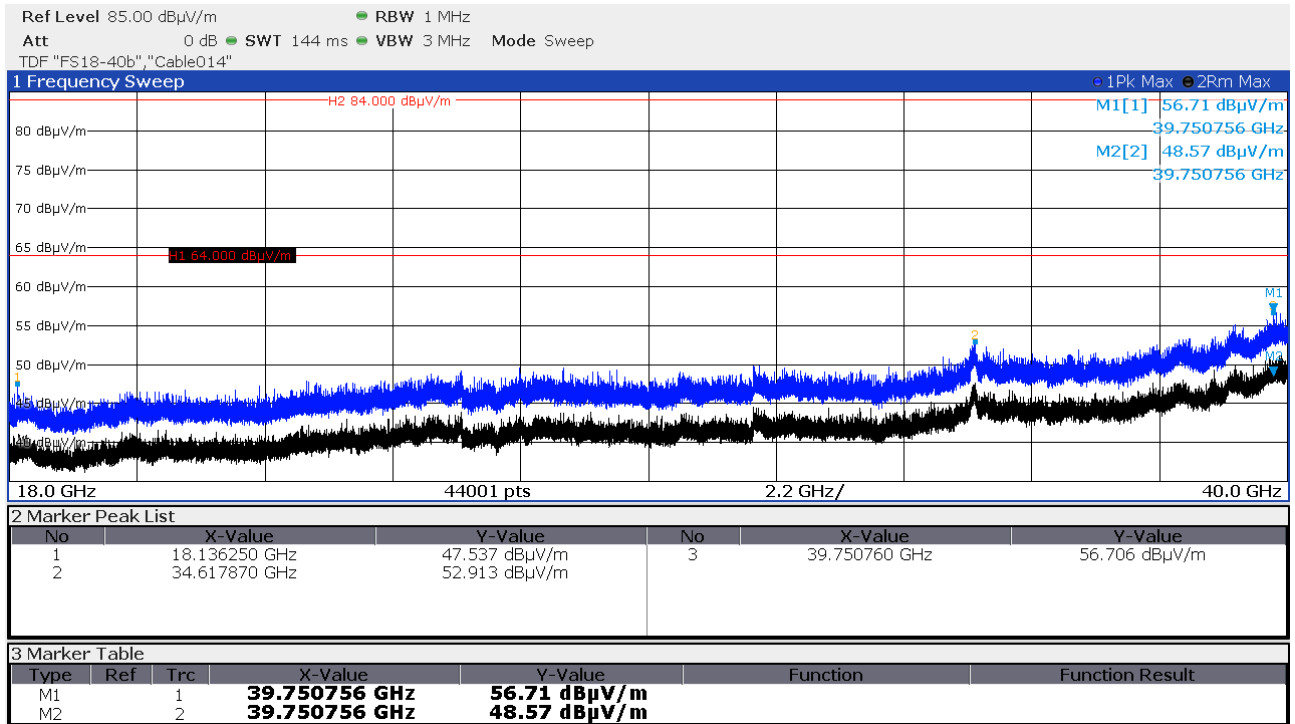
IC: 5228A-PR5XM

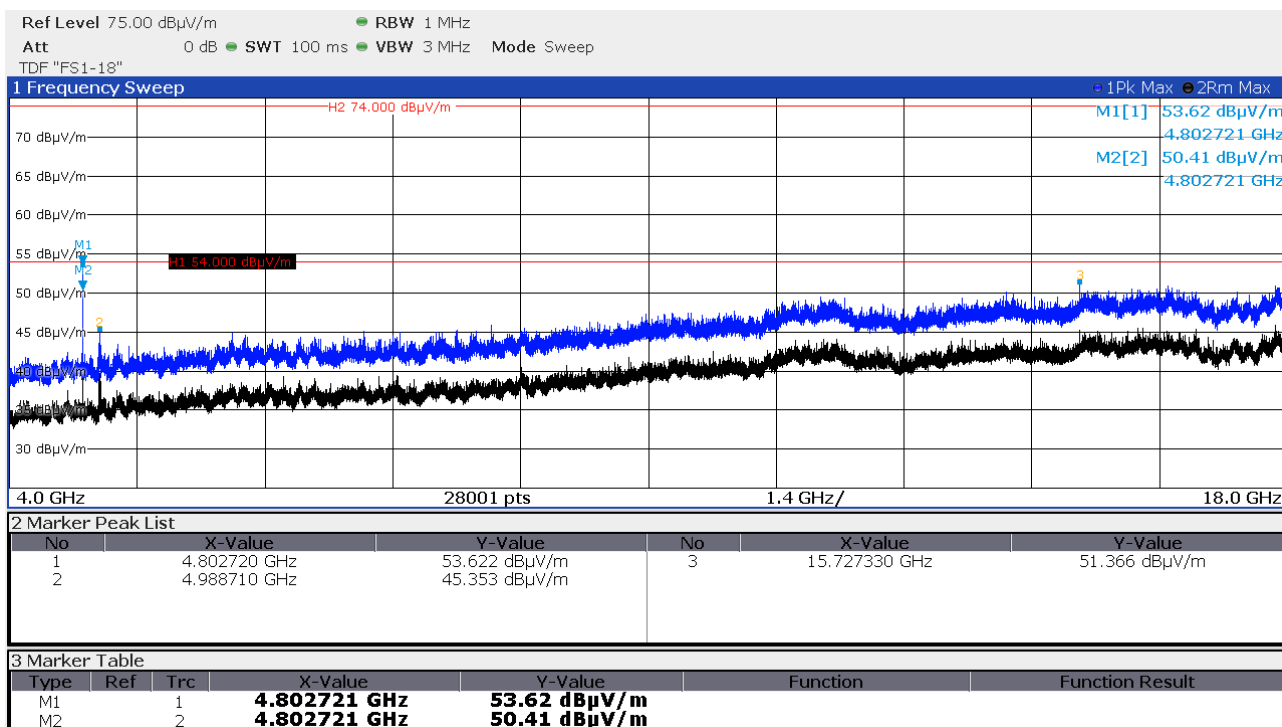
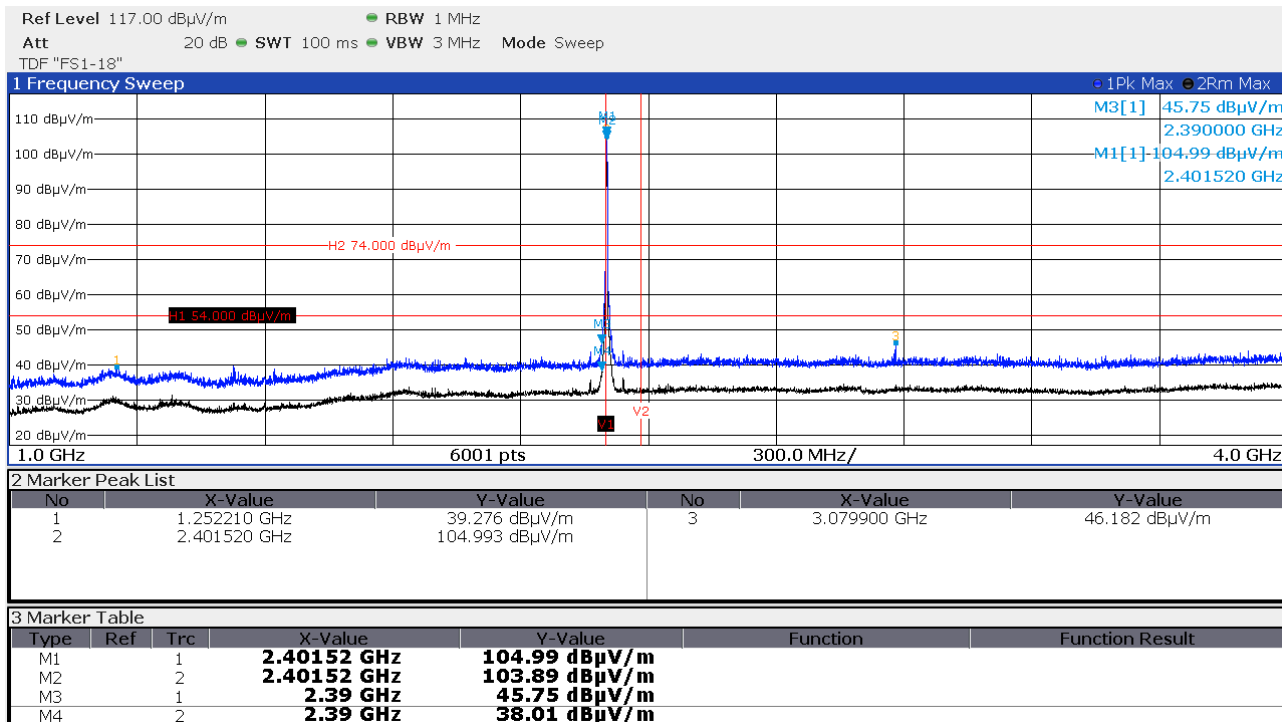
Data rate 2 Mbps, CH37 (2402 MHz) vertical polarisation, EUT-lying:

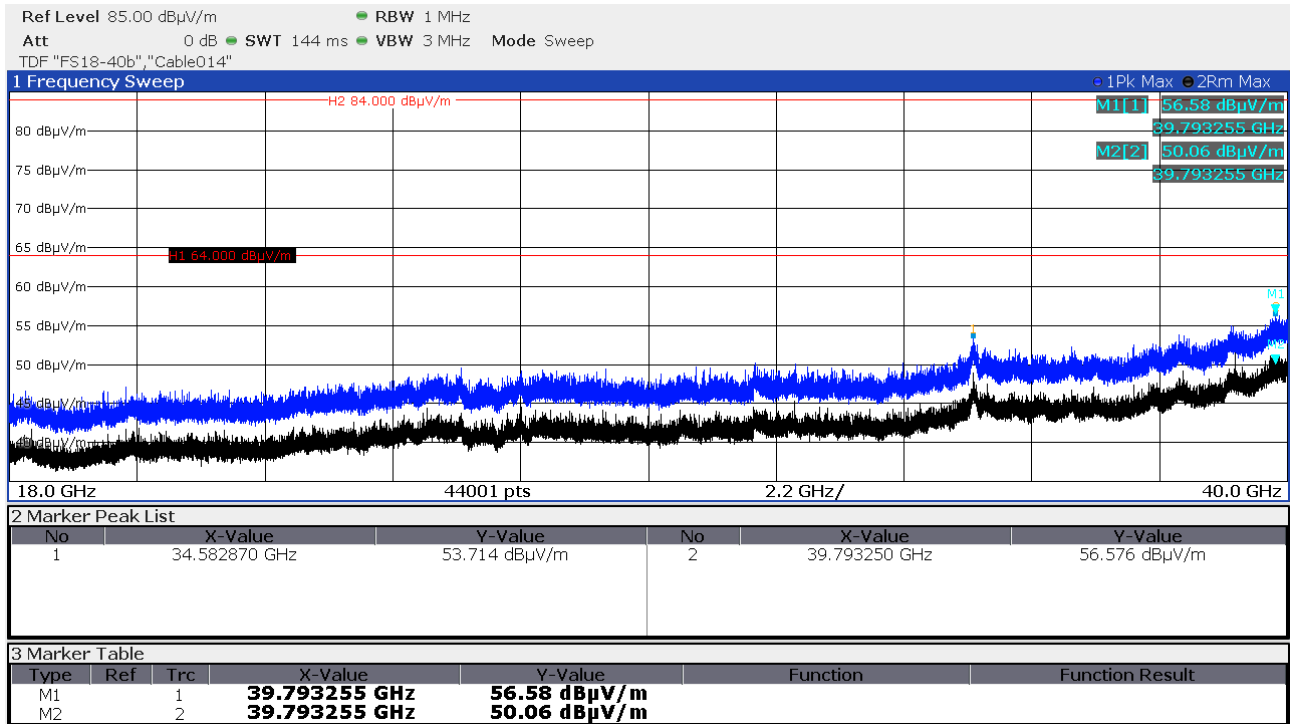


FCC ID: SDL-PR5XM

IC: 5228A-PR5XM



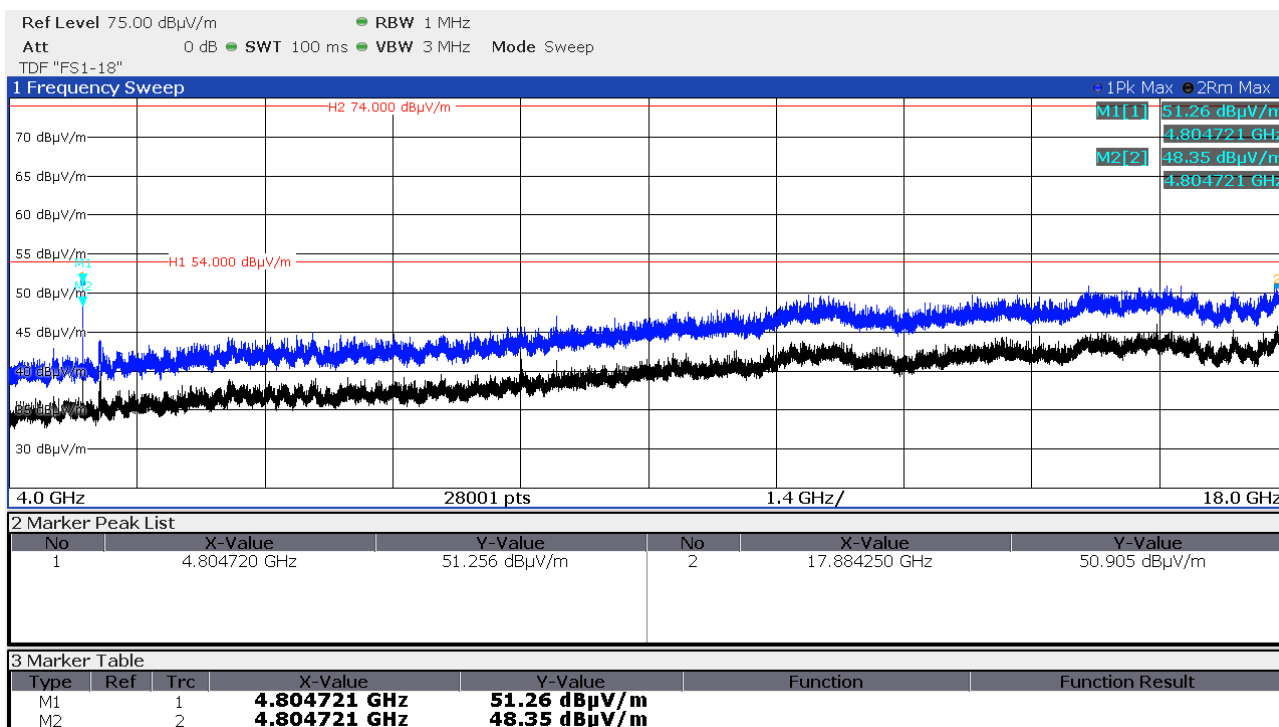
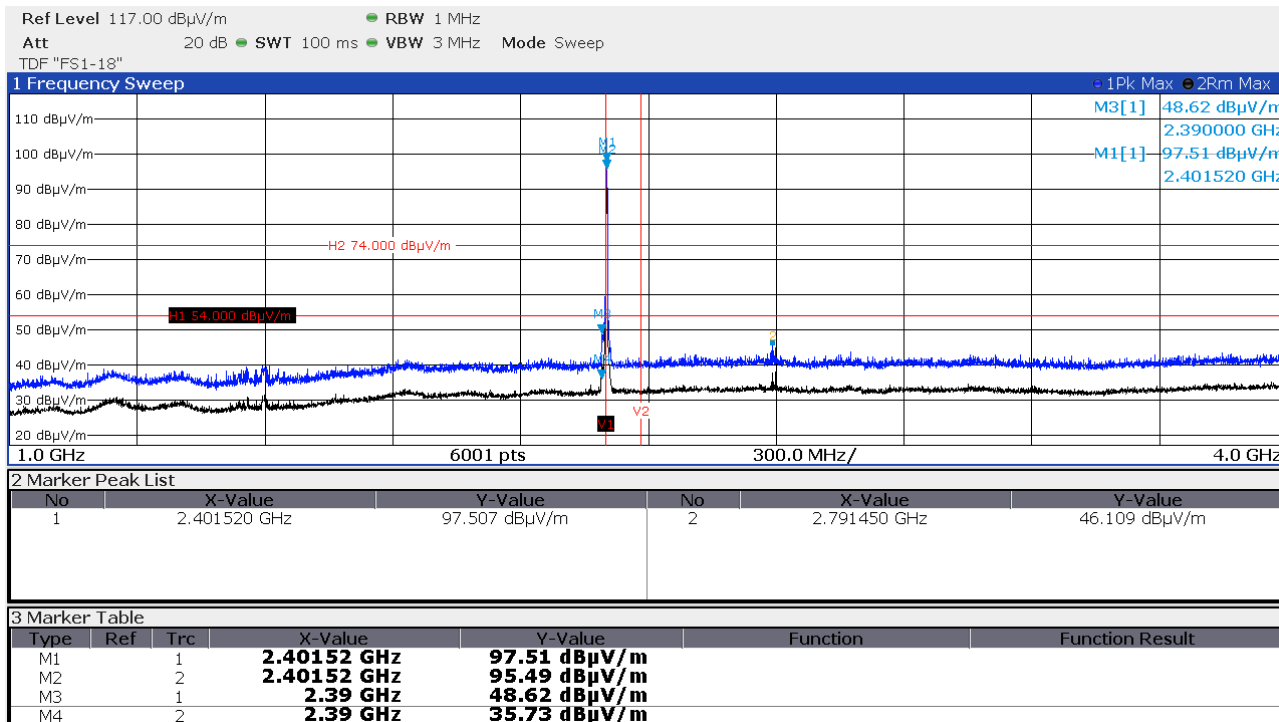
FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 2 Mbps, CH37 (2402 MHz) horizontal polarisation, EUT-standing:


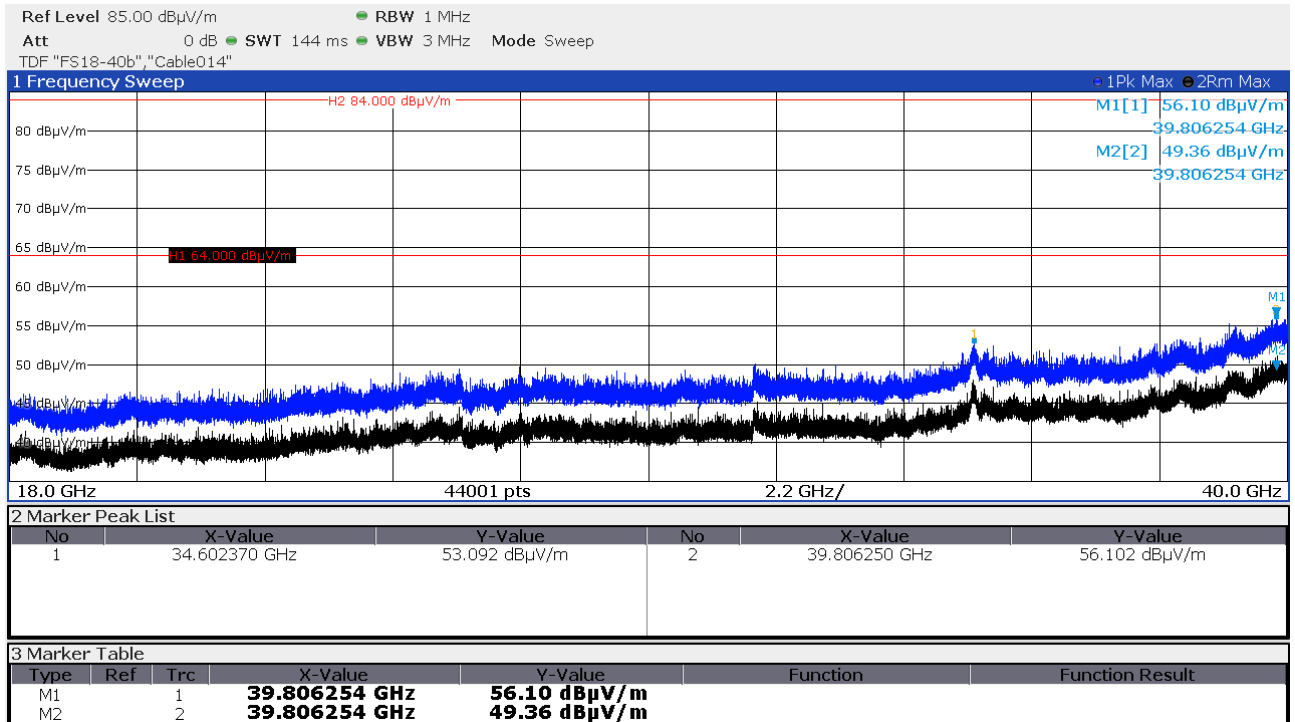
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IC: 5228A-PR5XM


