

Annex 1: Measurement diagrams to
TEST REPORT
No.: 18-1-0000401T03a-C2

According to:
FCC Regulations
Part 15.519

for

Siemens AG

WIRELESS TAG ASSET PULSE | PHASE

FCC ID: SCF6032701

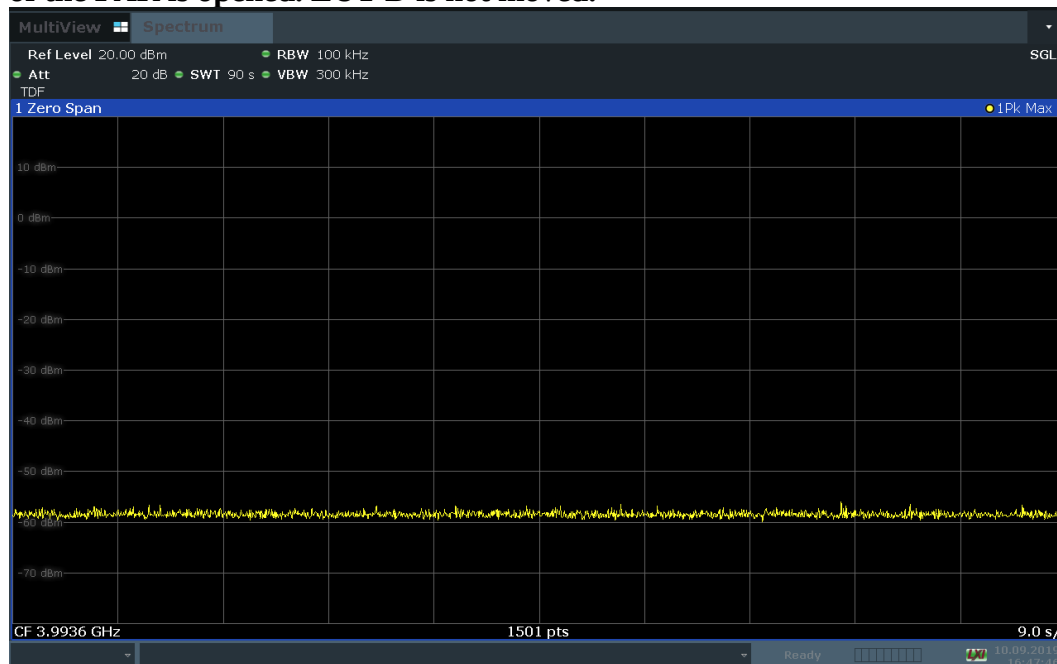
Laboratory Accreditation
 Deutsche Akkreditierungsstelle D-PL-12047-01-01 D-PL-12047-01-03 D-PL-12047-01-04
accredited according to DIN EN ISO/IEC 17025
CETECOM GmbH Laboratory Radio Communications & Electromagnetic Compatibility Im Teelbruch 116 • 45219 Essen • Germany Registered in Essen, Germany, Reg. No.: HRB Essen 8984 Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964 E-mail: info@cetecom.com • Internet: www.cetecom.com

TABLE OF CONTENTS:

1. TRANSMISSION TIME MEASUREMENT	3
1.1. Connection between EUT D and intentional radiator (AE7) is established. The door of the FAR is opened. EUT D is not moved.	3
1.2. Connection between EUT D and intentional radiator (AE7) is established. The door of the FAR is opened. EUT D is moved all the time.	3
1.3. Connection between EUT D and intentional radiator (AE7) is established. The door of the FAR is opened. EUT D is moved at first part of the measurement. Movement stops at time M1.....	4
1.4. Connection between EUT D and intentional radiator (AE7) is established. The door of the FAR is opened at first part of the measurement. EUT D is moved all the time. The door of the FAR is closed at time M1 (thereby the communication between EUT D and AE 7 is interrupted).	4
2. 10 DB BANDWIDTH MEASUREMENT	5
2.1. Op. Mode 2 (DW2_PR16MHz_DR110k_PCCh2_PL36)	5
2.2. Op. Mode 3 (DW2_PR16MHz_DR6800k_PCCh2_PL36)	5
2.3. Op. Mode 4 (DW2_PR64MHz_DR110k_PCCh2_PL36)	6
2.4. Op. Mode 5 (DW2_PR64MHz_DR6800k_PCCh2_PL36)	6
3. GENERAL LIMIT - RADIATED FIELD STRENGTH EMISSIONS BELOW 30 MHZ.....	7
3.1. Op. Mode 1, laying	7
3.2. Op. Mode 1, standing.....	7
4. GENERAL LIMIT - RADIATED FIELD STRENGTH EMISSIONS, 30 MHZ - 1 GHZ	8
4.1. Op. Mode 1, laying	8
4.2. Op. Mode 1, standing.....	8
5. GENERAL LIMIT – RADIATED FIELD STRENGTH EMISSIONS, ABOVE 960 MHZ.....	9
5.1. Frequency range 960 MHz – 1610 MHz, op. mode 1, set-up 1, ANT VER + HOR	9
5.2. Frequency range 1610 MHz – 3100 MHz, op. mode 1, set-up 4, ANT VER.....	9
5.3. Frequency range 1610 MHz – 3100 MHz, op. mode 1, set-up 4, ANT VER, peak measurement	10
5.4. Frequency range 1610 MHz – 3100 MHz, op. mode 1, set-up 4, ANT HOR	10
5.5. Frequency range 1610 MHz – 3100 MHz, op. mode 1, set-up 4, ANT HOR, peak measurement.....	11
5.6. Frequency range 1990 MHz – 3100 MHz, op. Mode 1, set-up 1.....	11
5.7. Frequency range 3100 MHz – 5000 MHz, op. Mode 1, set-up 1, ANT VER + HOR.....	12
5.8. UWB Ch. 2 cen. frequency with span 600 MHz, 600 pts, SWT 600ms, op. Mode 1, set-up 1, ANT VER + HOR.....	12
5.9. Frequency range 5000 MHz – 10600 MHz, op. Mode 1, set-up 1, ANT VER + HOR.....	13
5.10. Frequency range 10600 MHz – 12000 MHz, op. Mode 1, set-up 4, ANT VER.....	13
5.11. Frequency range 10600 MHz – 12000 MHz, op. Mode 1, set-up 4, ANT HOR	14
5.12. Frequency range 12000 MHz – 18000 MHz, op. Mode 1, set-up 4, ANT VER + HOR	14
5.13. Frequency range 18000 MHz – 40000 MHz	15
5.13.1. Standing + laying, ANT HOR, op. Mode 1, set-up 4, RBW = 50 kHz	15
5.13.2. Standing + laying, ANT HOR, op. Mode 1, set-up 4, RBW = 100 kHz	15
5.13.3. Standing + laying, ANT VER, op. Mode 1, set-up 4, RBW = 50 kHz.....	16
5.13.4. Standing + laying, ANT VER, op. Mode 1, set-up 4, RBW = 100 kHz.....	16
6. RADIATED EMISSIONS IN THE GPS BANDS	17
6.1. Frequency range 1164 MHz – 1240 MHz, op. Mode 1	17
6.2. Frequency range 1559 MHz – 1610 MHz, op. Mode 1	17
7. FUNDAMENTAL EMISSION PEAK POWER, OP. MODE 1	18

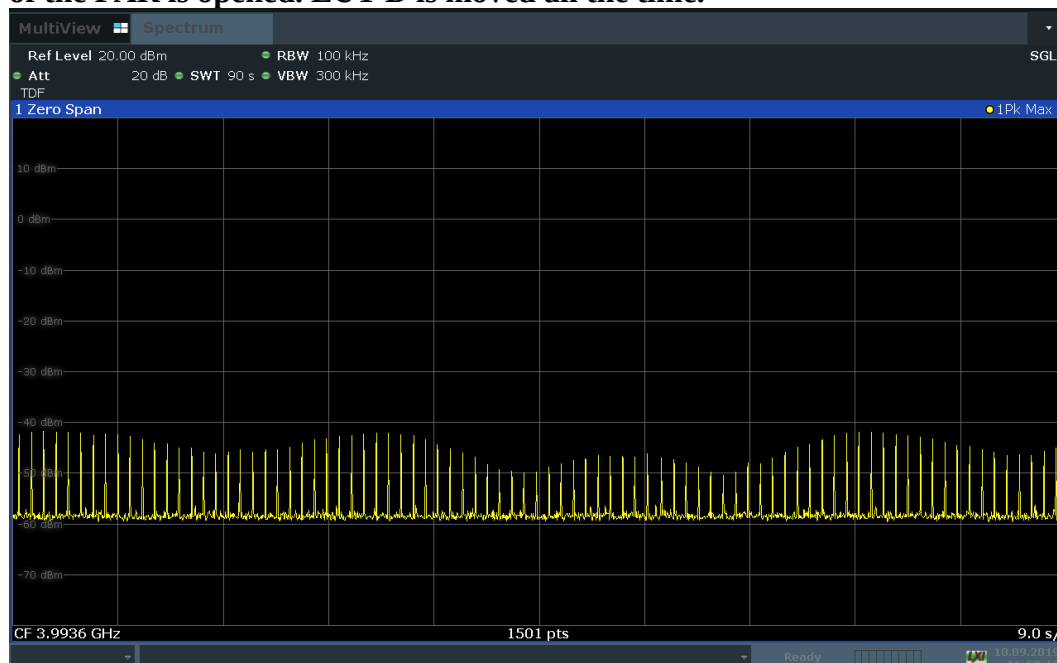
1. Transmission time measurement

1.1. Connection between EUT D and intentional radiator (AE7) is established. The door of the FAR is opened. EUT D is not moved.



