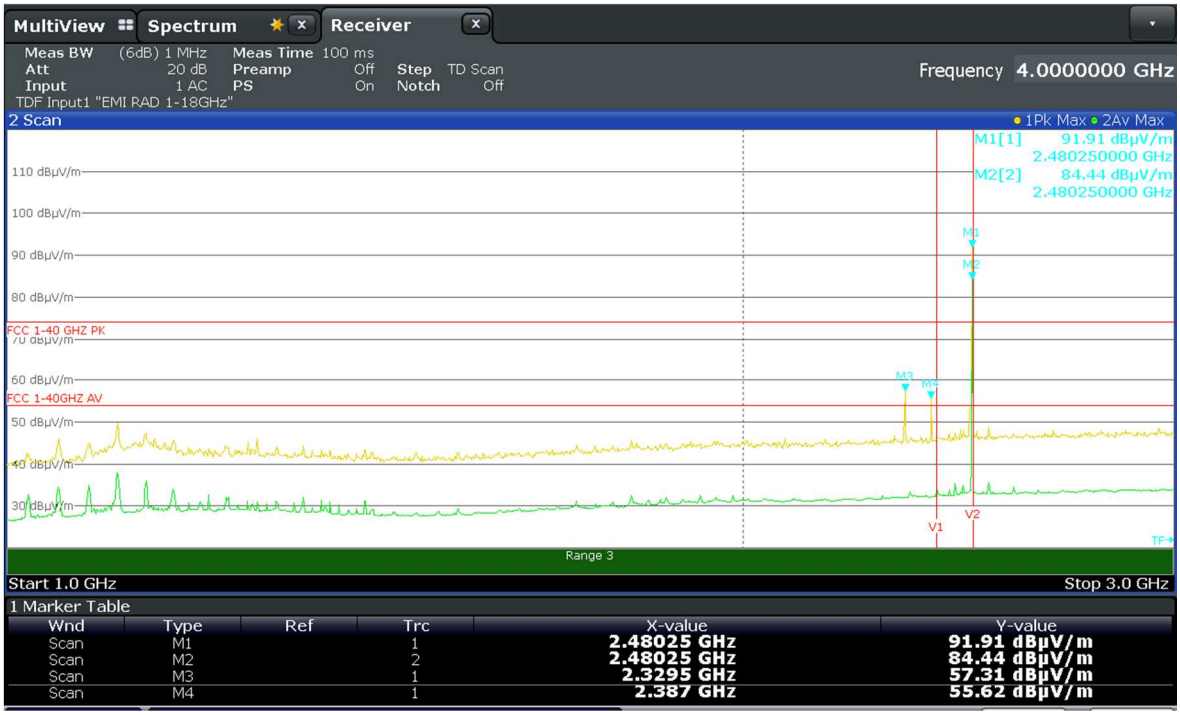
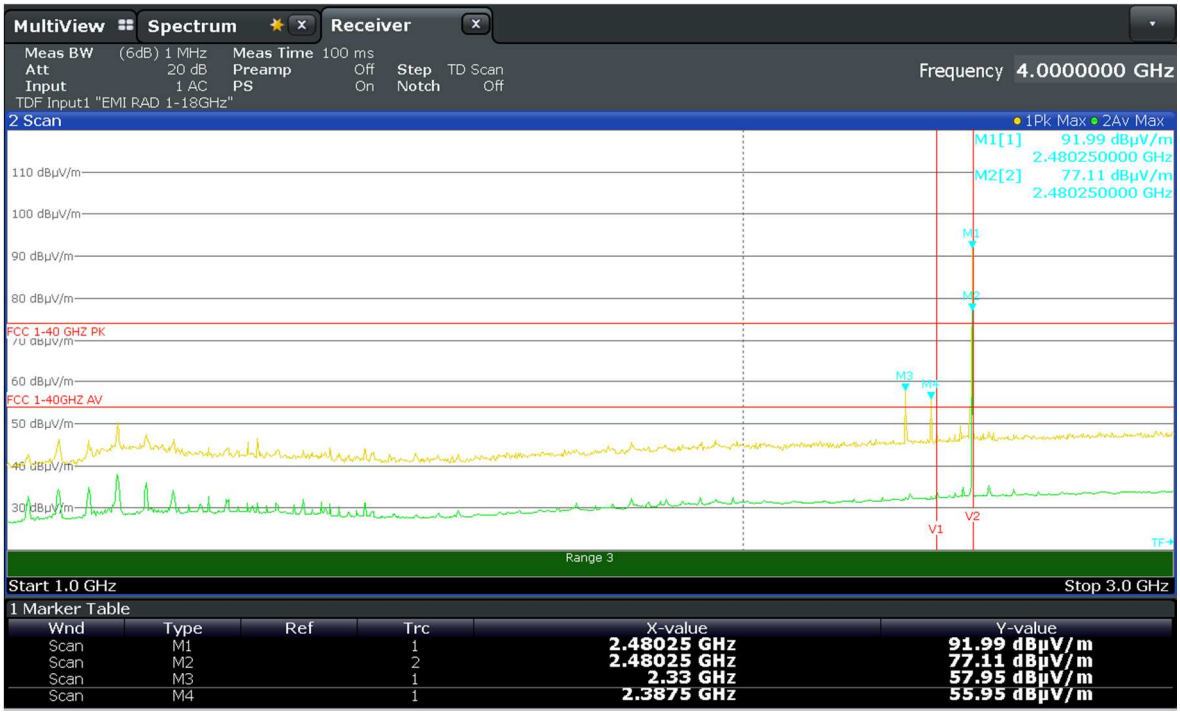
Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – High Channel (2480 MHz)
Frequency: 1GHz – 3GHz
Antenna Polarization: worst case Vertical and Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
2480,25 (fundamental)	97,97	-12,15	6,09	**91,91**	/	/	/
2329,50	63,87	-12,65	6,09	**57,31**	yes	74,00	16,69
2387,00	61,98	-12,45	6,09	**55,62**	yes	74,00	18,38

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
2480,25 (fundamental)	90,50	-12,15	6,09	**84,44**	/	/	/

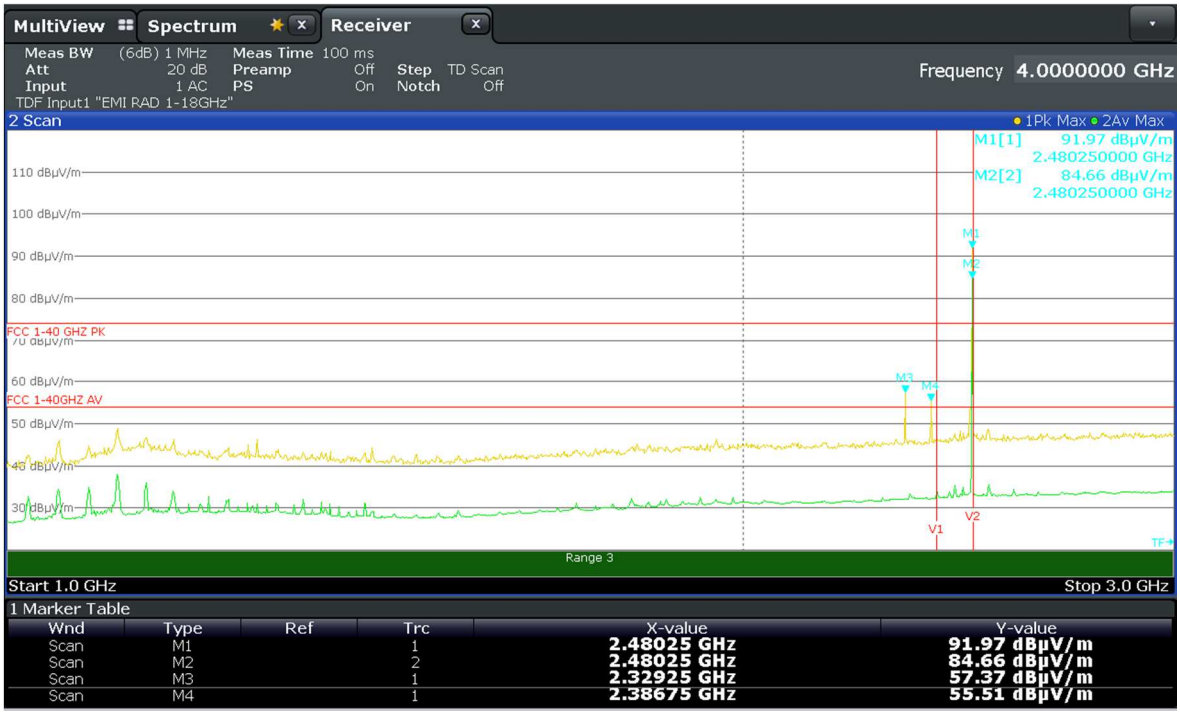
Graphical representation of Radiated Emission Measurement
Operation Mode: (#7) – High Channel (2480 MHz)
Frequency: 1GHz – 3GHz
Antenna Polarization: worst case Vertical and Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
2480,25 (fundamental)	98,05	-12,15	6,09	**91,99**	/	/	/
2330,00	64,51	-12,65	6,09	**57,95**	yes	74,00	16,05
2387,50	62,31	-12,45	6,09	**55,95**	yes	74,00	18,05

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
2480,25 (fundamental)	83,17	-12,15	6,09	**77,11**	/	/	/

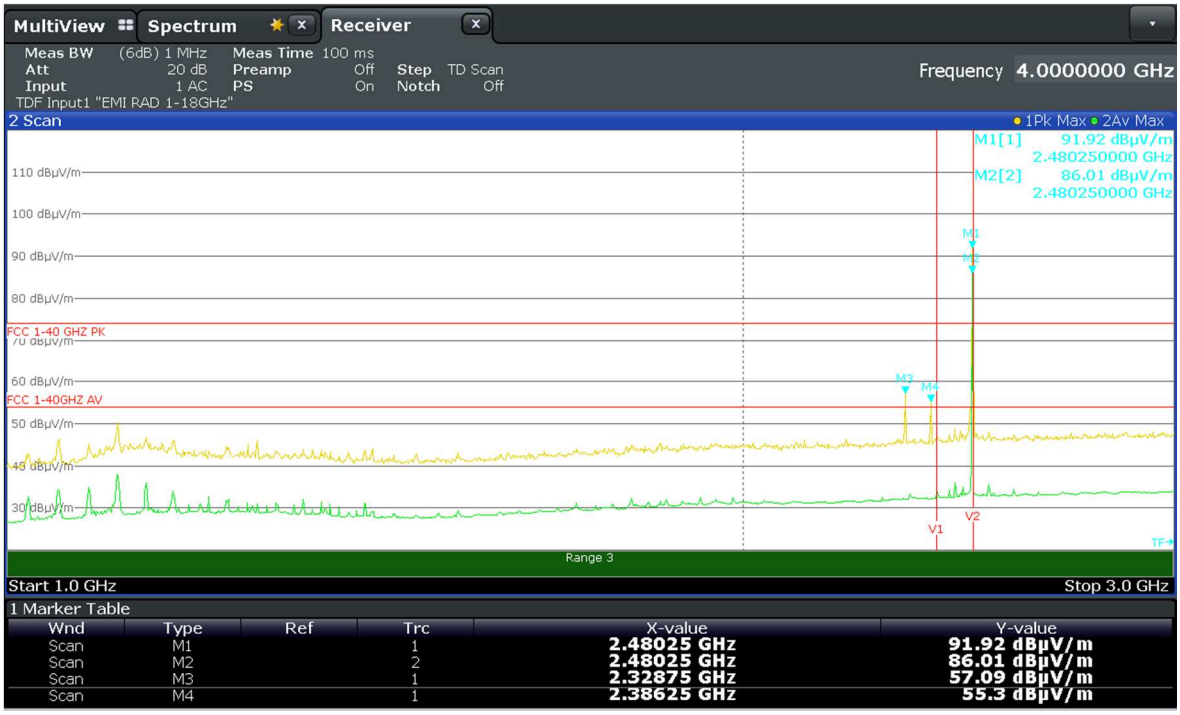
Graphical representation of Radiated Emission Measurement
Operation Mode: (#8) – High Channel (2480 MHz)
Frequency: 1GHz – 3GHz
Antenna Polarization: worst case Vertical and Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
2480,25 (fundamental)	98,03	-12,15	6,09	**91,97**	/	/	/
2329,25	63,93	-12,65	6,09	**57,37**	yes	74,00	16,63
2386,75	61,87	-12,45	6,09	**55,51**	yes	74,00	18,49

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
2480,25 (fundamental)	90,72	-12,15	6,09	**84,66**	/	/	/

Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – High Channel (2480 MHz)
Frequency: 1GHz – 3GHz
Antenna Polarization: worst case Vertical and Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
2480,25 (fundamental)	97,98	-12,15	6,09	**91,92**	/	/	/
2328,75	63,65	-12,65	6,09	**57,09**	yes	74,00	16,91
2386,25	61,66	-12,45	6,09	**55,30**	yes	74,00	18,70

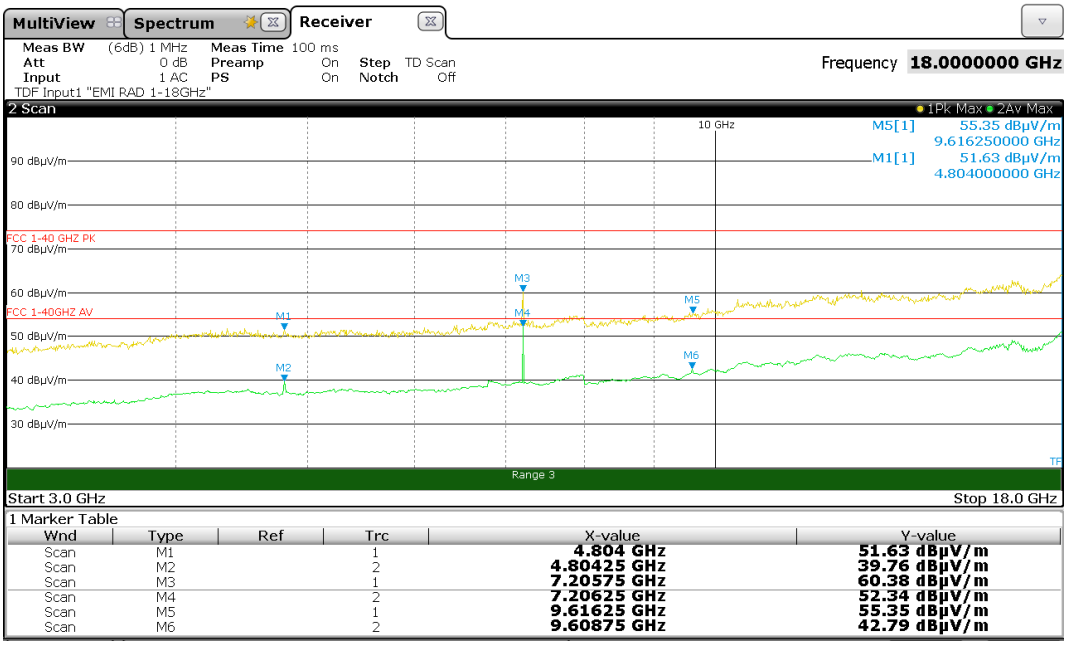
AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
2480,25 (fundamental)	92,07	-12,15	6,09	**86,01**	/	/	/

Graphical representation of Radiated Emission Measurement
Operation Mode: (#3) – Low Channel (2402 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Vertical

PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4804,00	52,84	-9,55	8,80	**52,09**	yes	74,00	21,91
7206,00	56,68	-8,35	11,25	**59,58**	no	72,33	12,75
9609,50	48,63	-6,37	12,64	**54,90**	no	72,33	17,43

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4804,25	40,62	-9,55	8,80	**39,87**	yes	54,00	14,13
7206,25	48,22	-8,35	11,25	**51,12**	no	69,14	18,02
9608,75	36,06	-6,37	12,64	**42,33**	no	69,14	26,81

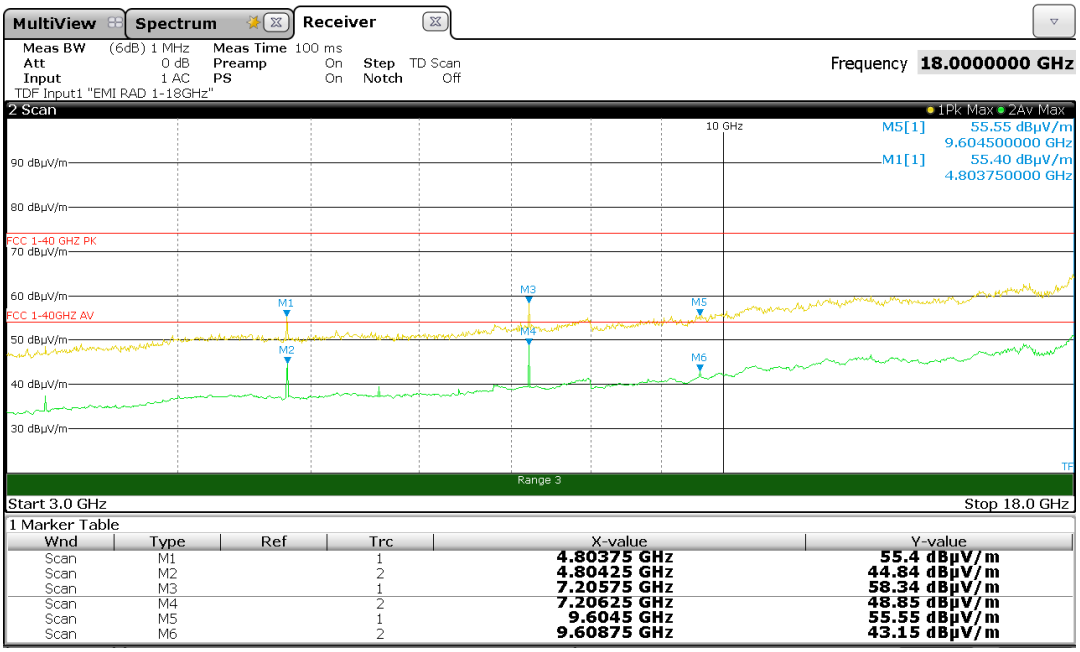
Graphical representation of Radiated Emission Measurement
Operation Mode: (#3) – Low Channel (2402 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4804,00	52,38	-9,55	8,80	**51,63**	yes	74,00	22,37
7205,75	57,48	-8,35	11,25	**60,38**	no	72,33	11,95
9616,25	49,08	-6,37	12,64	**55,35**	no	72,33	16,98

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4804,25	40,51	-9,55	8,80	**39,76**	yes	54,00	14,24
7206,25	49,44	-8,35	11,25	**52,34**	no	69,14	16,79
9608,75	36,52	-6,37	12,64	**42,79**	no	69,14	26,35

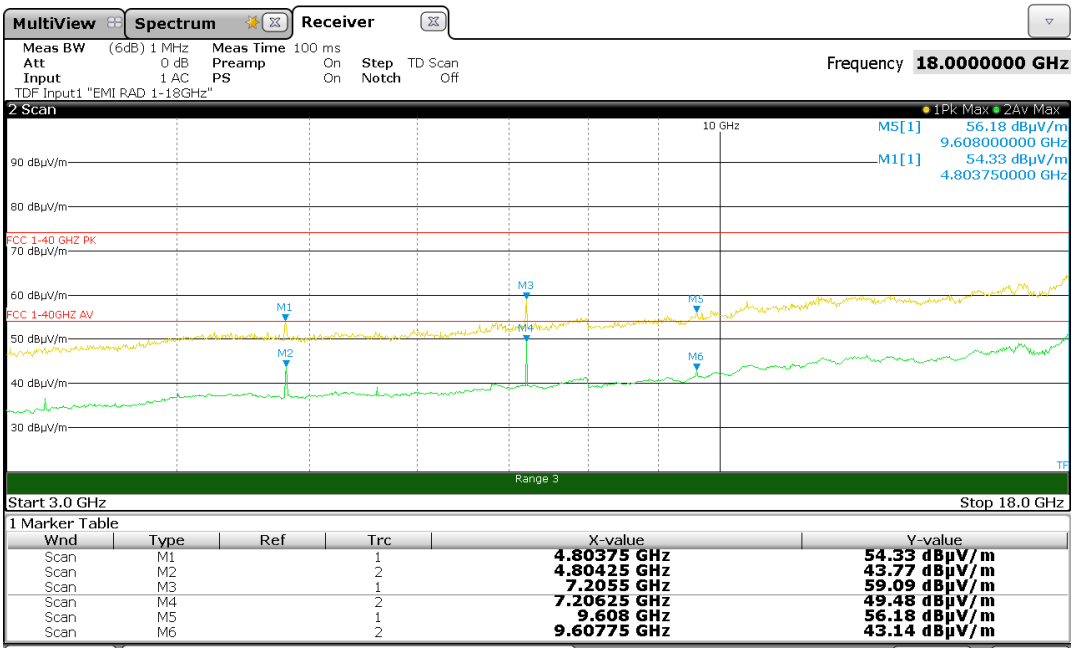
Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – Low Channel (2402 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Vertical



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4803,75	56,15	-9,55	8,80	**55,40**	yes	74,00	18,60
7205,75	55,44	-8,35	11,25	**58,34**	no	72,51	14,17
9604,50	49,28	-6,37	12,64	**55,55**	no	72,51	16,96

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4804,25	45,59	-9,55	8,80	**44,84**	yes	54,00	9,16
7206,25	45,95	-8,35	11,25	**48,85**	no	66,54	17,69
9608,75	36,88	-6,37	12,64	**43,15**	no	66,54	23,39