FCC ID: SDL-PR5XM

IC: 5228A-PR5XM

Data rate 2 Mbps, CH37 (2402 MHz) vertical polarisation, EUT-standing:

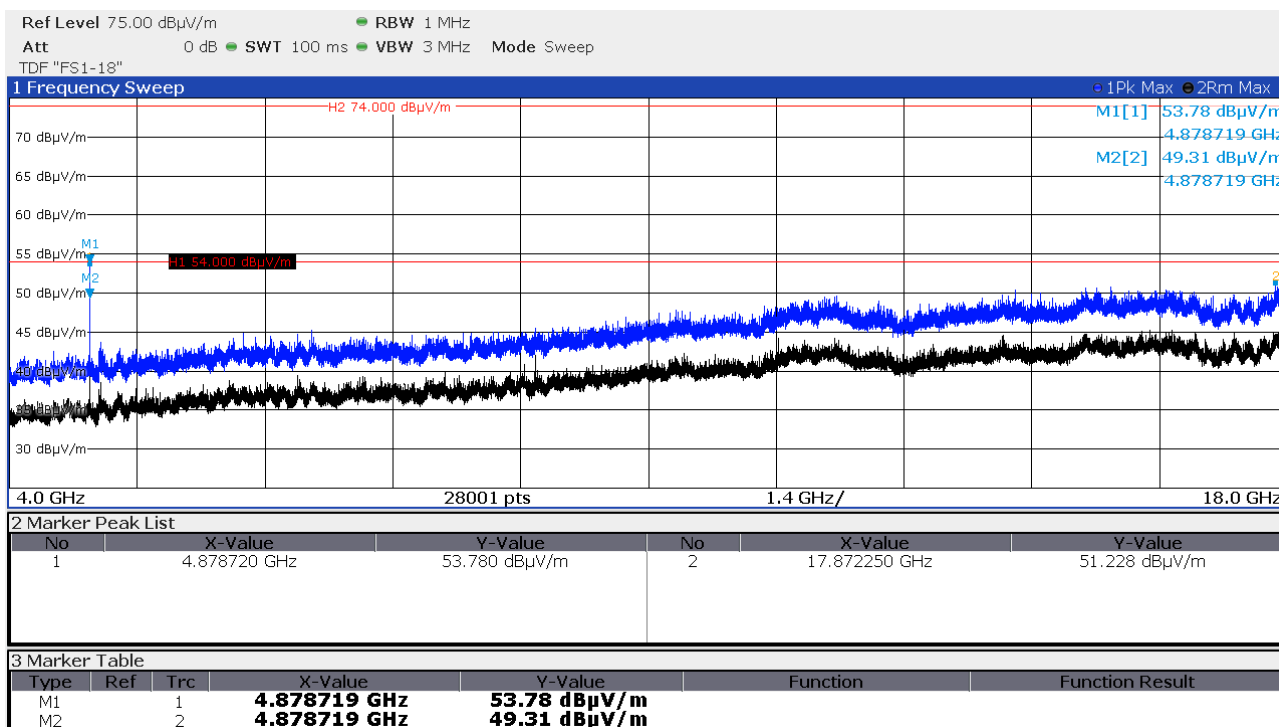
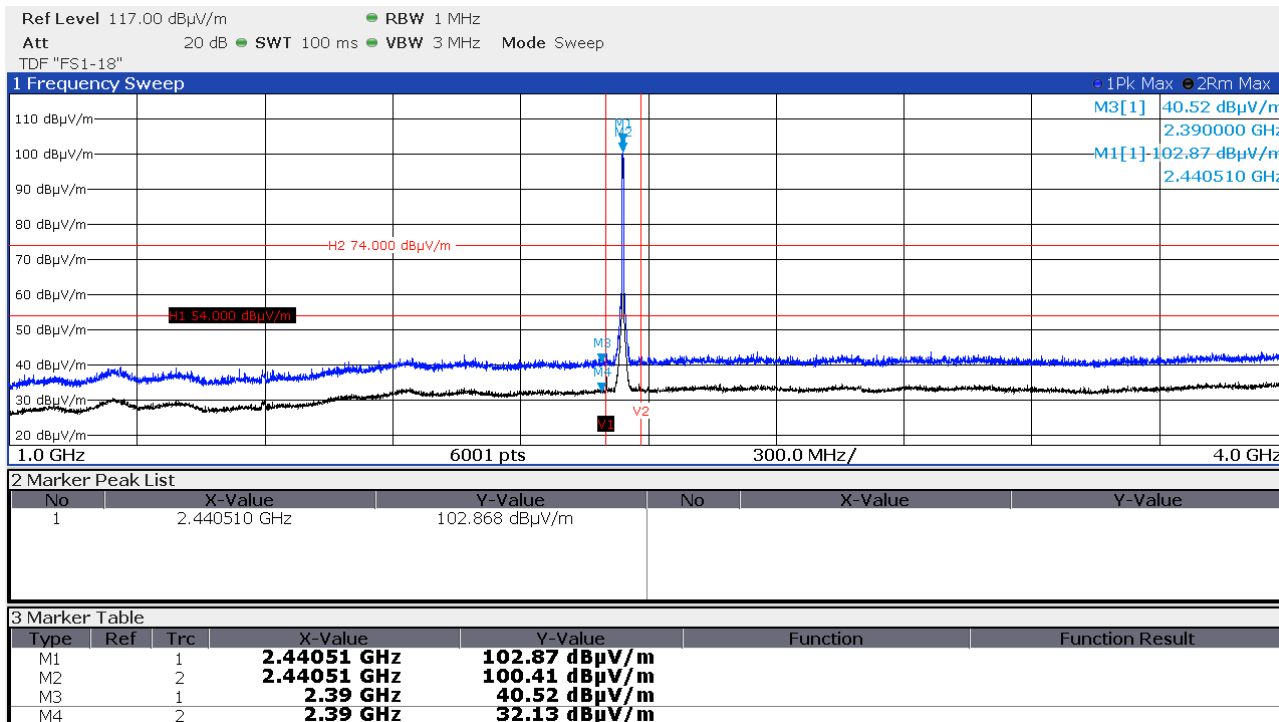


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IC: 5228A-PR5XM


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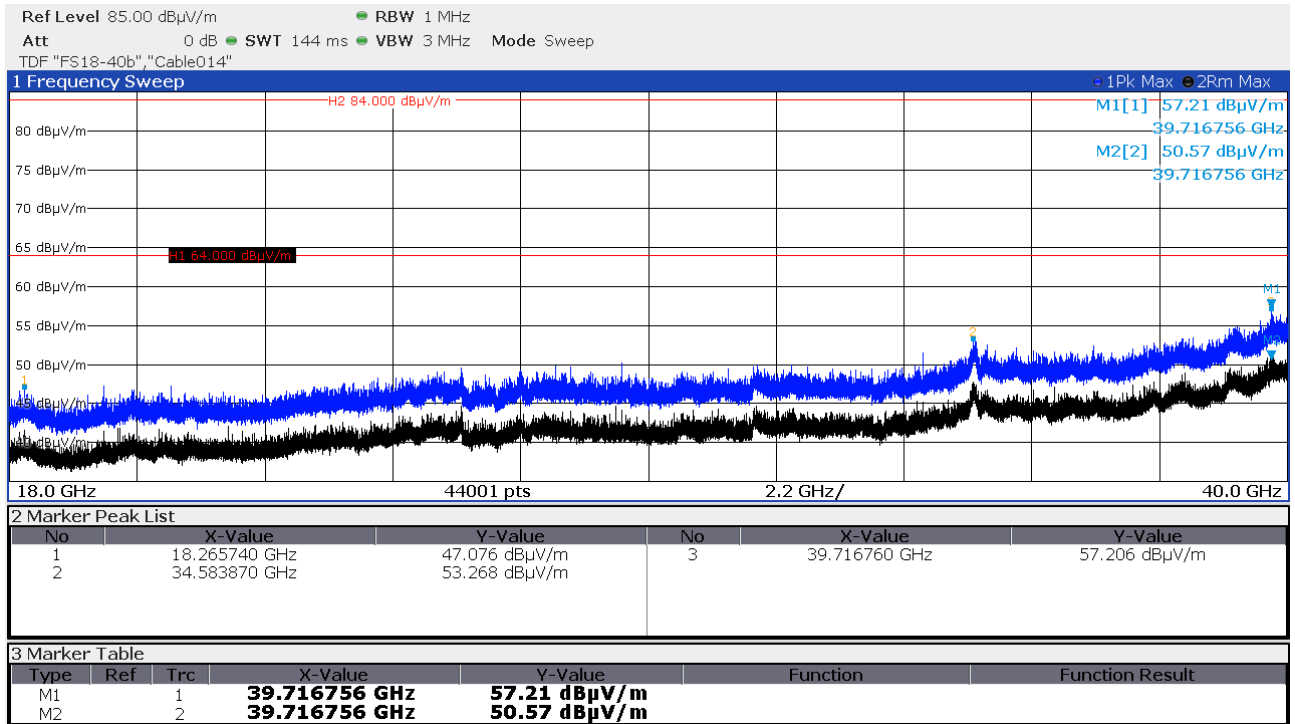
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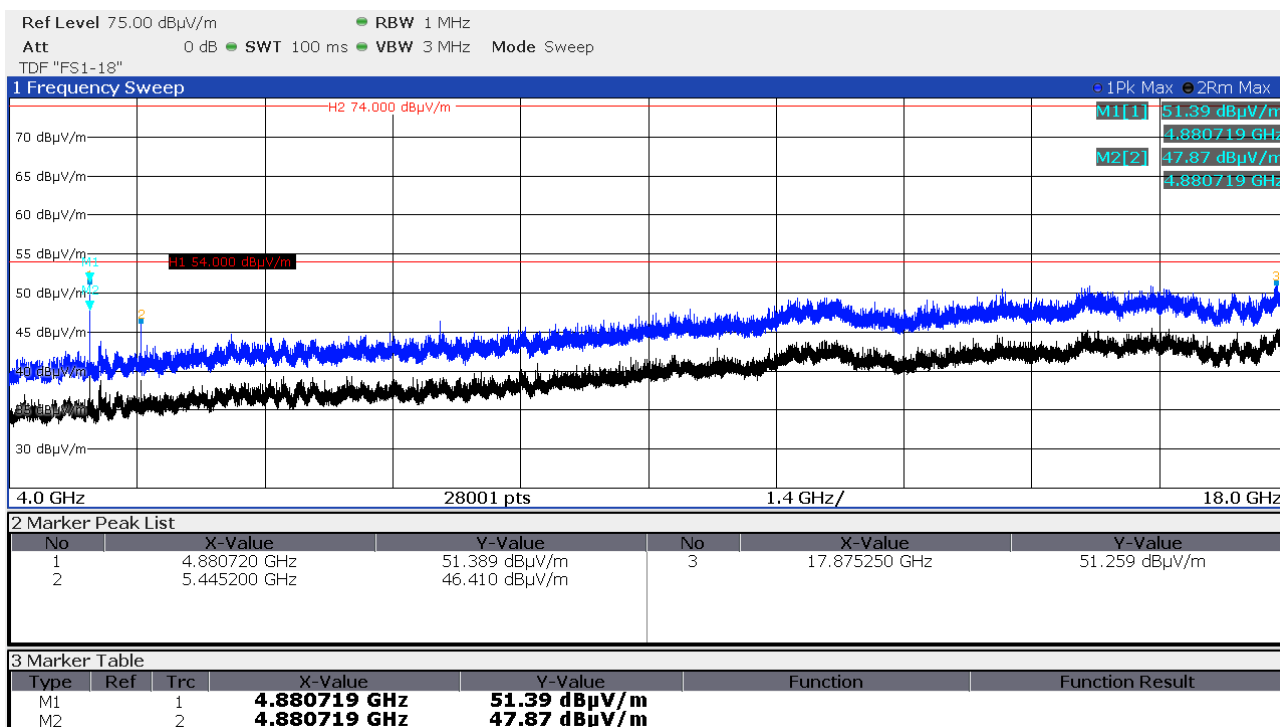
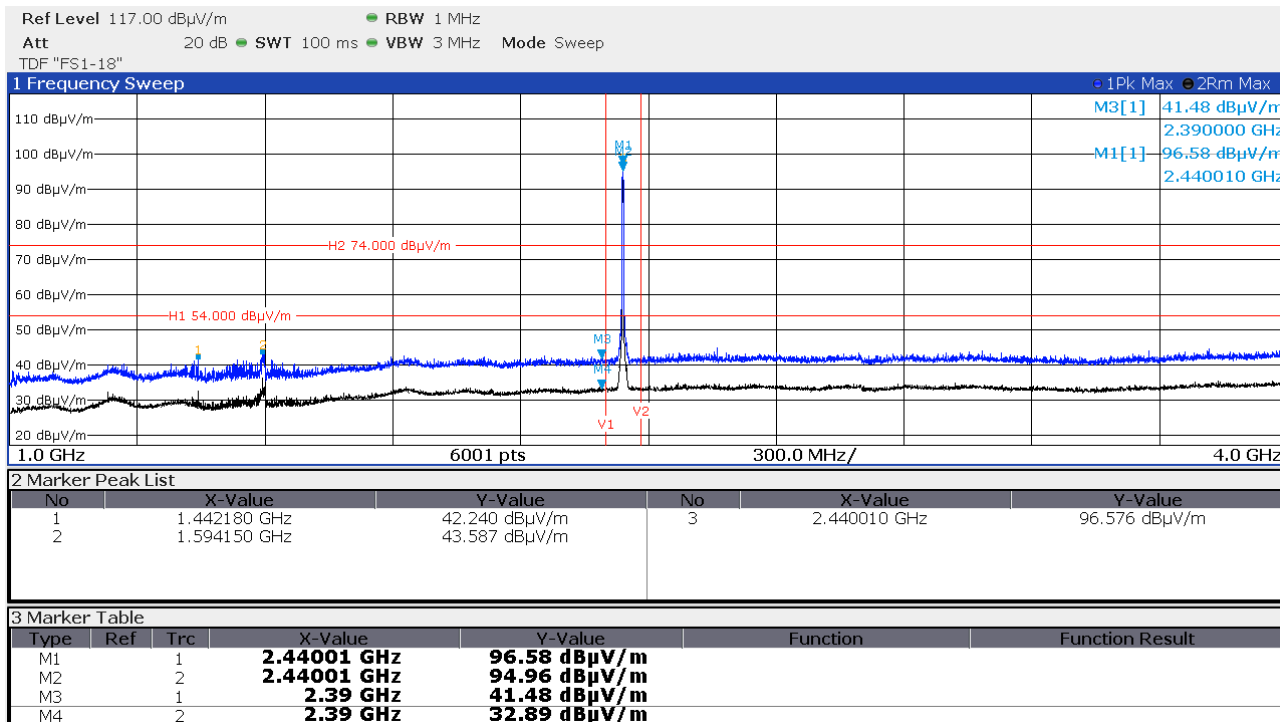
Data rate 2 Mbps, CH17 (2440 MHz) horizontal polarisation, EUT-lying:



FCC ID: SDL-PR5XM

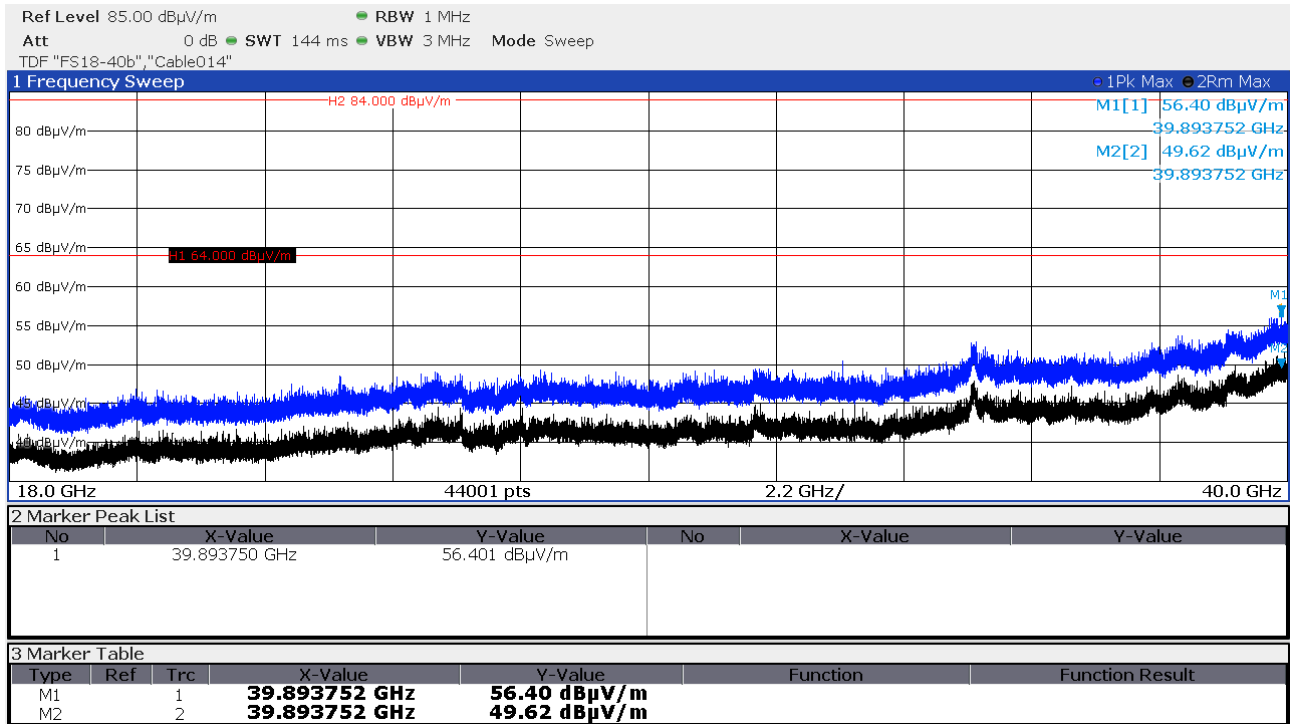
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 2 Mbps, CH17 (2440 MHz) vertical polarisation, EUT-lying:


FCC ID: SDL-PR5XM

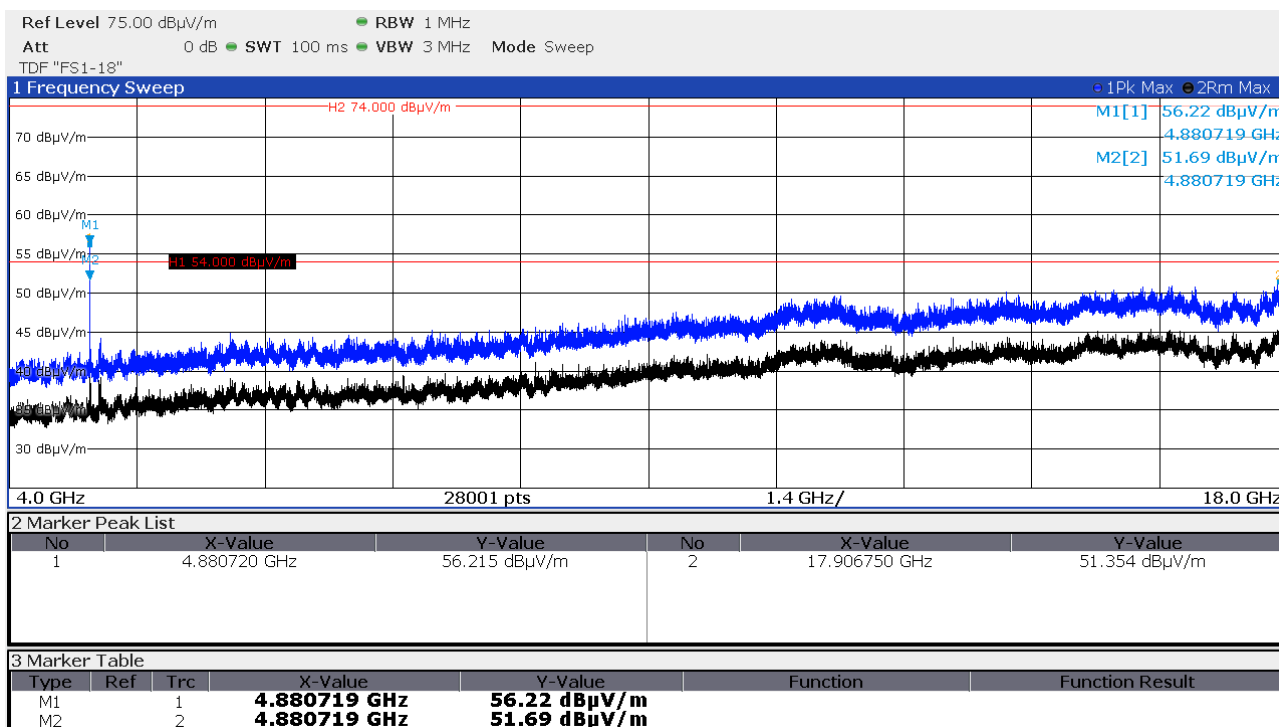
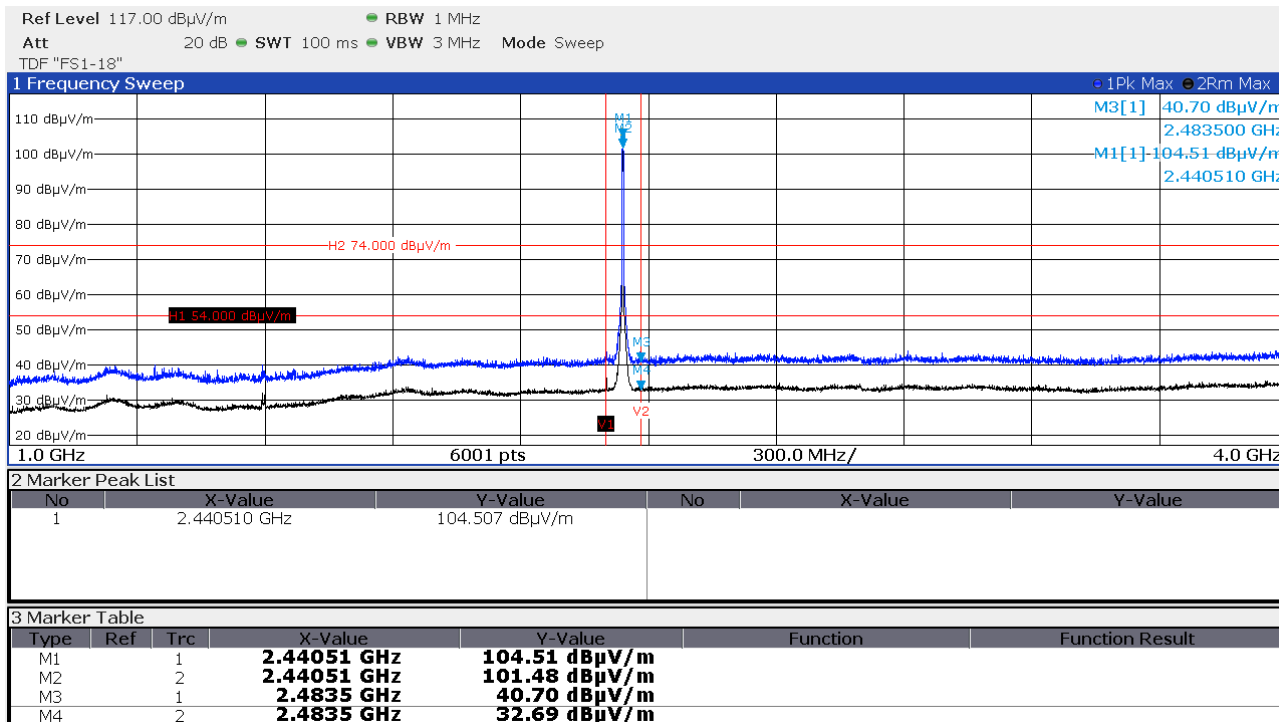
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM

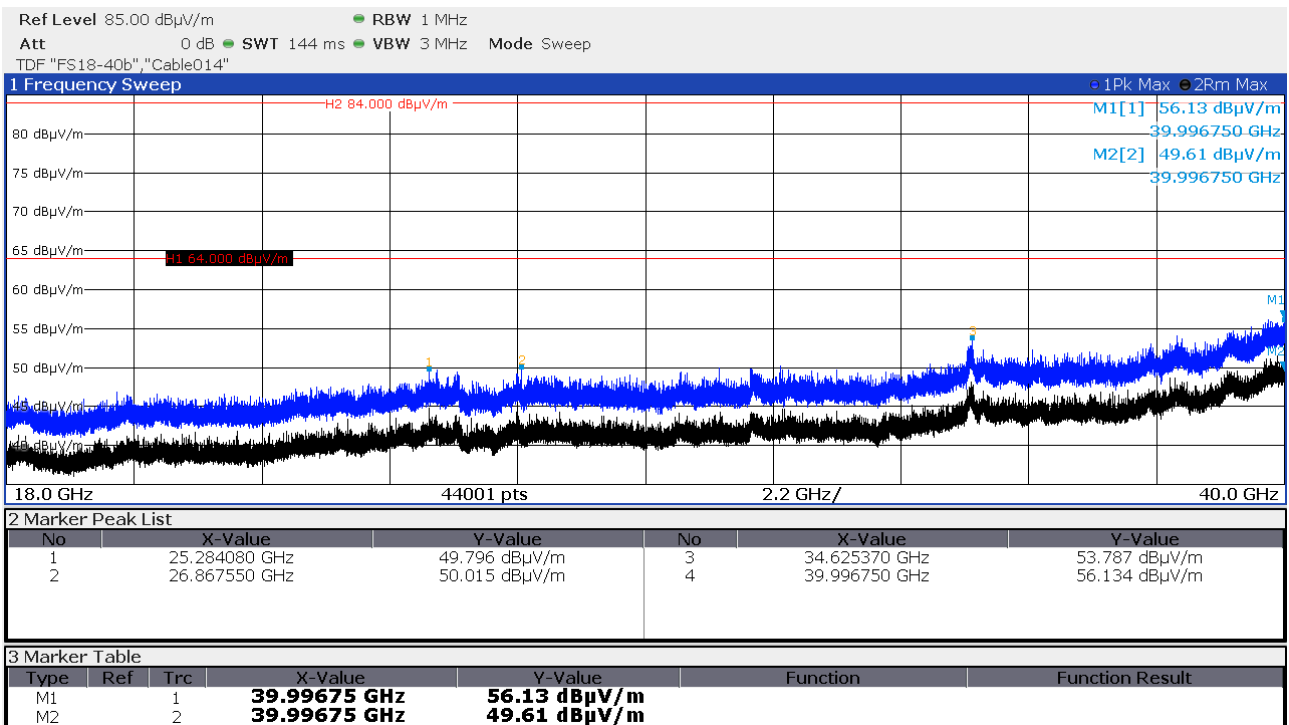
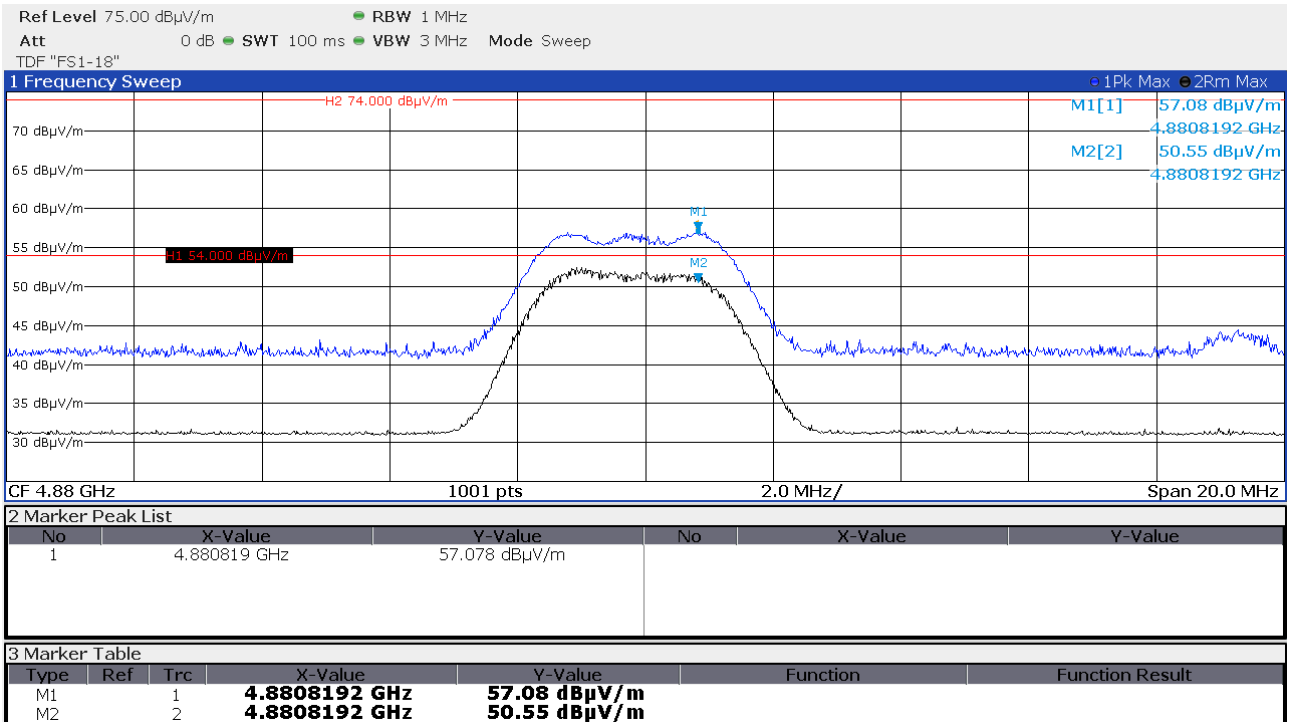
IC: 5228A-PR5XM

Data rate 2 Mbps, CH17 (2440 MHz) horizontal polarisation, EUT-standing:



FCC ID: SDL-PR5XM

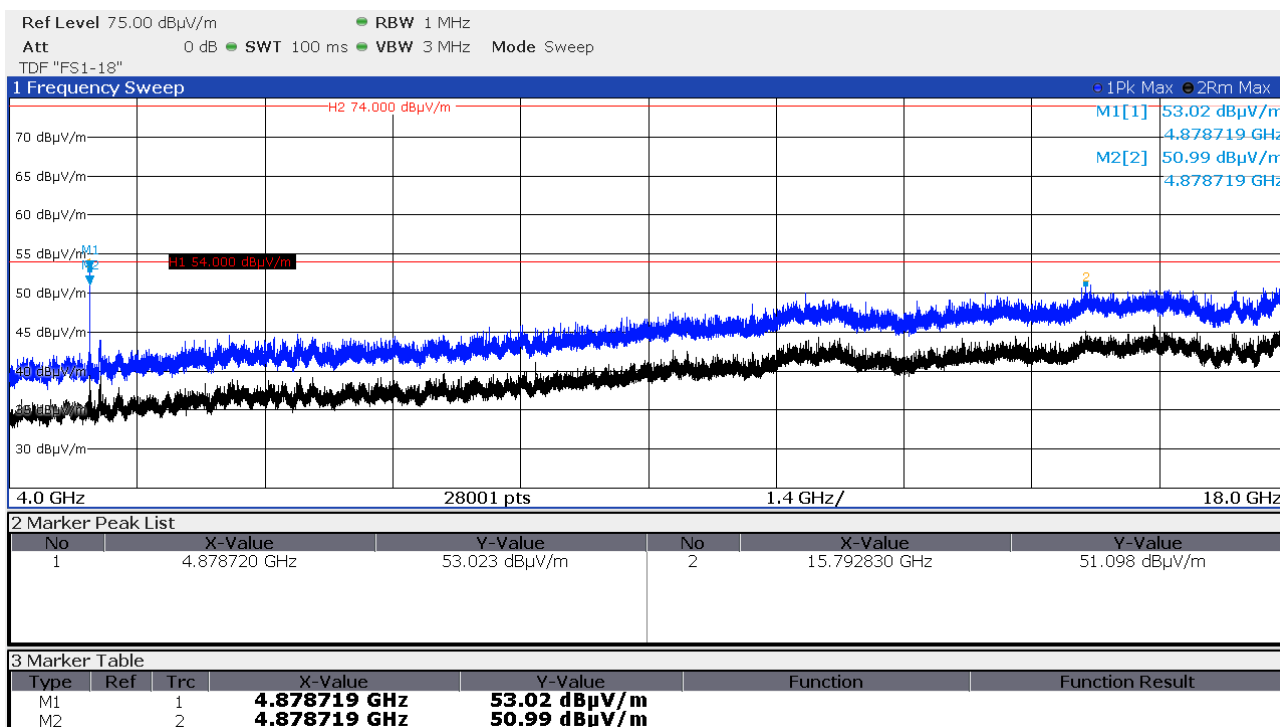
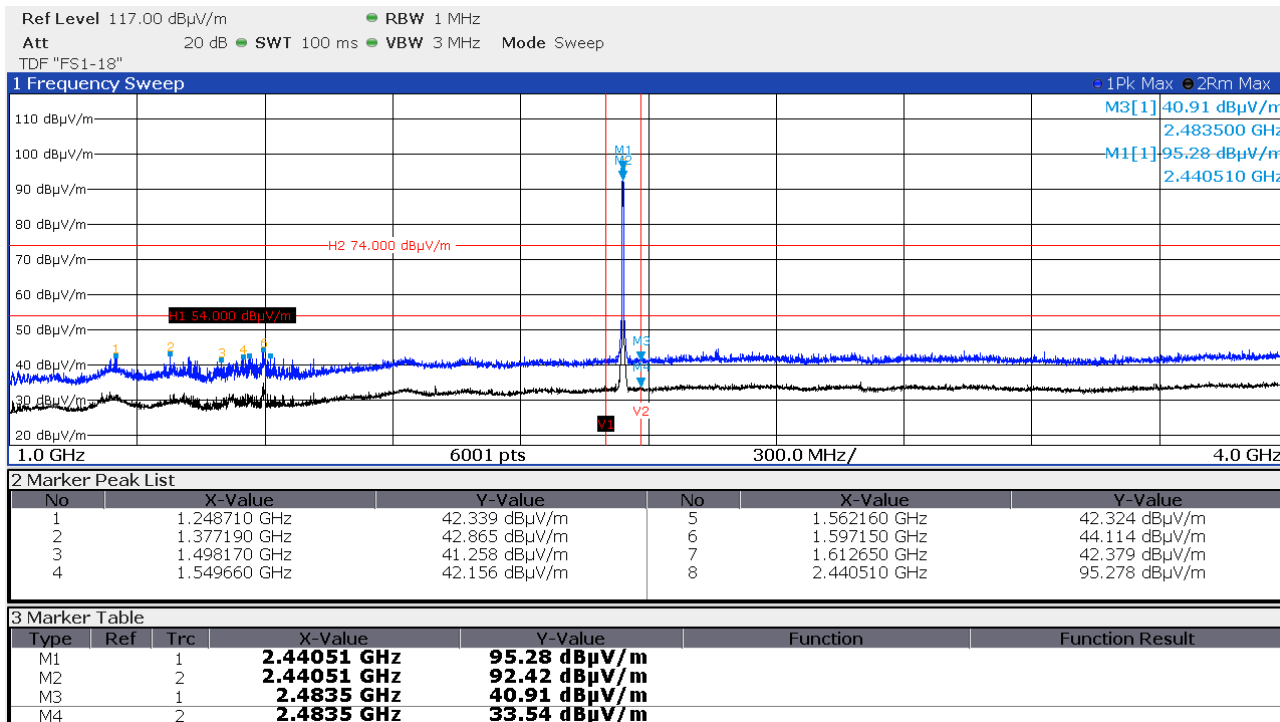
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM

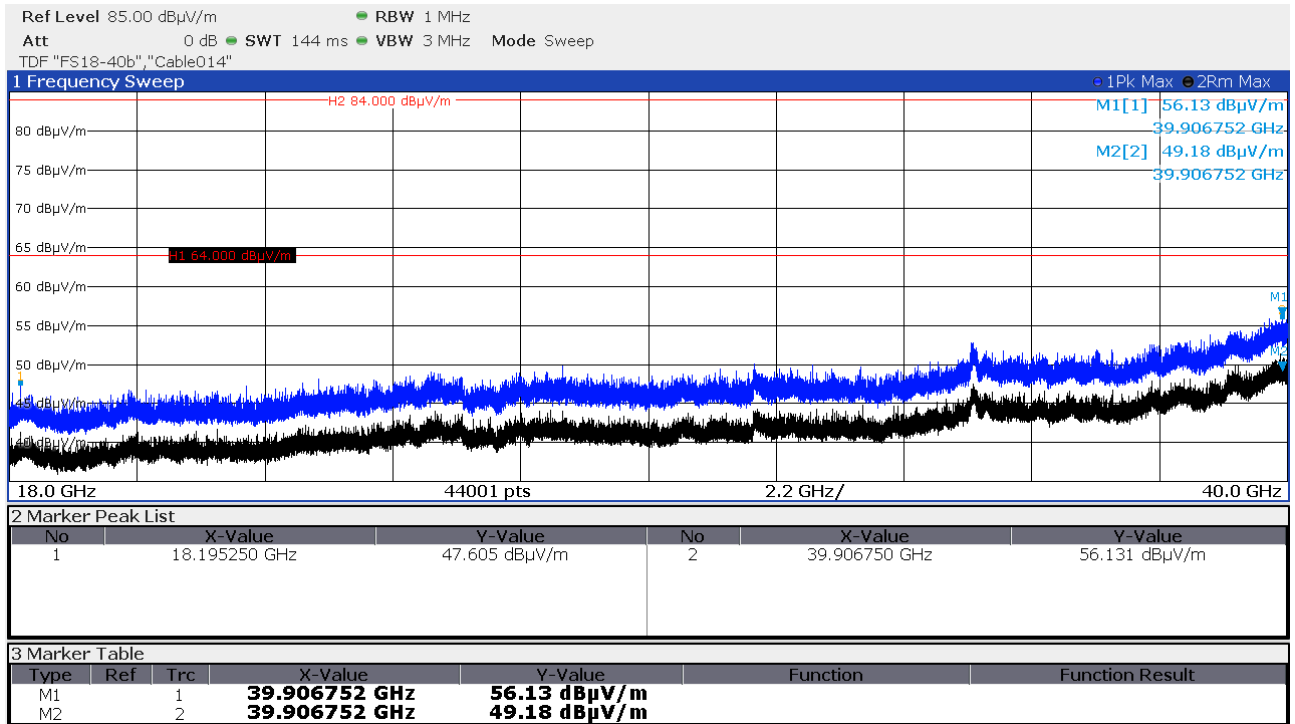
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Data rate 2 Mbps, CH17 (2440 MHz) vertical polarisation, EUT-standing:



FCC ID: SDL-PR5XM

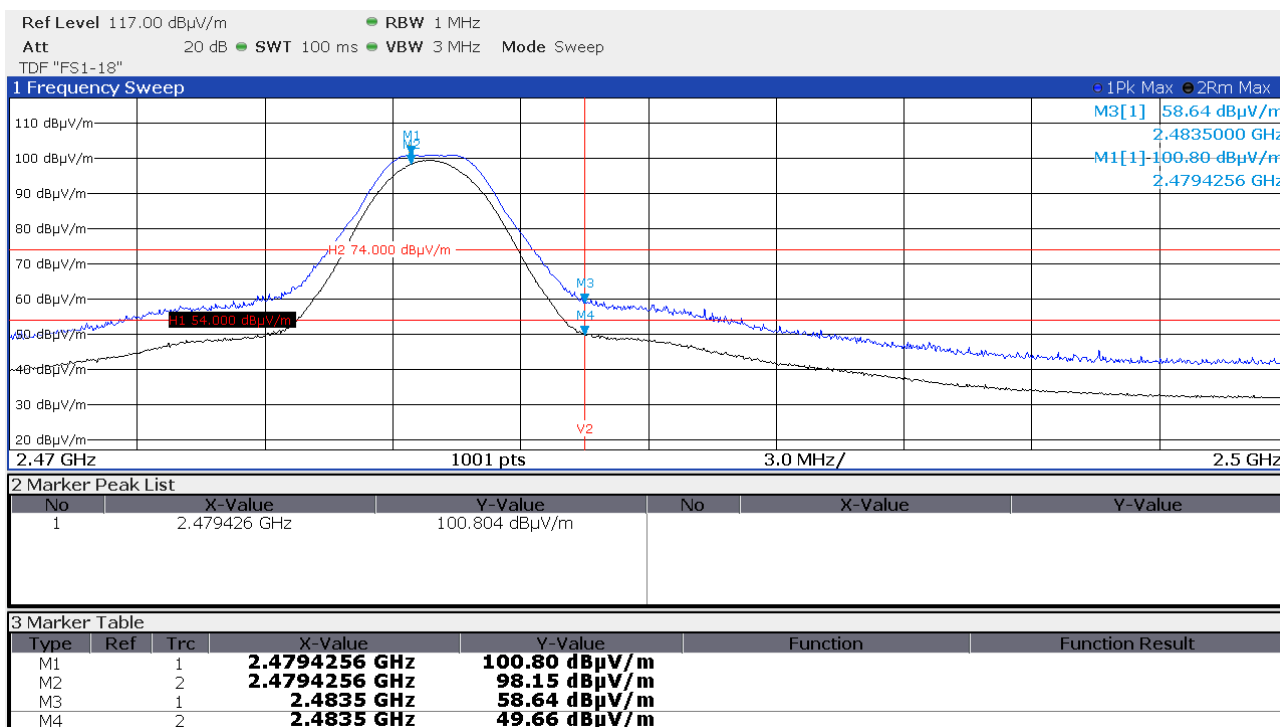
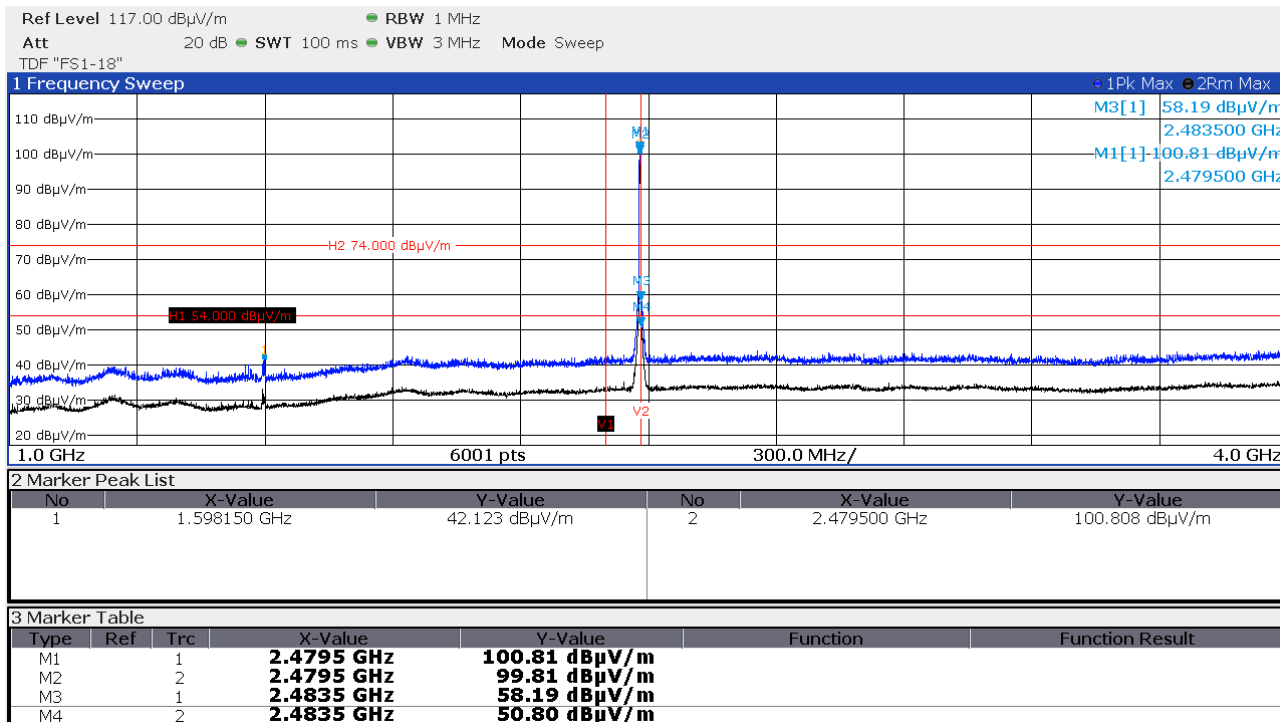
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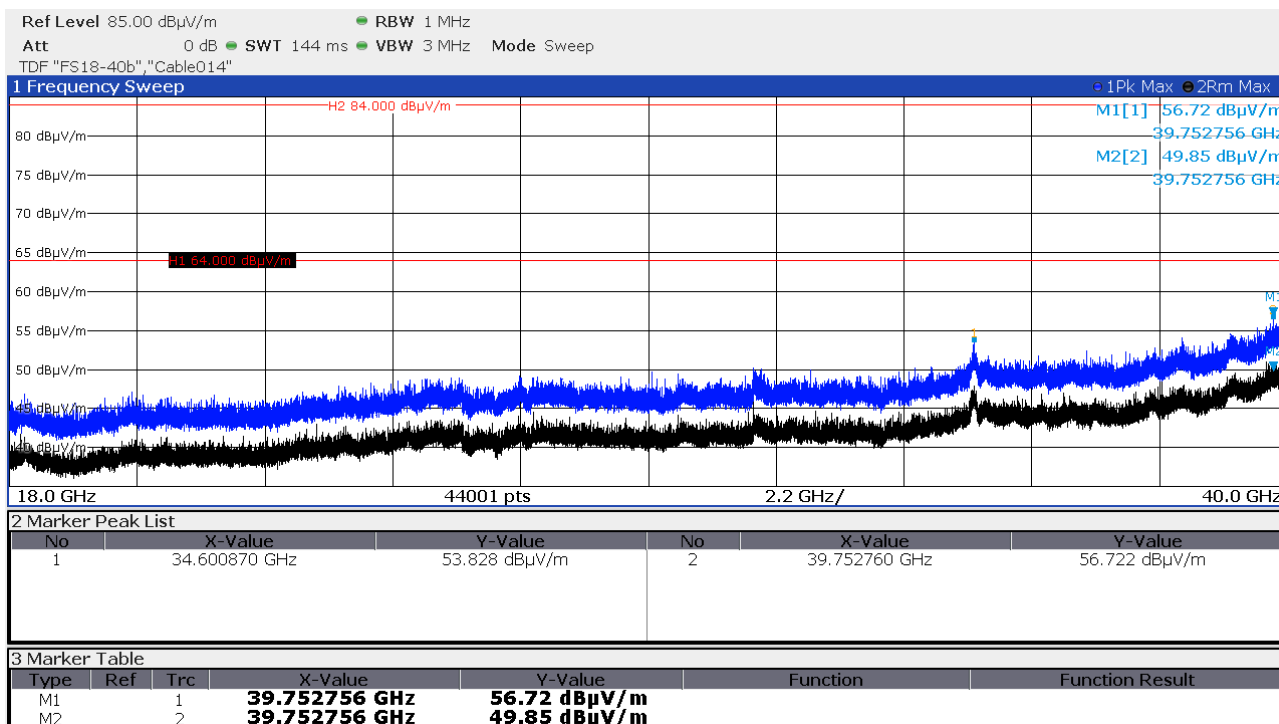
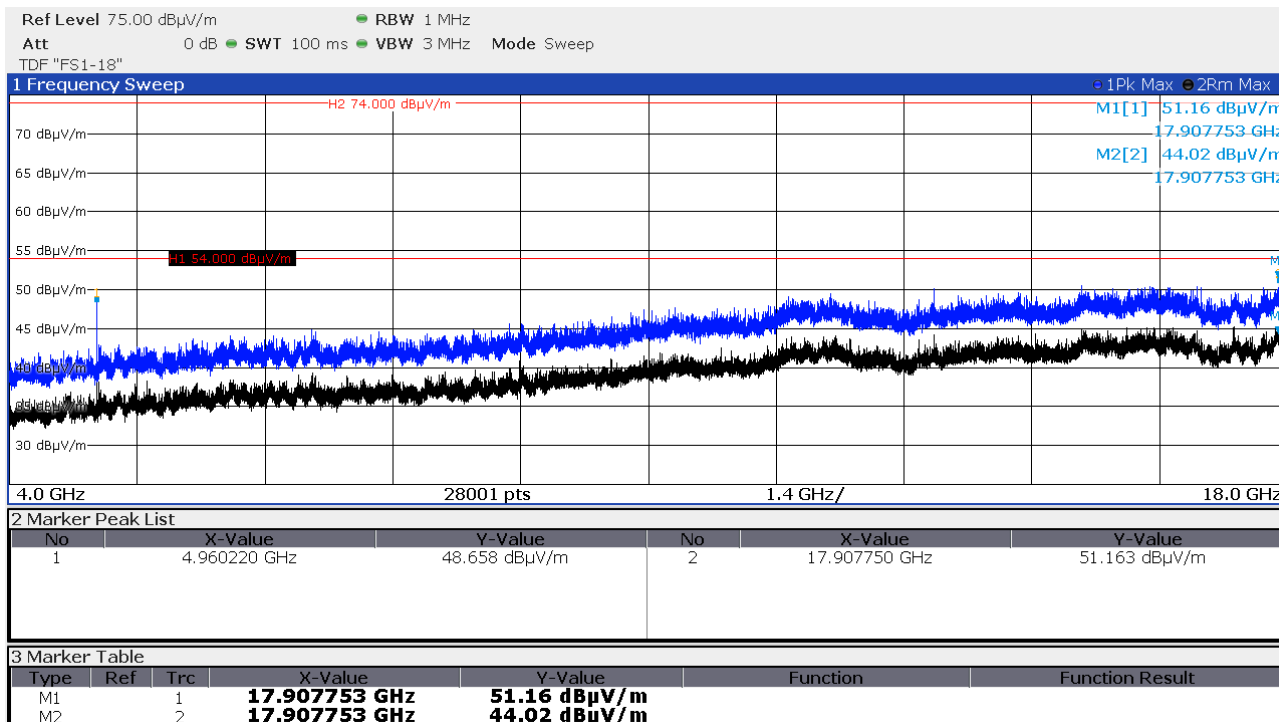
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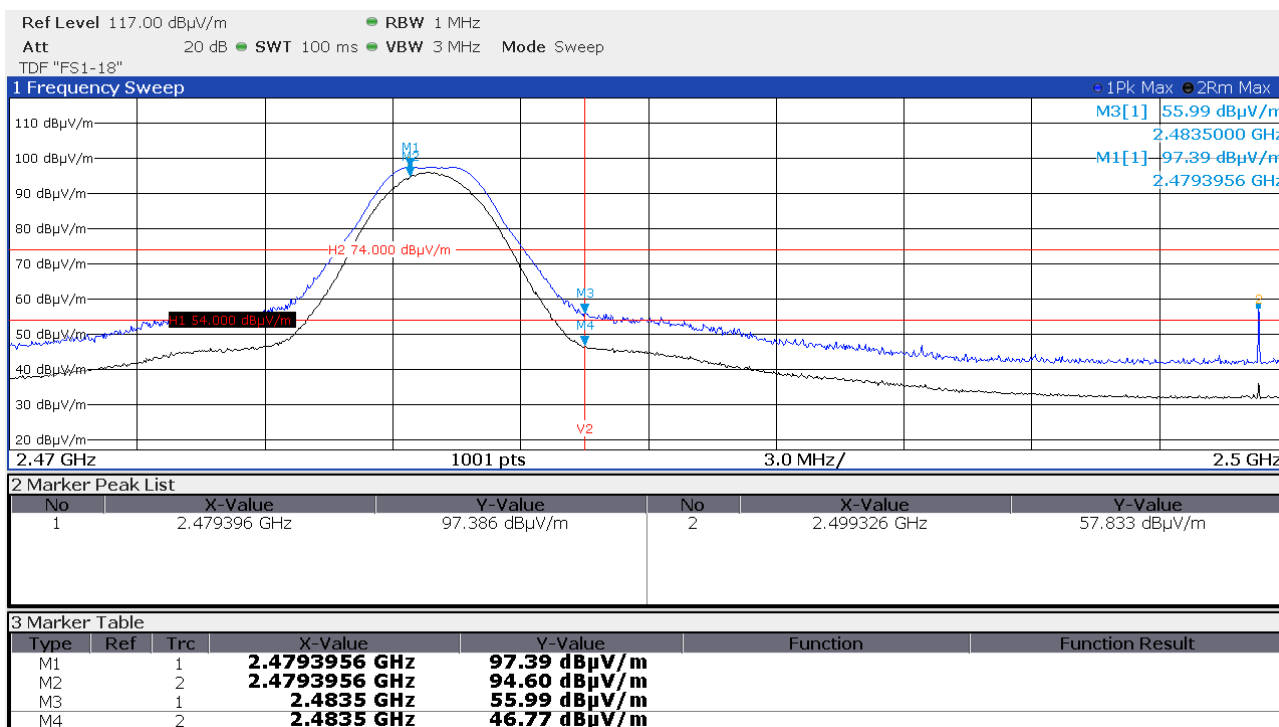
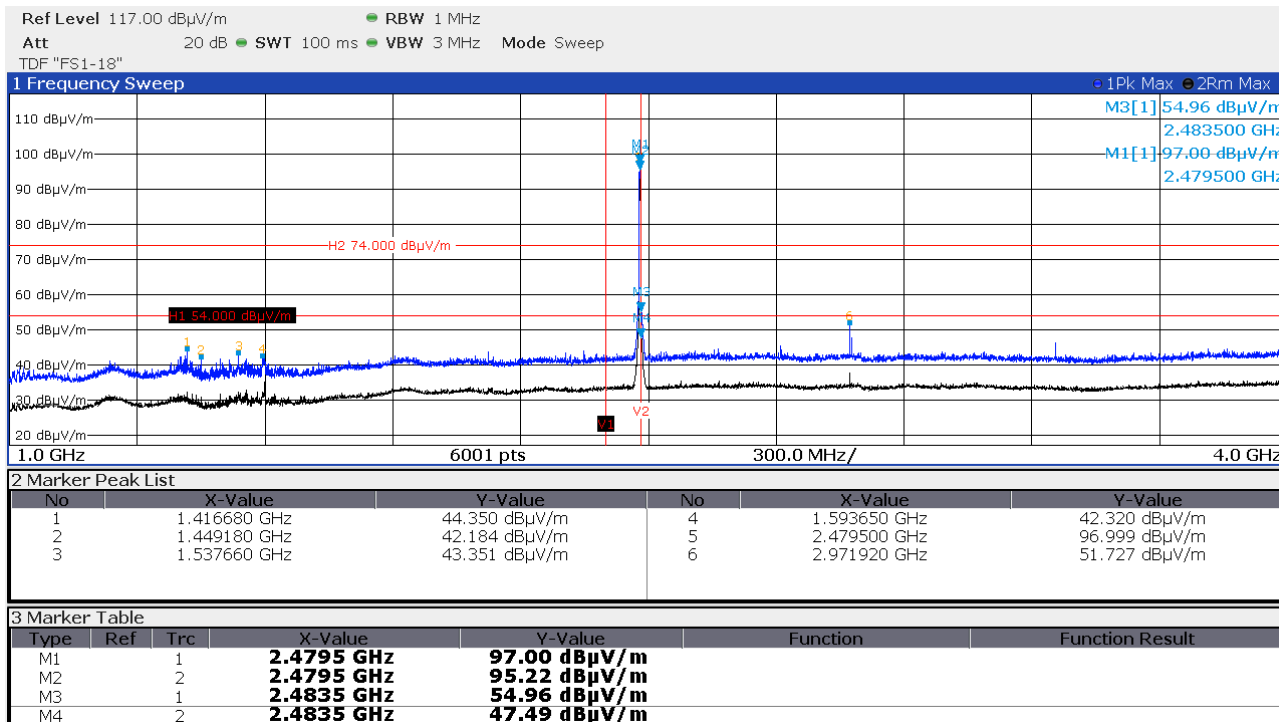
Data rate 2 Mbps, CH39 (2480 MHz) horizontal polarisation, EUT-lying:



FCC ID: SDL-PR5XM

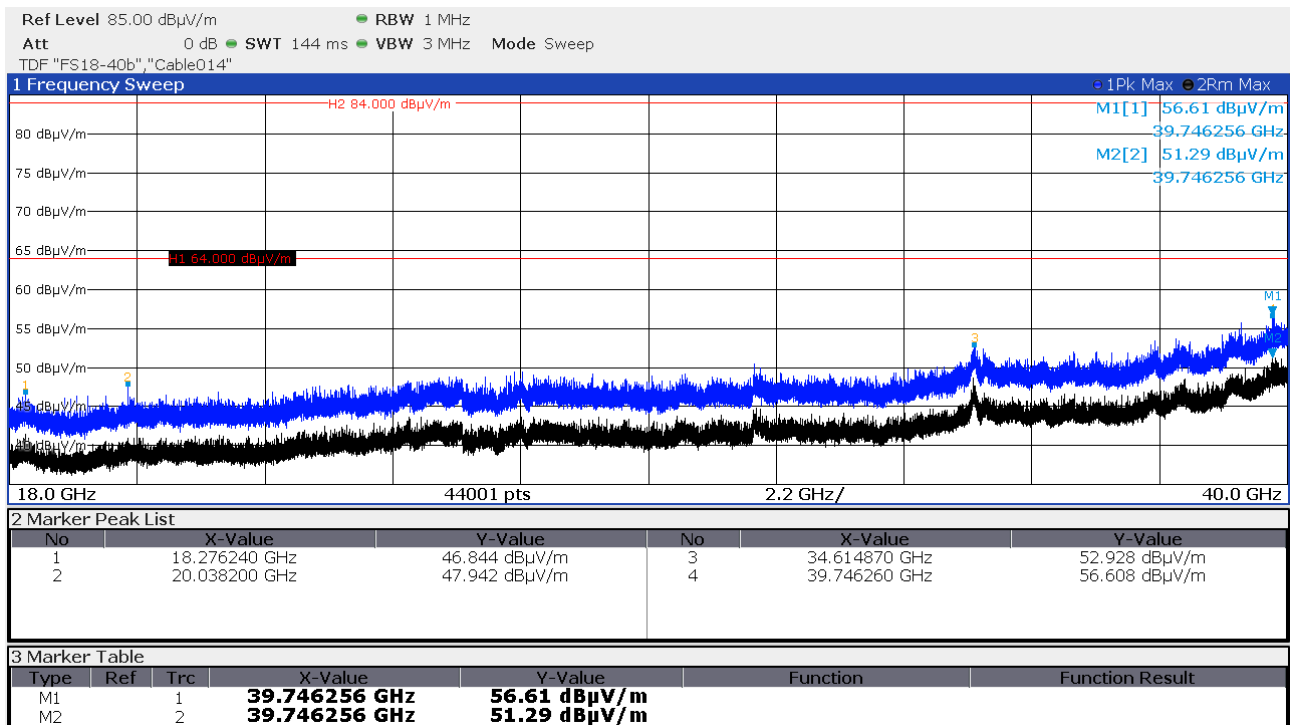
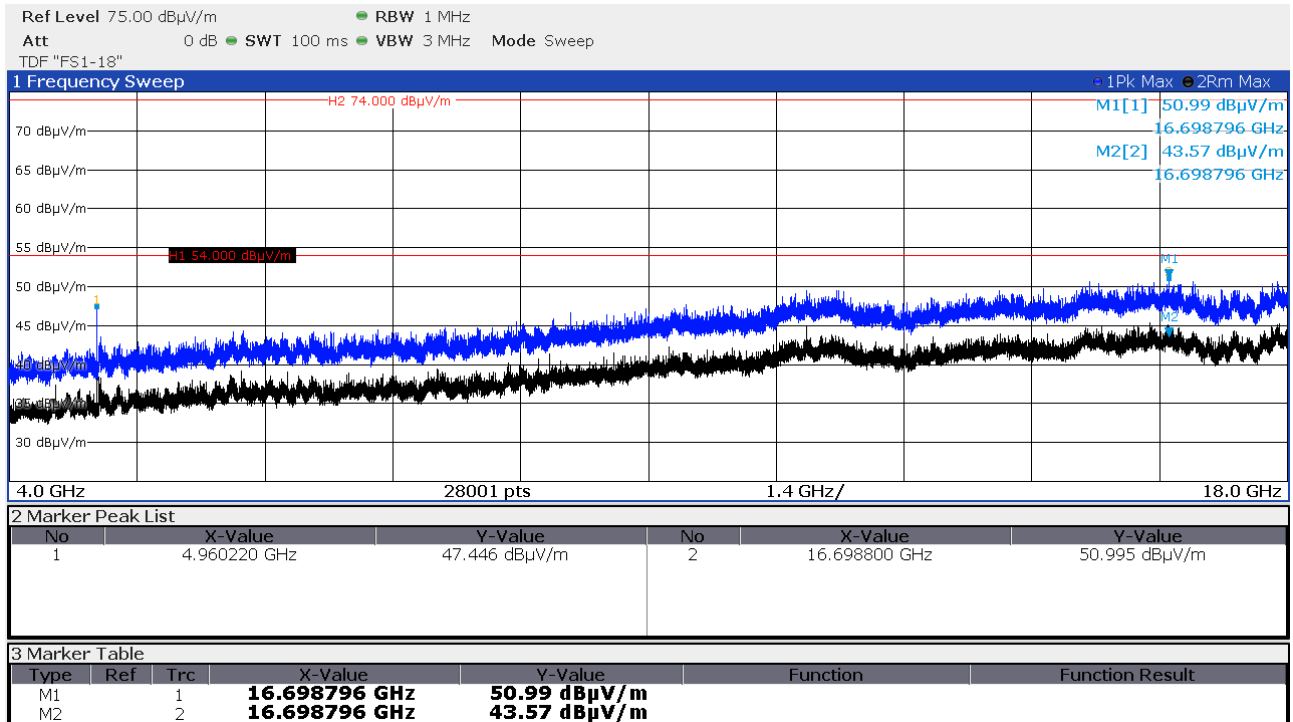
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 2 Mbps, CH39 (2480 MHz) vertical polarisation, EUT-lying:


FCC ID: SDL-PR5XM

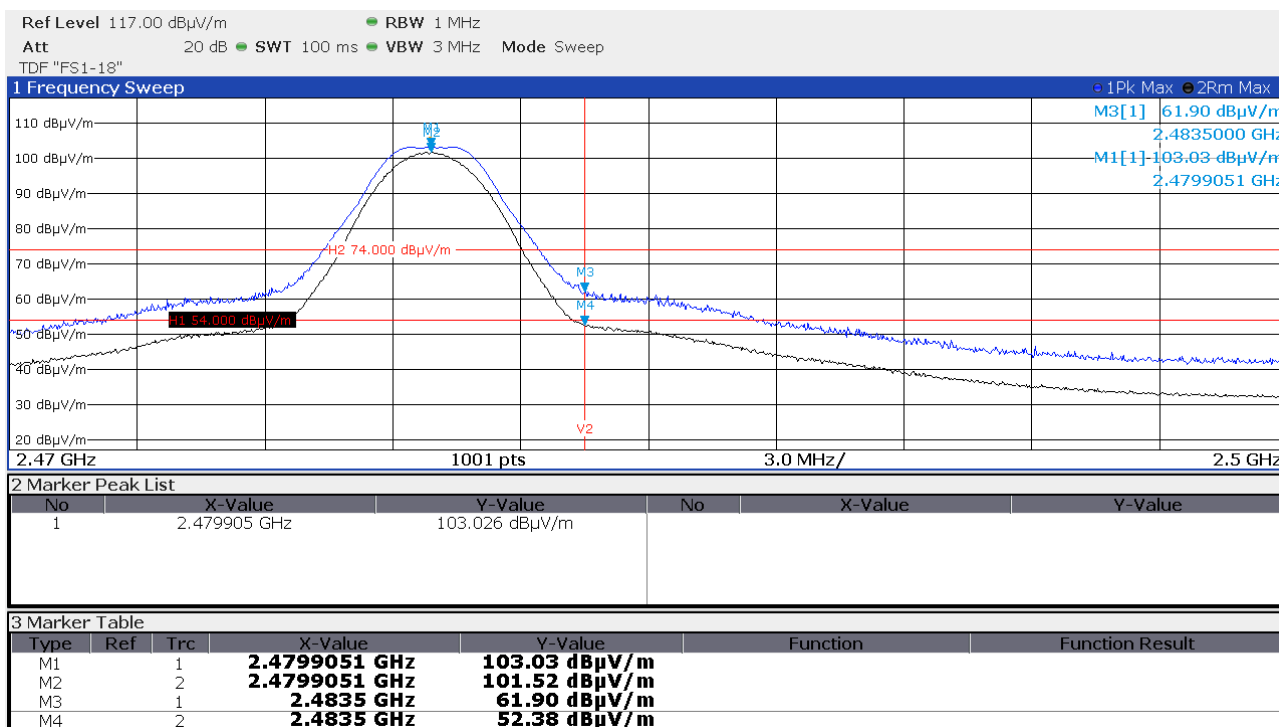
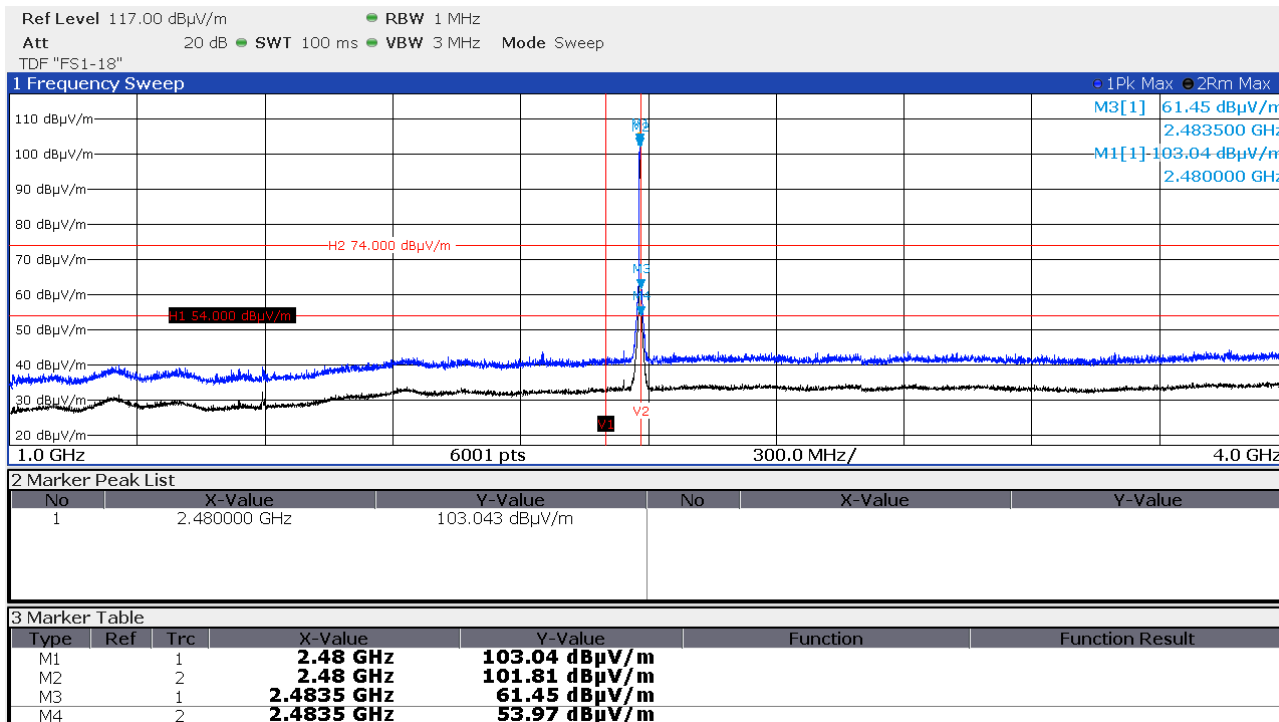
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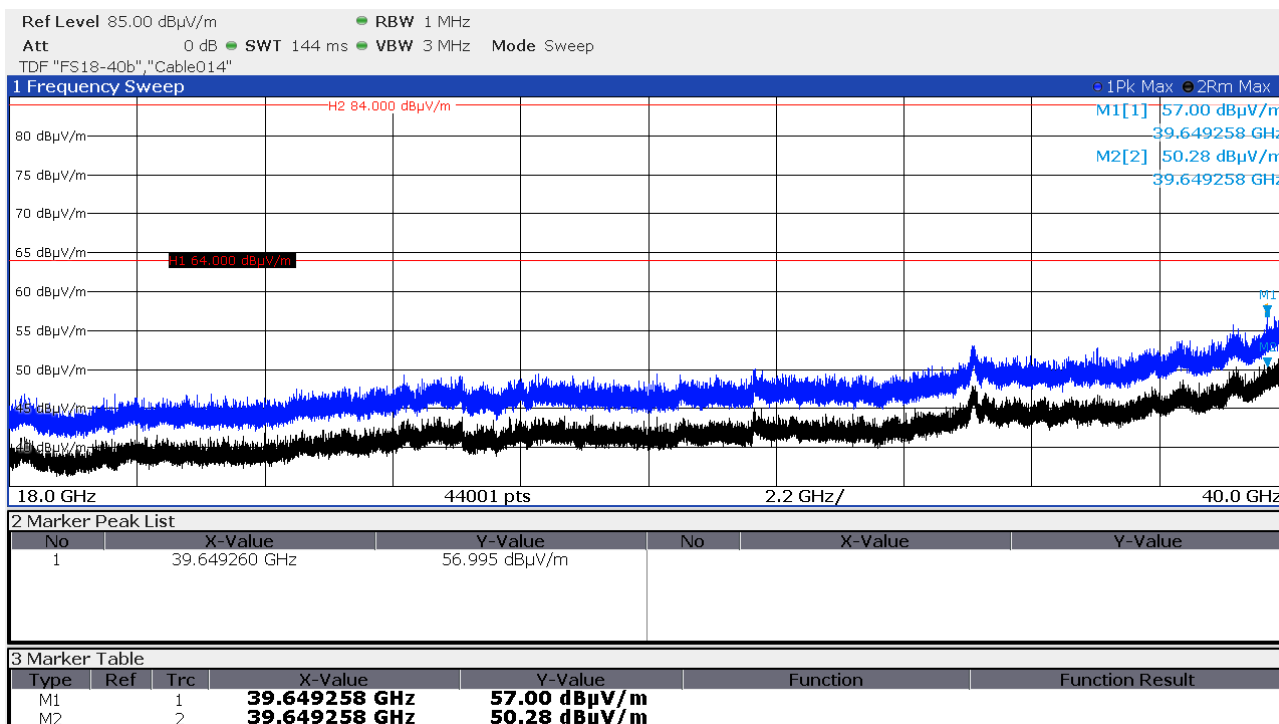
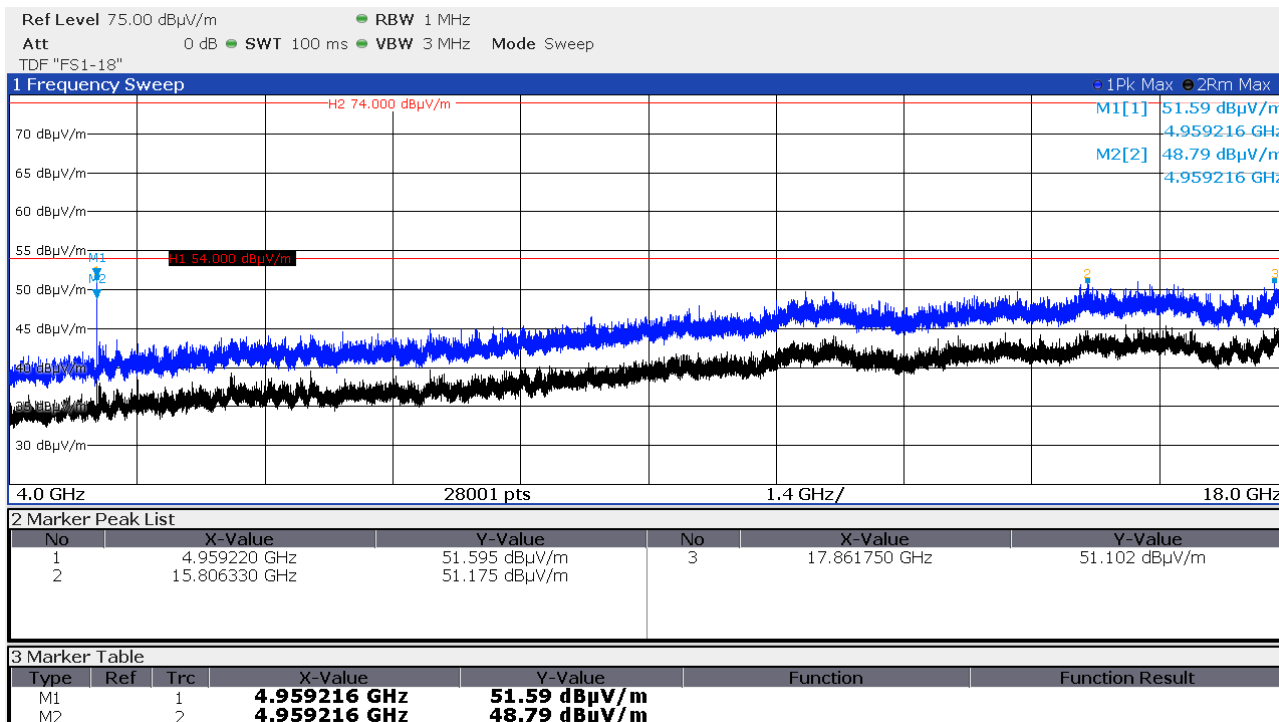
IC: 5228A-PR5XM

Data rate 2 Mbps, CH39 (2480 MHz) horizontal polarisation, EUT-standing:



FCC ID: SDL-PR5XM

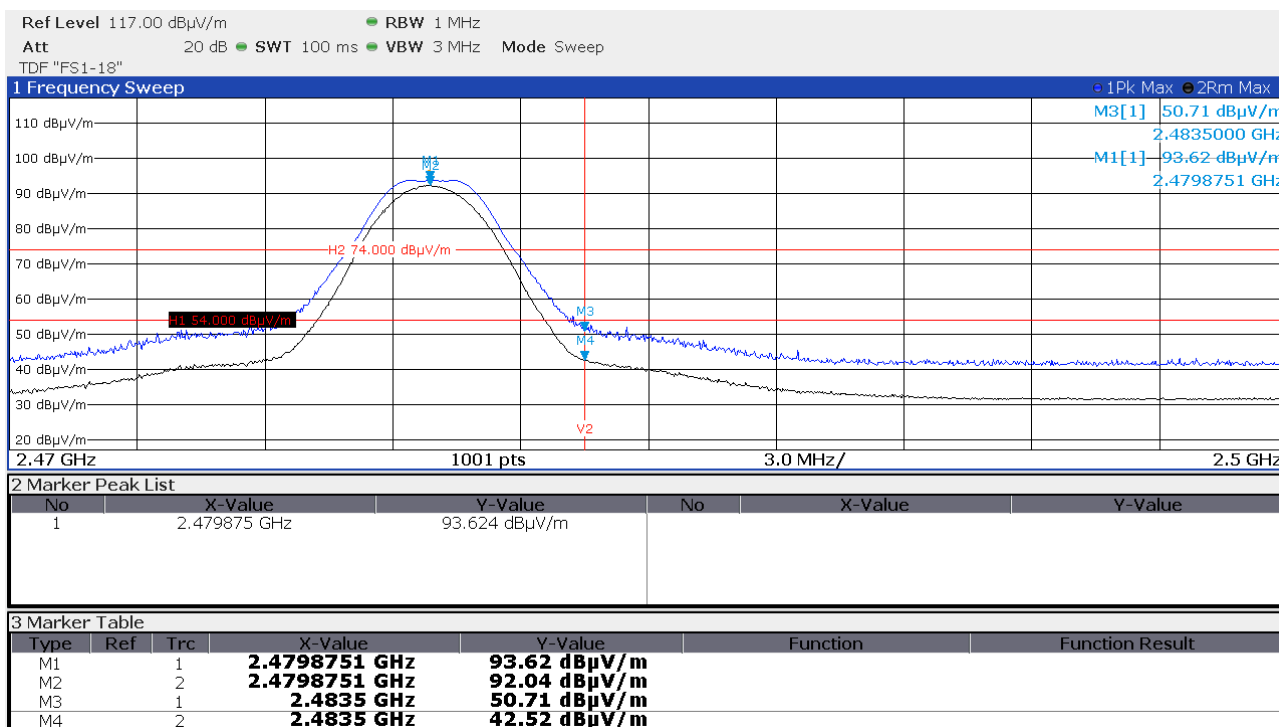
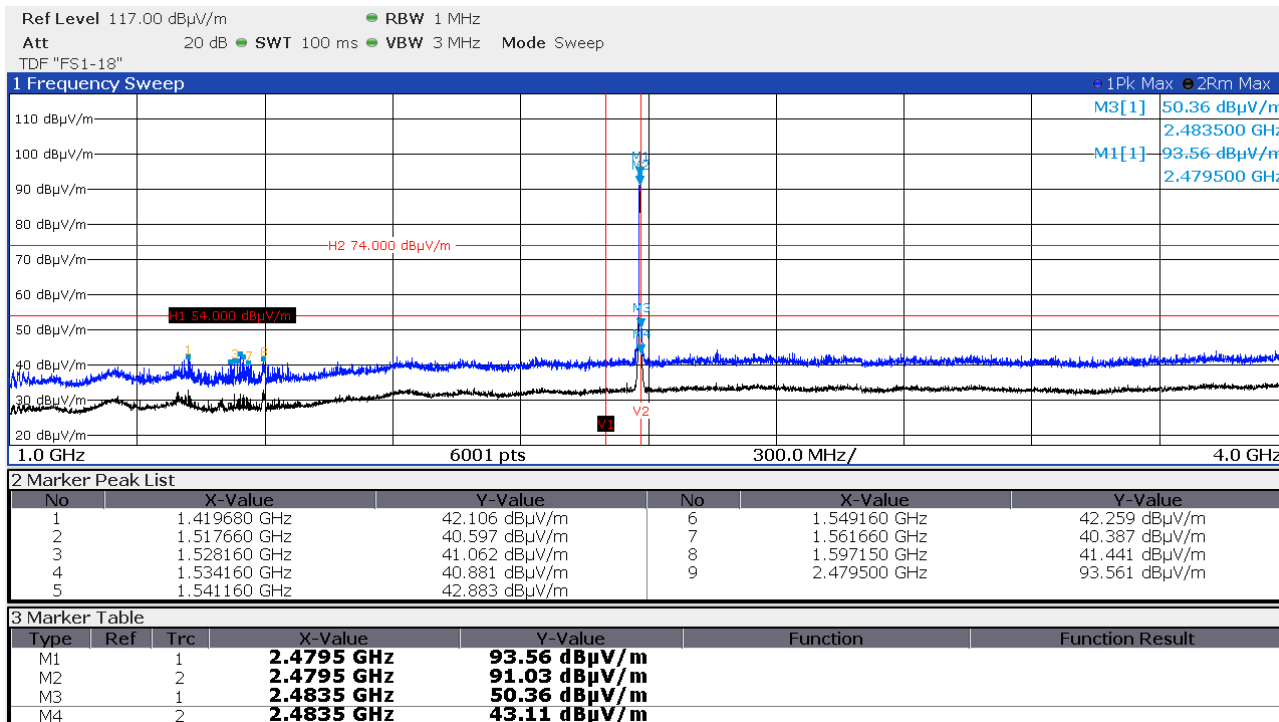
IC: 5228A-PR5XM