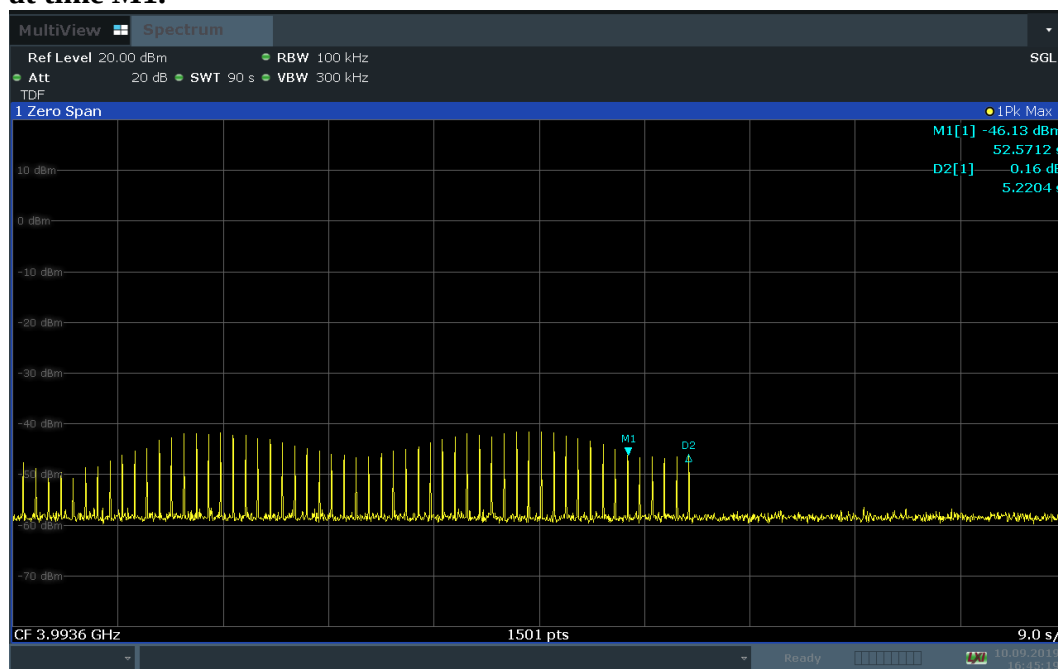
16:47:47 10.09.2019

1.2. Connection between EUT D and intentional radiator (AE7) is established. The door of the FAR is opened. EUT D is moved all the time.



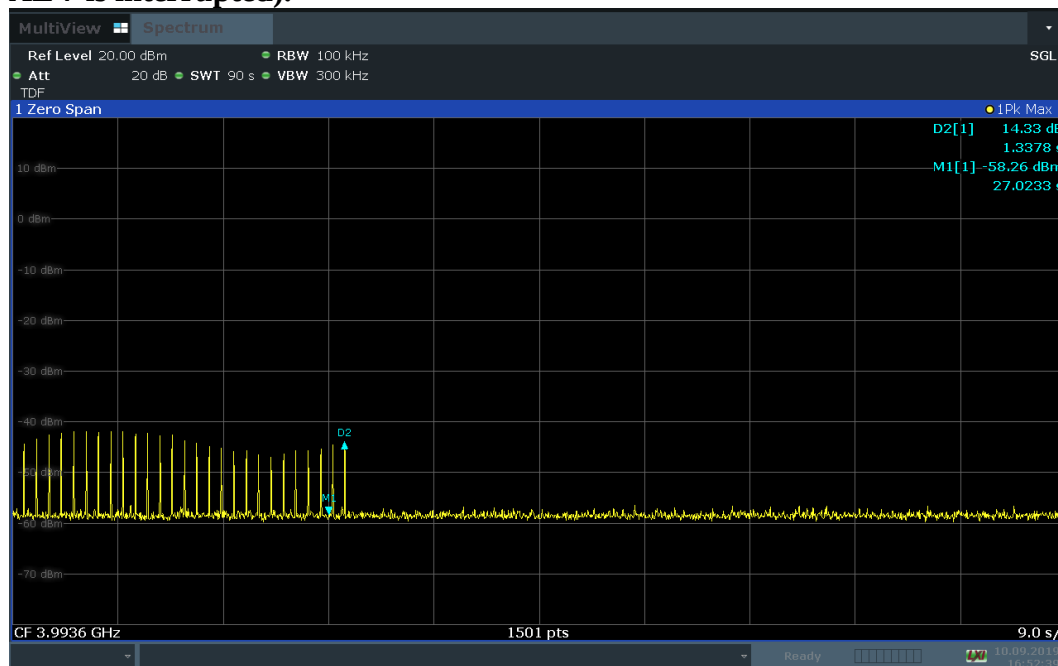
16:50:14 10.09.2019

1.3. Connection between EUT D and intentional radiator (AE7) is established. The door of the FAR is opened. EUT D is moved at first part of the measurement. Movement stops at time M1.



16:45:20 10.09.2019

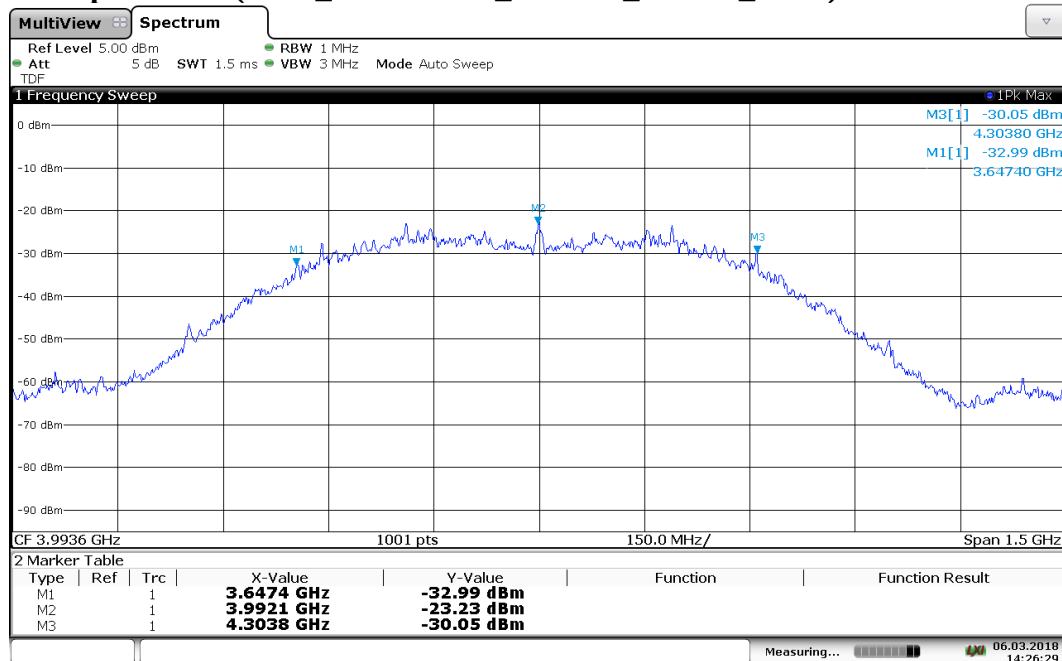
1.4. Connection between EUT D and intentional radiator (AE7) is established. The door of the FAR is opened at first part of the measurement. EUT D is moved all the time. The door of the FAR is closed at time M1 (thereby the communication between EUT D and AE 7 is interrupted).