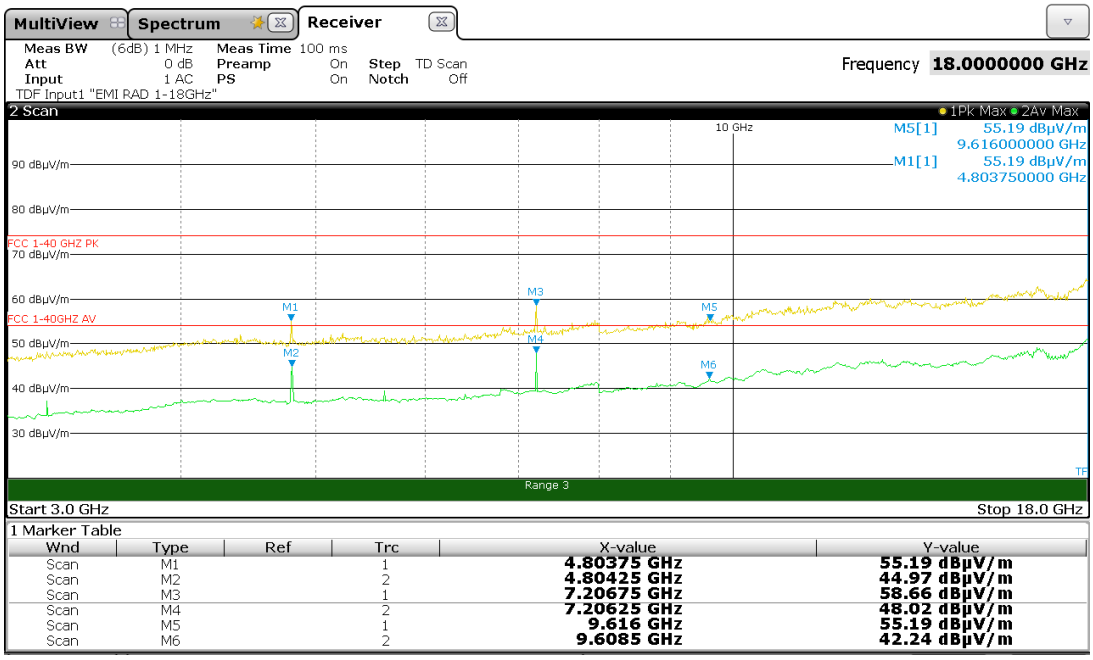
Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – Low Channel (2402 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4803,75	55,08	-9,55	8,80	**54,33**	yes	74,00	19,67
7205,50	56,19	-8,35	11,25	**59,09**	no	72,51	13,42
9608,00	49,91	-6,37	12,64	**56,18**	no	72,51	16,33

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4804,25	44,52	-9,55	8,80	**43,77**	yes	54,00	10,23
7206,25	46,58	-8,35	11,25	**49,48**	no	66,54	17,06
9607,75	36,87	-6,37	12,64	**43,14**	no	66,54	23,40

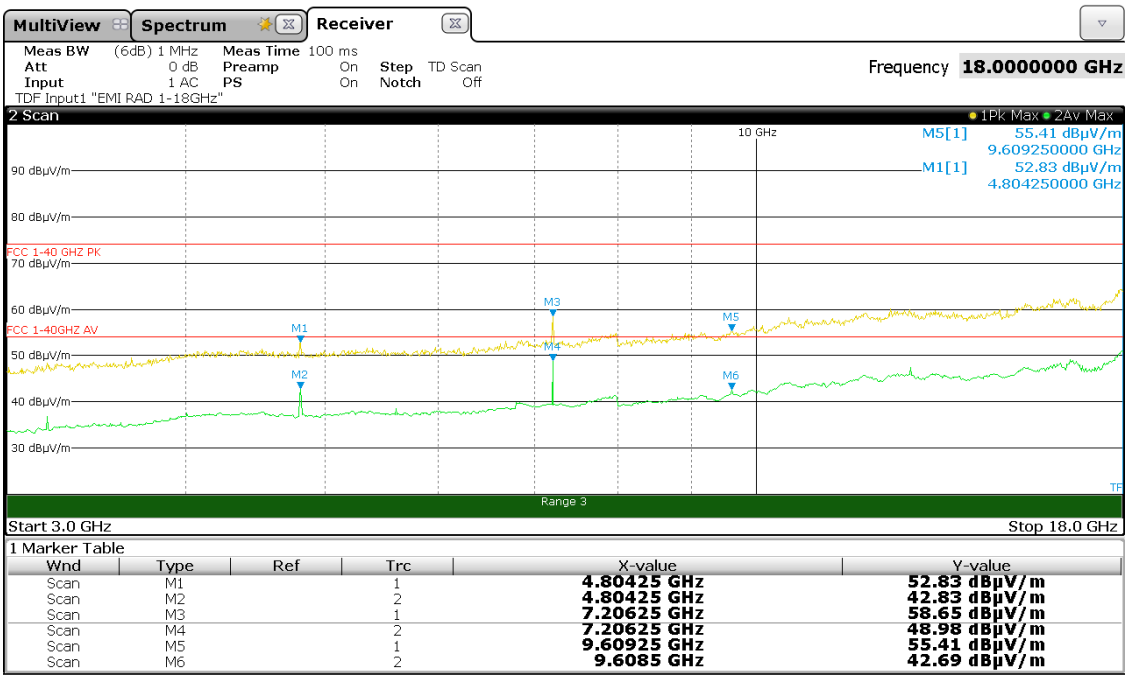
Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – Low Channel (2402 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Vertical



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4803,75	55,94	-9,55	8,80	**55,19**	yes	74,00	18,81
7205,75	55,76	-8,35	11,25	**58,66**	no	72,61	13,95
9616,00	48,92	-6,37	12,64	**55,19**	no	72,61	17,42

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4804,25	45,72	-9,55	8,80	**44,97**	yes	54,00	9,03
7206,25	45,12	-8,35	11,25	**48,02**	no	66,66	18,64
9608,50	35,97	-6,37	12,64	**42,24**	no	66,66	24,42

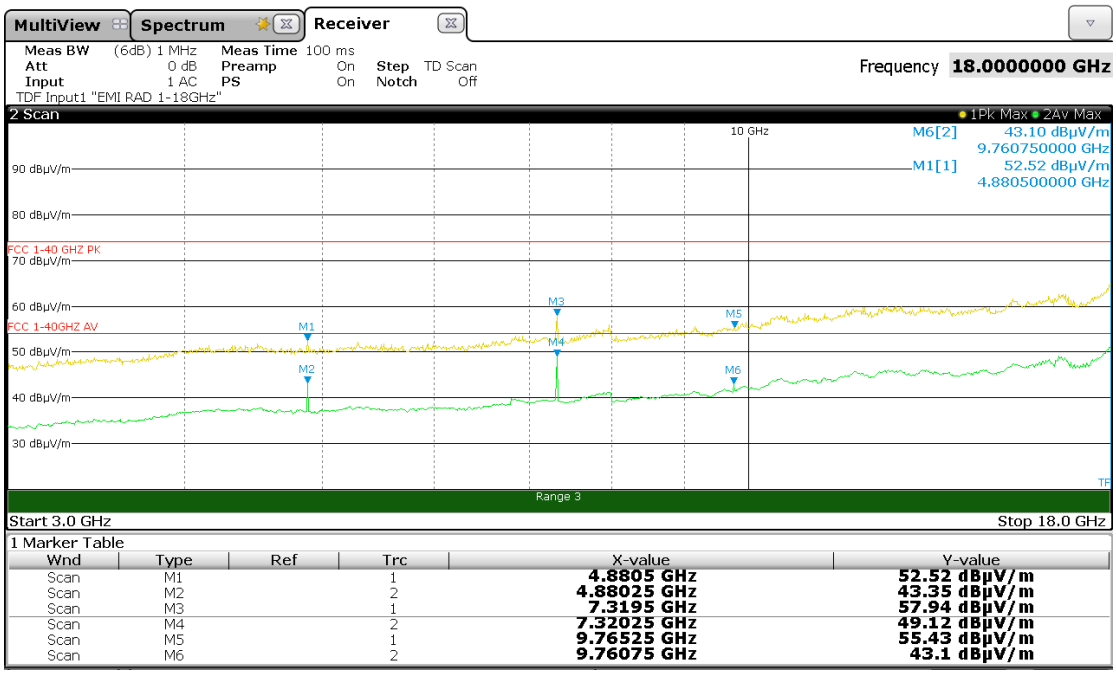
Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – Low Channel (2402 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4804,25	53,58	-9,55	8,80	**52,83**	yes	74,00	21,17
7206,25	55,75	-8,35	11,25	**58,65**	no	72,61	13,96
9609,25	49,14	-6,37	12,64	**55,41**	no	72,61	17,20

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4804,25	43,58	-9,55	8,80	**42,83**	yes	54,00	11,17
7206,25	46,08	-8,35	11,25	**48,98**	no	66,66	17,68
9608,50	36,42	-6,37	12,64	**42,69**	no	66,66	23,97

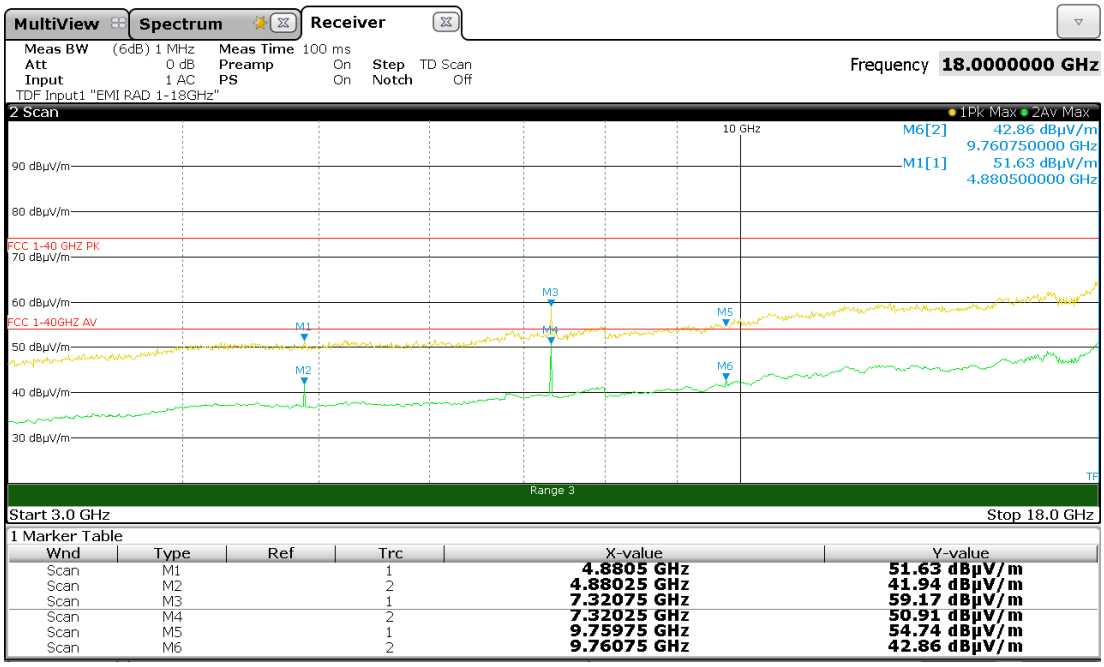
Graphical representation of Radiated Emission Measurement
Operation Mode: (#3) – Middle Channel (2440 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Vertical



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,50	53,22	-9,50	8,80	**52,52**	yes	74,00	21,48
7319,50	55,12	-8,43	11,25	**57,94**	yes	74,00	16,06
9765,25	49,23	-6,34	12,64	**55,53**	no	75,80	20,27

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,25	44,05	-9,50	8,80	**43,35**	yes	54,00	10,65
7320,25	46,30	-8,43	11,25	**49,12**	yes	54,00	4,88
9760,75	36,80	-6,34	12,64	**43,10**	no	73,21	30,11

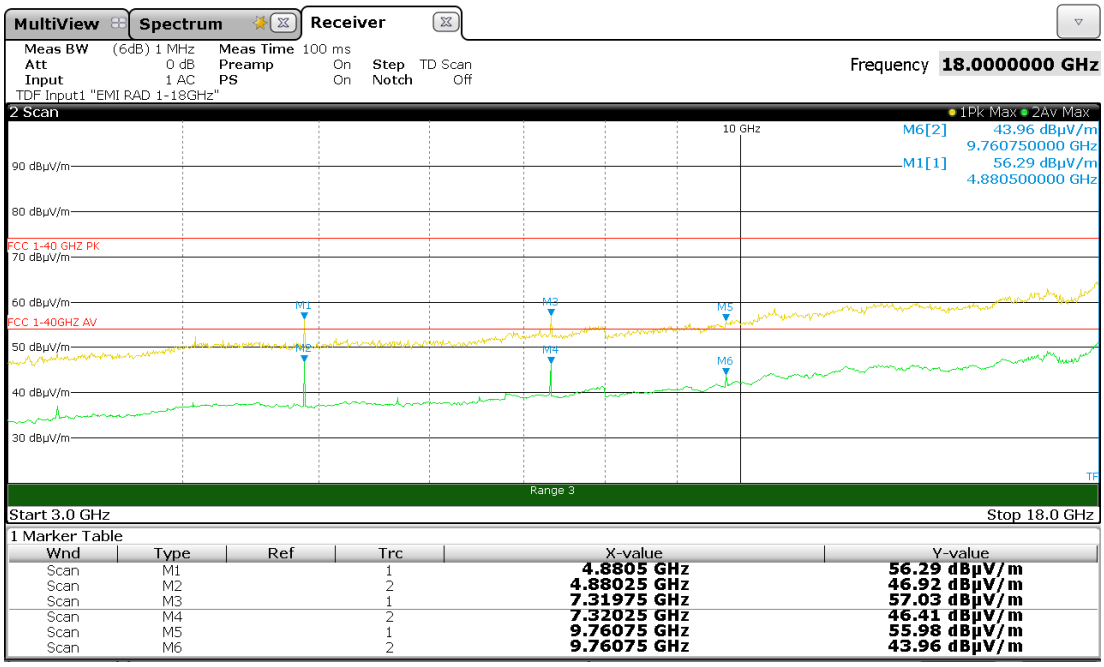
Graphical representation of Radiated Emission Measurement
Operation Mode: (#3) – Middle Channel (2440 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,50	52,33	-9,50	8,80	**51,63**	yes	74,00	22,37
7320,75	56,35	-8,43	11,25	**59,17**	yes	74,00	14,83
9759,75	48,44	-6,34	12,64	**54,74**	no	75,80	21,06

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,25	42,64	-9,50	8,80	**41,94**	yes	54,00	12,06
7320,25	48,09	-8,43	11,25	**50,91**	yes	54,00	3,09
9760,75	36,56	-6,34	12,64	**42,86**	no	73,21	30,35

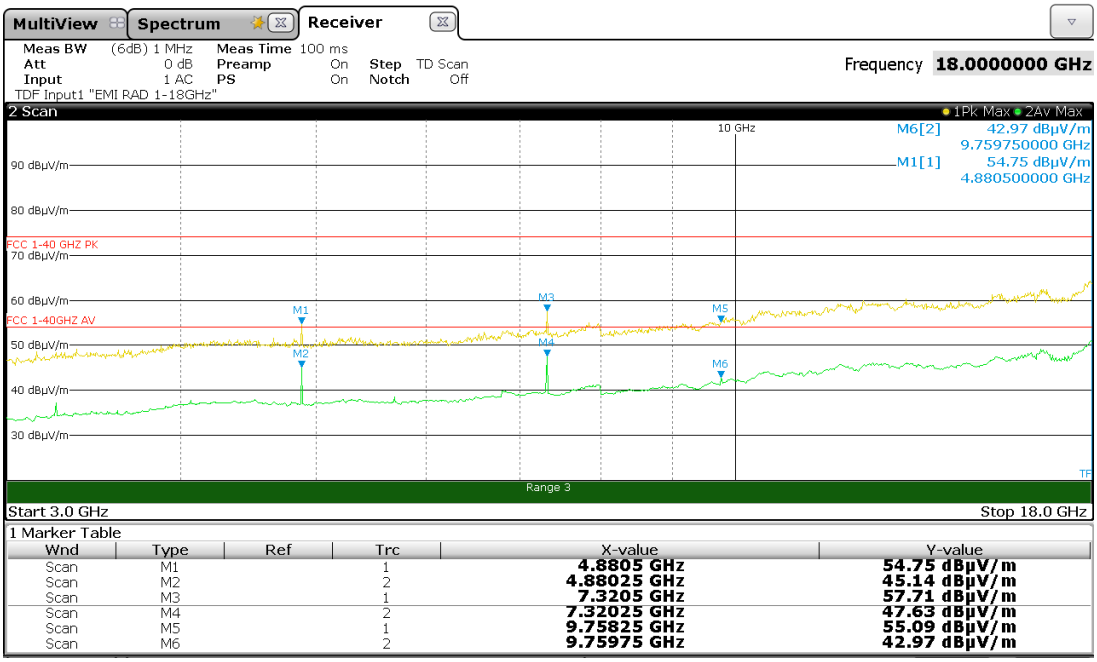
Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – Middle Channel (2440 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Vertical



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,50	56,99	-9,50	8,80	**56,29**	yes	74,00	17,71
7319,75	54,21	-8,43	11,25	**57,03**	yes	74,00	16,97
9760,75	49,68	-6,34	12,64	**55,98**	no	75,88	19,90

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,25	47,62	-9,50	8,80	**46,92**	yes	54,00	7,08
7320,25	43,59	-8,43	11,25	**46,41**	yes	54,00	7,59
9760,75	37,66	-6,34	12,64	**43,96**	no	70,26	26,30

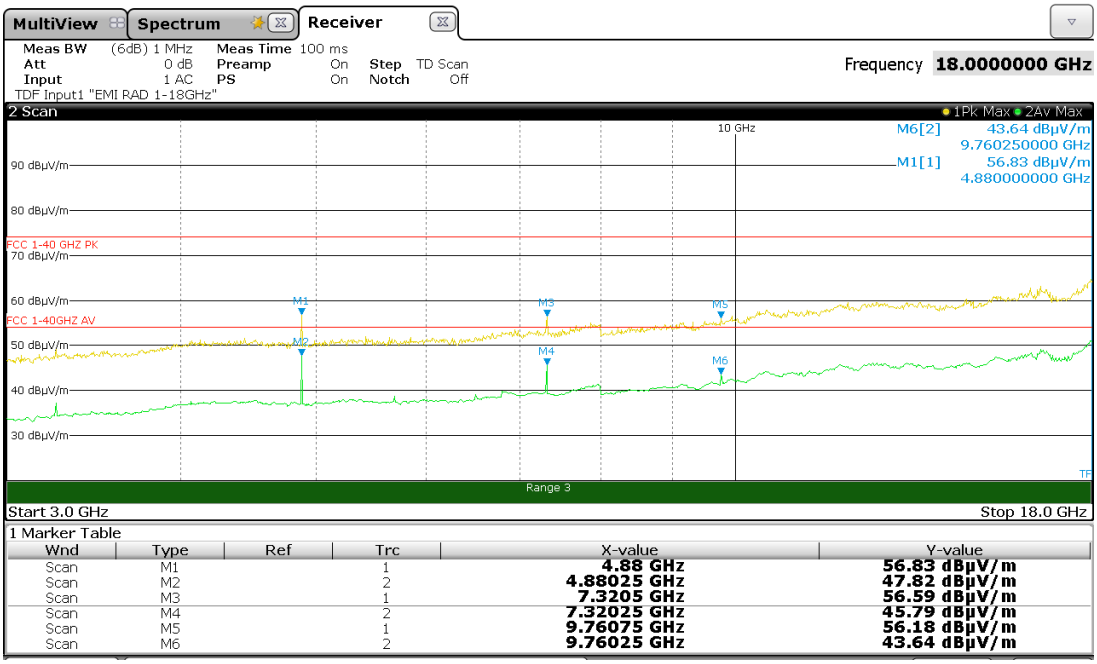
Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – Middle Channel (2440 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,50	55,45	-9,50	8,80	**54,75**	yes	74,00	19,25
7320,50	54,89	-8,43	11,25	**57,71**	yes	74,00	16,29
9758,25	48,79	-6,34	12,64	**55,09**	no	75,88	20,79

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,25	45,84	-9,50	8,80	**45,14**	yes	54,00	8,86
7320,25	44,81	-8,43	11,25	**47,63**	yes	54,00	6,37
9759,75	36,67	-6,34	12,64	**42,97**	no	70,26	27,29

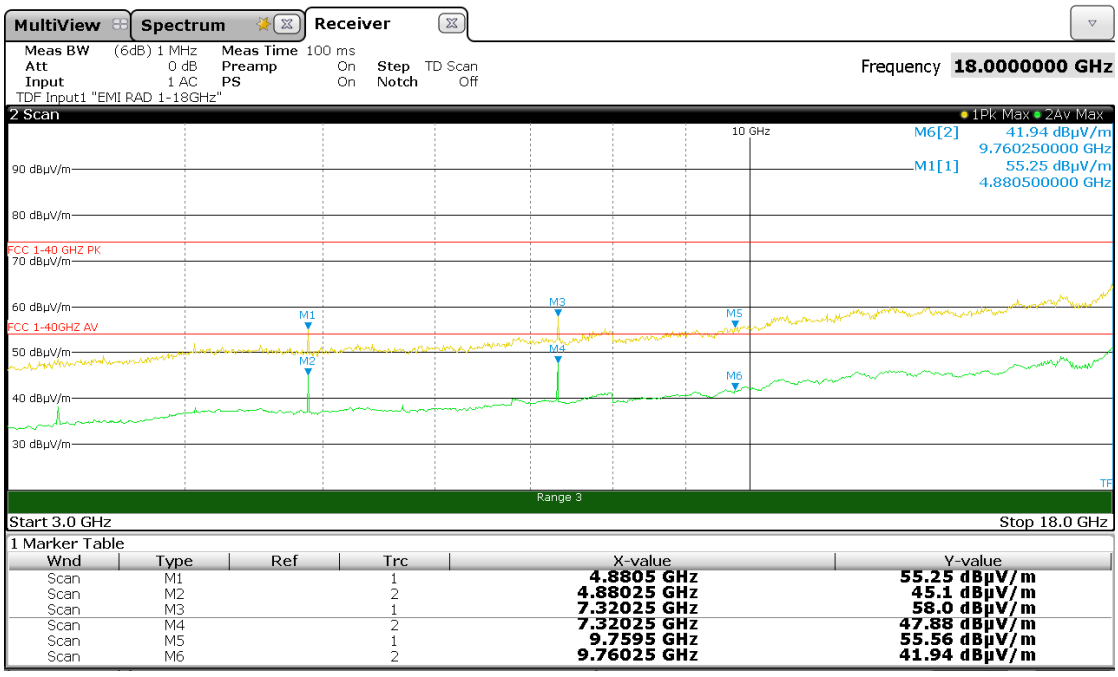
Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – Middle Channel (2440 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Vertical