FCC ID: SDL-PR5XM

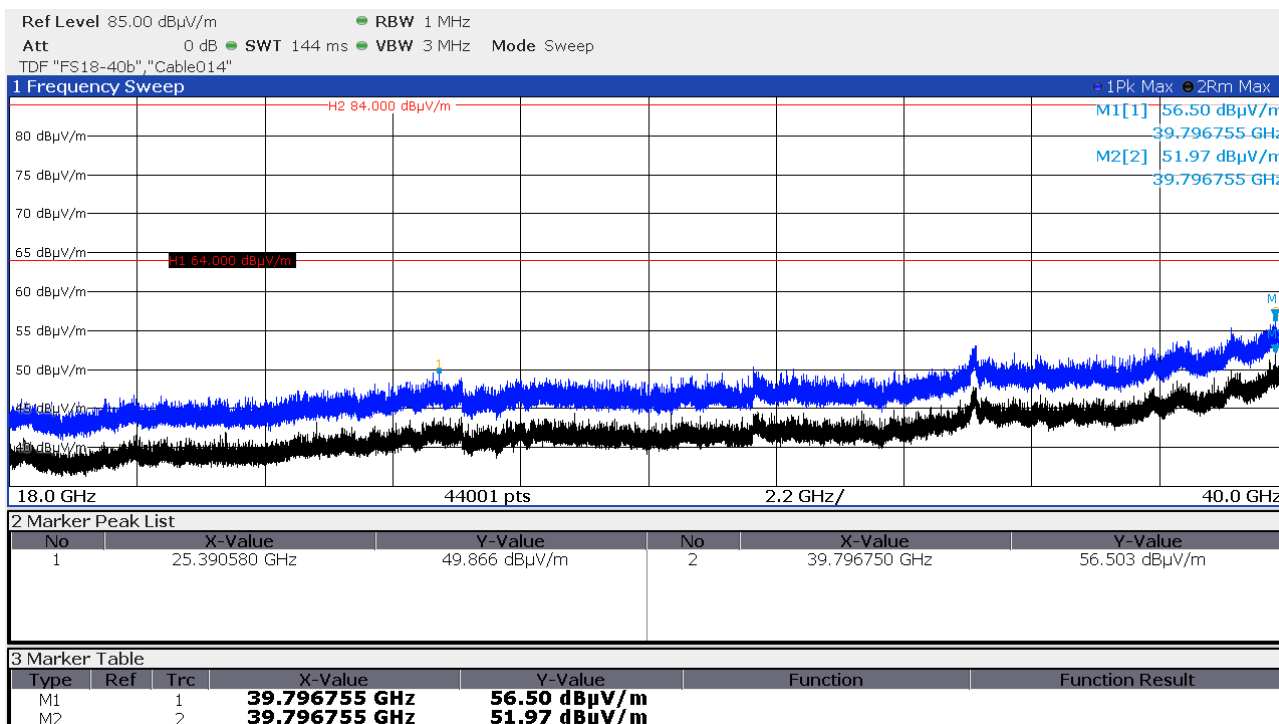
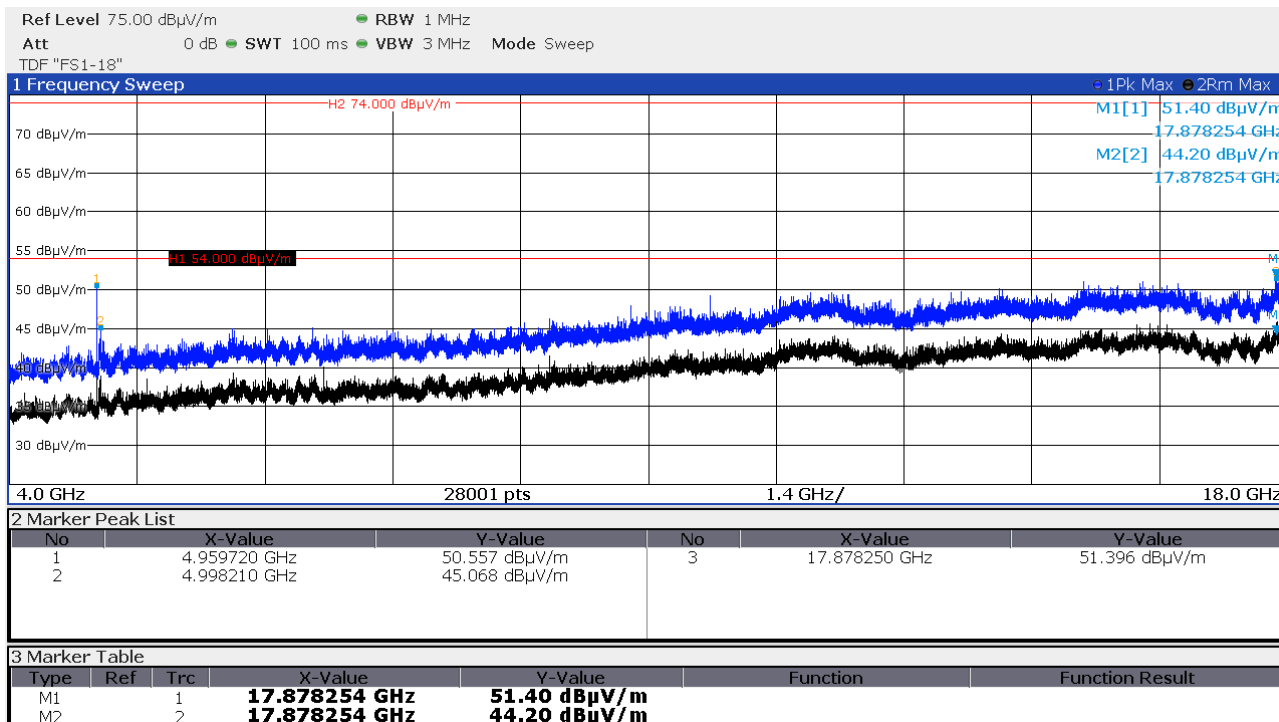
IC: 5228A-PR5XM

Data rate 2 Mbps, CH39 (2480 MHz) vertical polarisation, EUT-standing:



FCC ID: SDL-PR5XM

IC: 5228A-PR5XM



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

5.6 Spurious emissions radiated

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

5.6.1 Description of the test location

Test location: Anechoic chamber 1

Test distance: 3 m

5.6.2 Photo documentation of the test set-up

For test setup photos see T44863-00 ATTACHMENT B

5.6.3 Applicable standard

According to FCC Part 15, Section 15.247(d):

In any 100 kHz bandwidth outside the frequency bands 2400 – 2483.50 MHz and 5725 – 5850 MHz, the digitally modulated radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or an radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. 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) (see Section 15.205(c)).

5.6.4 Description of Measurement

The radiated power of the spurious emission from the EUT is measured in a test setup following the procedures set out in ANSI C63.10. If the emission level of the EUT in peak mode complies with the average limit is 20 dB lower, then testing will be stopped and peak values of the EUT will be reported, otherwise the emission will be measured in average mode again and reported.

Spectrum analyser settings for SER3:

RBW: 100 kHz, VBW: 300 kHz, Detector: Max. peak, Trace: Max. hold, Sweep: Auto

5.6.5 Test result

Frequency range: 2.39 GHz – 2.4 GHz

Highest value (Peak detection): 70.0 dB μ V/m at 2.4 GHz

Note:

Measurements were performed in the frequency range from 1 GHz up to 26 GHz with the analyser settings for restricted band measurements to show compliance for emissions falling into restricted bands, else the band edge compliance is fulfilled. In the frequency ranges from 9 kHz up to 1000 MHz no emissions can be detected.

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

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).

Compliance to the radiated emission limit specified in Section 15.209(a) is shown in section 5.4 of this test report. Only emissions exceeding the general limits of section 15.209(a) and which do not fall into the restricted bands are re-measured applying the limit of section 15.247(d).

Limit according to FCC Part 15, Section 15.247(d) for emissions falling not in restricted bands:

In any 100 kHz bandwidth outside the frequency bands 2400 – 2483.50 MHz and 5725 – 5850 MHz, the digitally modulated radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

Frequency (MHz)	Spurious emission limit
Below 1000	20 dB below the highest level of the desired power
Above 1000	20 dB below the highest level of the desired power

The requirements are **FULFILLED**.

Remarks: Only the frequency range not complying with the general emission limit has been re-measured.

Compliance to the general limit of the other frequency ranges are shown in section 5.4

For detailed test results please see the following test plots.

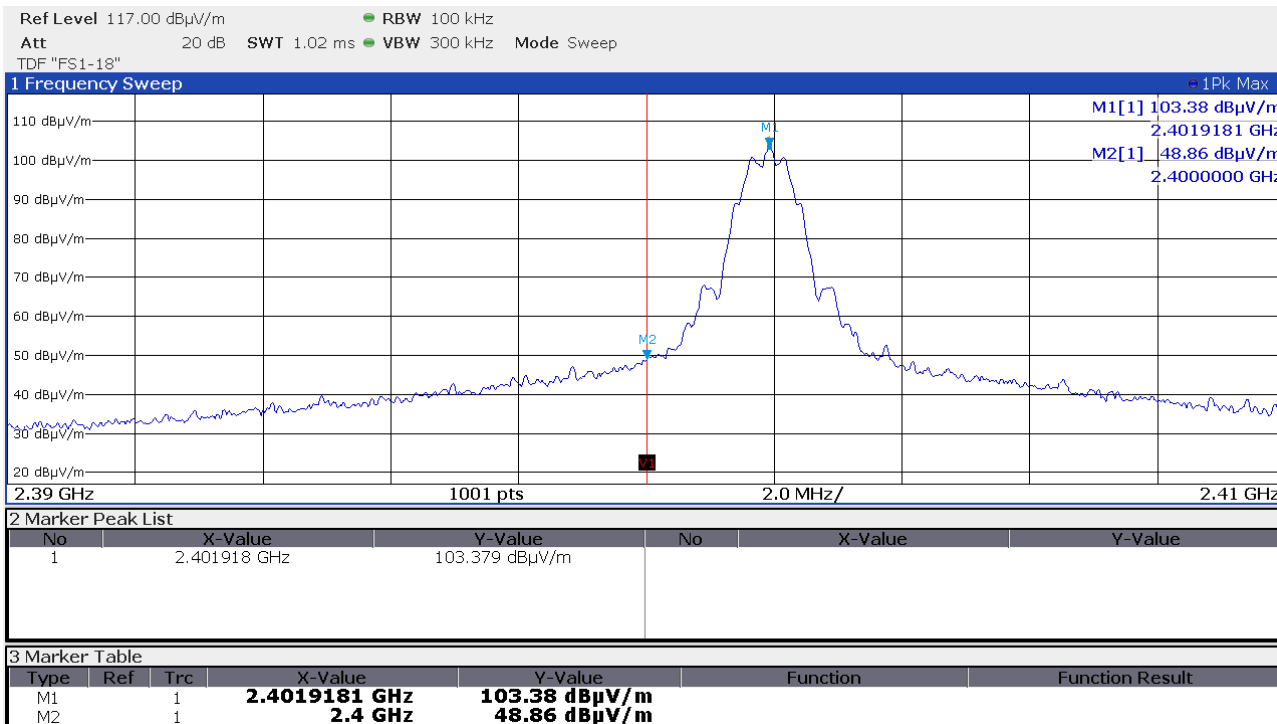
FCC ID: SDL-PR5XM

IC: 5228A-PR5XM

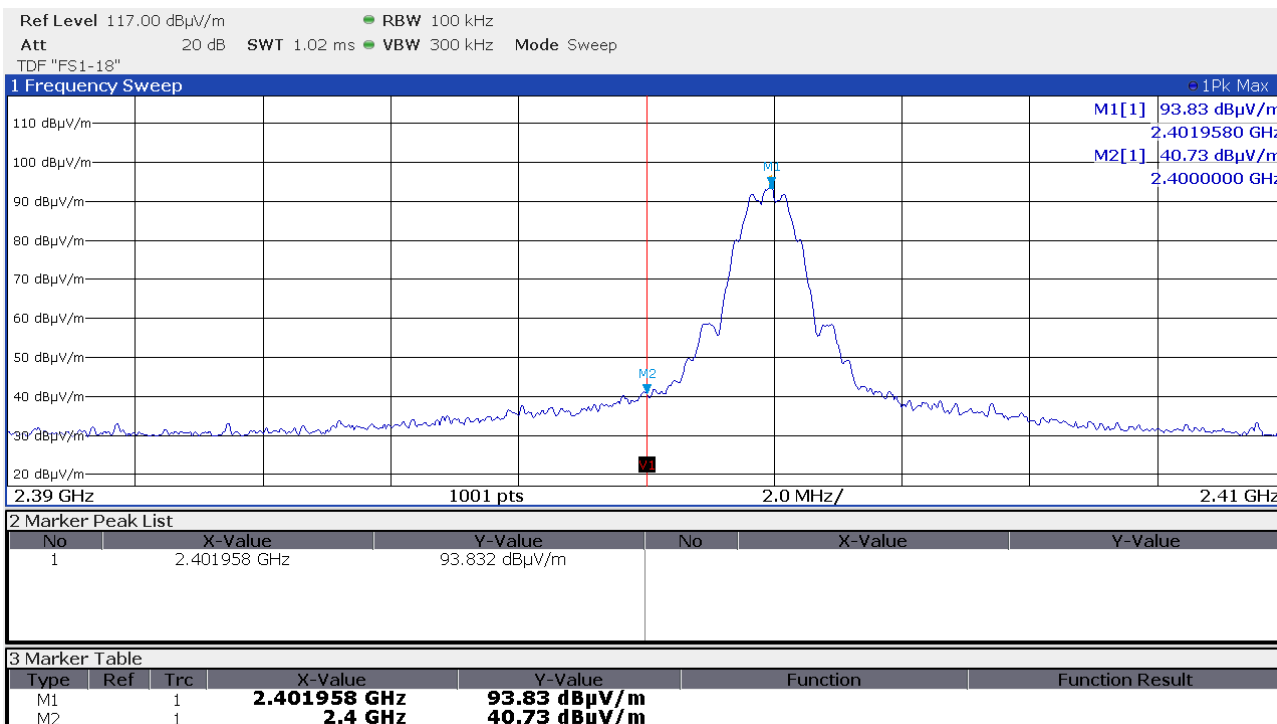
5.6.6 Test protocols radiated emissions

2.39 GHz ≤ f ≤ 2.4 GHz

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



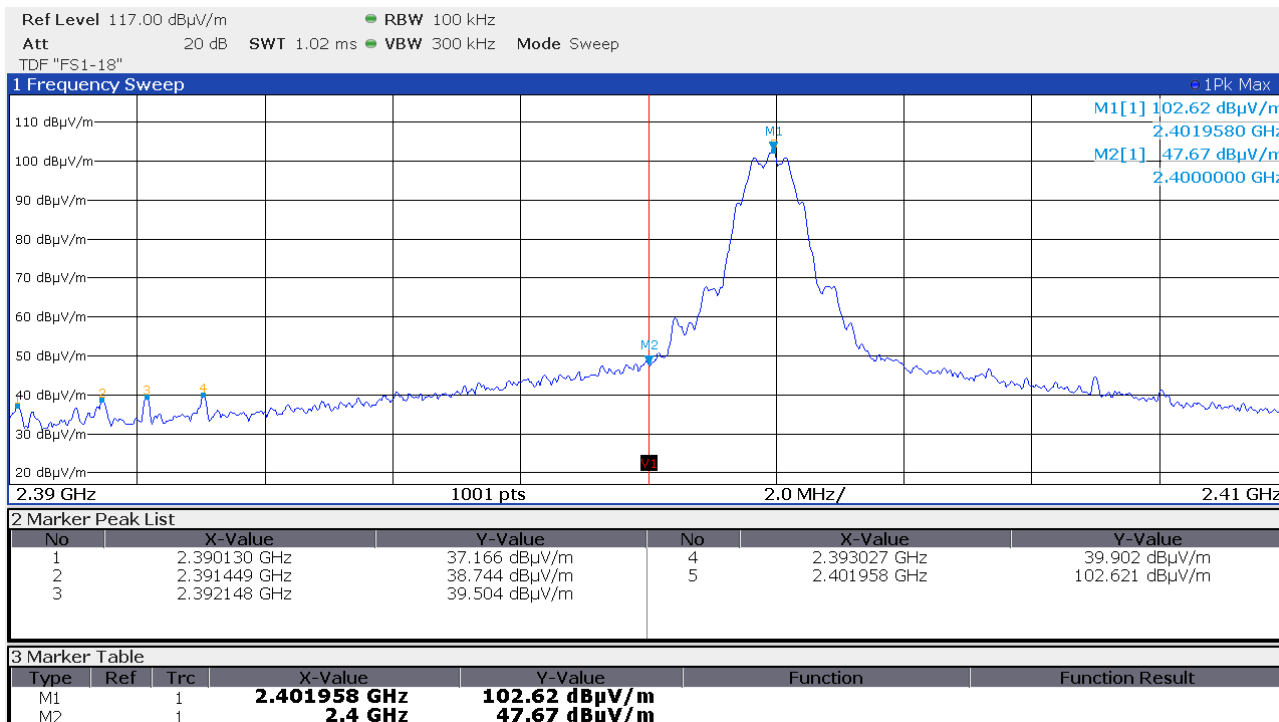
Data rate 125 kbps, CH37 (2402 MHz) vertical polarisation, EUT-lying:



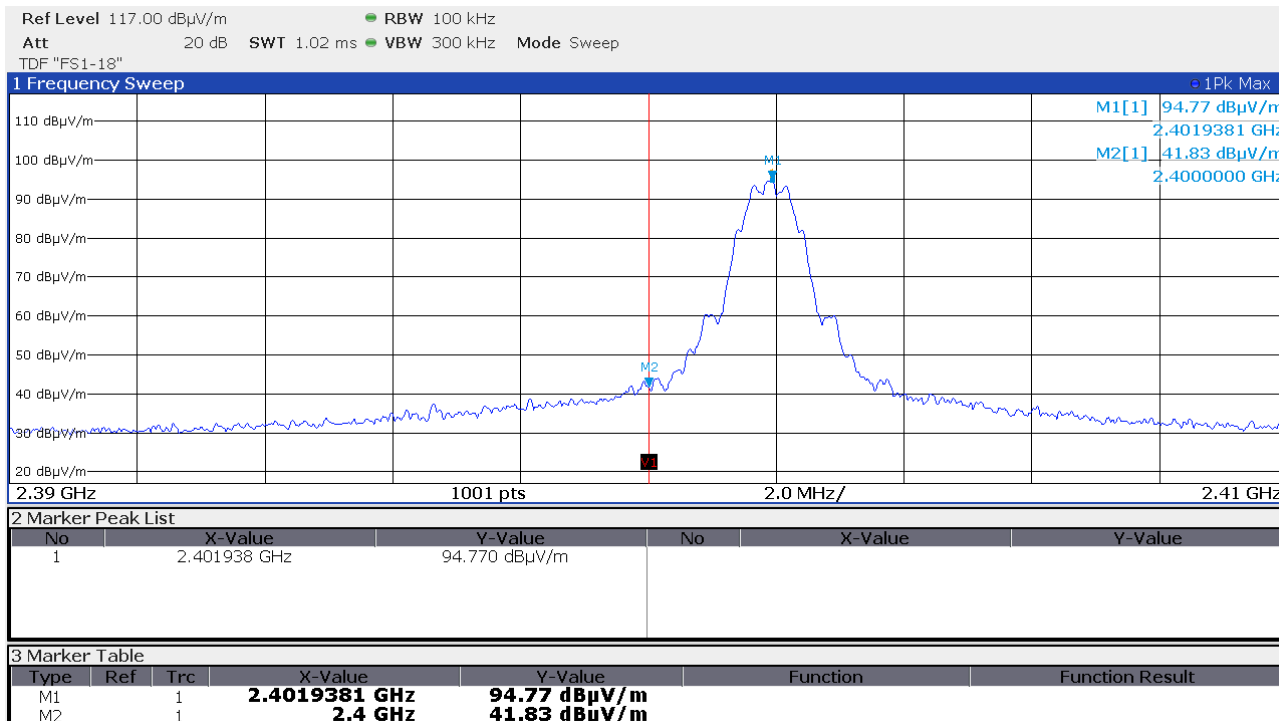
FCC ID: SDL-PR5XM

IC: 5228A-PR5XM

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



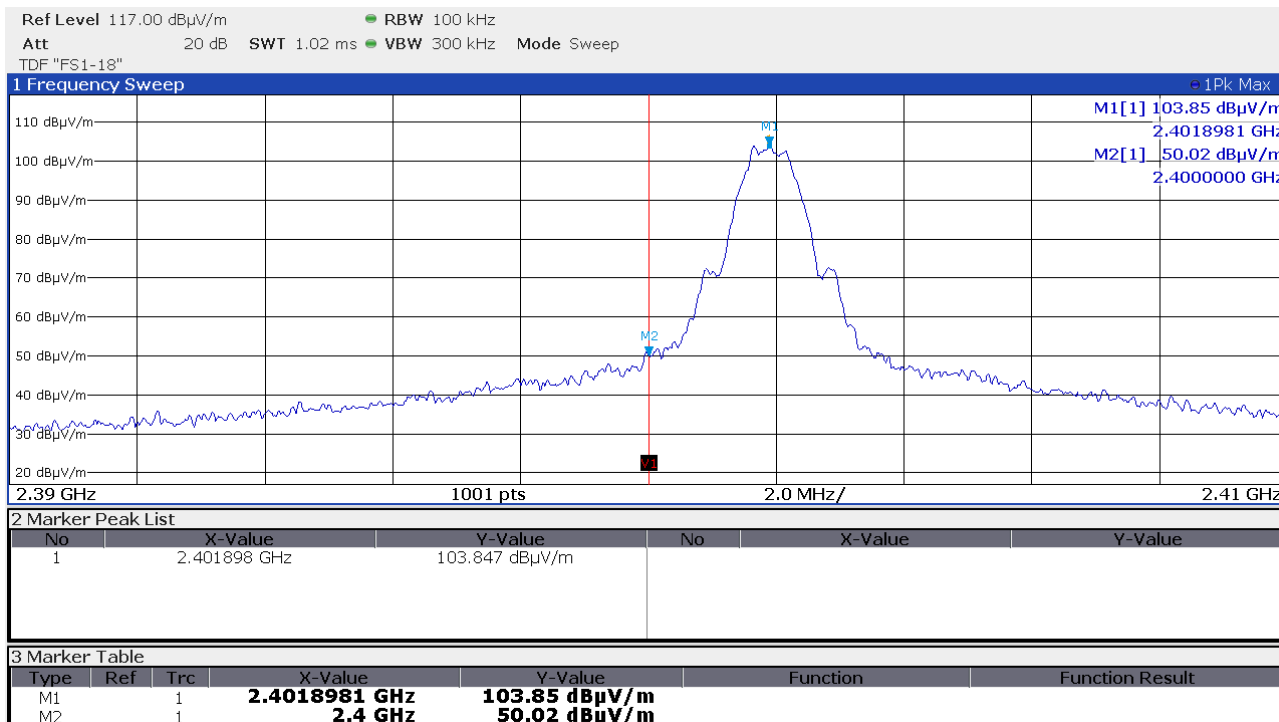
Data rate 125 kbps, CH37 (2402 MHz) vertical polarisation, EUT-standing:



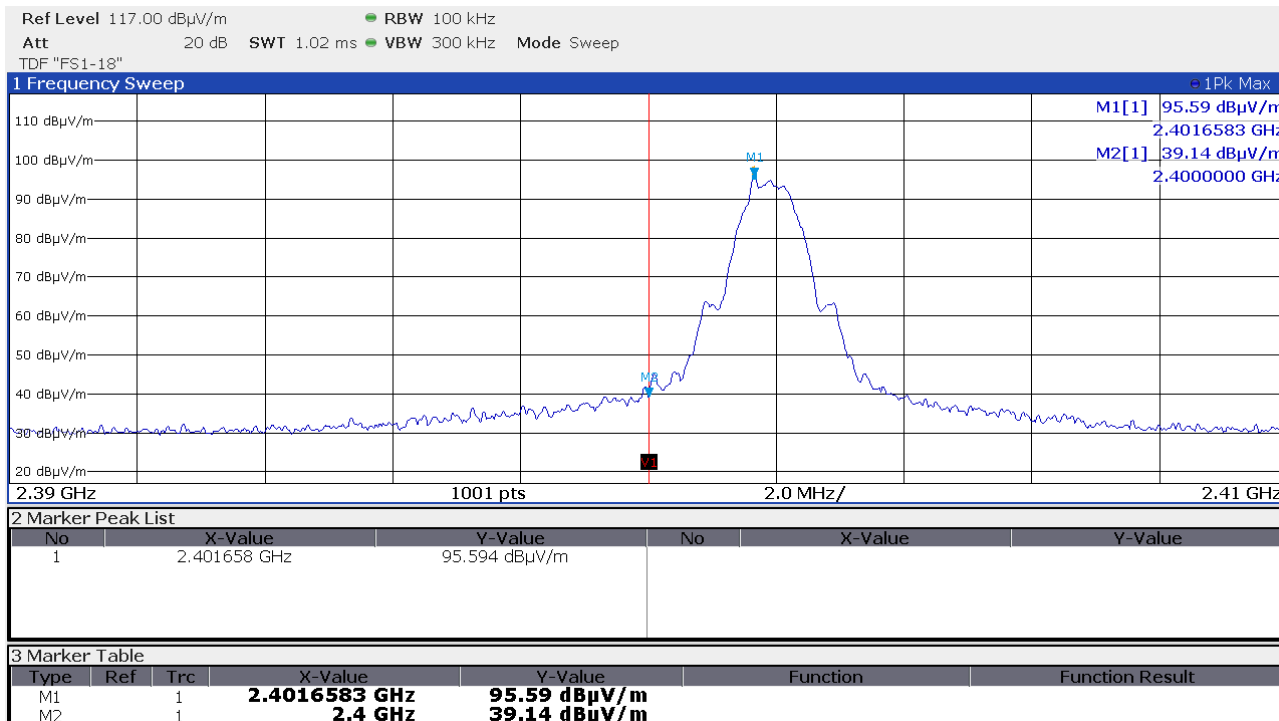
FCC ID: SDL-PR5XM

IC: 5228A-PR5XM

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



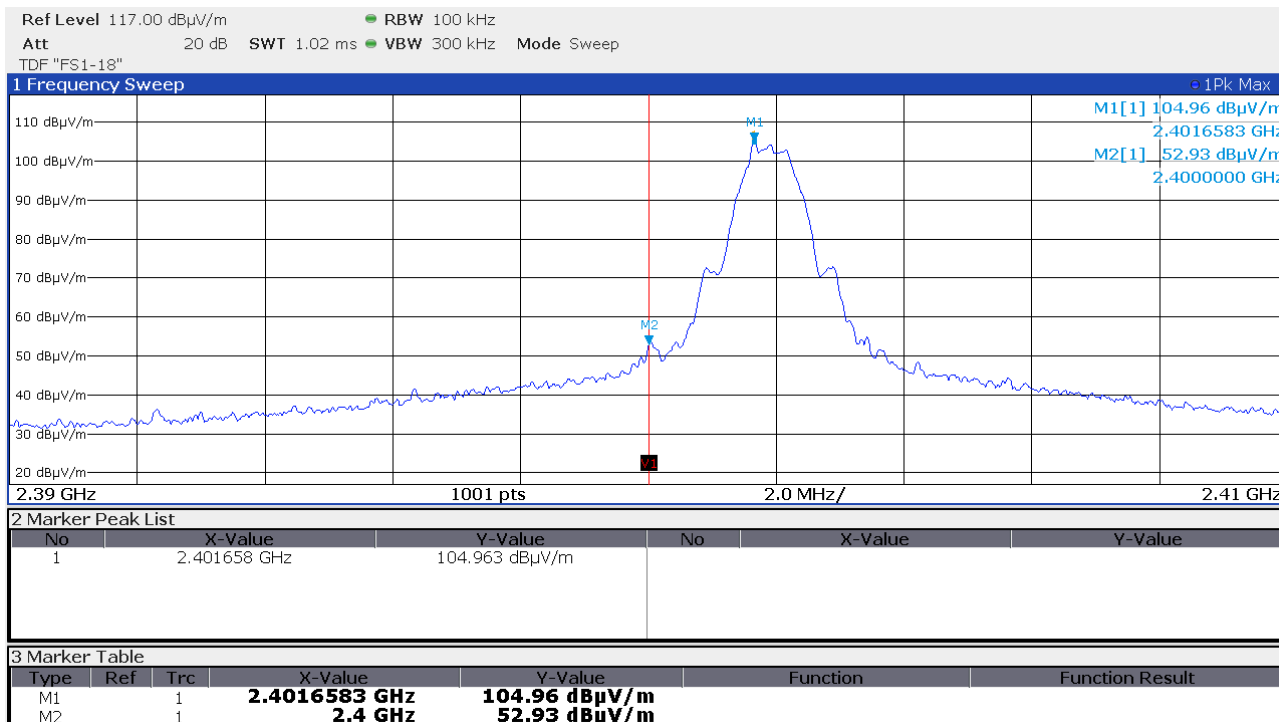
Data rate 500 kbps, CH37 (2402 MHz) vertical polarisation, EUT-lying:



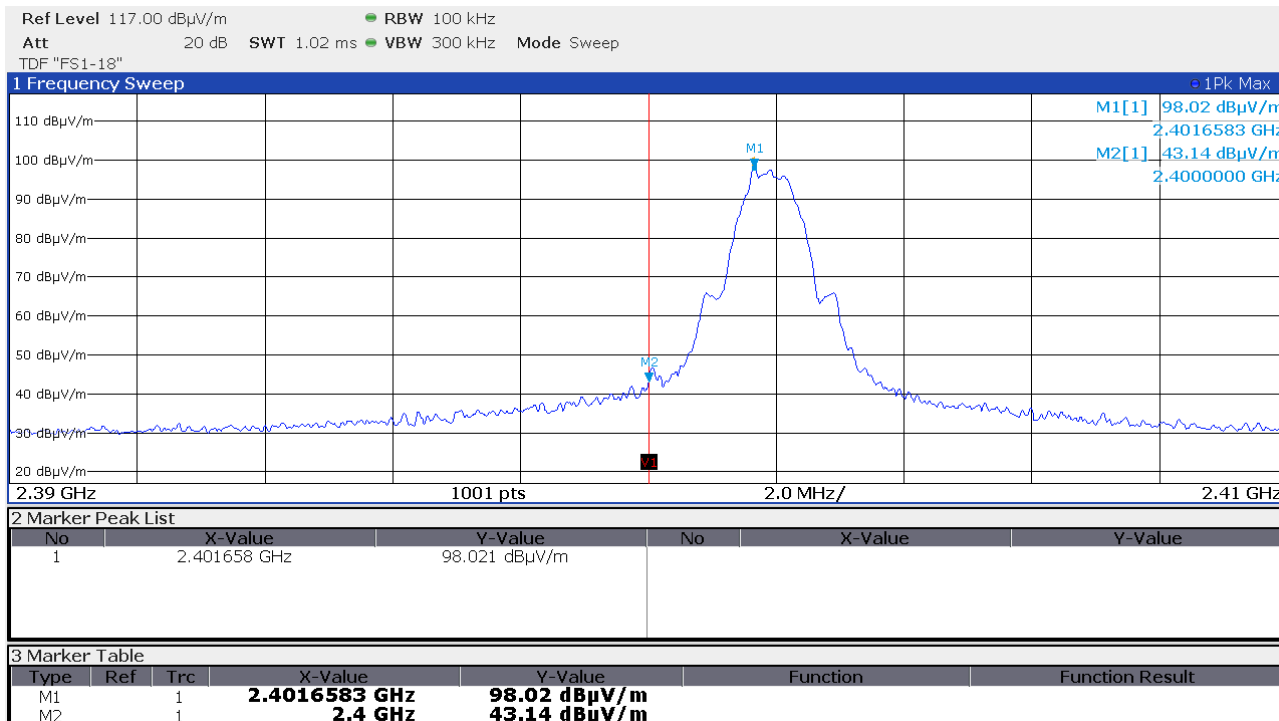
FCC ID: SDL-PR5XM

IC: 5228A-PR5XM

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



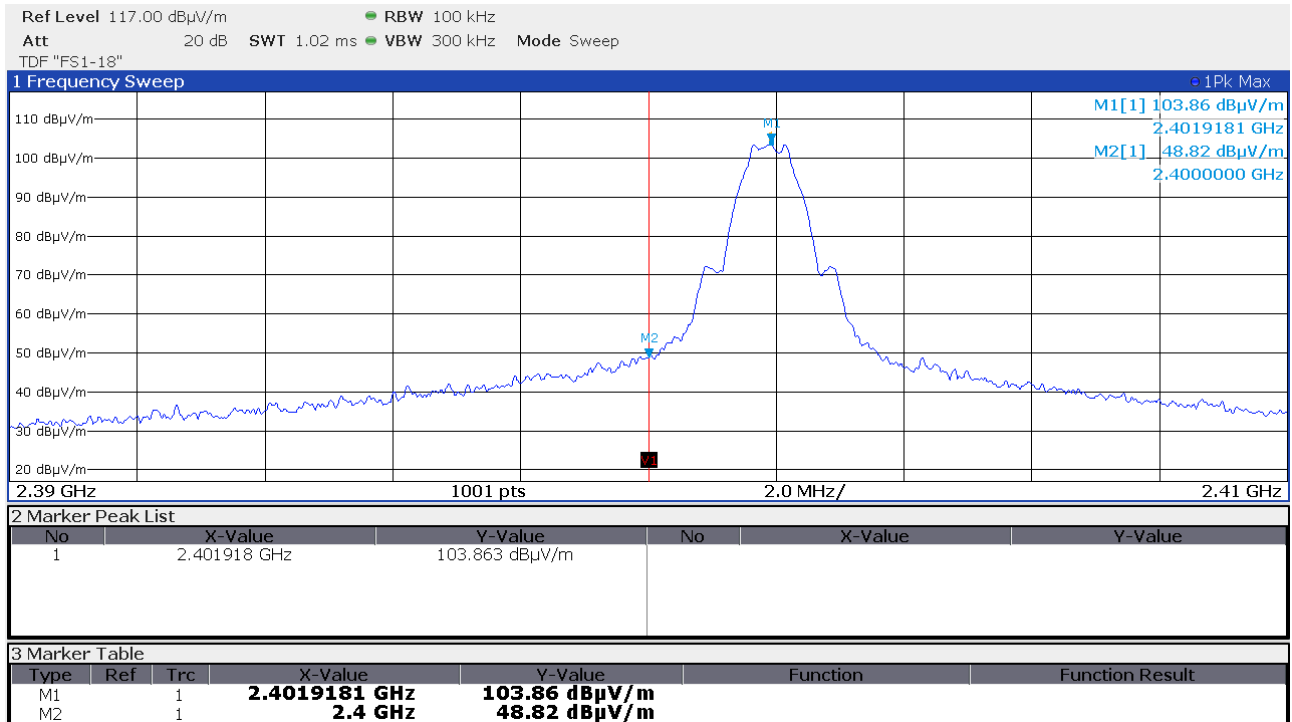
Data rate 500 kbps, CH37 (2402 MHz) vertical polarisation, EUT-standing:



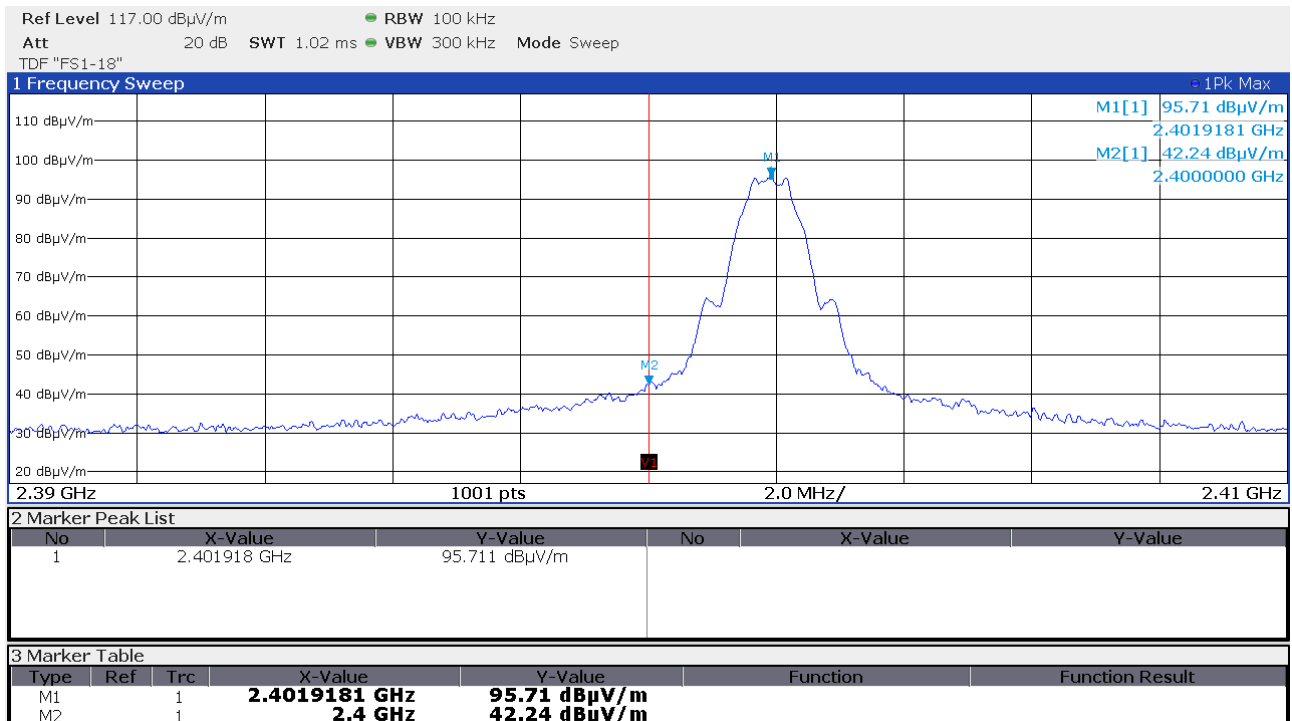
FCC ID: SDL-PR5XM

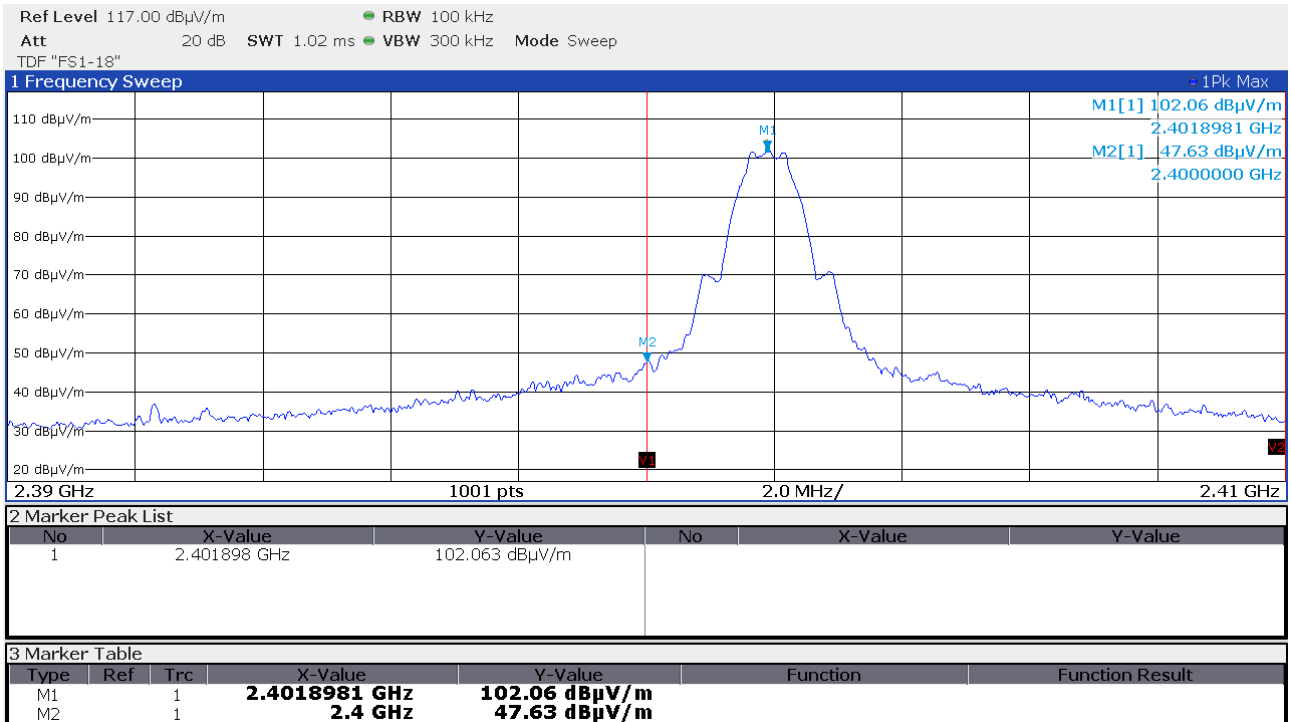
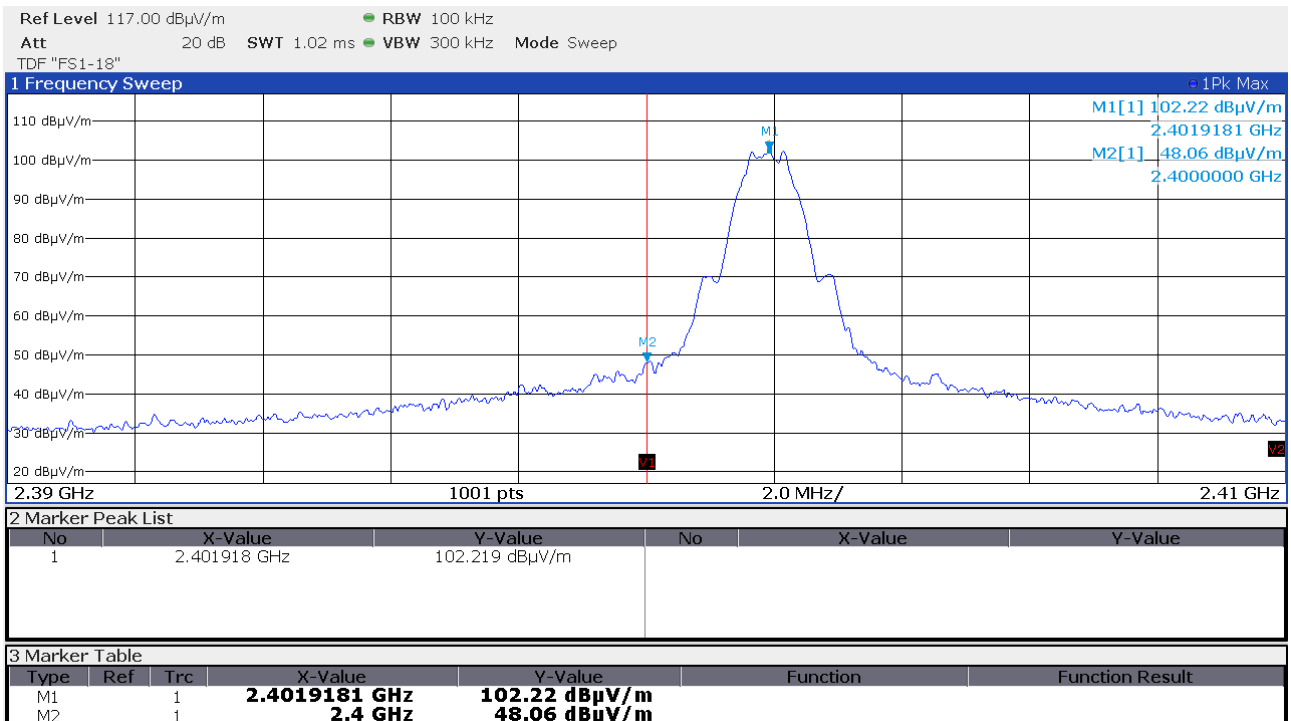
IC: 5228A-PR5XM

Data rate 1 Mbps, CH37 (2402 MHz) horizontal polarisation, EUT-lying:



Data rate 1 Mbps, CH37 (2402 MHz) vertical polarisation, EUT-lying:

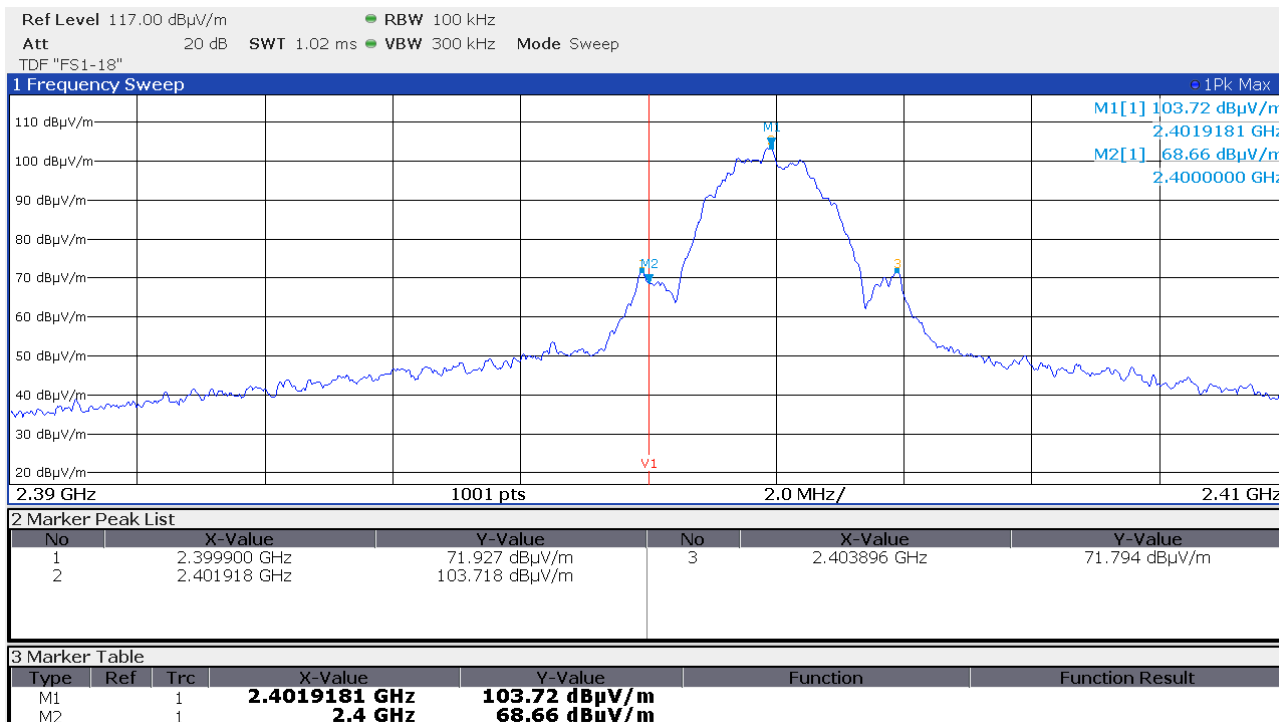


FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 1 Mbps, CH37 (2402 MHz) horizontal polarisation, EUT-standing:

Data rate 1 Mbps, CH37 (2402 MHz) vertical polarisation, EUT-standing:


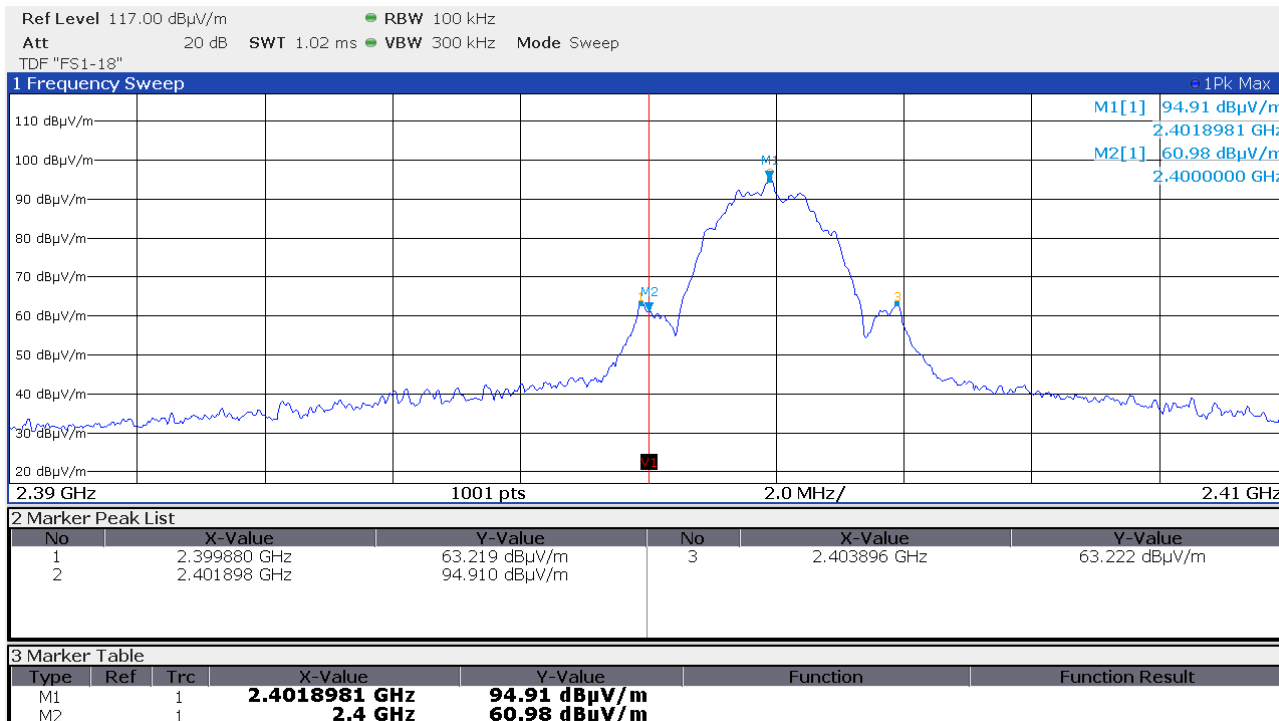
FCC ID: SDL-PR5XM

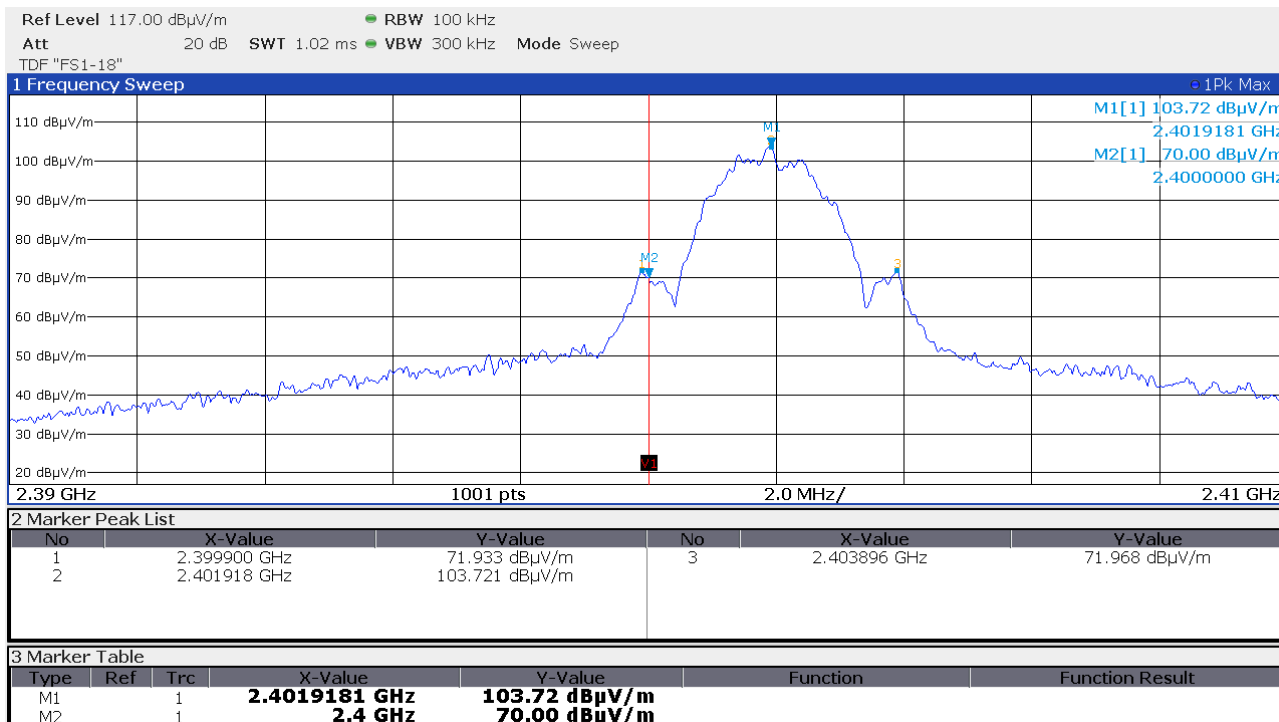
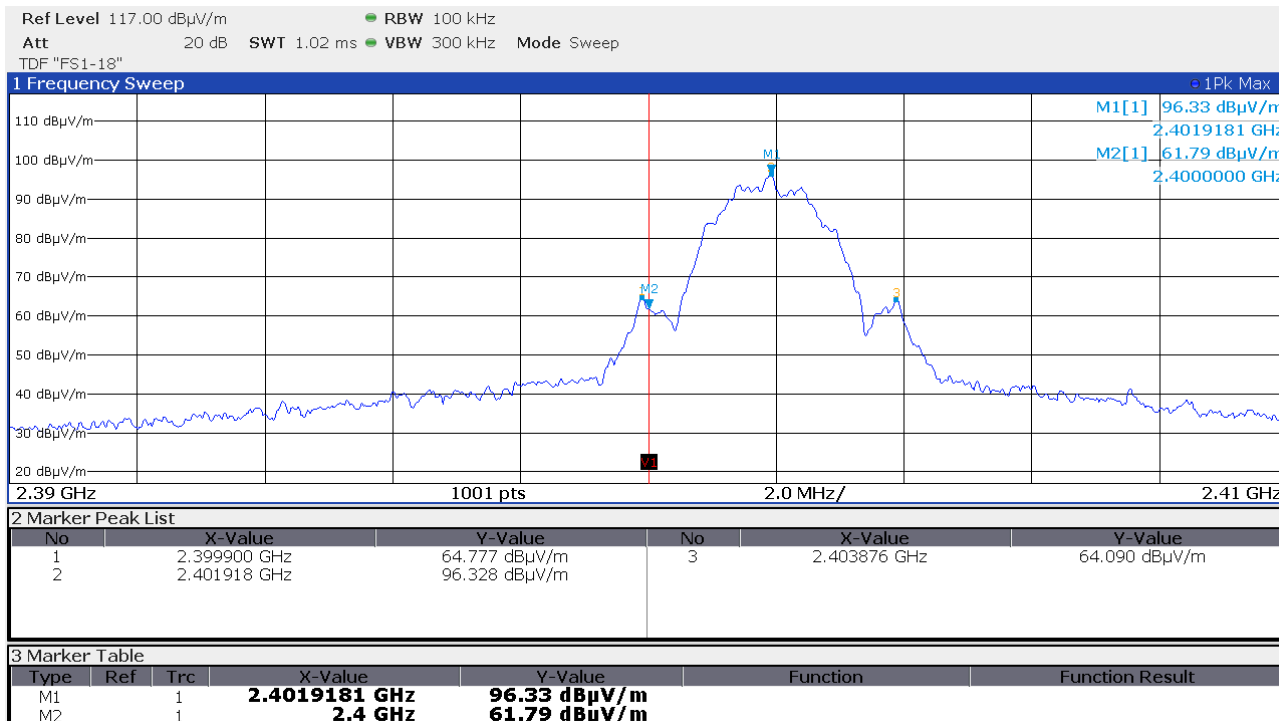
IC: 5228A-PR5XM

Data rate 2 Mbps, CH37 (2402 MHz) horizontal polarisation, EUT-lying:



Data rate 2 Mbps, CH37 (2402 MHz) vertical polarisation, EUT-lying:



FCC ID: SDL-PR5XM
IC: 5228A-PR5XM
Data rate 2 Mbps, CH37 (2402 MHz) horizontal polarisation, EUT-standing:

Data rate 2 Mbps, CH37 (2402 MHz) vertical polarisation, EUT-standing:


FCC ID: SDL-PR5XM

IC: 5228A-PR5XM

5.7 Antenna application

5.7.1 Applicable standard

According to FCC Part 15C, Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

The EUT has an integrated antenna. No other antenna can be used with the device.

The antenna of the EUT meets the requirement of FCC Part 15C, Section 15.203 and 15.204.

5.7.2 Antenna requirements

According to FCC Part 15C, Section 15.247(b)(4):

The conducted output power limit specified in paragraph (b) of 15.247 is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from intentional radiator shall be reduced below the stated values in paragraph (b)(1), (b)(2) and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Remarks: No power reduction results from the defacto limit, peak Gain of the used antenna is 1.9 dBi.

-

FCC ID: SDL-PR5XM

IC: 5228A-PR5XM

6 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used are calibrated and verified regularly. The calibration history is available on request.

Test ID	Model Type	Equipment No.	Next Calib.	Last Calib.	Next Verif.	Last Verif.
A 4	BAT-EMC 3.18.0.26	01-02/68-13-001				
	ESCI	02-02/03-15-001	02/07/2020	02/07/2019		
	ESH 2 - Z 5	02-02/20-05-004	25/10/2019	25/10/2017	30/10/2019	30/04/2019
	N-4000-BNC	02-02/50-05-138				
	N-1500-N	02-02/50-05-140				
	ESH 3 - Z 2	02-02/50-05-155	18/11/2019	18/11/2016	13/11/2019	13/05/2019
CPC 3	ESW26	02-02/03-17-002	13/12/2019	13/12/2018		
MB	ESW26	02-02/03-17-002	13/12/2019	13/12/2018		
PSD	ESW26	02-02/03-17-002	13/12/2019	13/12/2018		
SER 1	ESCI	02-02/03-05-004	02/10/2020	02/10/2019		
	HFH 2 - Z 2	02-02/24-15-001	28/03/2020	28/03/2019		
	NW-2000-NB	02-02/50-05-113				
	KK-EF393/U-16N-21N20 m	02-02/50-12-018				
	KK-SD_7/8-2X21N-33,0M	02-02/50-15-028				
SER 2	ESVS 30	02-02/03-05-006	19/08/2020	19/08/2019		
	VULB 9168	02-02/24-05-005	19/07/2020	19/07/2019		
	NW-2000-NB	02-02/50-05-113				
	KK-EF393/U-16N-21N20 m	02-02/50-12-018				
	KK-SD_7/8-2X21N-33,0M	02-02/50-15-028				
SER 3	FSW43	02-02/11-15-001	08/04/2020	08/04/2019		
	AMF-6D-01002000-22-10P	02-02/17-15-004				
	3117	02-02/24-05-009	06/06/2020	06/06/2019		
	WHK 3.0/18G-10EF	02-02/50-05-180				
	18N-20	02-02/50-17-003				
	NMS111-GL200SC01-NMS11	02-02/50-17-012				
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