16:52:40 10.09.2019

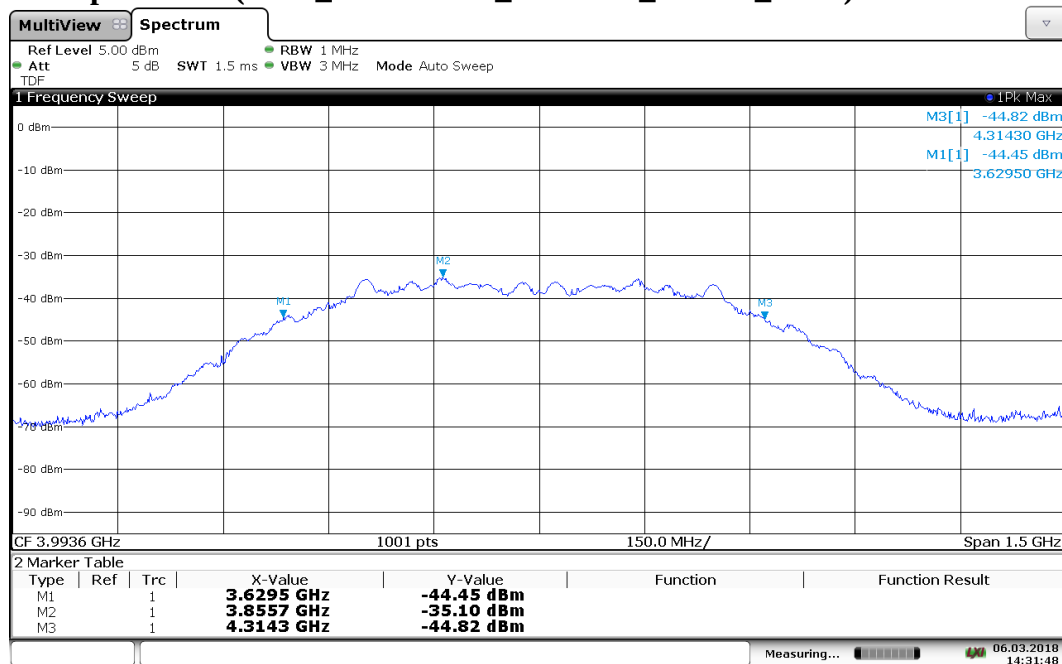
2. 10 dB bandwidth measurement

2.1. Op. Mode 2 (DW2_PRF16MHz_DR110k_PCCh2_PL36)



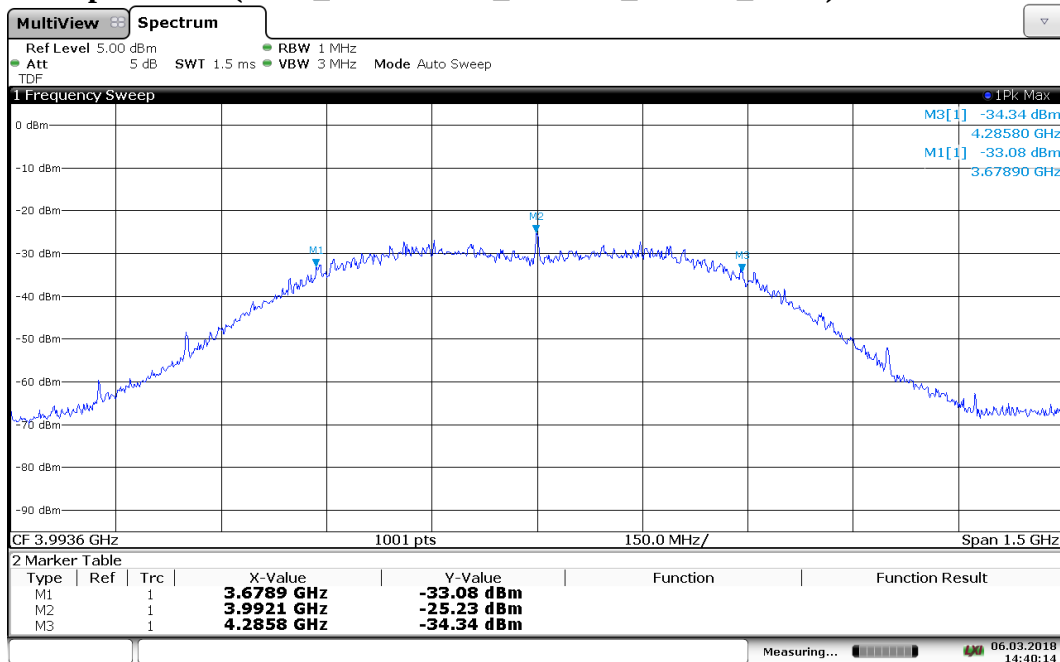
14:26:29 06.03.2018

2.2. Op. Mode 3 (DW2_PRF16MHz_DR6800k_PCCh2_PL36)



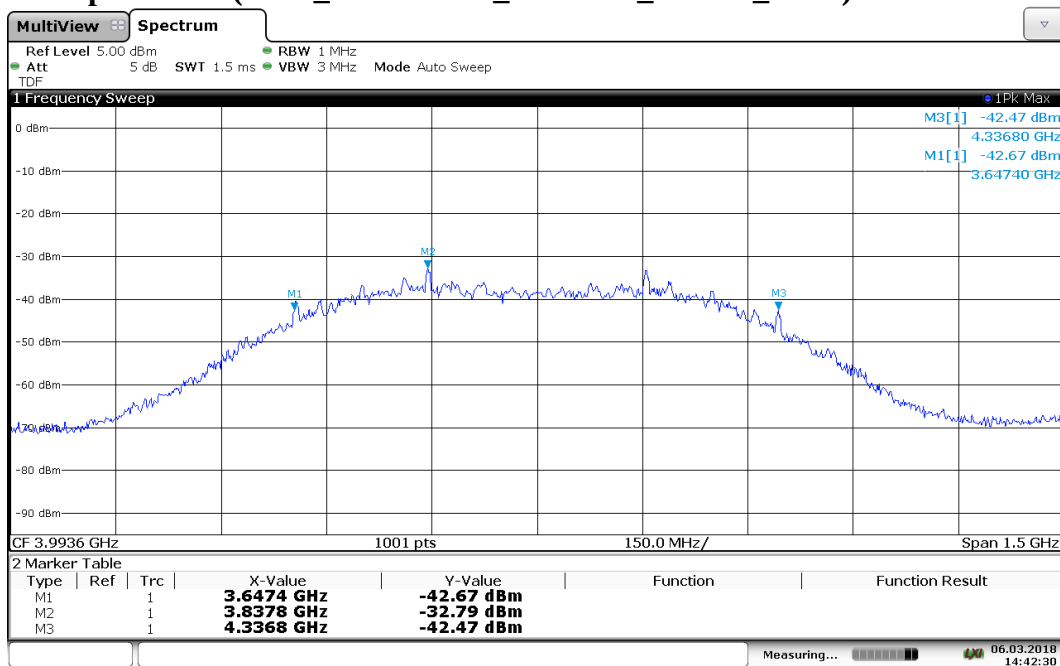
14:31:48 06.03.2018

2.3. Op. Mode 4 (DW2_PRF64MHz_DR110k_PCCh2_PL36)



14:40:14 06.03.2018

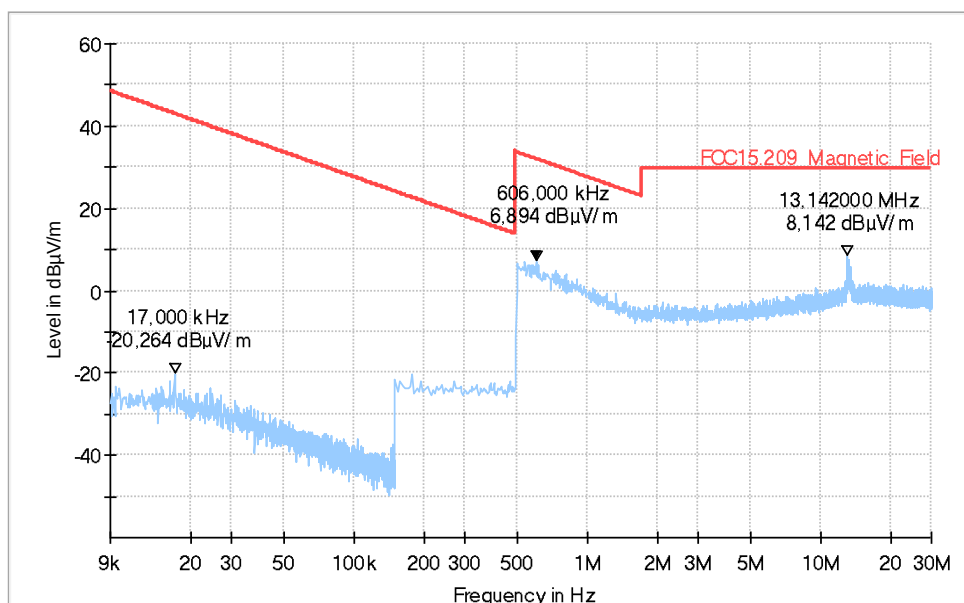
2.4. Op. Mode 5 (DW2_PRF64MHz_DR6800k_PCCh2_PL36)