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,00	57,53	-9,50	8,80	**56,83**	yes	74,00	17,17
7320,50	53,77	-8,43	11,25	**56,59**	yes	74,00	17,41
9760,75	49,88	-6,34	12,64	**56,18**	no	76,04	19,86

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,25	48,52	-9,50	8,80	**47,82**	yes	54,00	6,18
7320,25	42,97	-8,43	11,25	**45,79**	yes	54,00	8,21
9760,75	37,34	-6,34	12,64	**43,64**	no	70,31	26,67

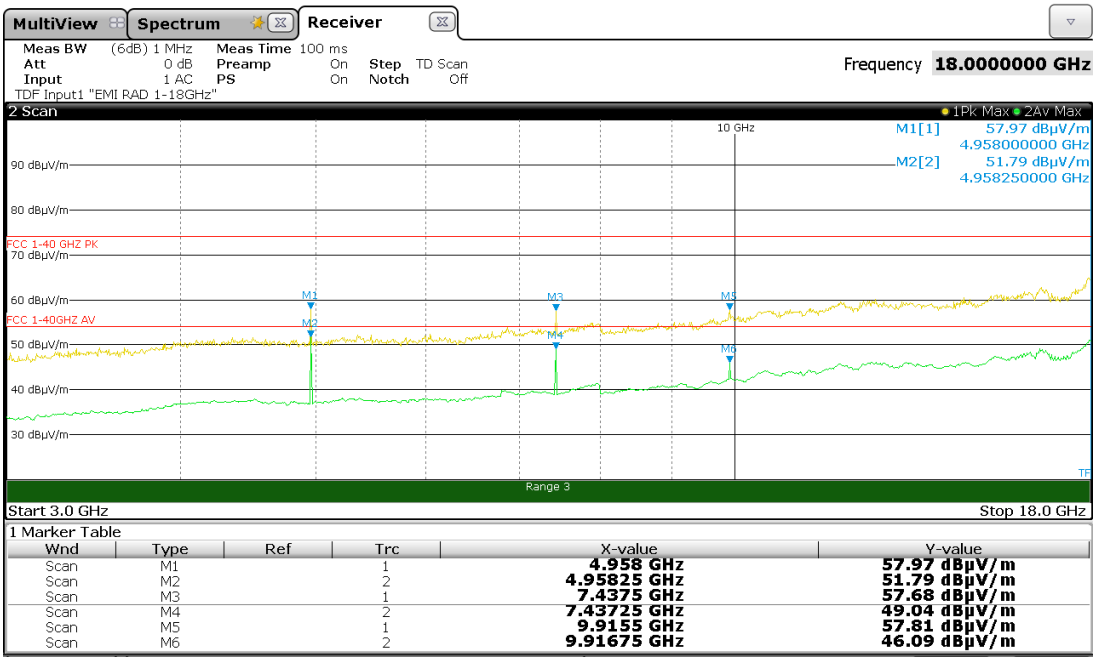
Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – Middle Channel (2440 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,50	55,95	-9,50	8,80	**55,25**	yes	74,00	18,75
7320,25	55,18	-8,43	11,25	**58,00**	yes	74,00	16,00
9759,50	49,26	-6,34	12,64	**55,56**	no	76,04	20,48

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4880,25	45,80	-9,50	8,80	**45,10**	yes	54,00	8,90
7320,25	45,06	-8,43	11,25	**47,88**	yes	54,00	6,12
9760,25	35,64	-6,34	12,64	**41,94**	no	70,31	28,37

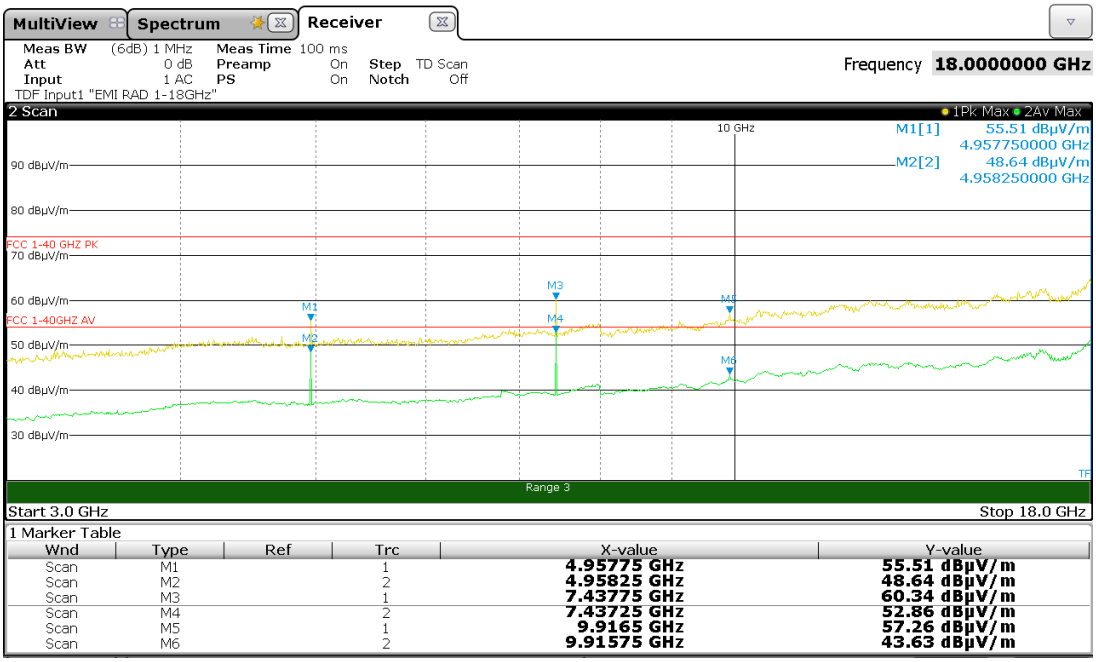
Graphical representation of Radiated Emission Measurement
Operation Mode: (#3) – High Channel (2480 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Vertical



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,00	58,53	-9,46	8,90	**57,97**	yes	74,00	16,03
7437,50	55,40	-8,54	10,82	**57,68**	yes	74,00	16,32
9915,50	50,67	-5,70	12,84	**57,81**	no	**77,17**	19,36

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,25	52,35	-9,46	8,90	**51,79**	yes	54,00	2,21
7437,25	46,76	-8,54	10,82	**49,04**	yes	54,00	4,96
9916,75	38,95	-5,70	12,84	**46,09**	no	**74,31**	28,22

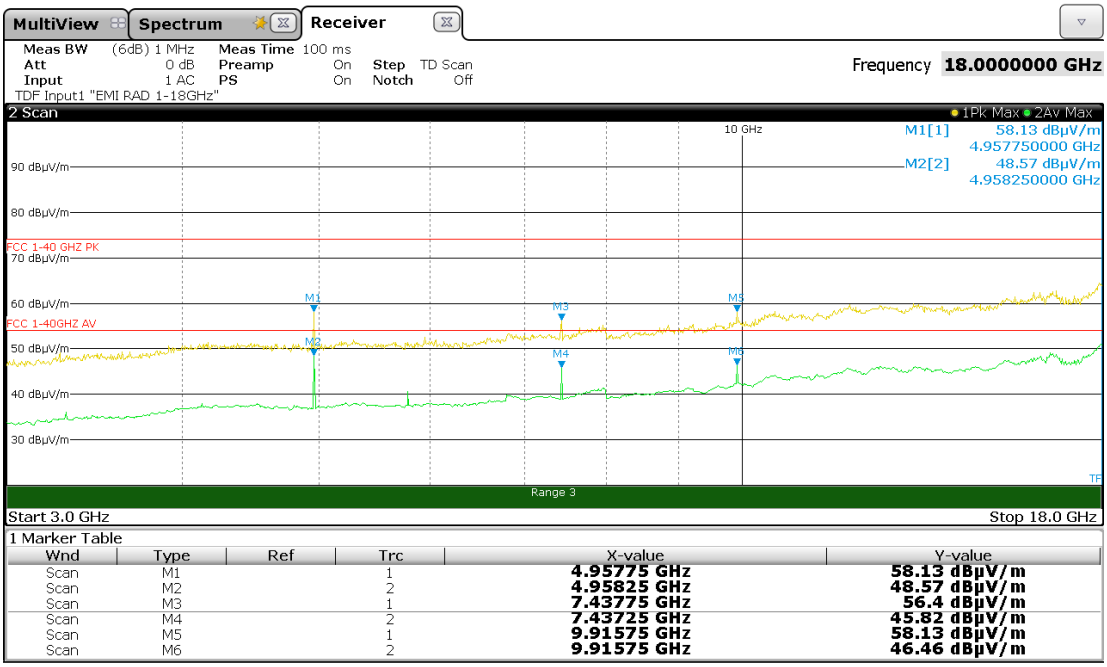
Graphical representation of Radiated Emission Measurement
Operation Mode: (#3) – High Channel (2480 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4957,75	56,07	-9,46	8,90	**55,51**	yes	74,00	18,49
7437,75	58,06	-8,54	10,82	**60,34**	yes	74,00	13,66
9916,50	50,12	-5,70	12,84	**57,26**	no	**77,17**	19,91

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,25	49,20	-9,46	8,90	**48,64**	yes	54,00	5,36
7437,25	50,58	-8,54	10,82	**52,86**	yes	54,00	1,14
9915,75	36,49	-5,70	12,84	**43,63**	no	**74,31**	30,68

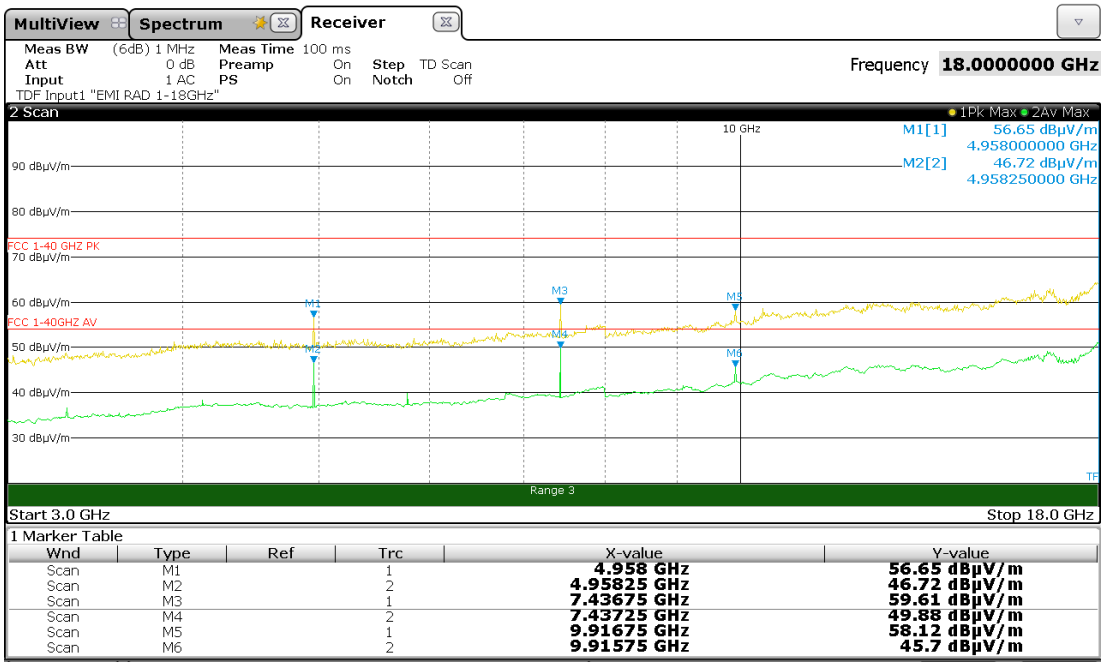
Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – High Channel (2480 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Vertical



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4957,75	58,69	-9,46	8,90	**58,13**	yes	74,00	15,87
7437,75	54,12	-8,54	10,82	**56,40**	yes	74,00	17,60
9915,75	50,99	-5,70	12,84	**58,13**	no	71,91	13,78

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,25	49,13	-9,46	8,90	**48,57**	yes	54,00	5,43
7437,25	43,54	-8,54	10,82	**45,82**	yes	54,00	8,18
9915,75	39,32	-5,70	12,84	**46,46**	no	64,44	17,98

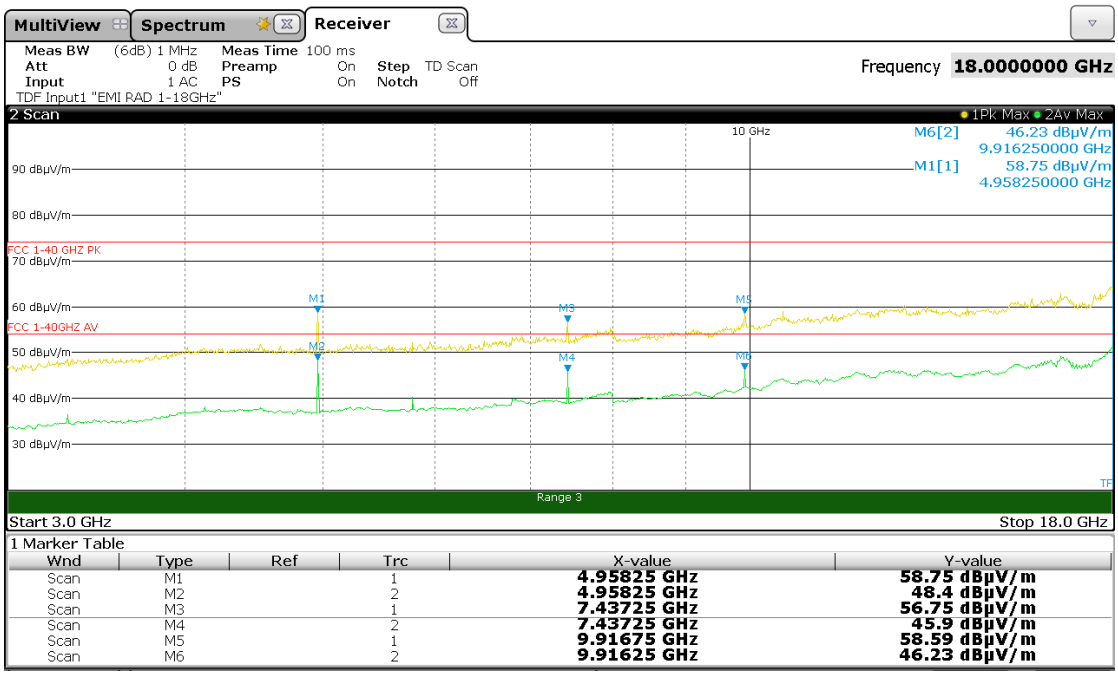
Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – High Channel (2480 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Horizontal



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,00	57,21	-9,46	8,90	**56,65**	yes	74,00	17,35
7436,75	57,33	-8,54	10,82	**59,61**	yes	74,00	14,39
9916,75	50,98	-5,70	12,84	**58,12**	no	71,91	13,79

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,25	47,28	-9,46	8,90	**46,72**	yes	54,00	7,28
7437,25	47,60	-8,54	10,82	**49,88**	yes	54,00	4,12
9915,75	38,56	-5,70	12,84	**45,70**	no	64,44	18,74

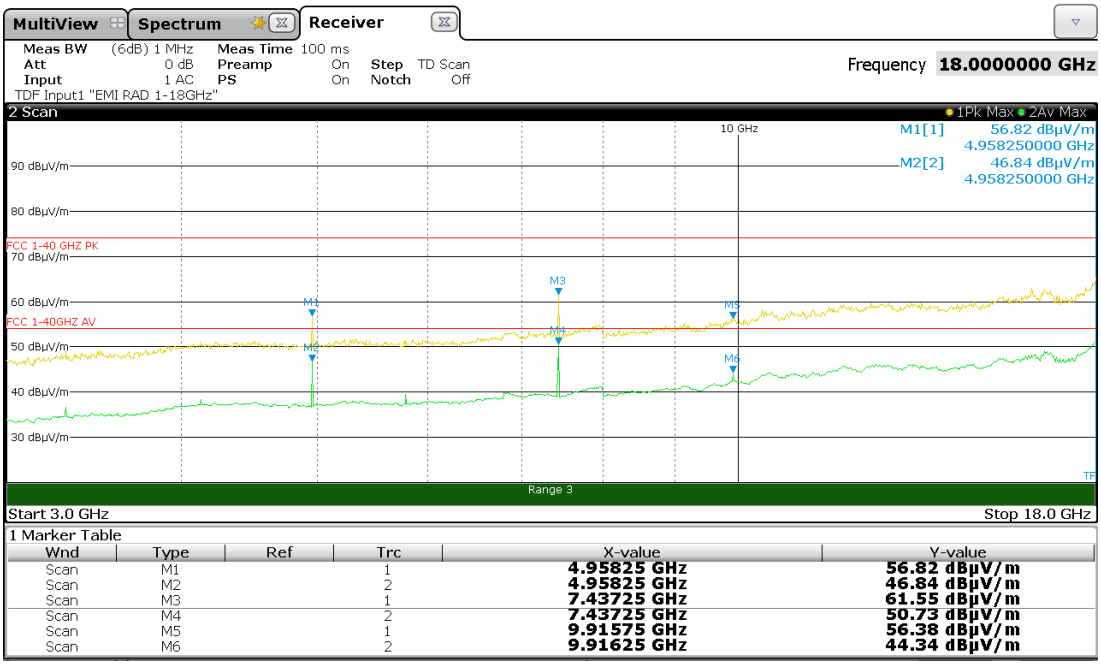
Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – High Channel (2480 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Vertical



PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,25	59,31	-9,46	8,90	**58,75**	yes	74,00	15,25
7437,25	54,47	-8,54	10,82	**56,75**	yes	74,00	17,25
9916,75	51,45	-5,70	12,84	**58,59**	no	71,92	13,33

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,25	48,96	-9,46	8,90	**48,40**	yes	54,00	5,60
7437,25	43,62	-8,54	10,82	**45,90**	yes	54,00	8,10
9916,25	39,09	-5,70	12,84	**46,23**	no	66,01	19,78

Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – High Channel (2480 MHz)
Frequency: 3GHz – 18GHz - Antenna Polarization: Horizontal



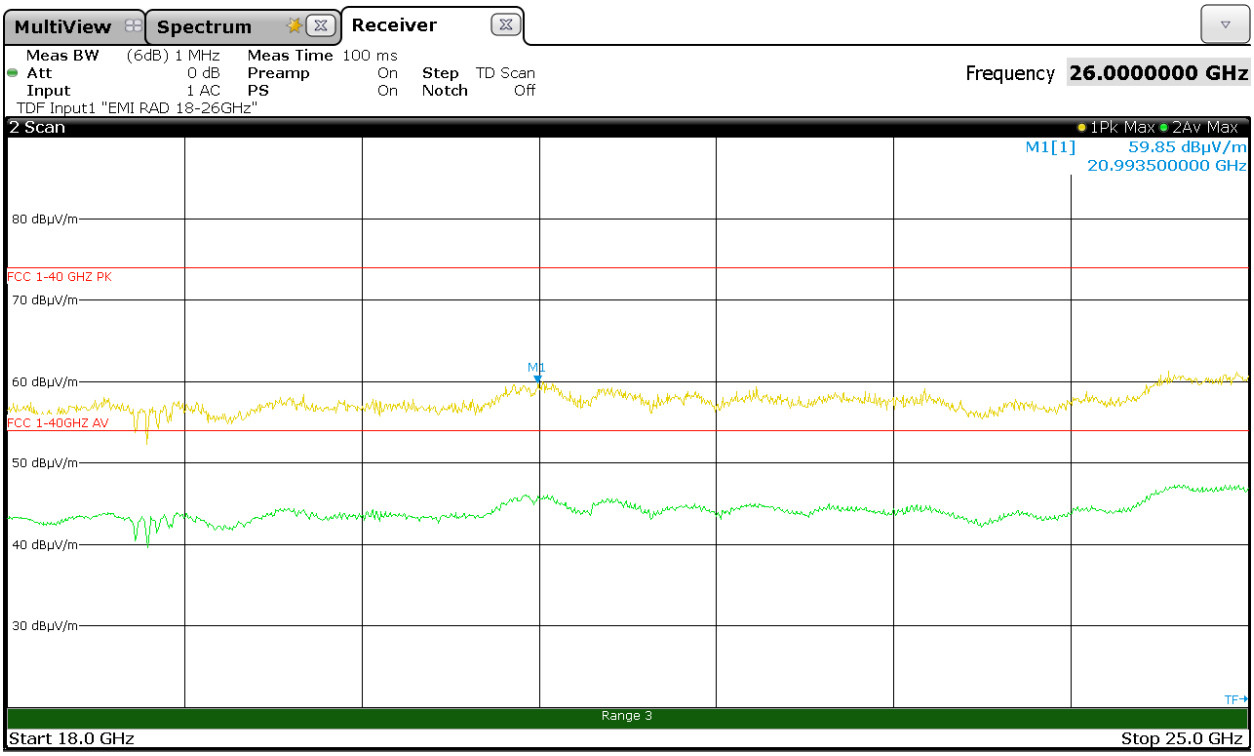
PEAK RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**PK Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,25	57,38	-9,46	8,90	**56,82**	yes	74,00	17,18
7437,25	59,27	-8,54	10,82	**61,55**	yes	74,00	12,45
9915,75	49,24	-5,70	12,84	**56,38**	no	71,92	15,54

AVERAGE RESULT (RBW=1MHz)							
Frequency	**Reading value**	**Antenna Factor with Pre-Amp. Gain**	**Cable Loss**	**Correcting reading**	**Restricted band**	**AV Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dBµV/m)**	**/**	**(dBµV/m)**	**(dB)**
4958,25	47,40	-9,46	8,90	**46,84**	yes	54,00	7,16
7437,25	48,45	-8,54	10,82	**50,73**	yes	54,00	3,27
9915,25	37,20	-5,70	12,84	**44,34**	no	66,01	21,67

Graphical representation of Radiated Emission Measurement
Operation Mode: (#3) – Low Channel (2402 MHz)
Frequency: 18GHz – 25GHz
Antenna Polarization: worst case Vertical and Horizontal

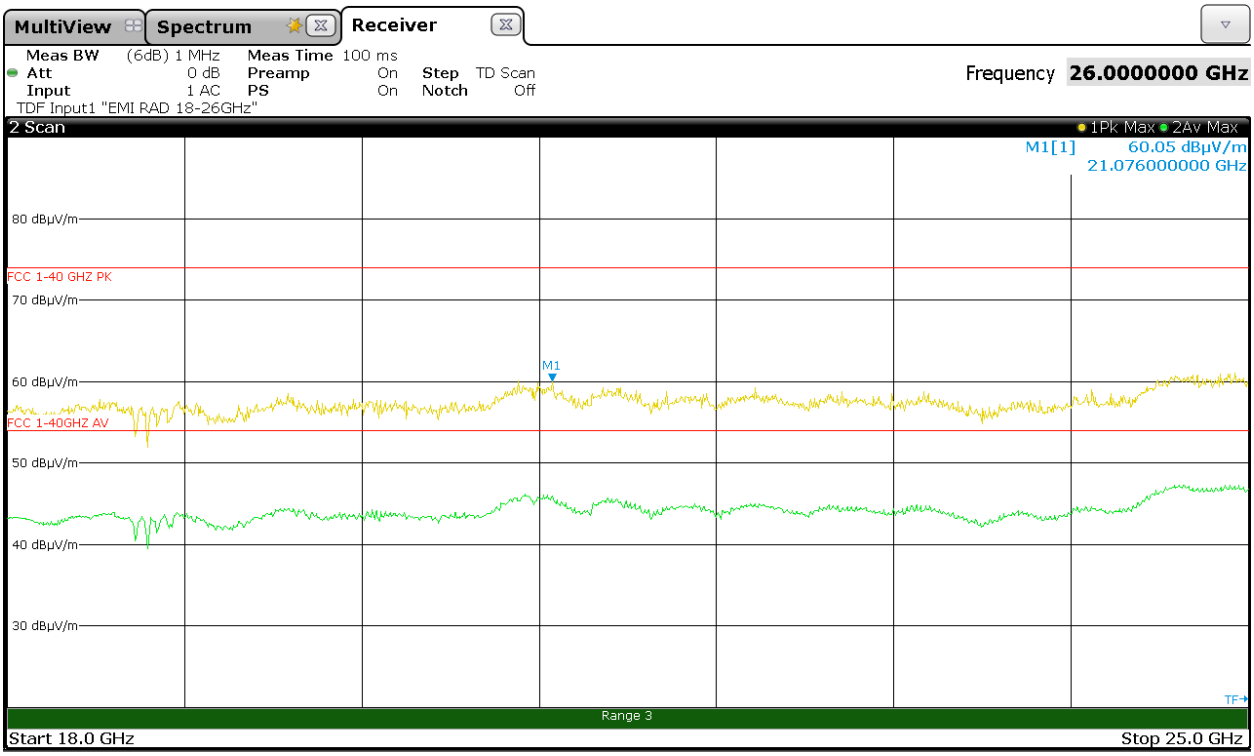
Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – Low Channel (2402 MHz)
Frequency: 18GHz – 25GHz
Antenna Polarization: worst case Vertical and Horizontal

Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – Low Channel (2402 MHz)
Frequency: 18GHz – 25GHz
Antenna Polarization: worst case Vertical and Horizontal

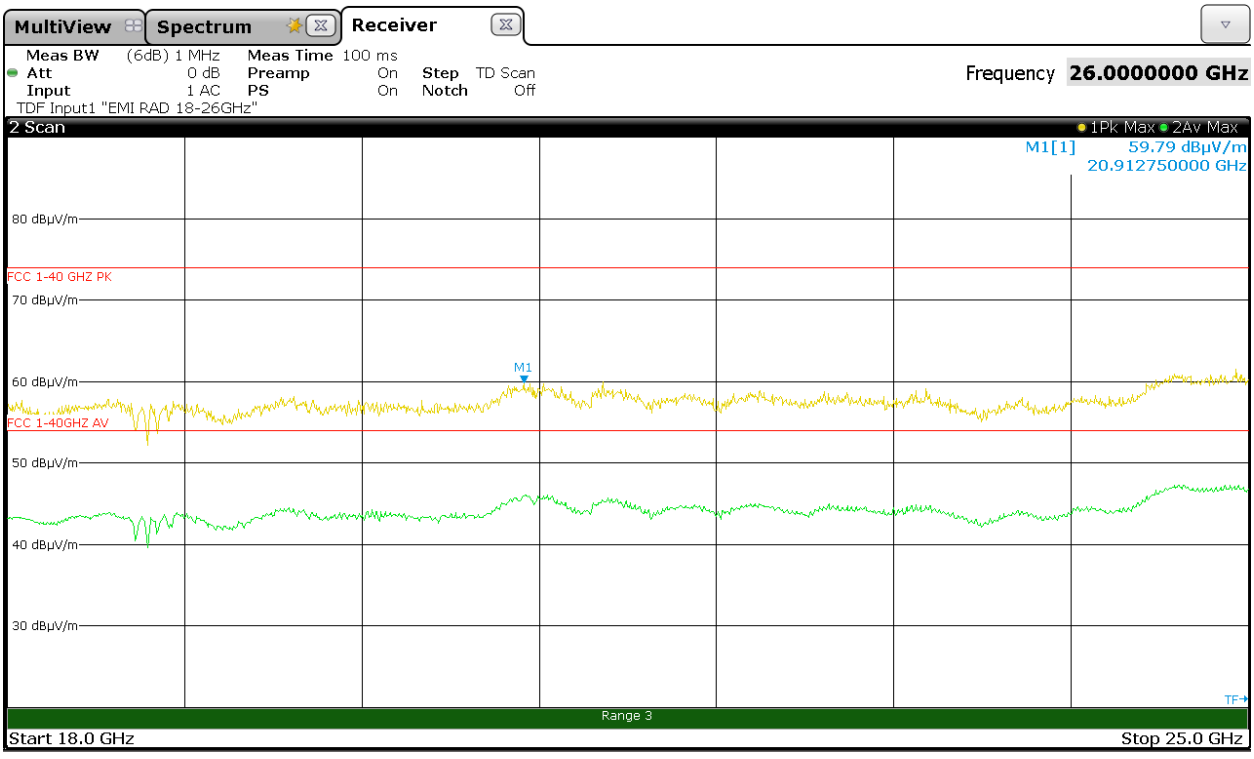


Graphical representation of Radiated Emission Measurement
Operation Mode: (#3) – Middle Channel (2440 MHz)
Frequency: 18GHz – 25GHz
Antenna Polarization: worst case Vertical and Horizontal

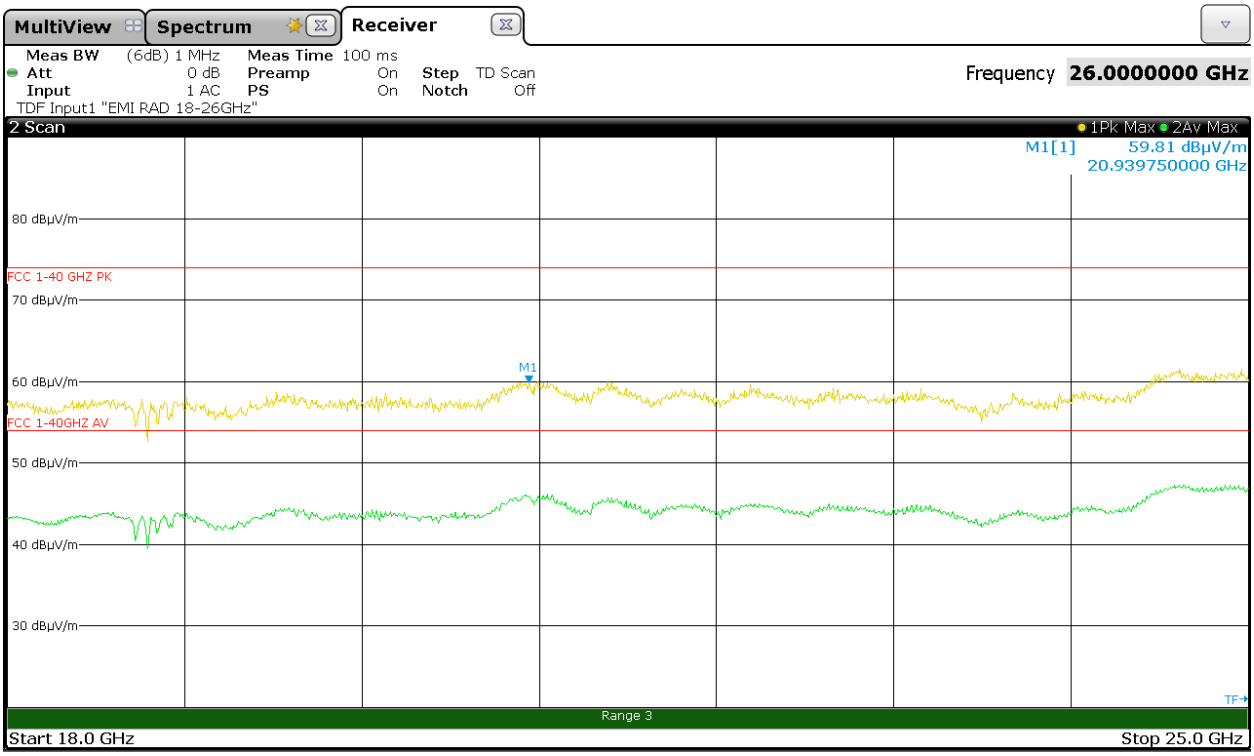
Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – Middle Channel (2440 MHz)
Frequency: 18GHz – 25GHz
Antenna Polarization: worst case Vertical and Horizontal



Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – Middle Channel (2440 MHz)
Frequency: 18GHz – 25GHz
Antenna Polarization: worst case Vertical and Horizontal

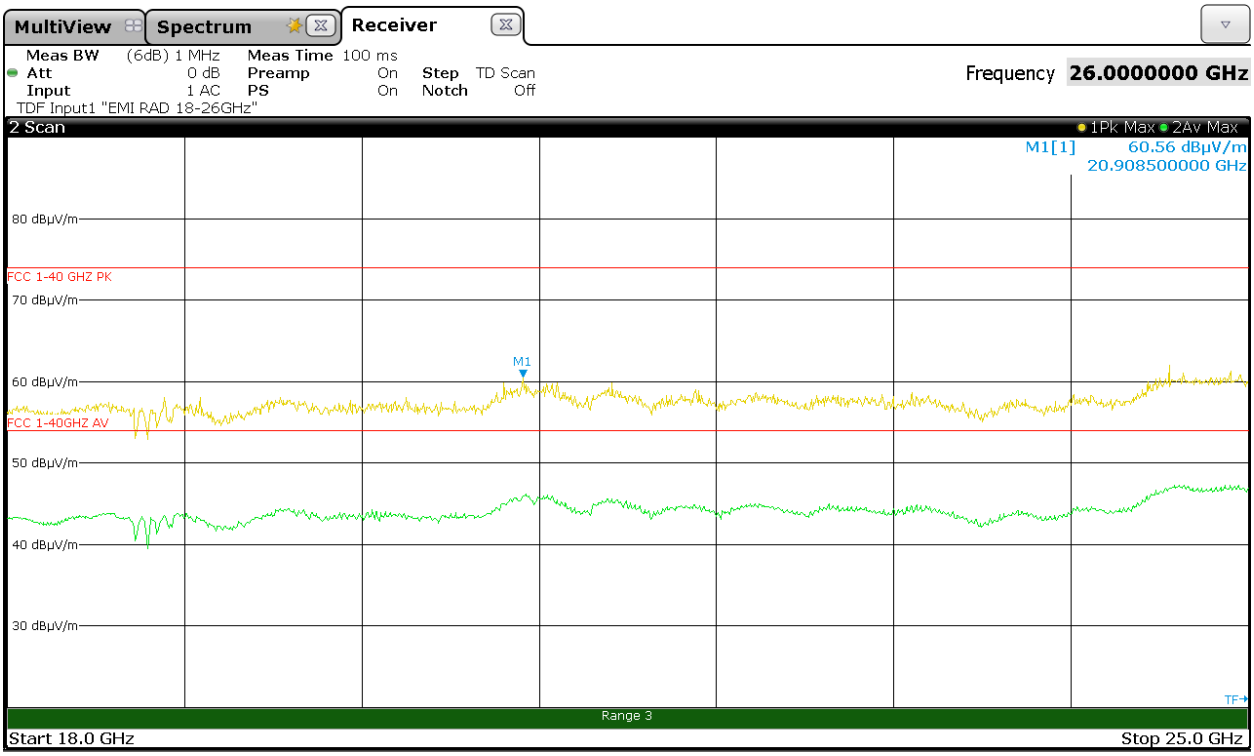


Graphical representation of Radiated Emission Measurement
Operation Mode: (#3) – High Channel (2480 MHz)
Frequency: 18GHz – 25GHz
Antenna Polarization: worst case Vertical and Horizontal



Graphical representation of Radiated Emission Measurement
Operation Mode: (#6) – High Channel (2480 MHz)
Frequency: 18GHz – 25GHz
Antenna Polarization: worst case Vertical and Horizontal

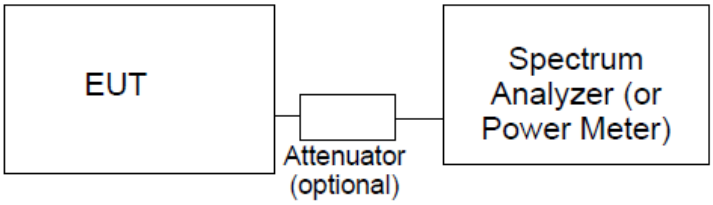
Graphical representation of Radiated Emission Measurement
Operation Mode: (#9) – High Channel (2480 MHz)
Frequency: 18GHz – 25GHz
Antenna Polarization: worst case Vertical and Horizontal



12.4 TEST: 20dB Bandwidth			PASS
Parameters required prior to the test	Laboratory Ambient Temperature (°C)	15 to 35 °C	
	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	24°C	
	Relative Humidity (%)	48%	
	Air pressure (hPa)	1020	
—	Frequency	Application Point	
Fully configured sample tested at the power line frequency	12 Vdc	SMA Connector	
Equipment mode:	Operation mode	#1 #2 #3 #4 #5 #6 #7 #8 #9	
FCC Standard	§15.247 (A)(1)		

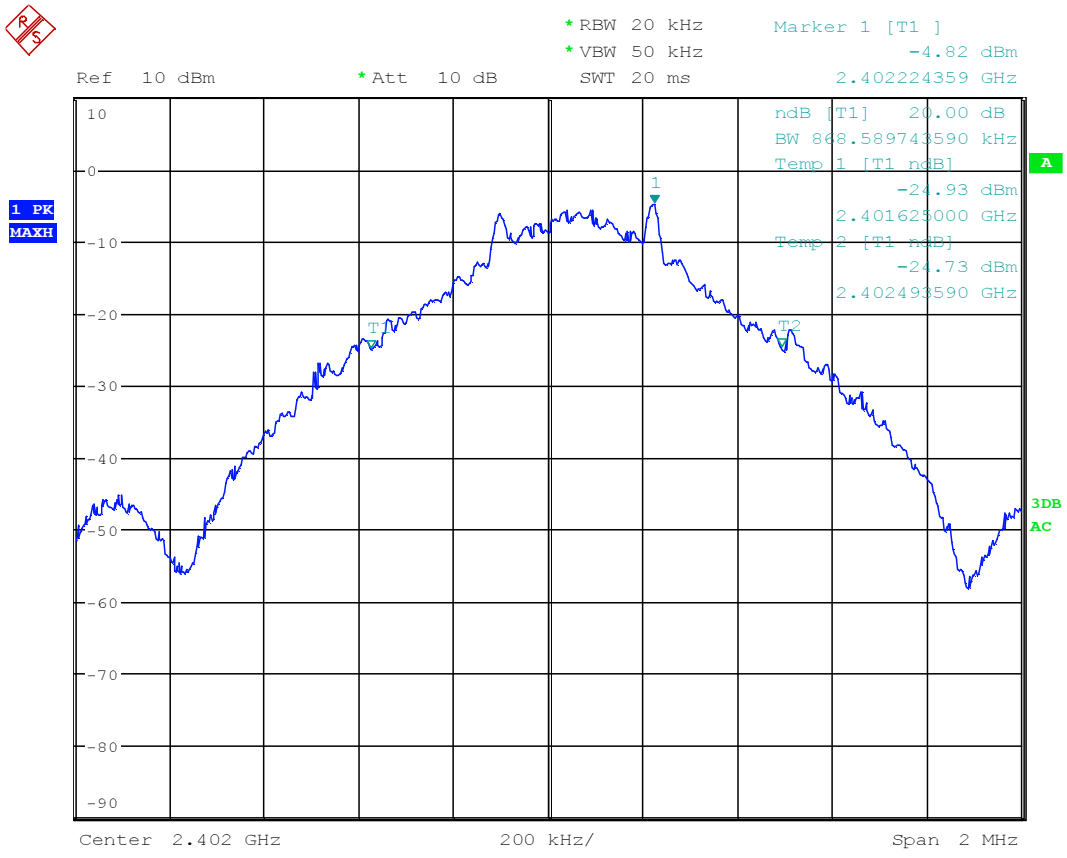
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Further information to test setup



Test Equipment Used					
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due
EMI Test Receiver	R&S	ESU40	87020455	05/2018	05/2019

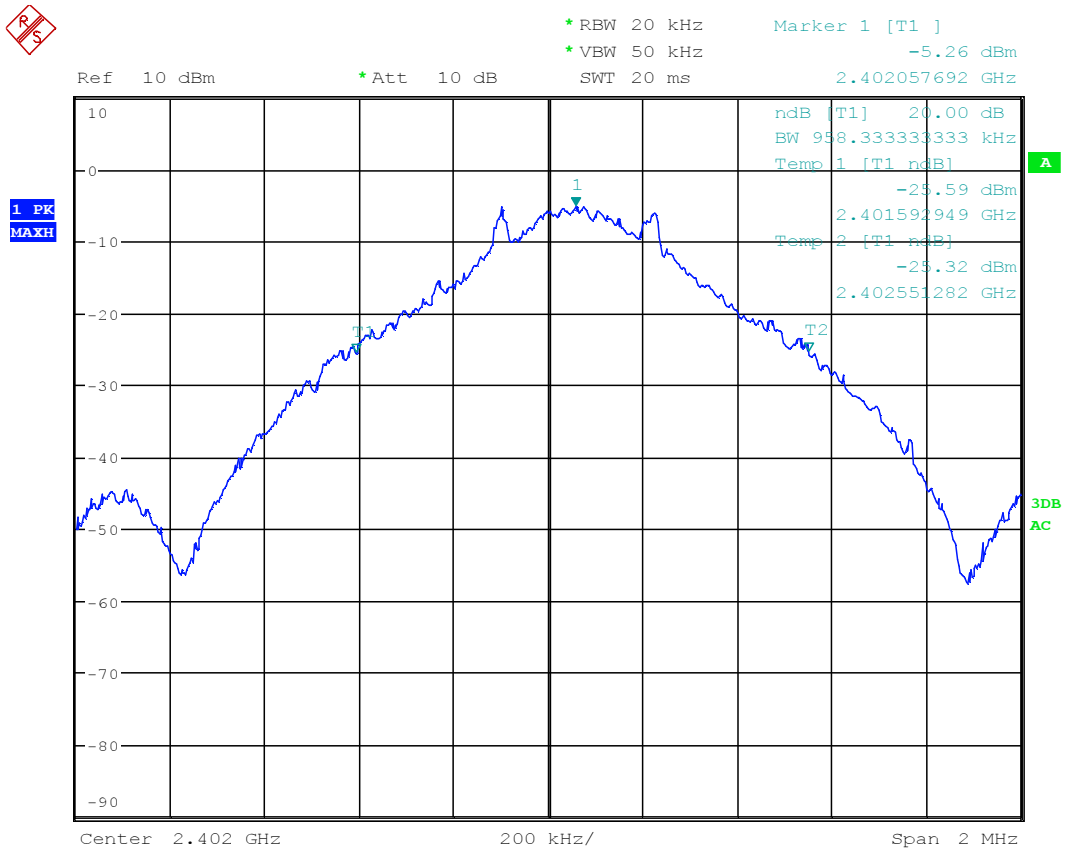
Graphical representation of 20dB Bandwidth
Operation Mode: #1 – Low Channel (2402 MHz)
Plot n°1



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Low	**2402**	**868,59**	**1**

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	**2401,62 MHz**	**Fmax**	**2402,49 MHz**