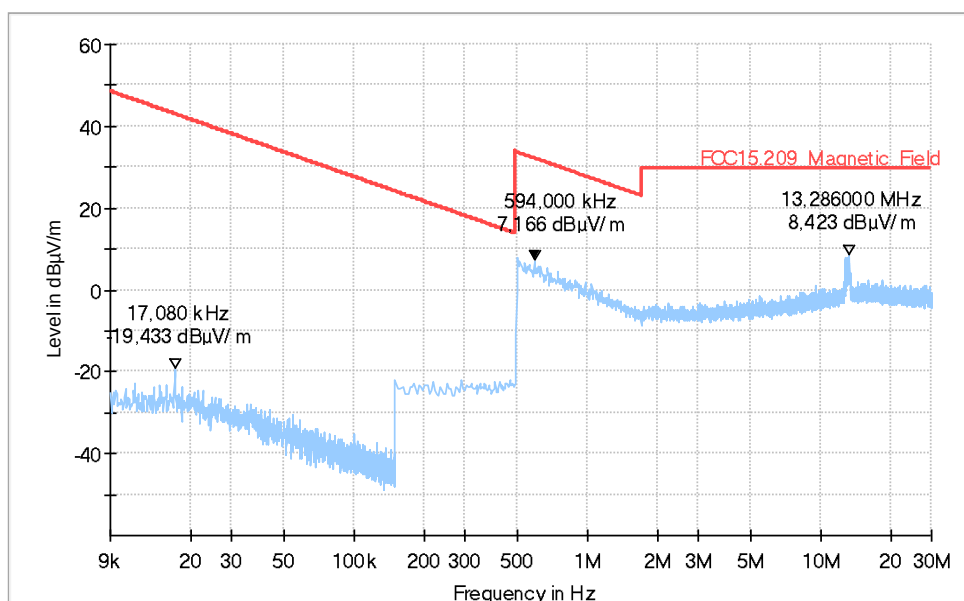
14:42:30 06.03.2018

3. General Limit - Radiated field strength emissions below 30 MHz

3.1. Op. Mode 1, laying

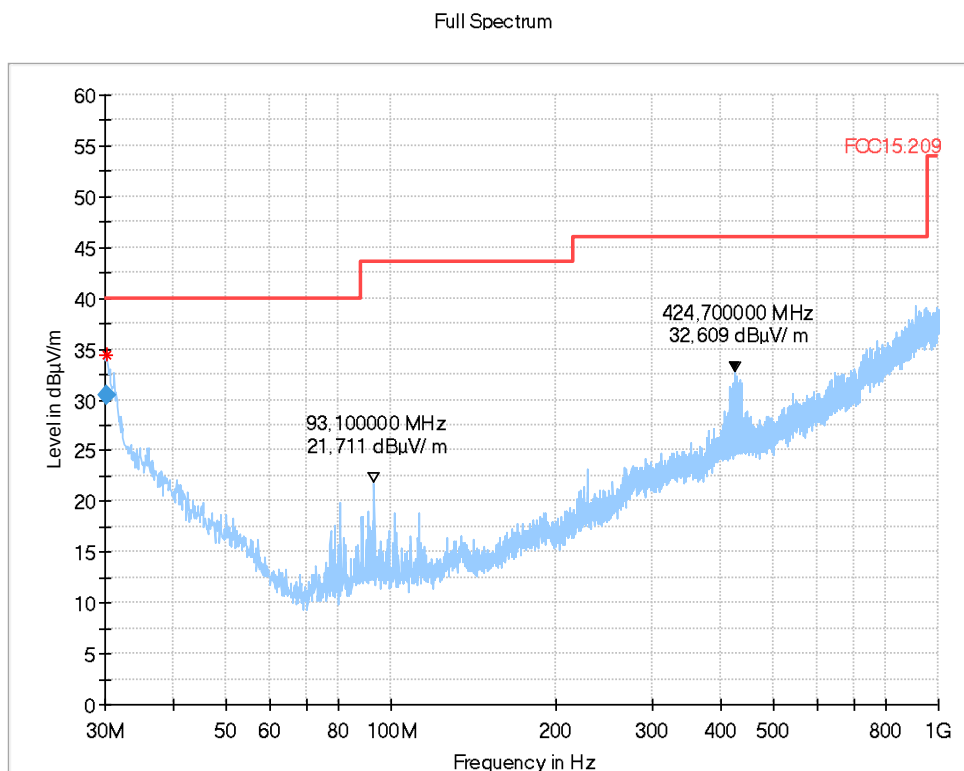


3.2. Op. Mode 1, standing

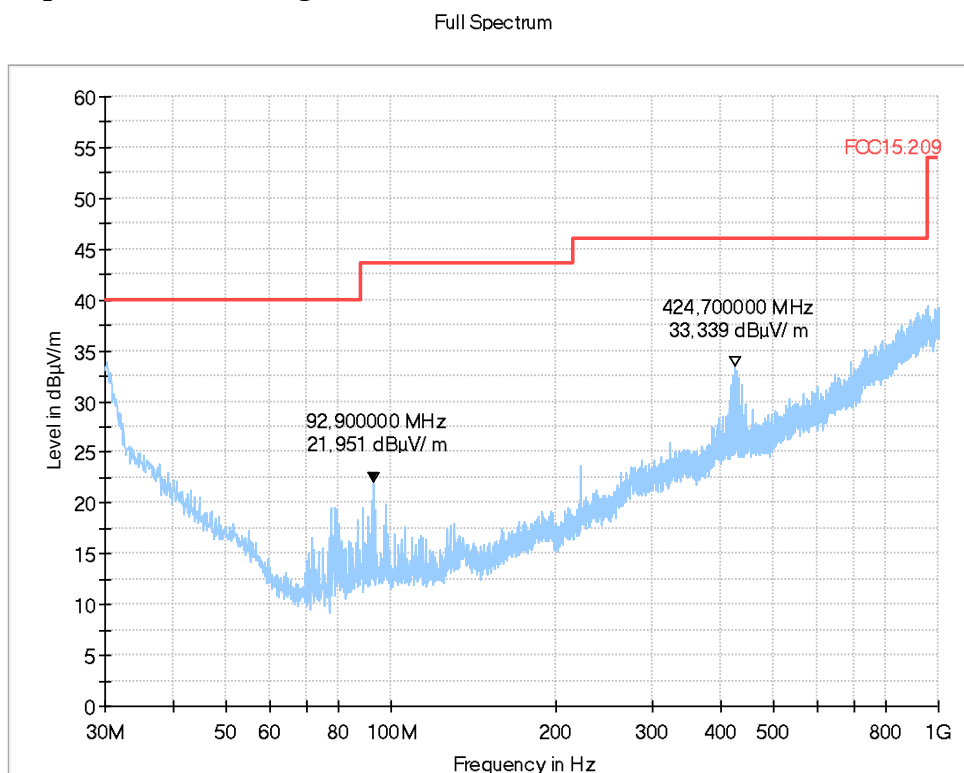


4. General Limit - Radiated field strength emissions, 30 MHz - 1 GHz

4.1. Op. Mode 1, laying

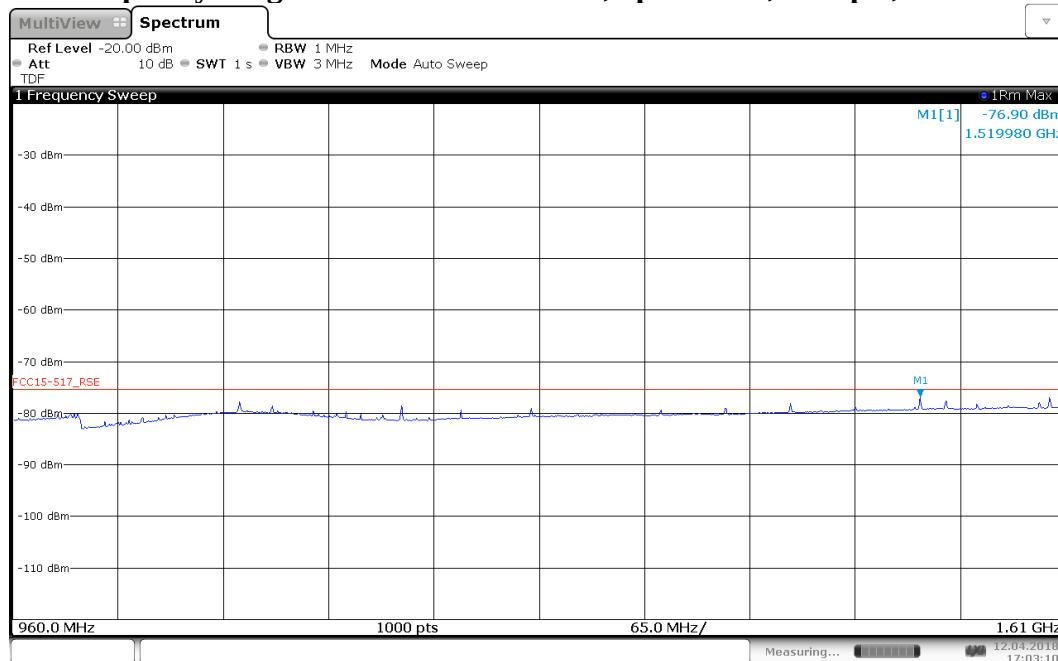


4.2. Op. Mode 1, standing



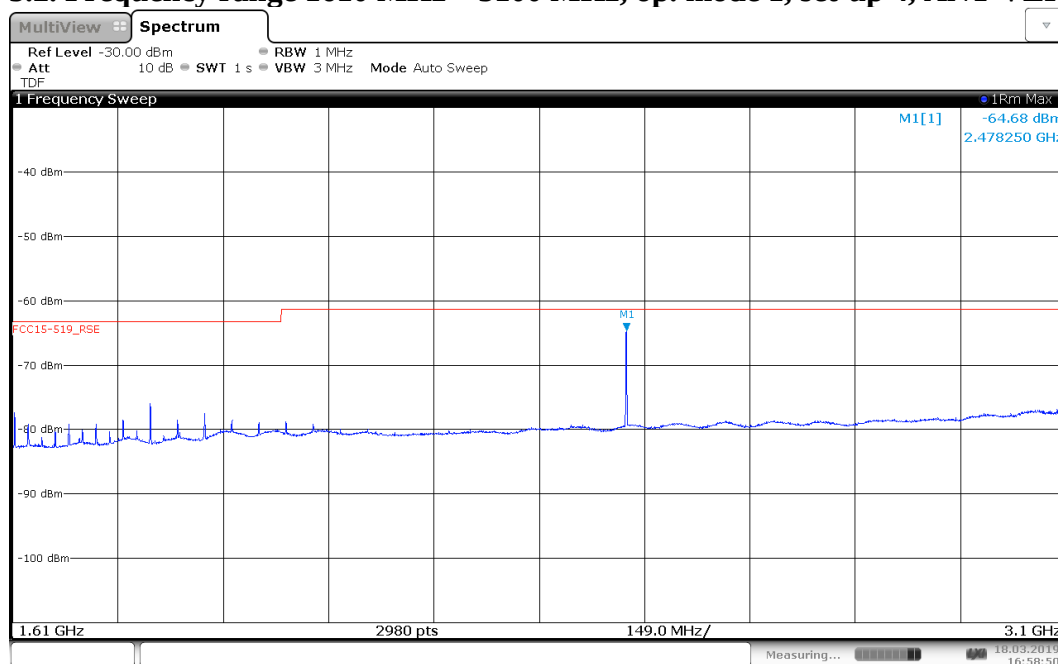
5. General Limit – Radiated field strength emissions, above 960 MHz