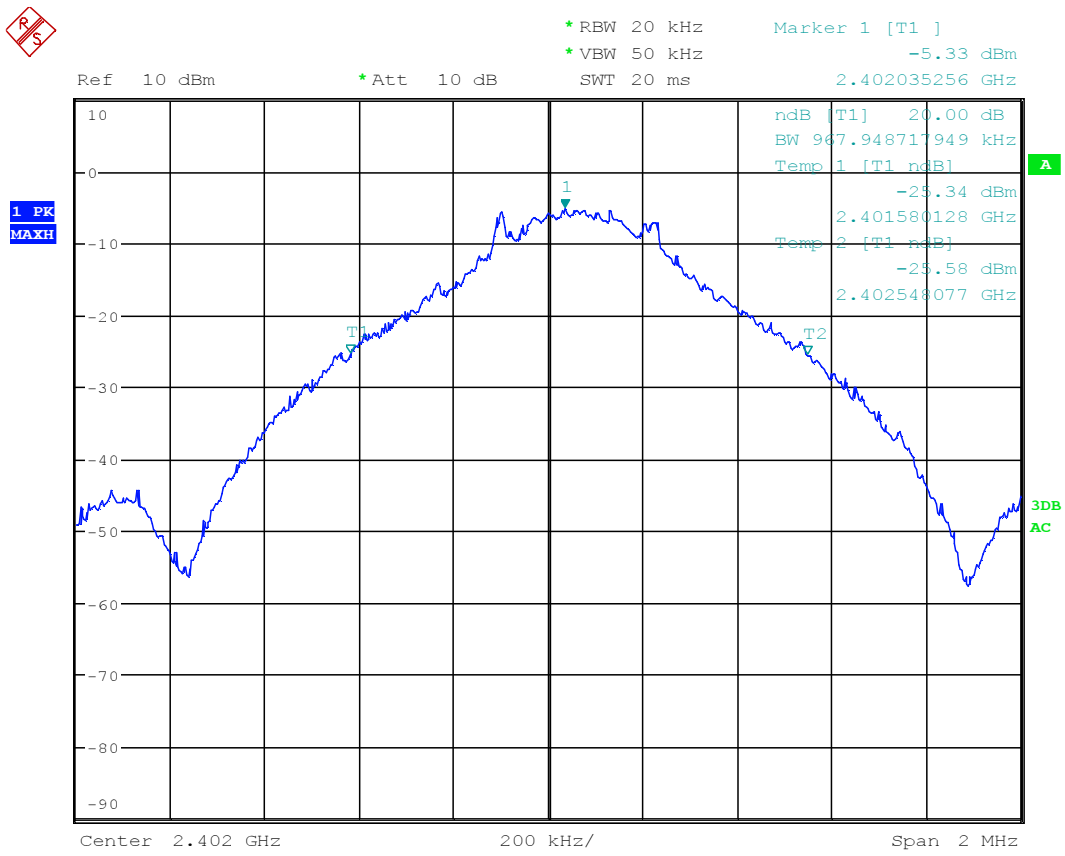
Graphical representation of 20dB Bandwidth
Operation Mode: #2 – Low Channel (2402 MHz)
Plot n°2



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Low	2402	958,33	2

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2401,59 MHz	Fmax	2402,55 MHz

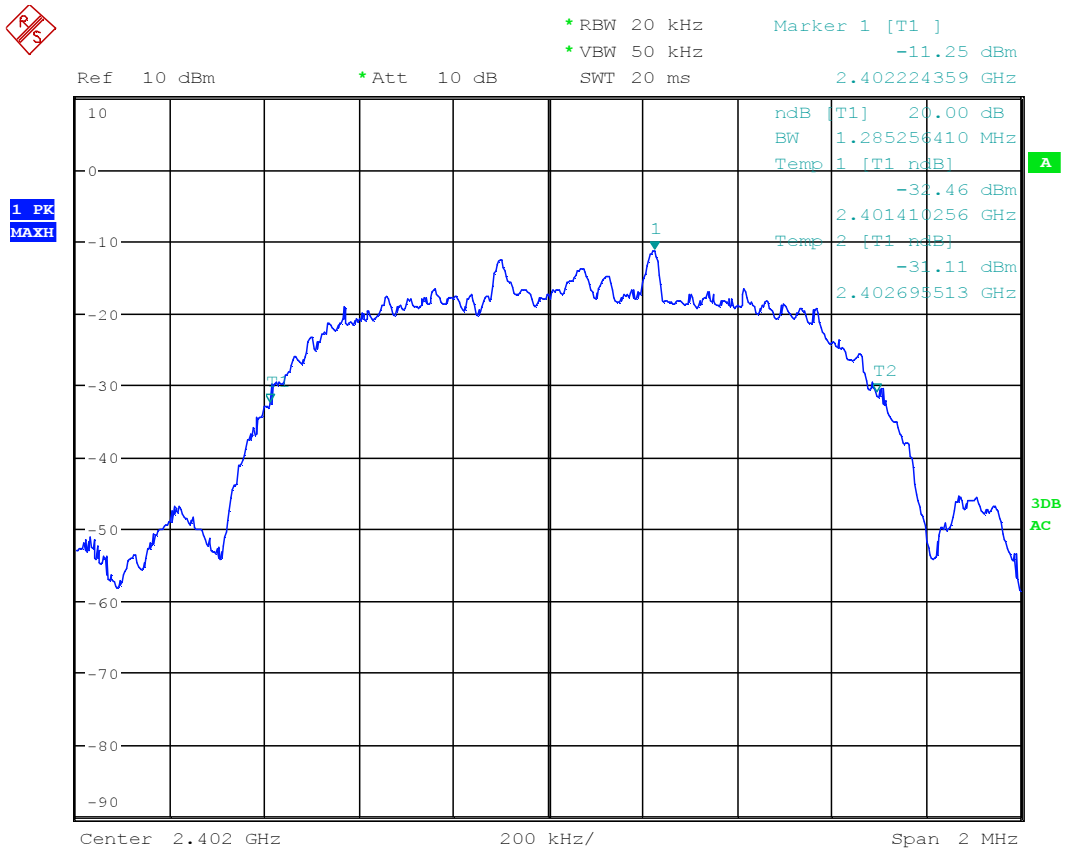
Graphical representation of 20dB Bandwidth
Operation Mode: #3 – Low Channel (2402 MHz)
Plot n°3



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Low	2402	967,94	3

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2401,58 MHz	Fmax	2402,54 MHz

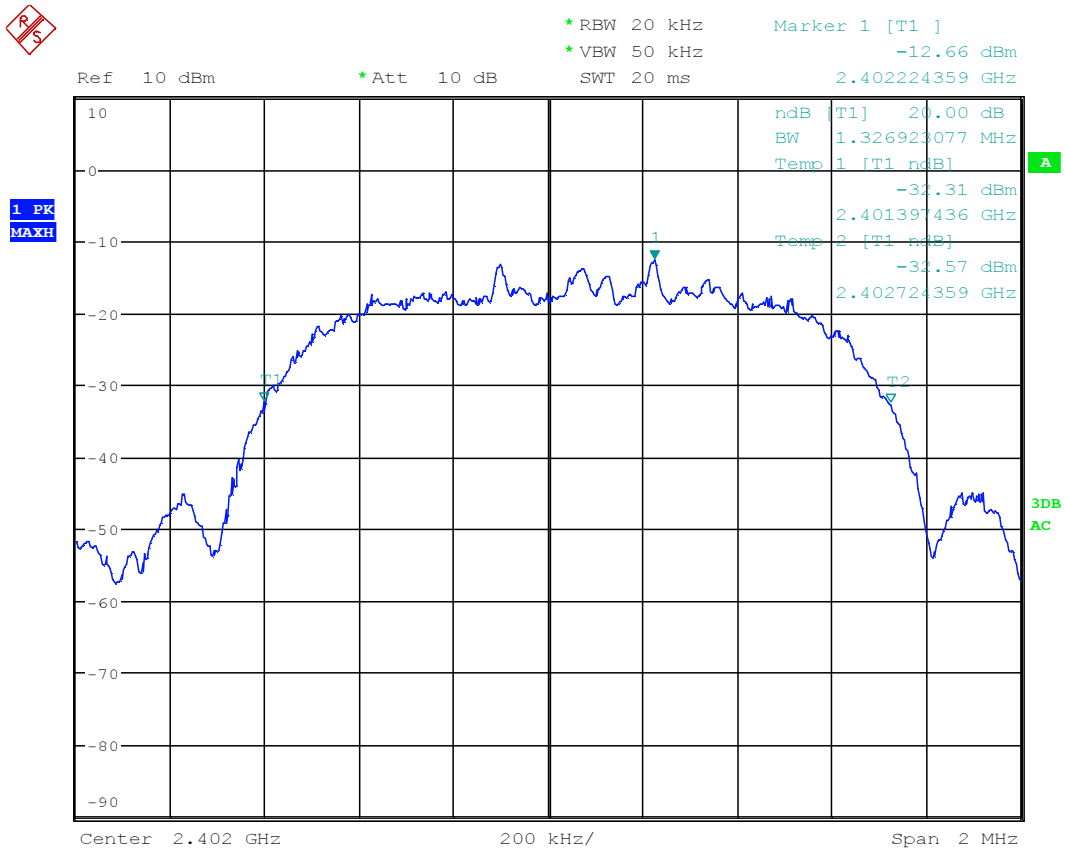
Graphical representation of 20dB Bandwidth
Operation Mode: #4 – Low Channel (2402 MHz)
Plot n°4



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Low	2402	1285,25	4

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2401,41 MHz	Fmax	2402,69 MHz

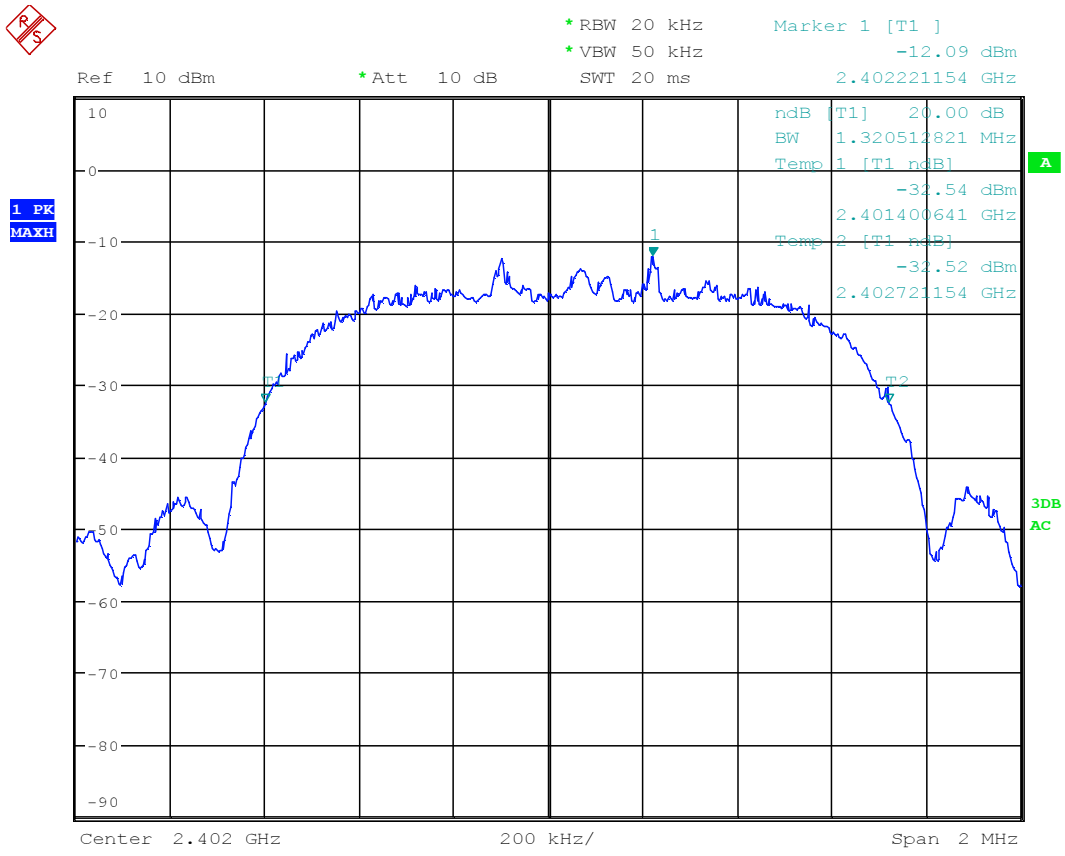
Graphical representation of 20dB Bandwidth
Operation Mode: #5 – Low Channel (2402 MHz)
Plot n°5



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Low	2402	1326,92	5

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2401,39 MHz	Fmax	2402,72 MHz

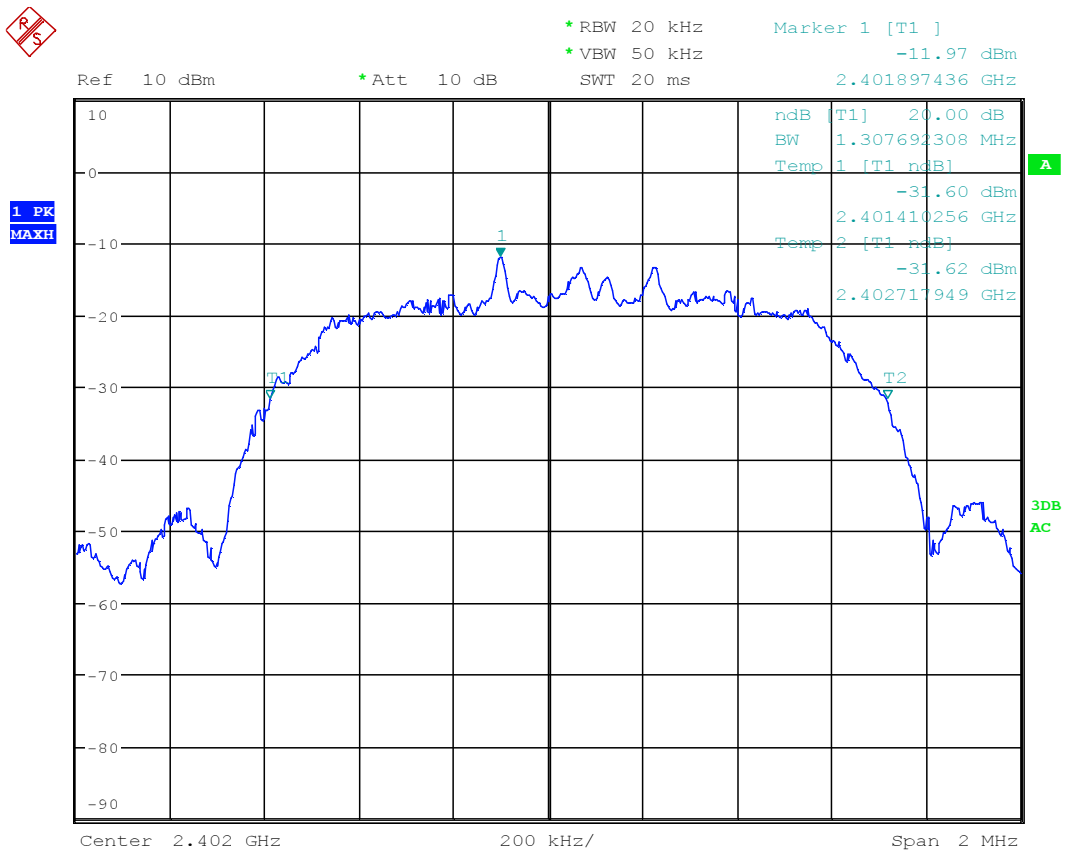
Graphical representation of 20dB Bandwidth
Operation Mode: #6 – Low Channel (2402 MHz)
Plot n°6



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Low	2402	1320,51	6

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2401,40 MHz	Fmax	2402,72 MHz

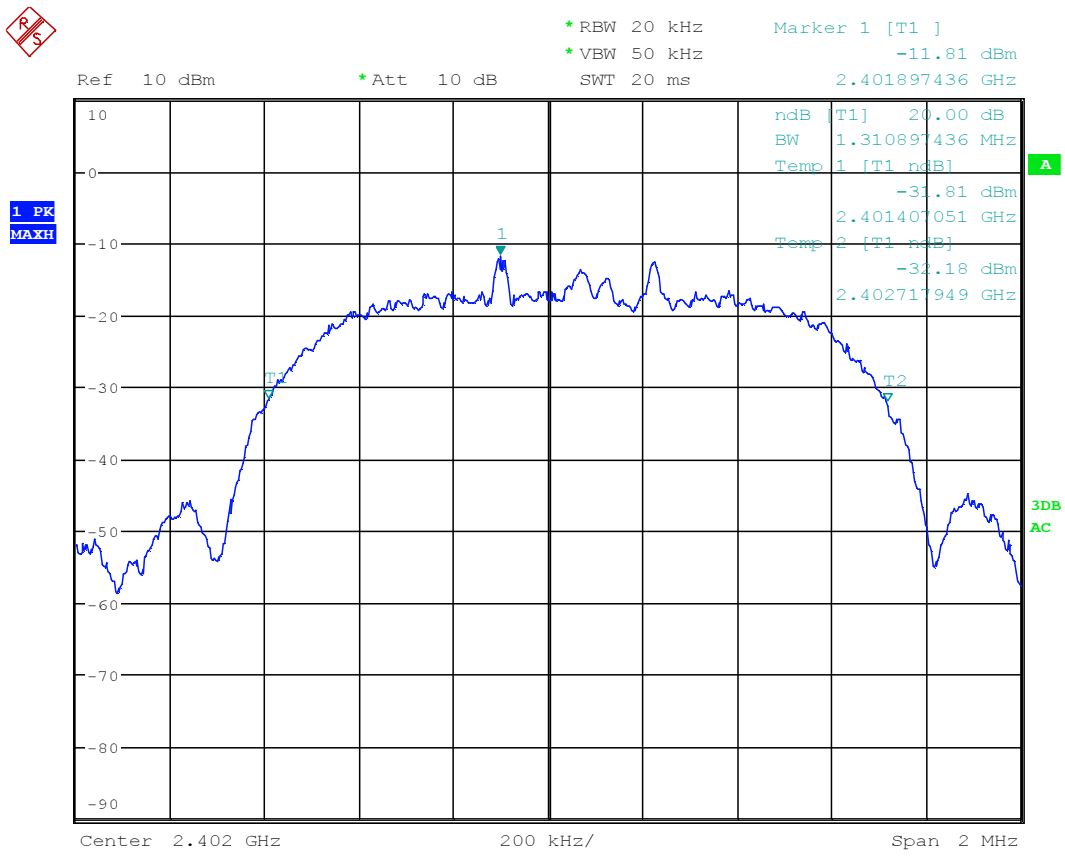
Graphical representation of 20dB Bandwidth
Operation Mode: #7 – Low Channel (2402 MHz)
Plot n°7



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Low	2402	1307,69	7

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2401,41 MHz	Fmax	2402,71 MHz

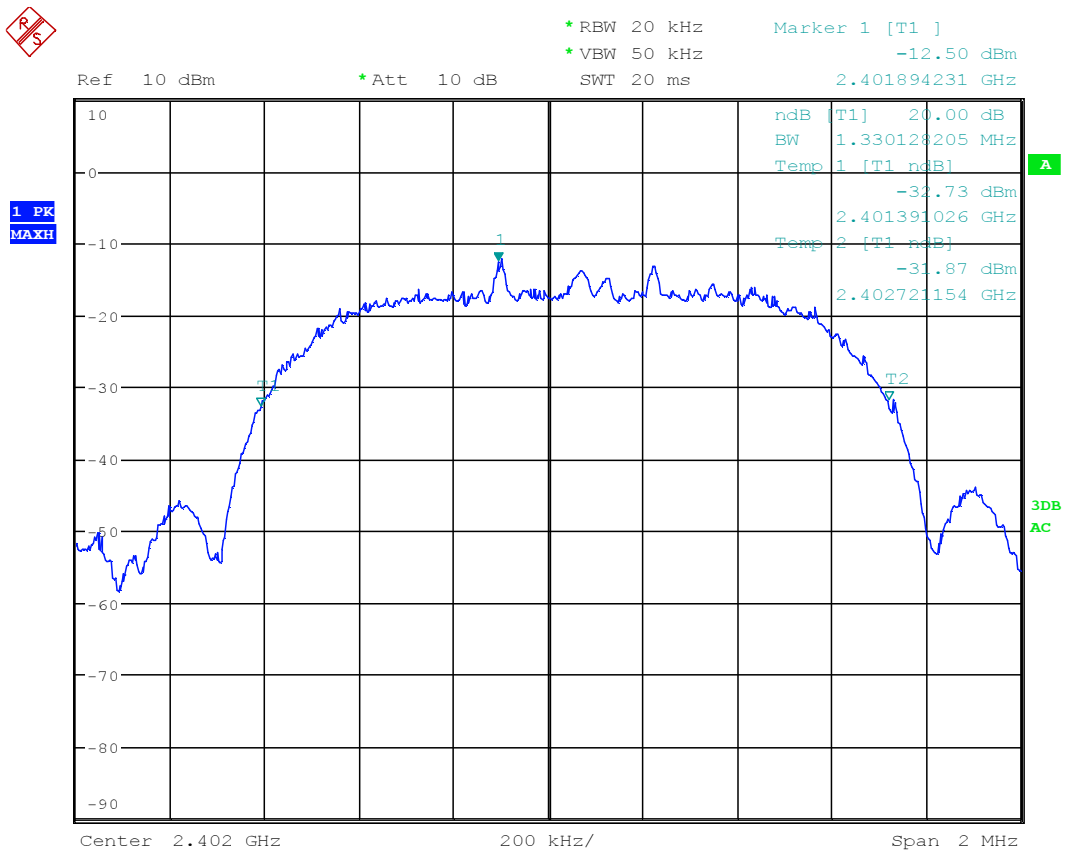
Graphical representation of 20dB Bandwidth
Operation Mode: #8 – Low Channel (2402 MHz)
Plot n°8



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Low	2402	1310,89	8

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2401,40 MHz	Fmax	2402,71 MHz

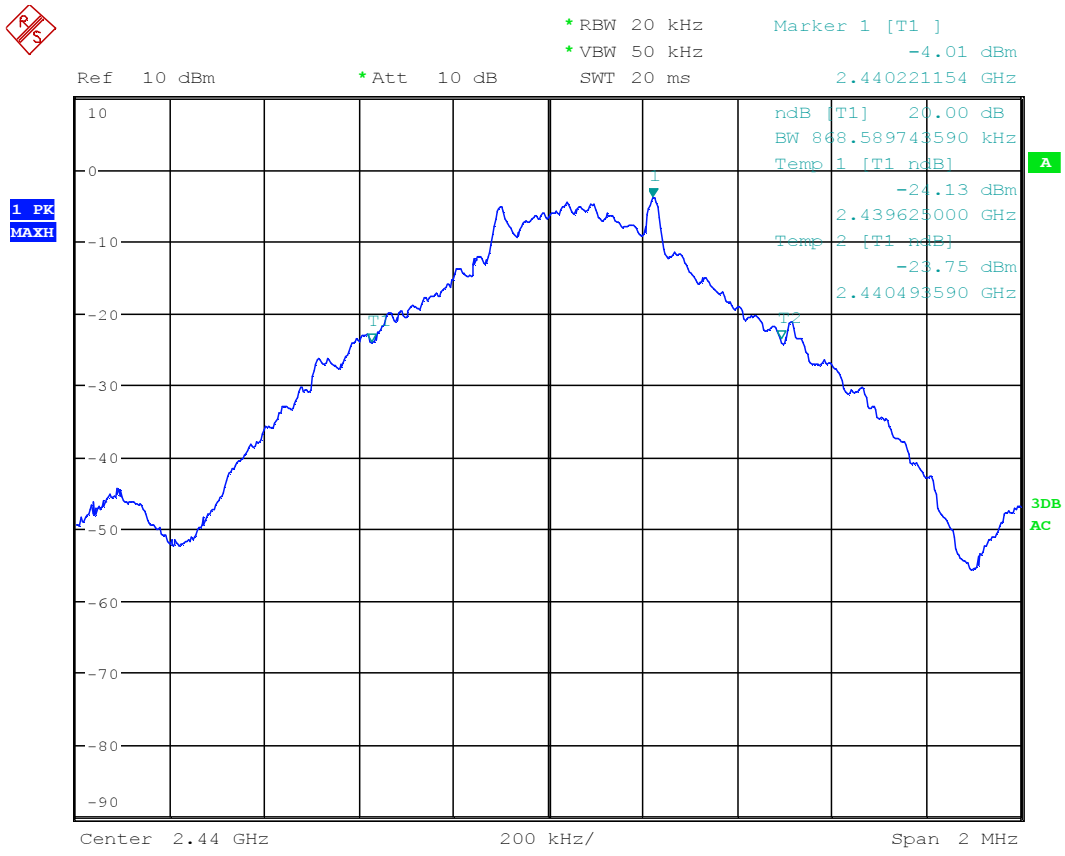
Graphical representation of 20dB Bandwidth
Operation Mode: #9 – Low Channel (2402 MHz)
Plot n°9



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Low	2402	1330,12	9

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2401,39 MHz	Fmax	2402,72 MHz

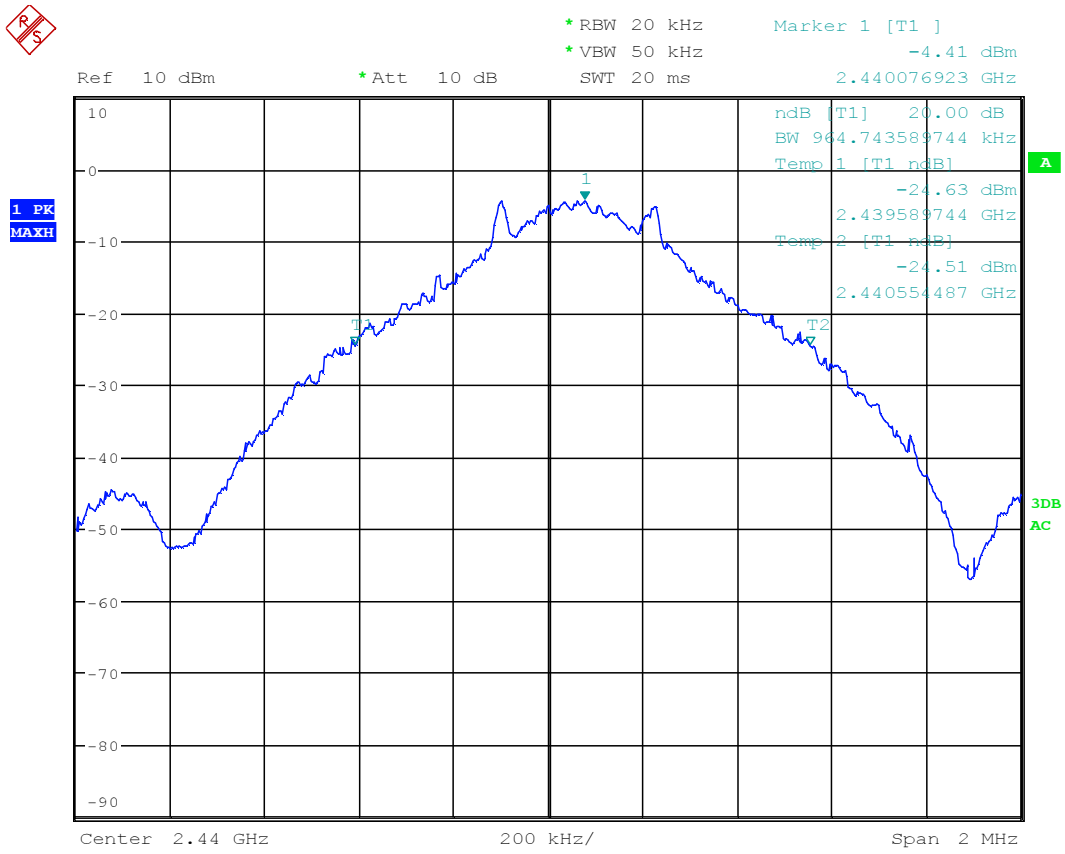
Graphical representation of 20dB Bandwidth
Operation Mode: #1 – Middle Channel (2440 MHz)
Plot n°10



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Middle	**2440**	**868,58**	**10**

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	**2439,62 MHz**	**Fmax**	**2440,49 MHz**

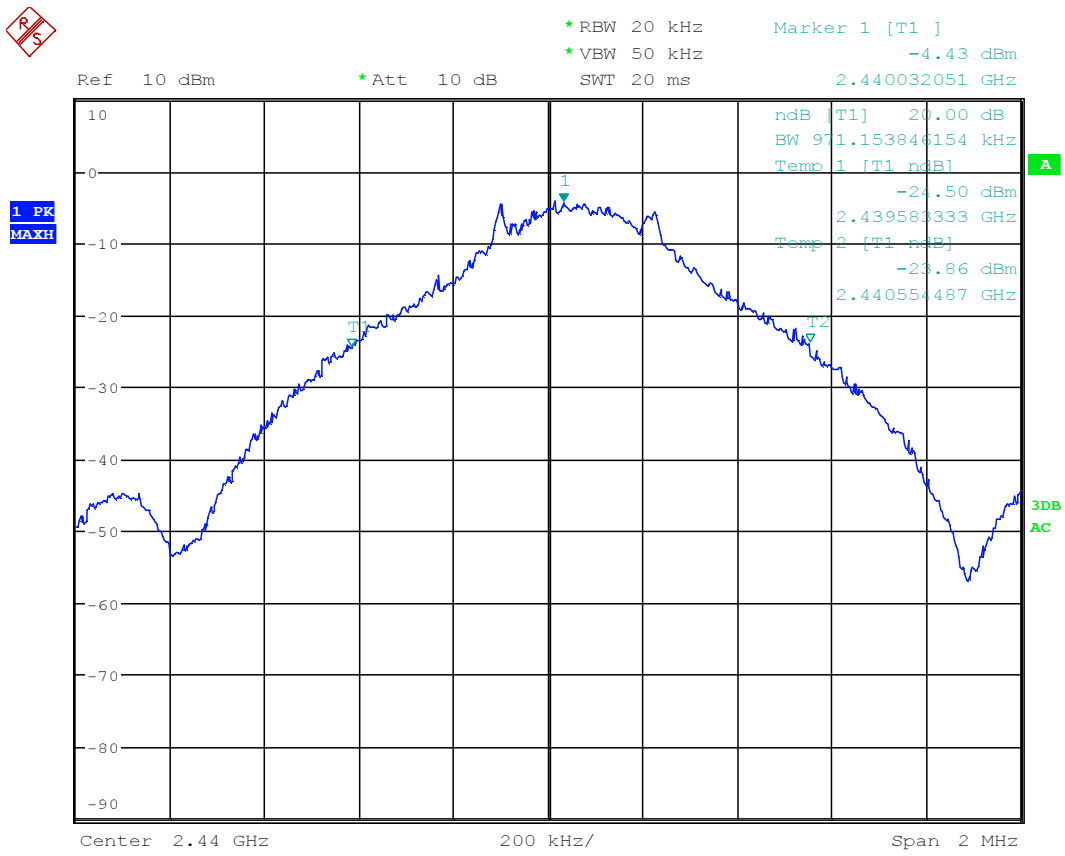
Graphical representation of 20dB Bandwidth
Operation Mode: #2 – Middle Channel (2440 MHz)
Plot n°11



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Middle	**2440**	**964,74**	**11**

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	**2439,59 MHz**	**Fmax**	**2440,55 MHz**

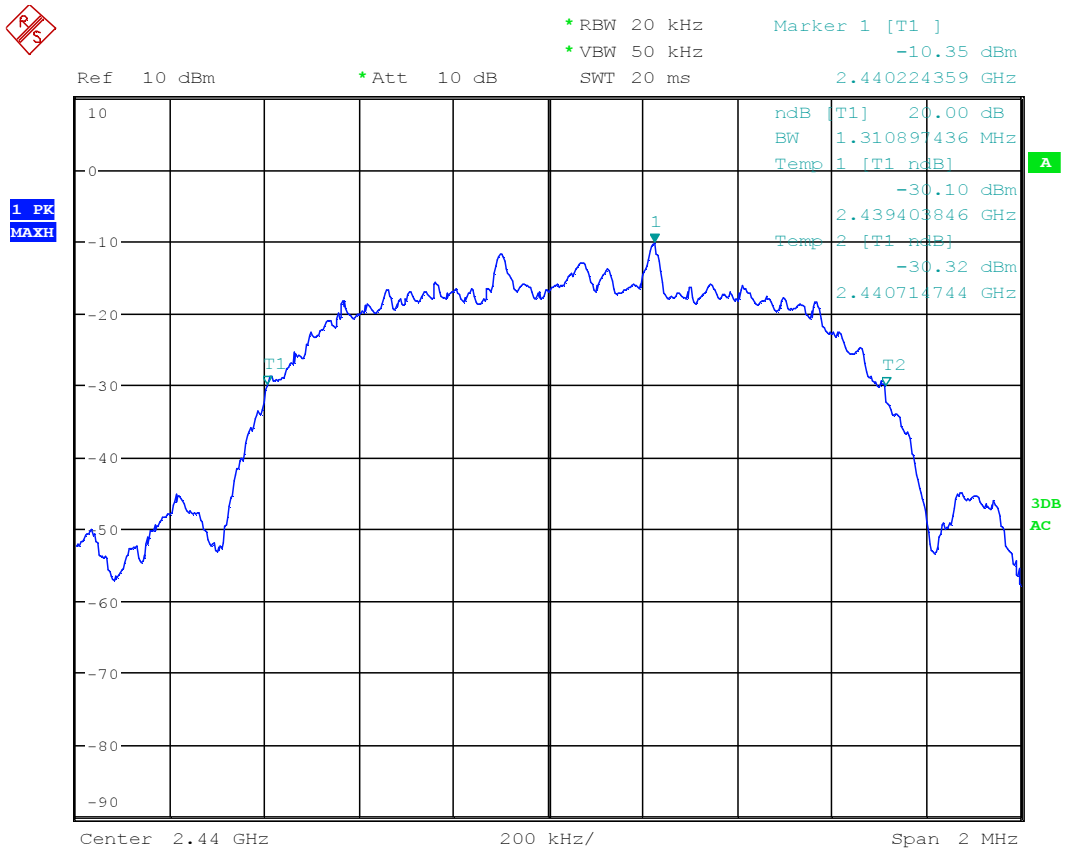
Graphical representation of 20dB Bandwidth
Operation Mode: #3 – Middle Channel (2440 MHz)
Plot n°12



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Middle	**2440**	**971,15**	**12**

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	**2439,58 MHz**	**Fmax**	**2440,55 MHz**

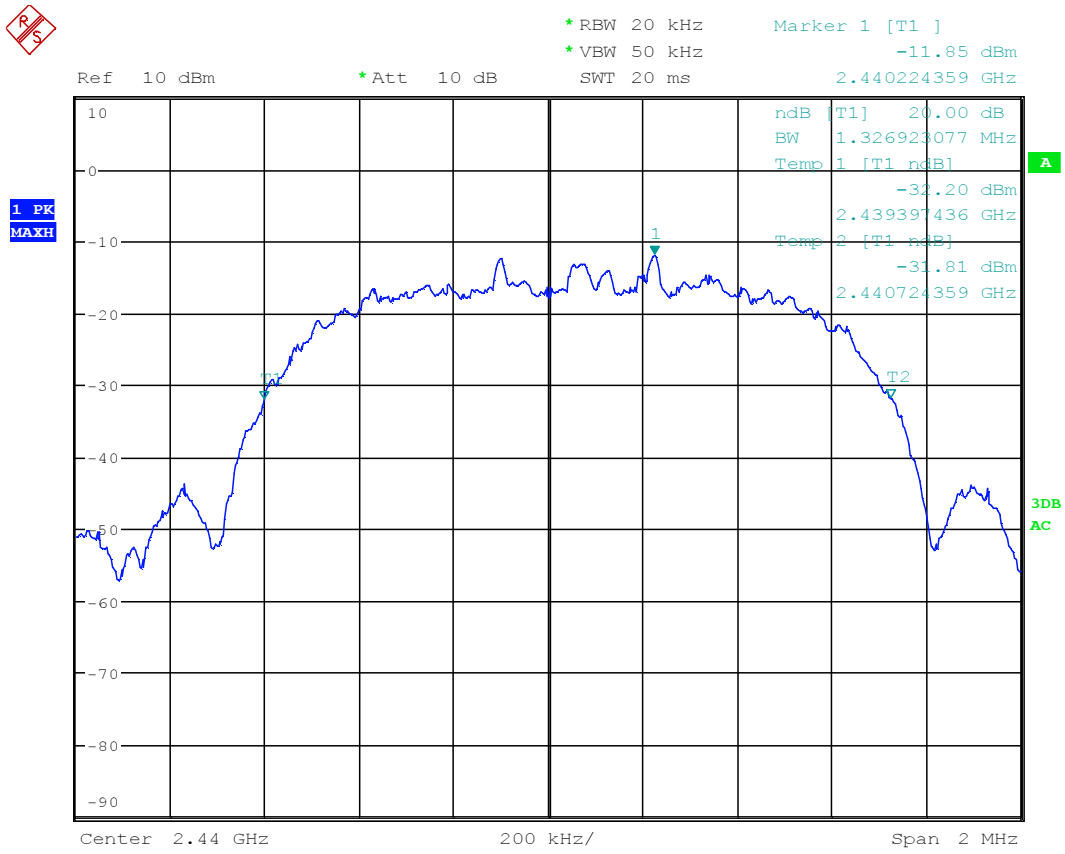
Graphical representation of 20dB Bandwidth
Operation Mode: #4 – Middle Channel (2440 MHz)
Plot n°13



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Middle	**2440**	**1310,89**	**13**

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	**2439,40 MHz**	**Fmax**	**2440,71 MHz**

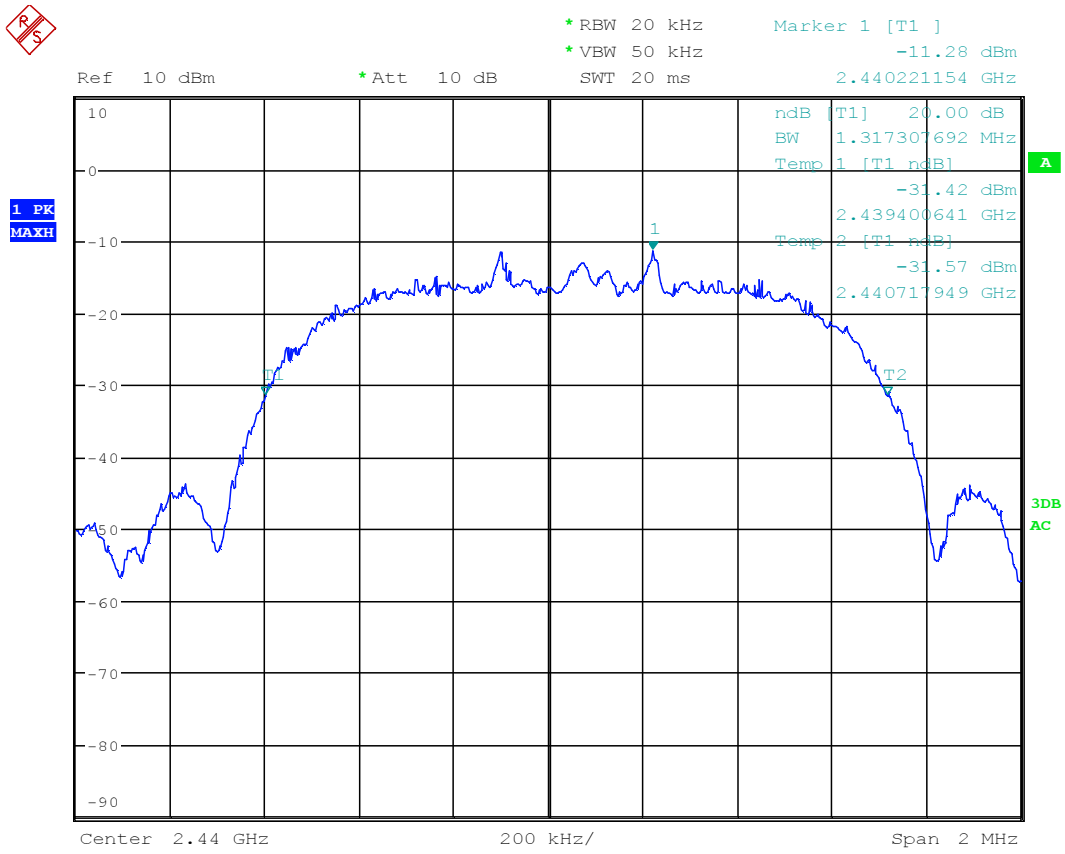
Graphical representation of 20dB Bandwidth
Operation Mode: #5 – Middle Channel (2440 MHz)
Plot n°14



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Middle	**2440**	**1326,92**	**14**

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	**2439,39 MHz**	**Fmax**	**2440,72 MHz**

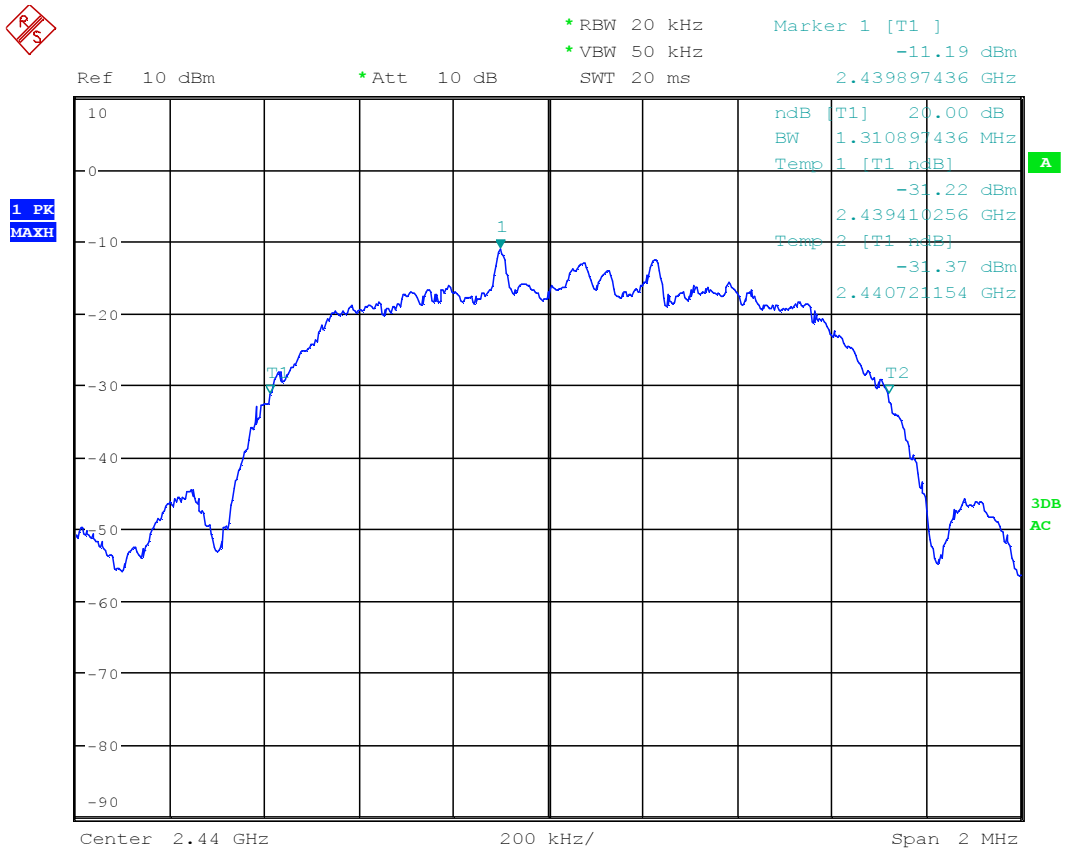
Graphical representation of 20dB Bandwidth
Operation Mode: #6 – Middle Channel (2440 MHz)
Plot n°15