5.1. Frequency range 960 MHz – 1610 MHz, op. mode 1, set-up 1, ANT VER + HOR



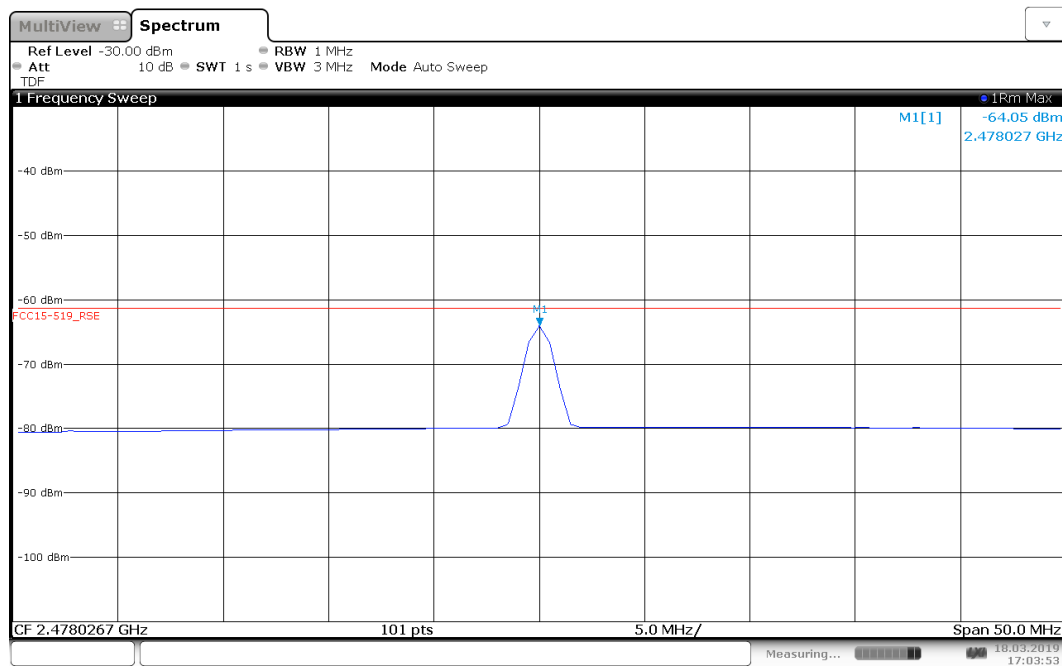
17:03:10 12.04.2018

5.2. Frequency range 1610 MHz – 3100 MHz, op. mode 1, set-up 4, ANT VER



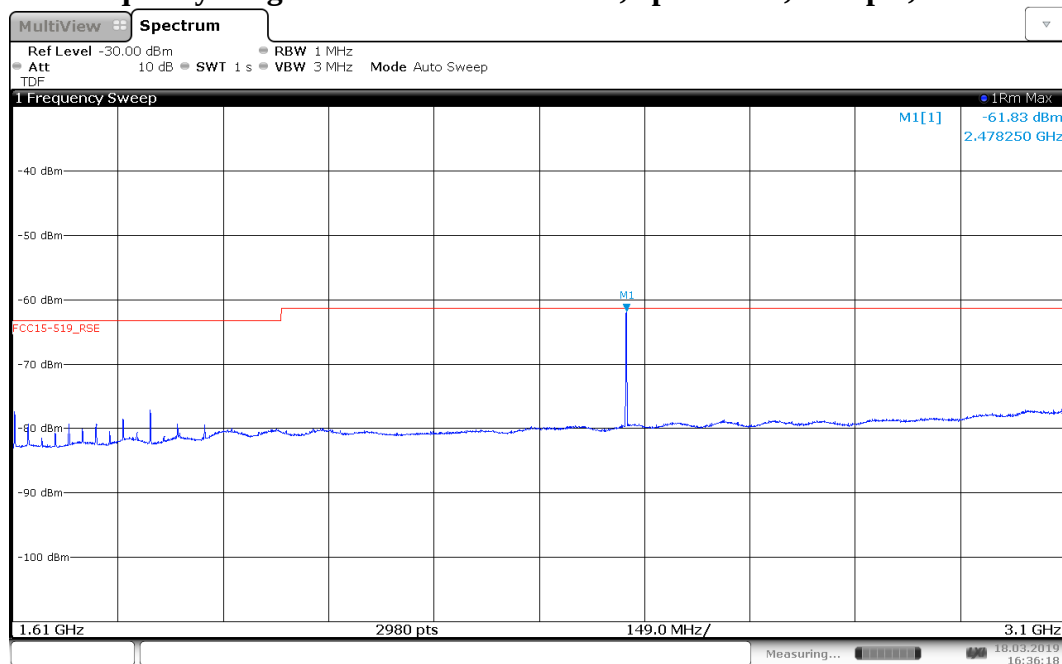
16:58:50 18.03.2019

5.3. Frequency range 1610 MHz – 3100 MHz, op. mode 1, set-up 4, ANT VER, peak measurement



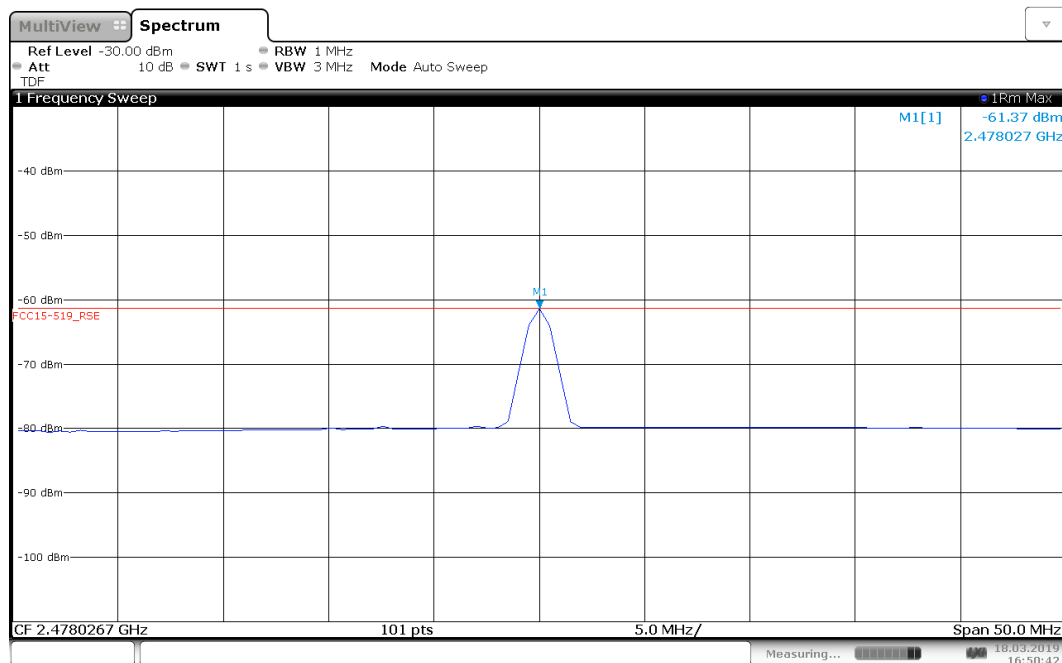
17:03:53 18.03.2019

5.4. Frequency range 1610 MHz – 3100 MHz, op. mode 1, set-up 4, ANT HOR



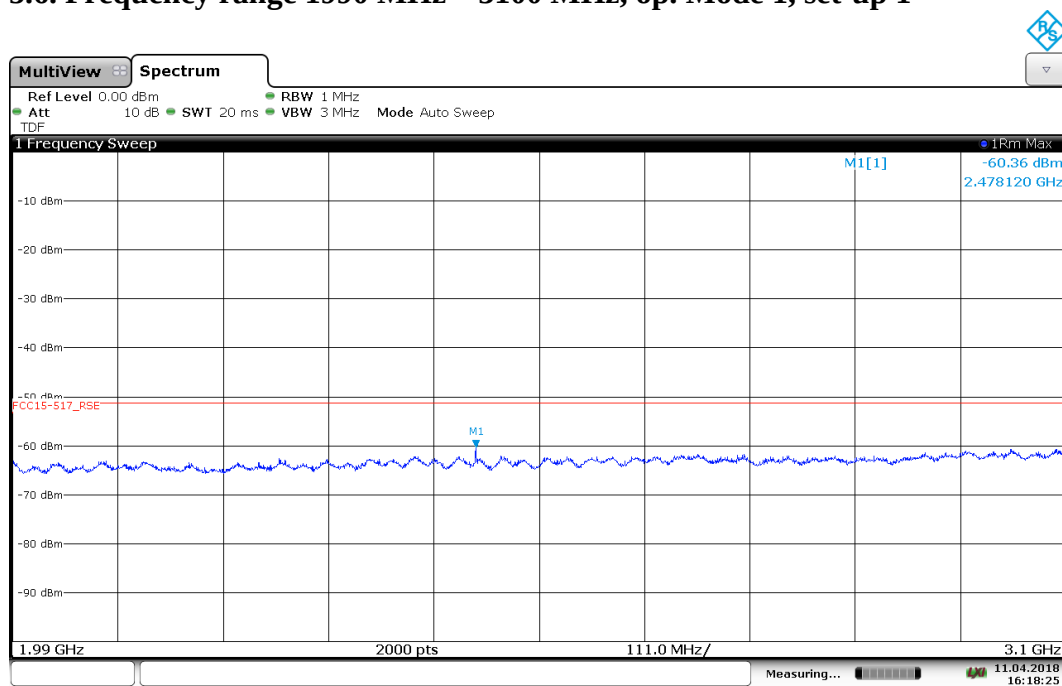
16:36:19 18.03.2019

5.5. Frequency range 1610 MHz – 3100 MHz, op. mode 1, set-up 4, ANT HOR, peak measurement



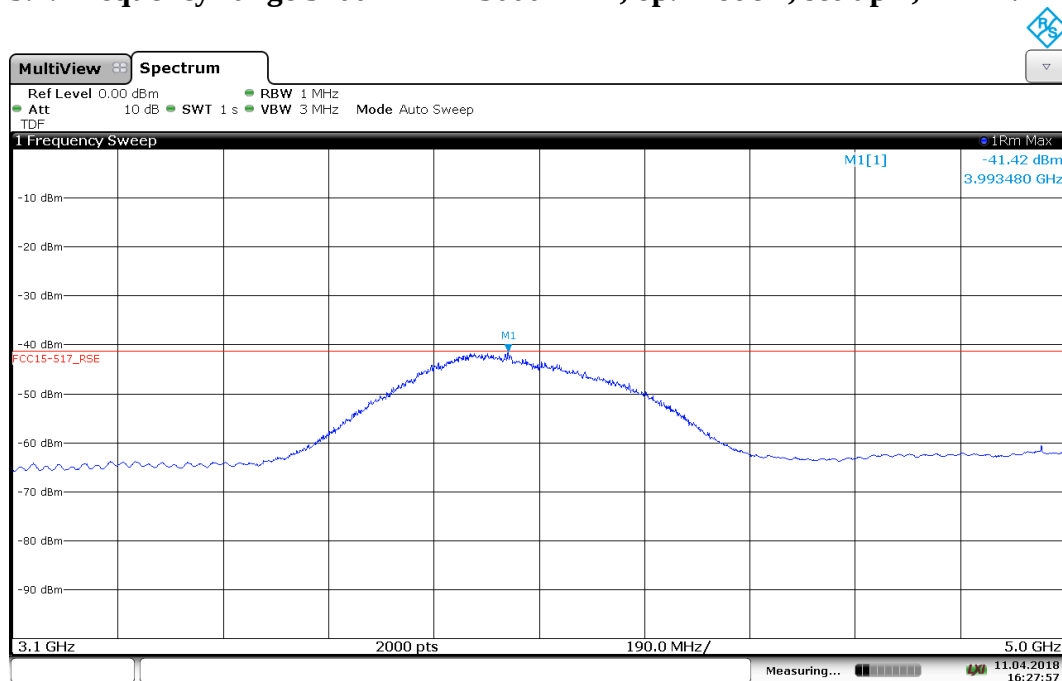
16:50:42 18.03.2019

5.6. Frequency range 1990 MHz – 3100 MHz, op. Mode 1, set-up 1



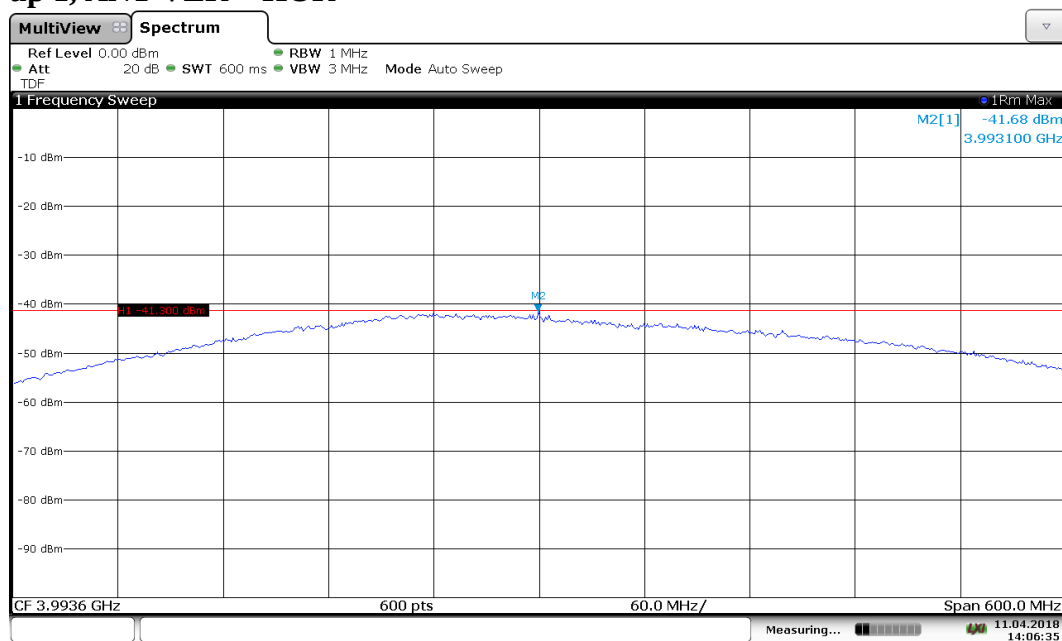
16:18:25 11.04.2018

5.7. Frequency range 3100 MHz – 5000 MHz, op. Mode 1, set-up 1, ANT VER + HOR



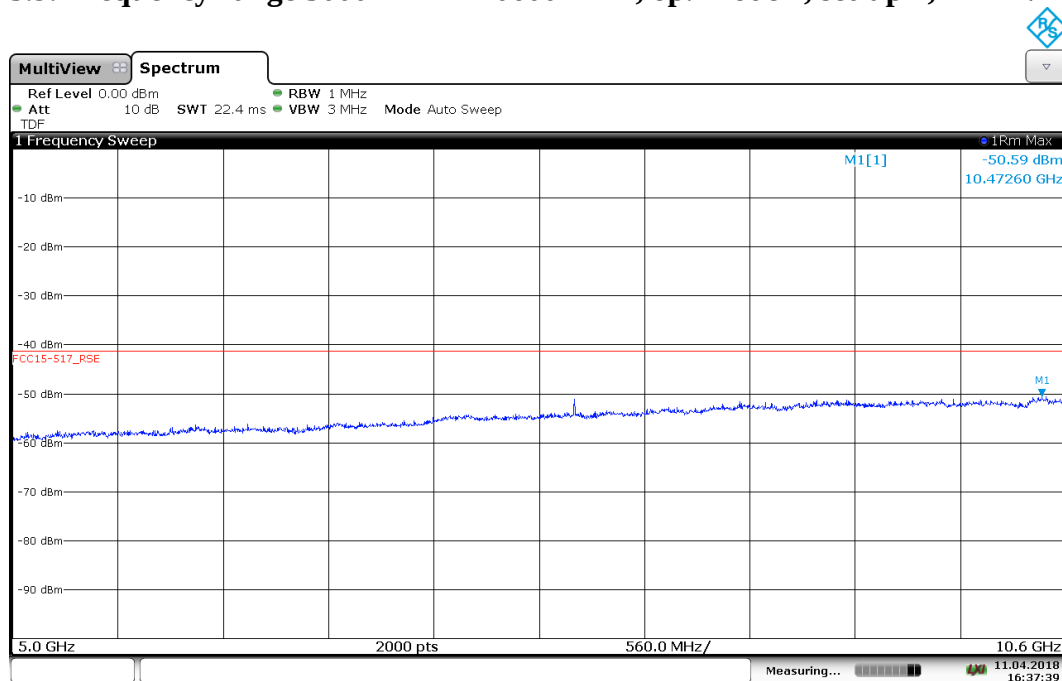
16:27:57 11.04.2018

5.8. UWB Ch. 2 cen. frequency with span 600 MHz, 600 pts, SWT 600ms, op. Mode 1, set-up 1, ANT VER + HOR



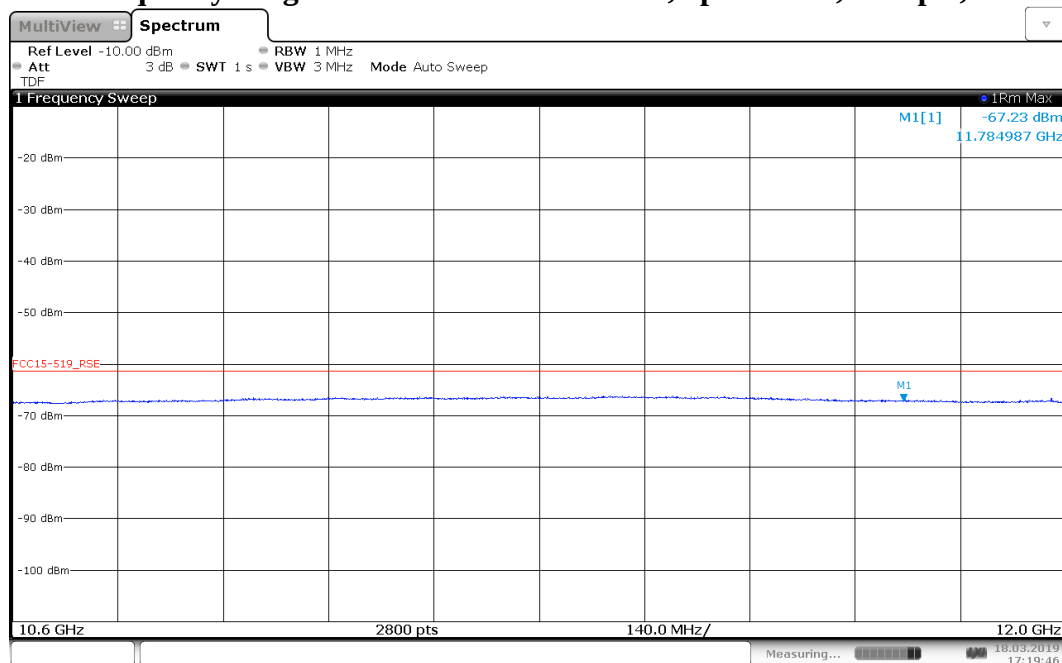
14:06:36 11.04.2018