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Middle	**2440**	**1317,30**	**15**

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	**2439,40 MHz**	**Fmax**	**2440,71 MHz**

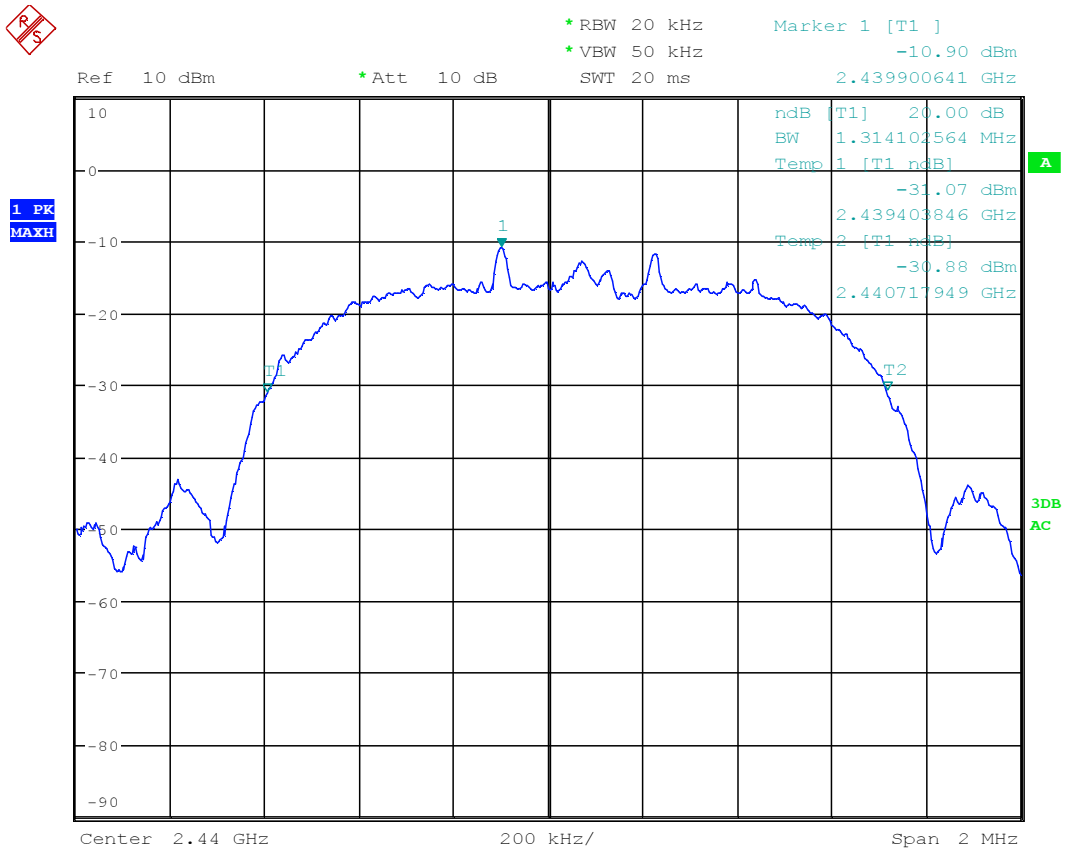
Graphical representation of 20dB Bandwidth
Operation Mode: #7 – Middle Channel (2440 MHz)
Plot n°16



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Middle	**2440**	**1310,89**	**16**

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	**2439,41 MHz**	**Fmax**	**2440,72 MHz**

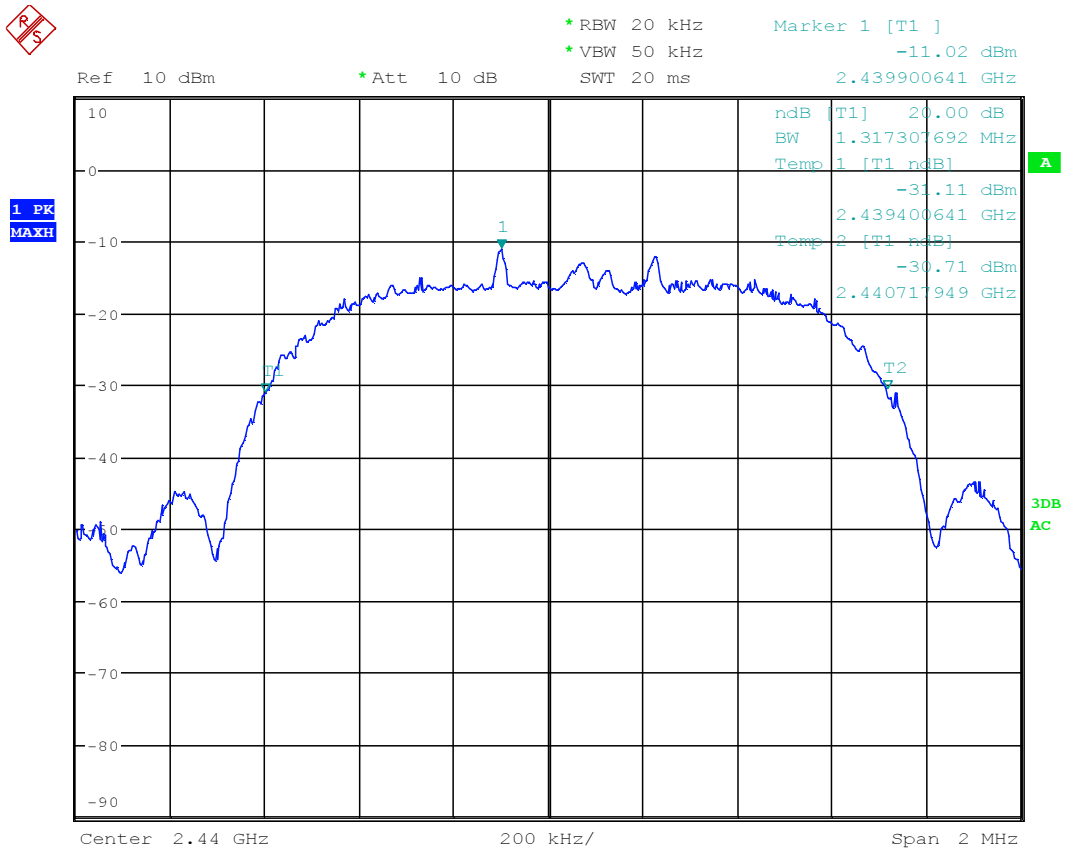
Graphical representation of 20dB Bandwidth
Operation Mode: #8 – Middle Channel (2440 MHz)
Plot n°17



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Middle	**2440**	**1314,10**	**17**

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	**2439,40 MHz**	**Fmax**	**2440,71 MHz**

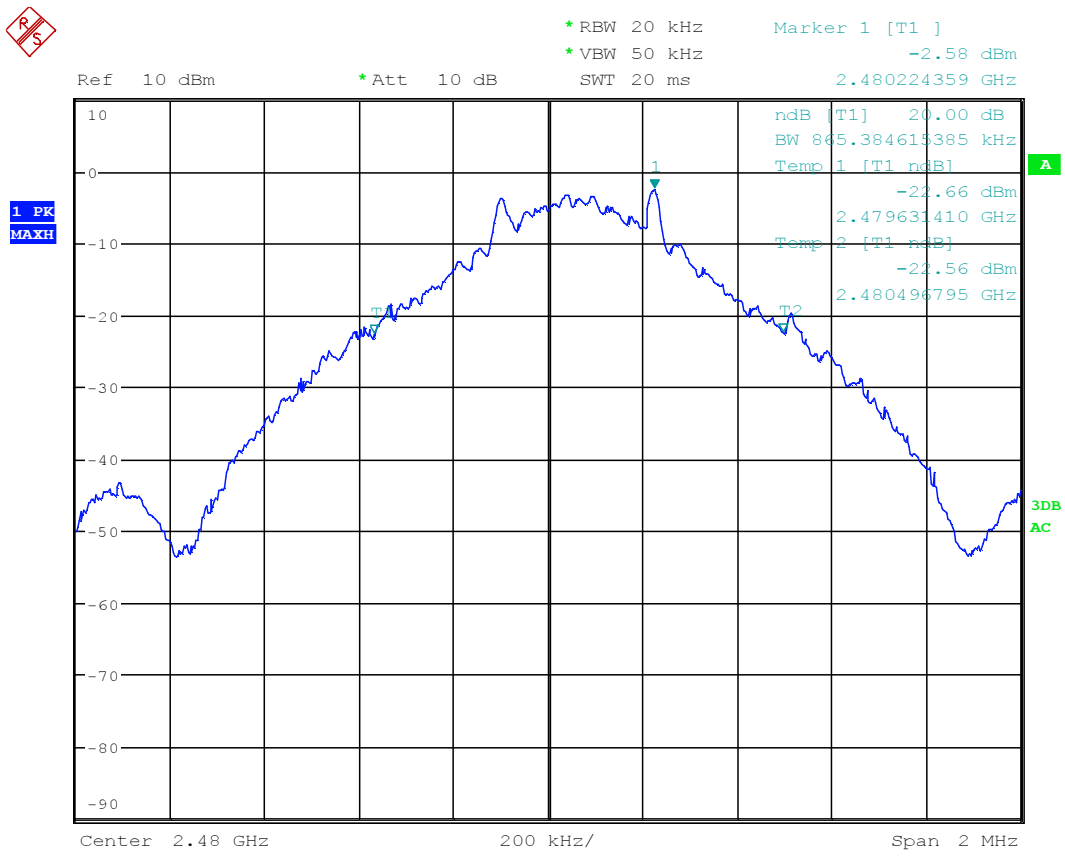
Graphical representation of 20dB Bandwidth
Operation Mode: #9 – Middle Channel (2440 MHz)
Plot n°18



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
Middle	2440	1317,30	18

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2439,40 MHz	Fmax	2440,71 MHz

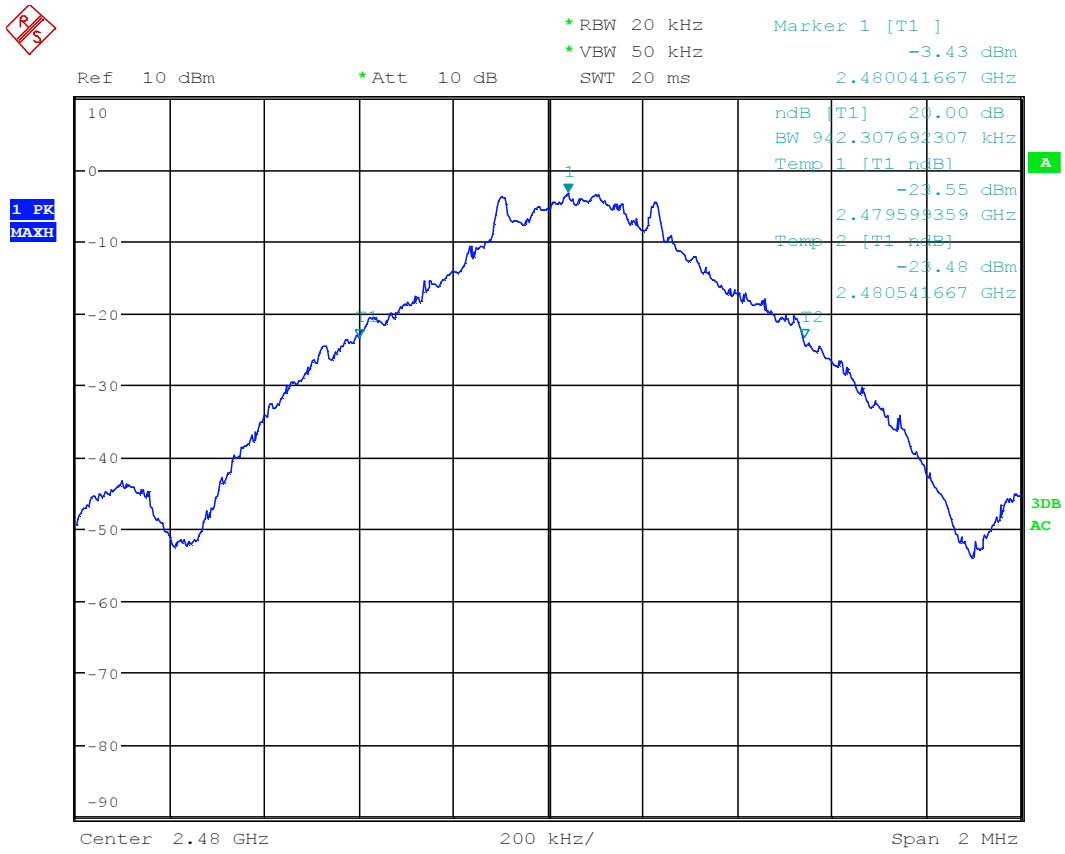
Graphical representation of 20dB Bandwidth
Operation Mode: #1 – High Channel (2480 MHz)
Plot n°19



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
High	2480	865,38	19

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2479,63 MHz	Fmax	2480,49 MHz

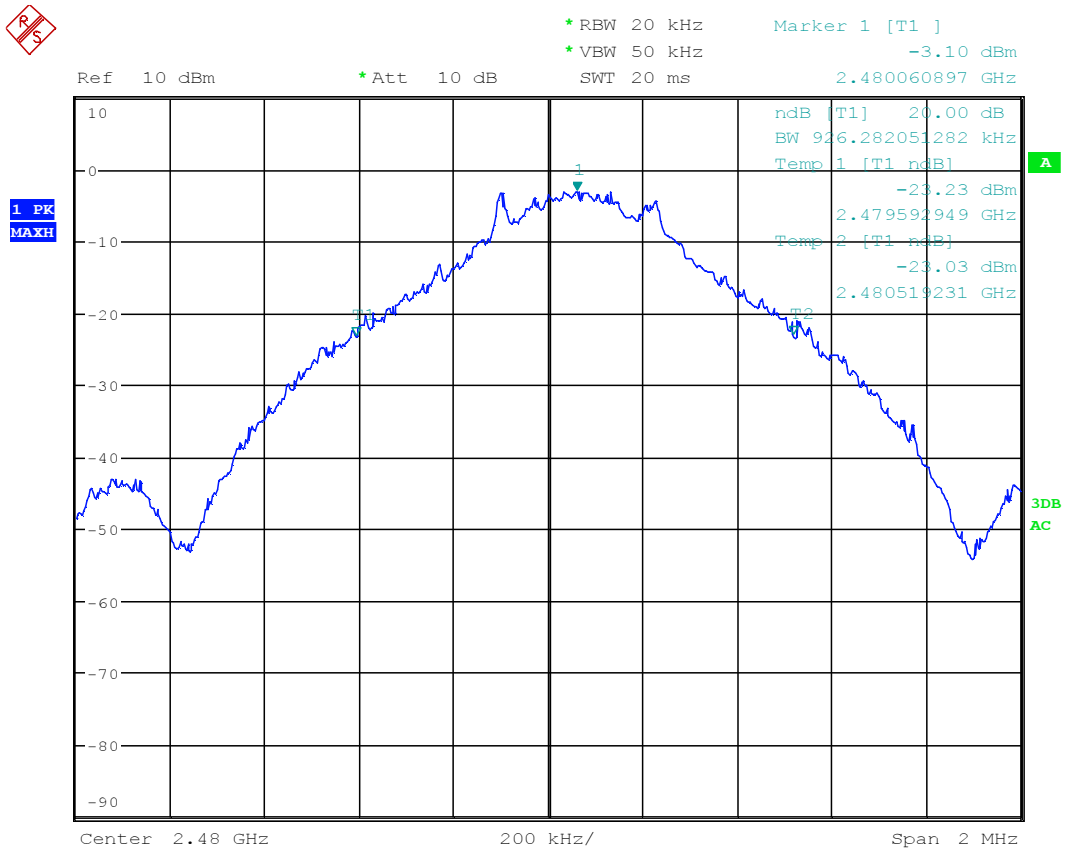
Graphical representation of 20dB Bandwidth
Operation Mode: #2 – High Channel (2480 MHz)
Plot n°20



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
High	2480	942,30	20

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2479,59 MHz	Fmax	2480,54 MHz

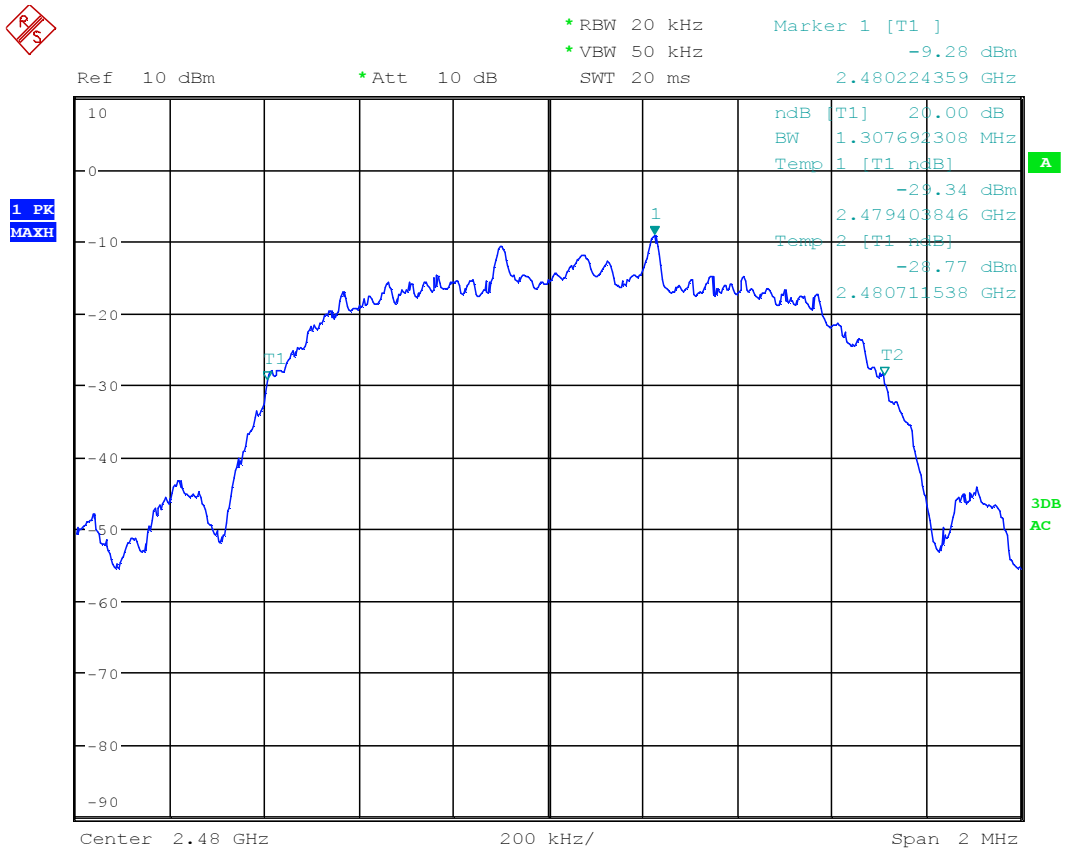
Graphical representation of 20dB Bandwidth
Operation Mode: #3 – High Channel (2480 MHz)
Plot n°21



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
High	2480	926,28	21

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2479,59 MHz	Fmax	2480,51 MHz

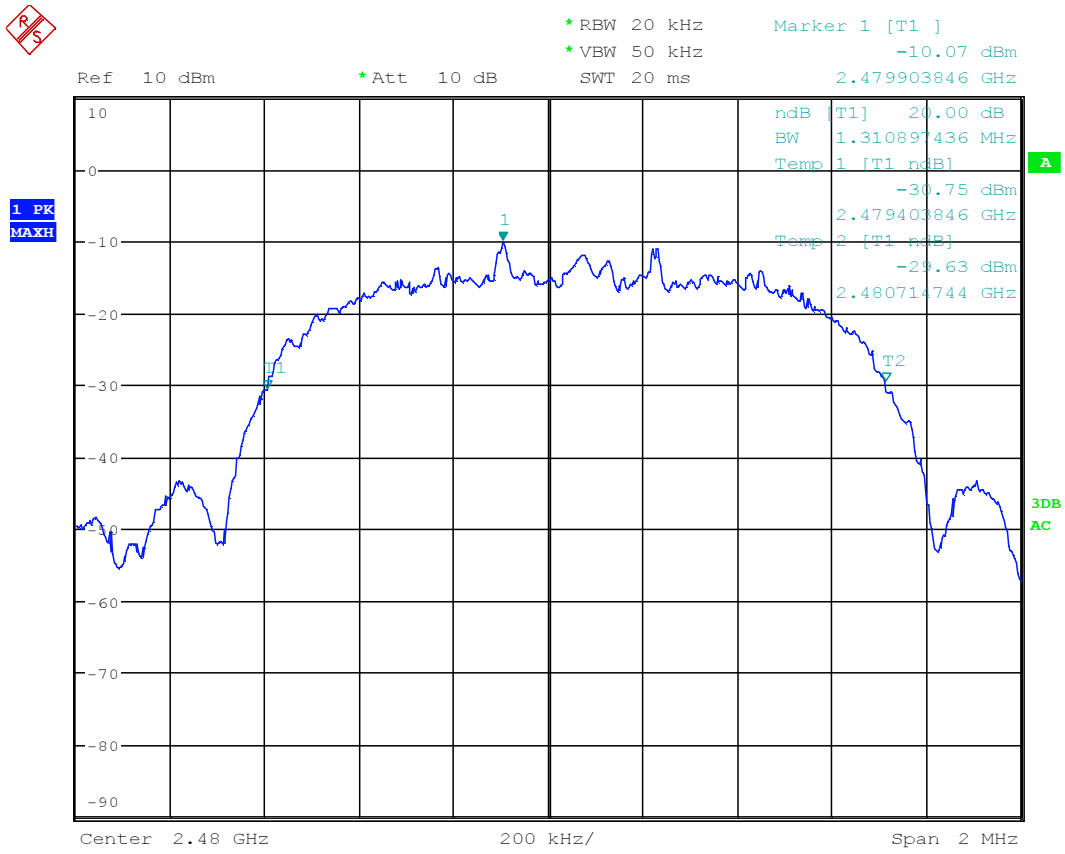
Graphical representation of 20dB Bandwidth
Operation Mode: #4 – High Channel (2480 MHz)
Plot n°22