5.9. Frequency range 5000 MHz – 10600 MHz, op. Mode 1, set-up 1, ANT VER + HOR



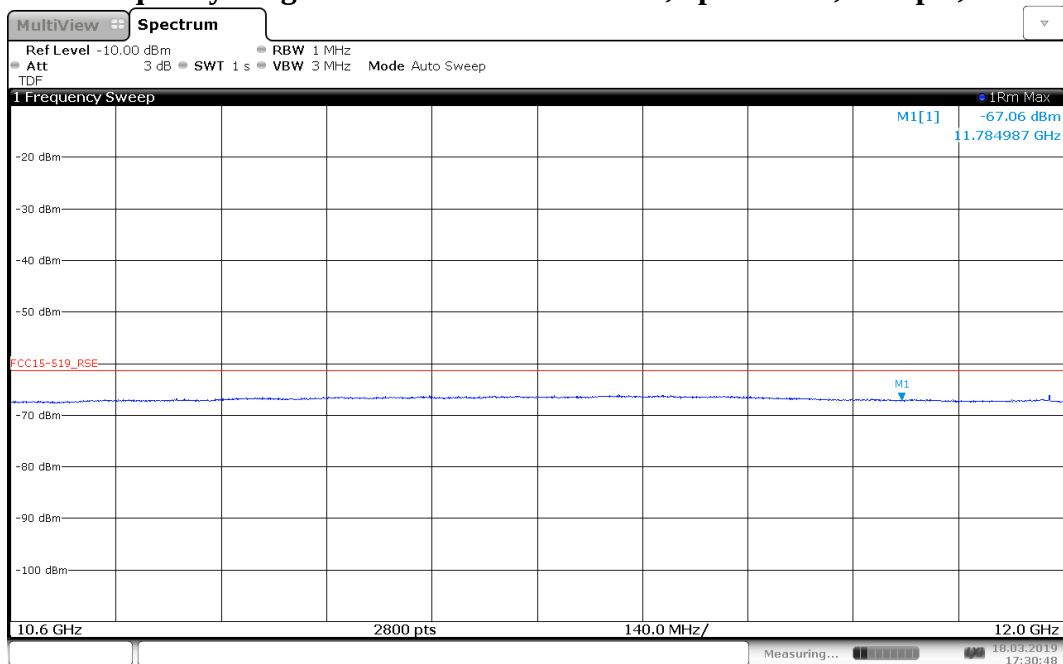
16:37:40 11.04.2018

5.10. Frequency range 10600 MHz – 12000 MHz, op. Mode 1, set-up 4, ANT VER



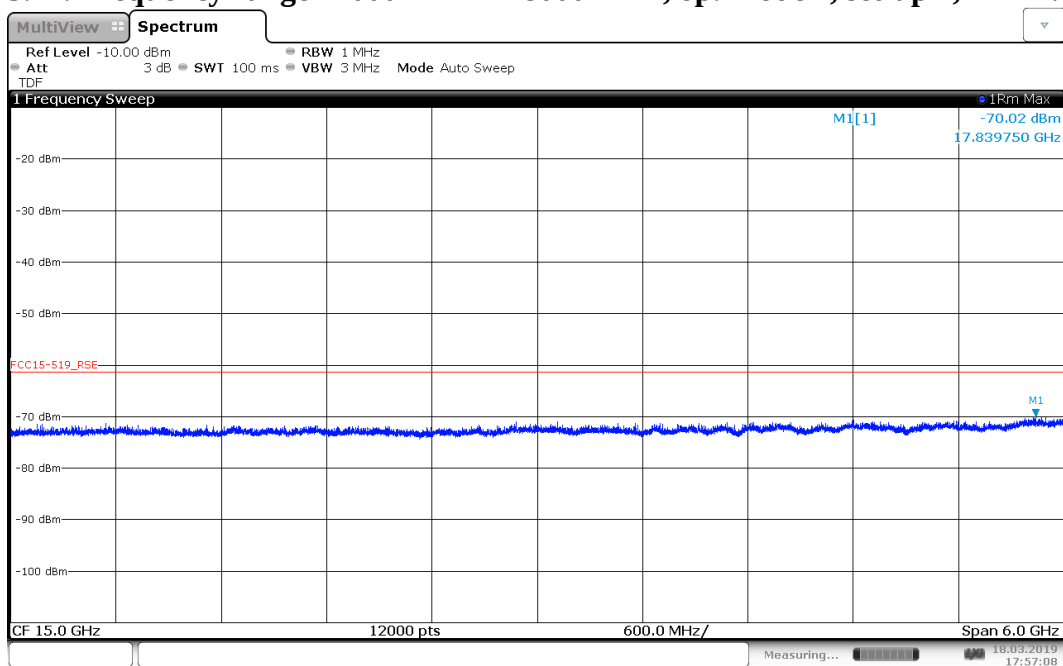
17:19:46 18.03.2019

5.11. Frequency range 10600 MHz – 12000 MHz, op. Mode 1, set-up 4, ANT HOR



17:30:48 18.03.2019

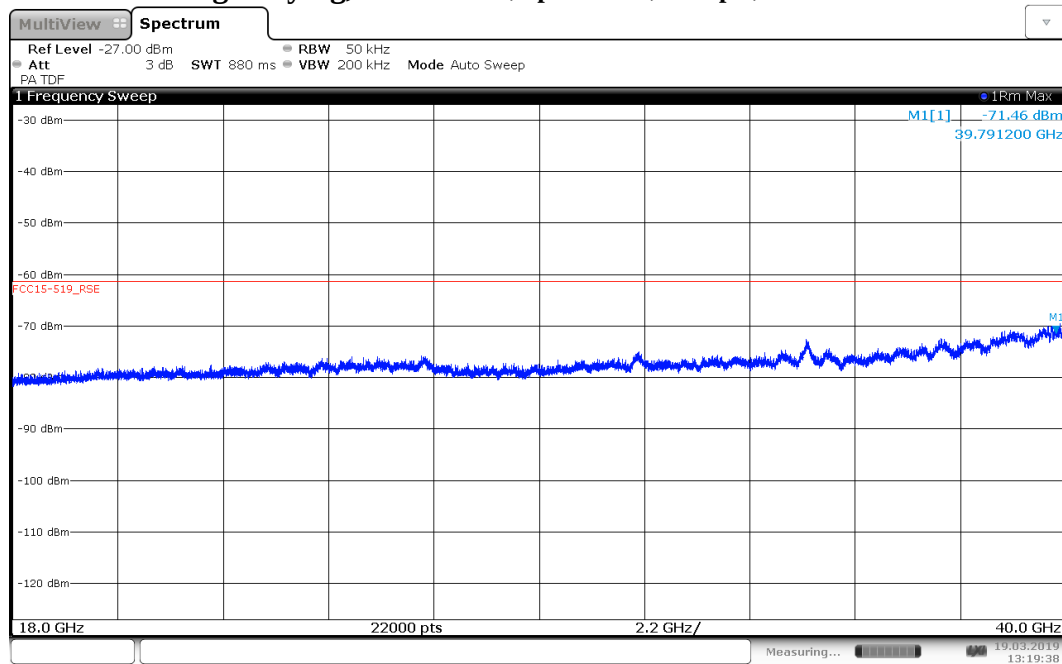
5.12. Frequency range 12000 MHz – 18000 MHz, op. Mode 1, set-up 4, ANT VER + HOR



17:57:08 18.03.2019

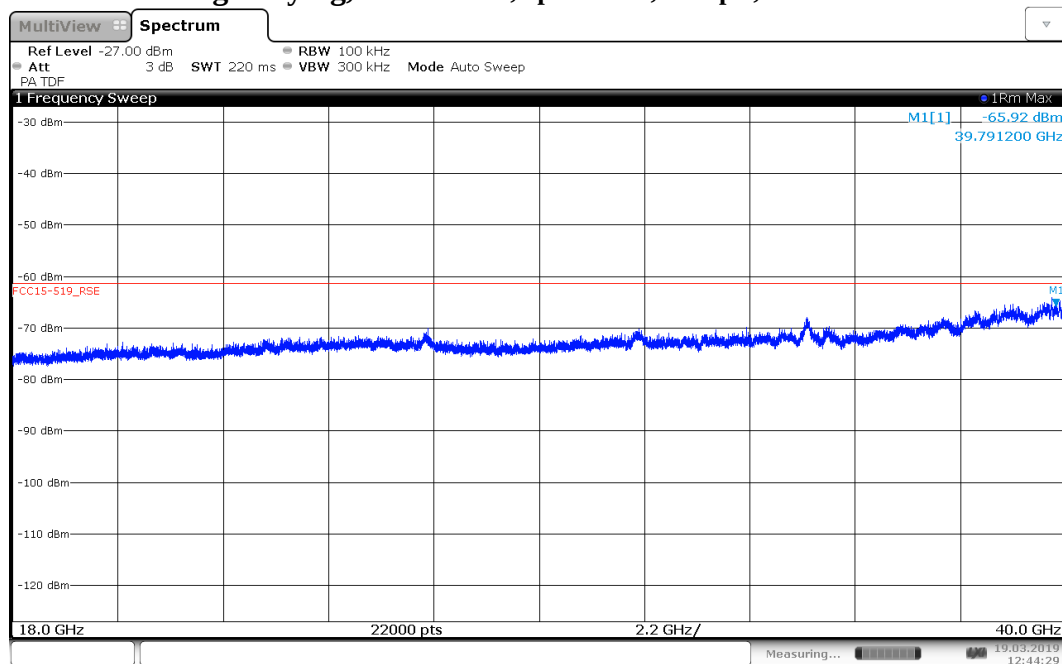
5.13. Frequency range 18000 MHz – 40000 MHz

5.13.1. Standing + laying, ANT HOR, op. Mode 1, set-up 4, RBW = 50 kHz



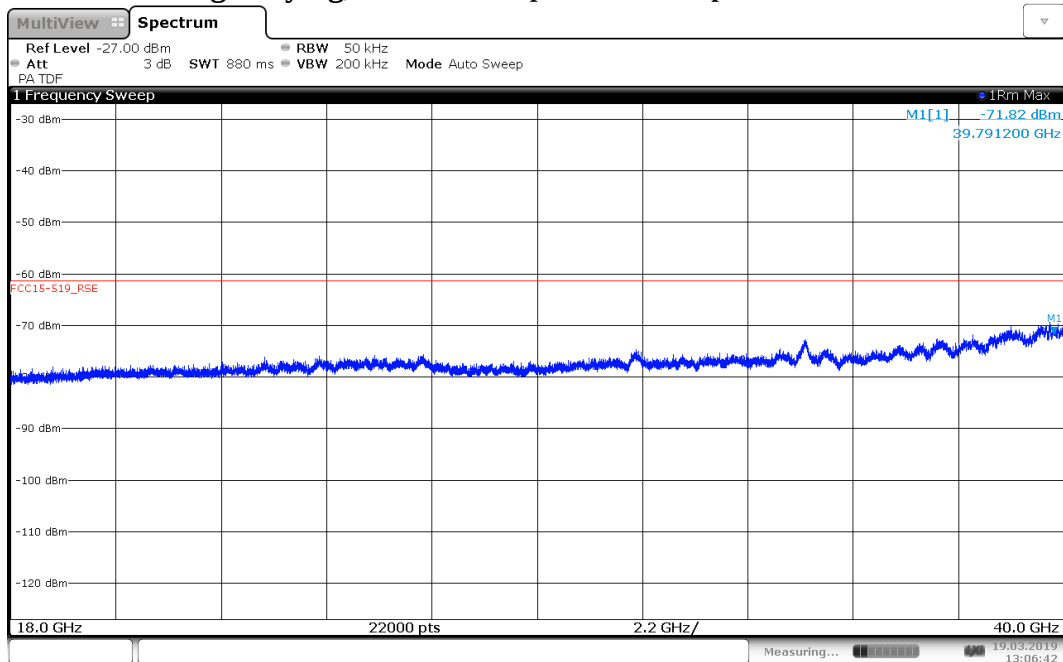
13:19:39 19.03.2019

5.13.2. Standing + laying, ANT HOR, op. Mode 1, set-up 4, RBW = 100 kHz



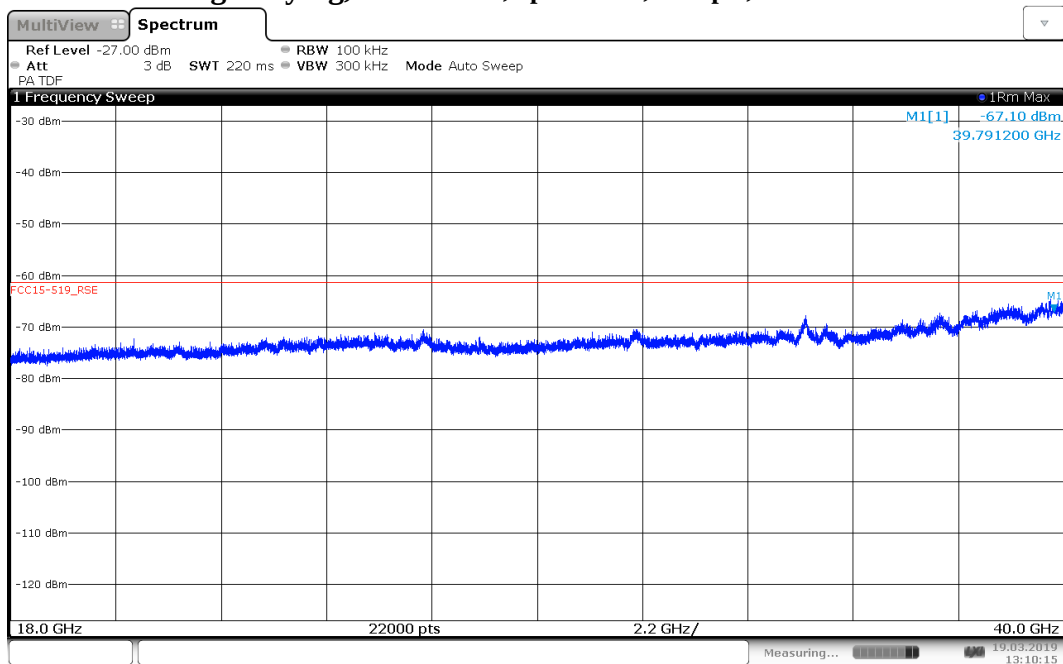
12:44:30 19.03.2019

5.13.3. Standing + laying, ANT VER, op. Mode 1, set-up 4, RBW = 50 kHz



13:06:42 19.03.2019

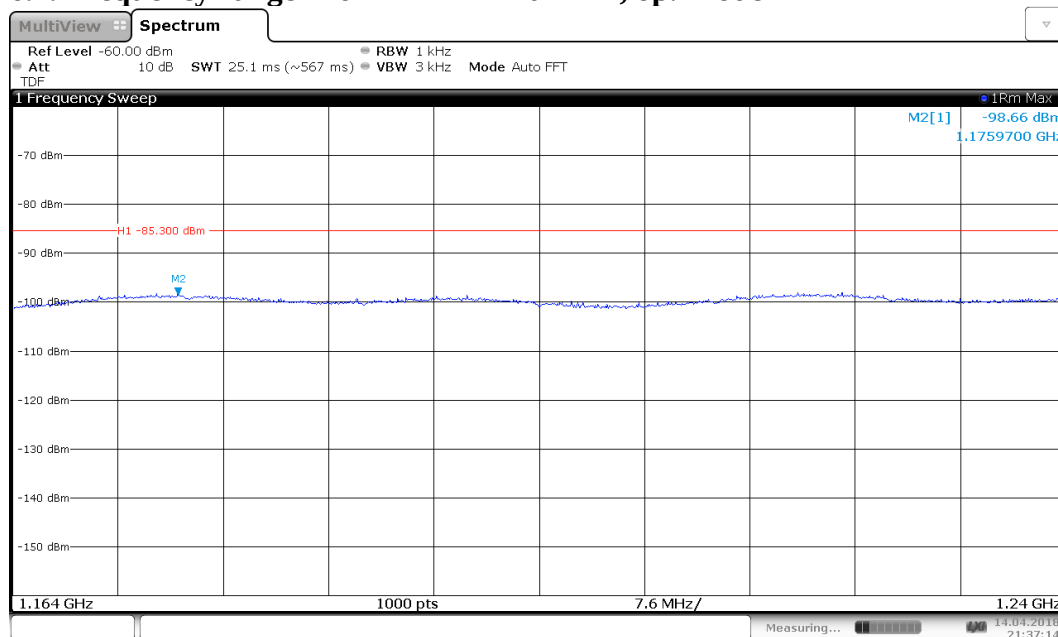
5.13.4. Standing + laying, ANT VER, op. Mode 1, set-up 4, RBW = 100 kHz



13:10:15 19.03.2019

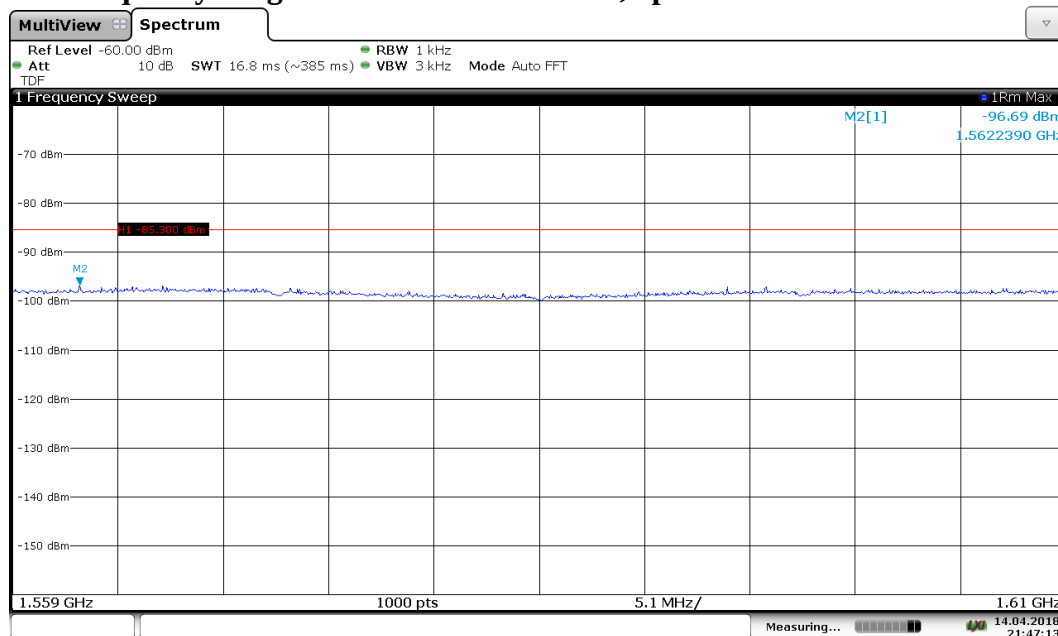
6. Radiated emissions in the GPS bands

6.1. Frequency range 1164 MHz – 1240 MHz, op. Mode 1



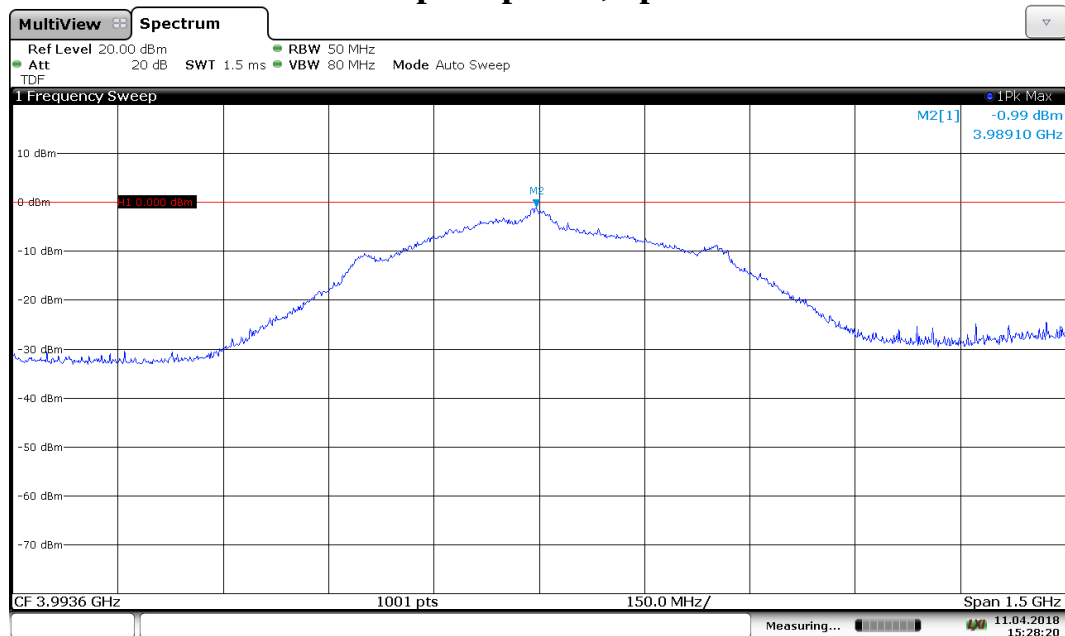
21:37:14 14.04.2018

6.2. Frequency range 1559 MHz – 1610 MHz, op. Mode 1



21:47:14 14.04.2018

7. Fundamental emission peak power, op. Mode 1



15:28:21 11.04.2018