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
High	2480	1307,69	22

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2479,40 MHz	Fmax	2480,71 MHz

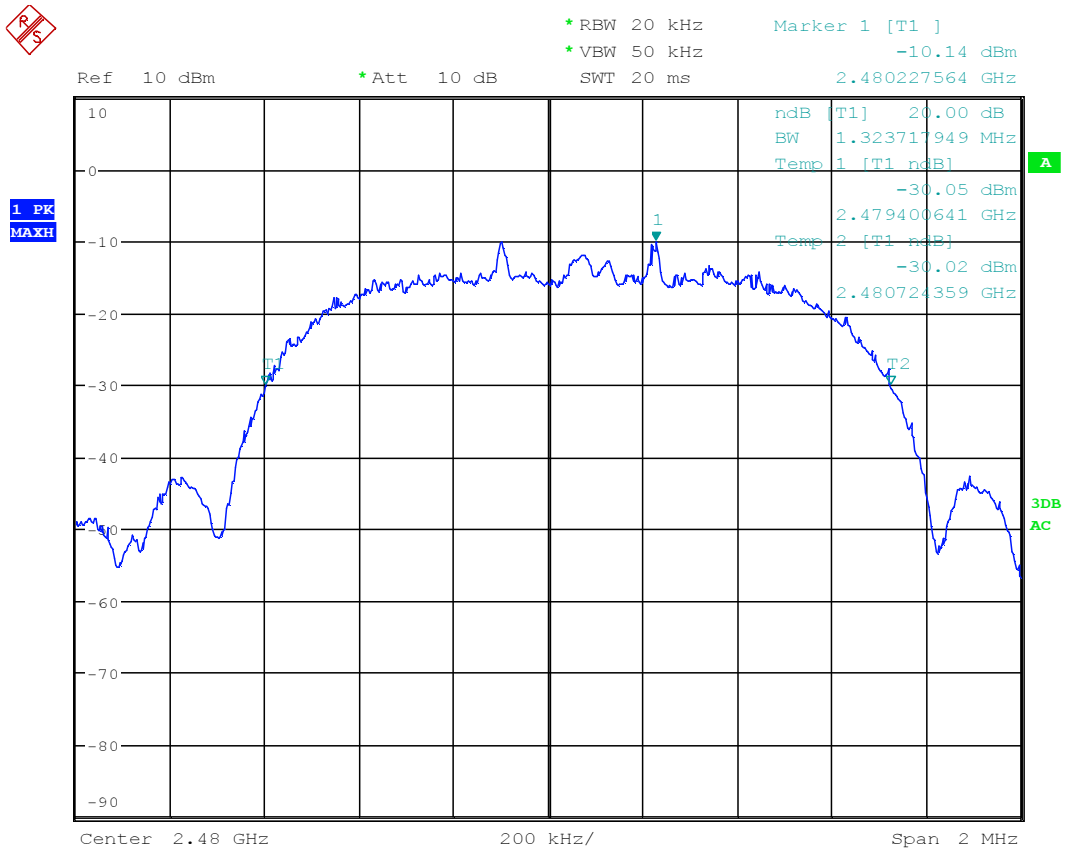
Graphical representation of 20dB Bandwidth
Operation Mode: #5 – High Channel (2480 MHz)
Plot n°23



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
High	2480	1310,89	23

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2479,40 MHz	Fmax	2480,71 MHz

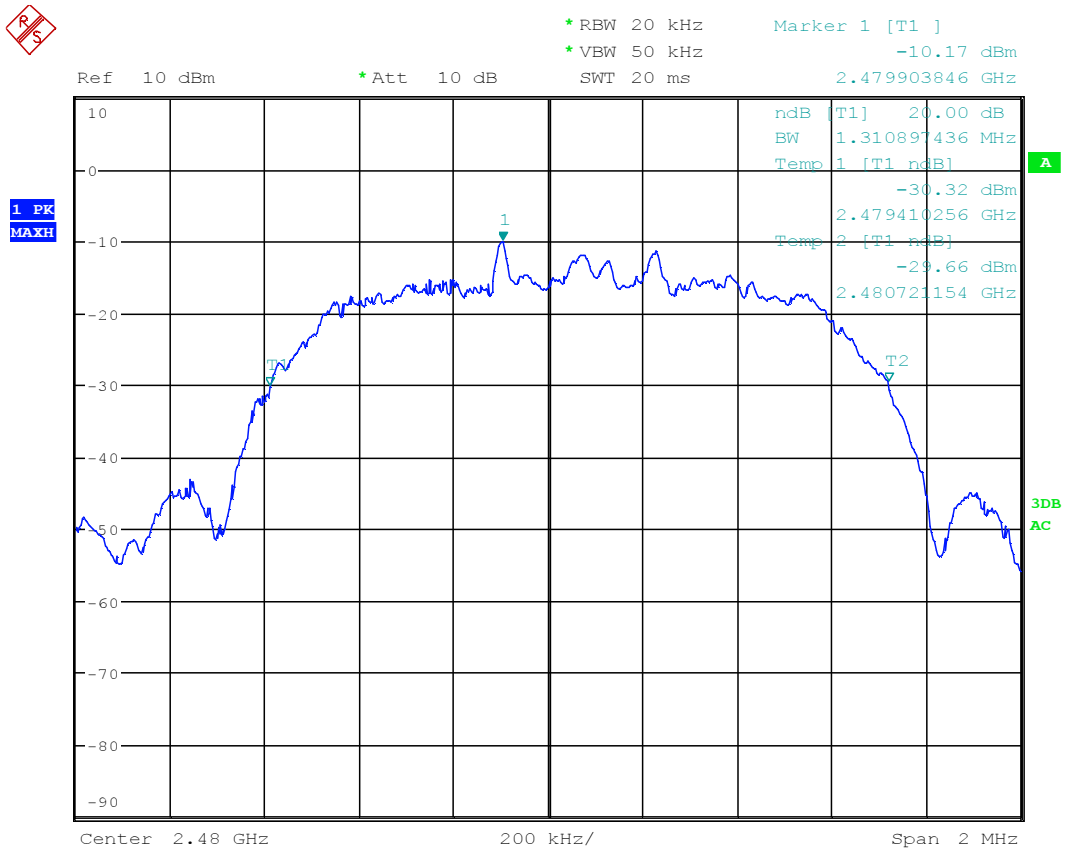
Graphical representation of 20dB Bandwidth
Operation Mode: #6 – High Channel (2480 MHz)
Plot n°24



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
High	2480	1323,71	24

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2479,40 MHz	Fmax	2480,72 MHz

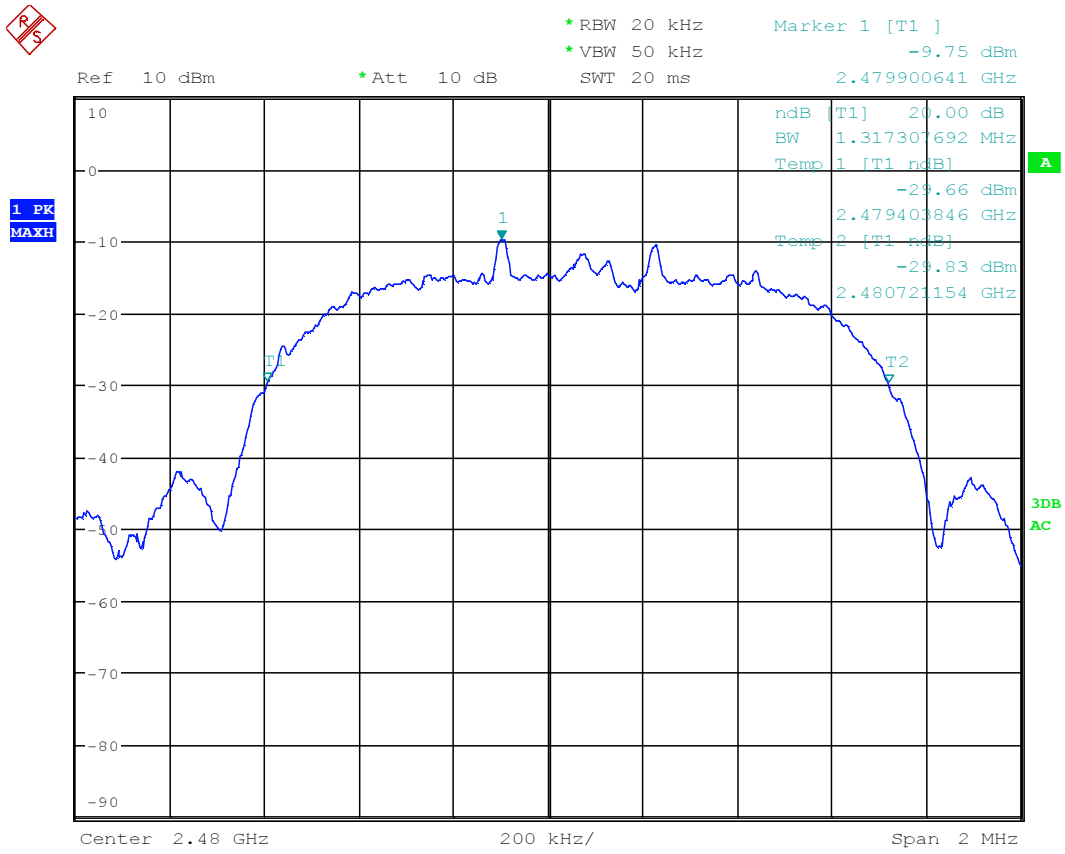
Graphical representation of 20dB Bandwidth
Operation Mode: #7 – High Channel (2480 MHz)
Plot n°25



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
High	2480	1310,89	25

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2479,41 MHz	Fmax	2480,72 MHz

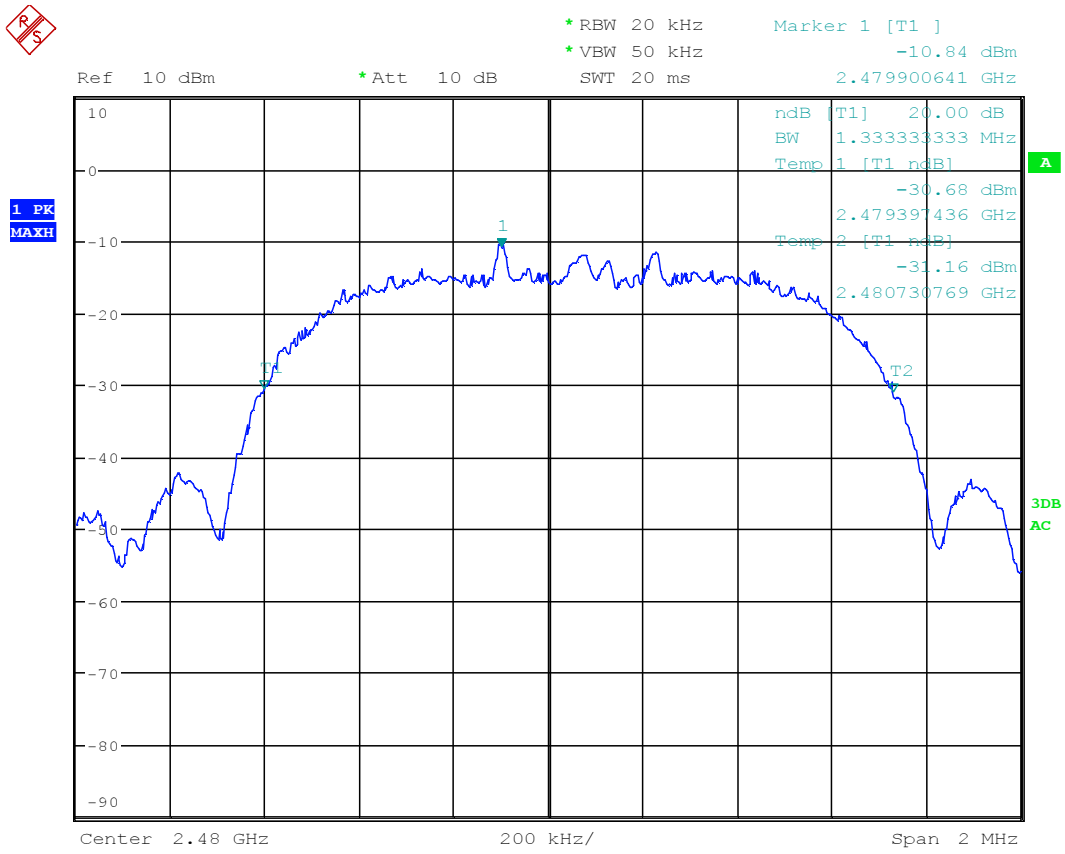
Graphical representation of 20dB Bandwidth
Operation Mode: #8 – High Channel (2480 MHz)
Plot n°26



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
High	2480	1317,30	26

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2479,40 MHz	Fmax	2480,72 MHz

Graphical representation of 20dB Bandwidth
Operation Mode: #9 – High Channel (2480 MHz)
Plot n°27



Channel (No.)	Frequency (MHz)	Channel Bandwidth at -20dB (kHz)	Plot (No.)
High	2480	1333,33	27

Bandwidth at -20dB (Fmin and Fmax)			
Fmin	2479,39 MHz	Fmax	2480,73 MHz

12.5 TEST: RF power output			PASS
Parameters required prior to the test	Laboratory Ambient Temperature (°C)	15 to 35 °C	
	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	22,5°C	
	Relative Humidity (%)	51%	
	Air pressure (hPa)	1020	
—	Frequency	Application Point	
Fully configured sample tested at the power line frequency	12Vdc	SMA Connector	
Equipment mode:	Operation mode	#1 #2 #3 #4 #5 #6 #7 #8 #9	
FCC Standard	§15.247 (B) (2)		

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:

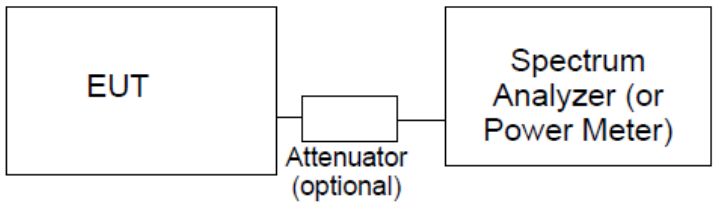
(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

(2) For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

(4) The conducted output power limit specified in paragraph (b) of this section 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 the intentional radiator shall be reduced below the stated values in paragraphs (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.

Further information to test setup

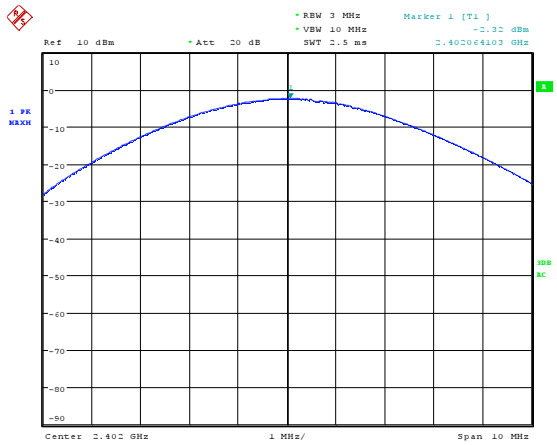


Test Equipment Used					
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due
EMI Test Receiver	R&S	ESU40	87020455	05/2018	05/2019

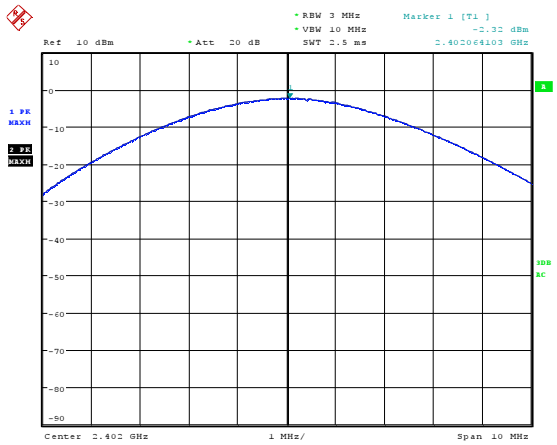
Graphical representation of RF power output

Low Channel (2402 MHz)

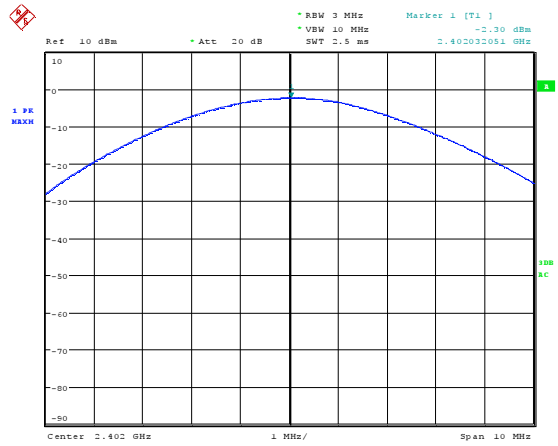
Operation Mode: #1 - Plot n°1



Operation Mode: #2 - Plot n°2



Operation Mode: #3 - Plot n°3



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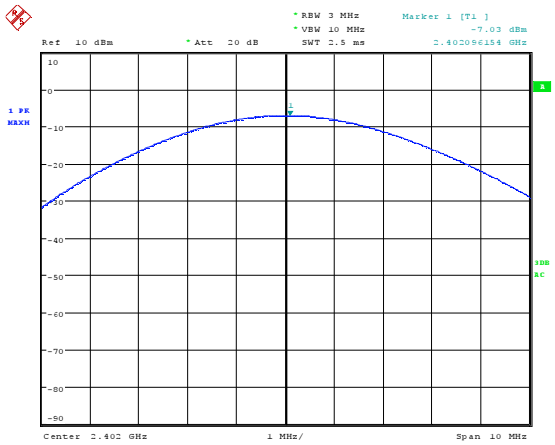
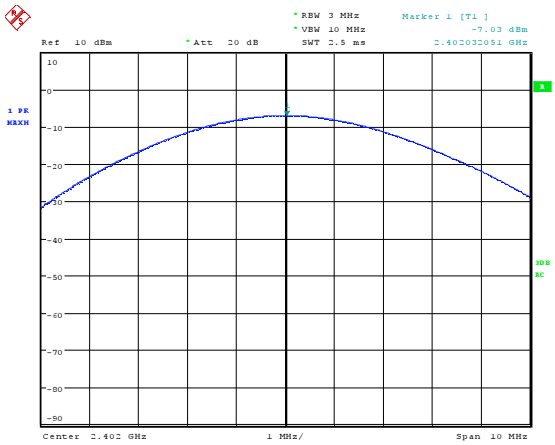
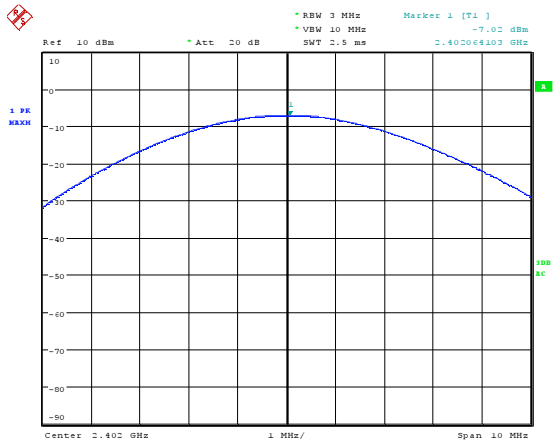
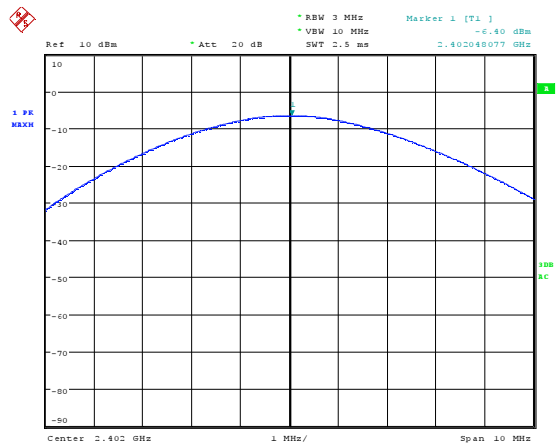
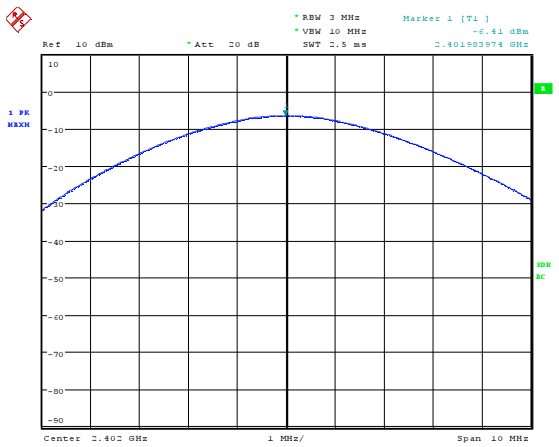
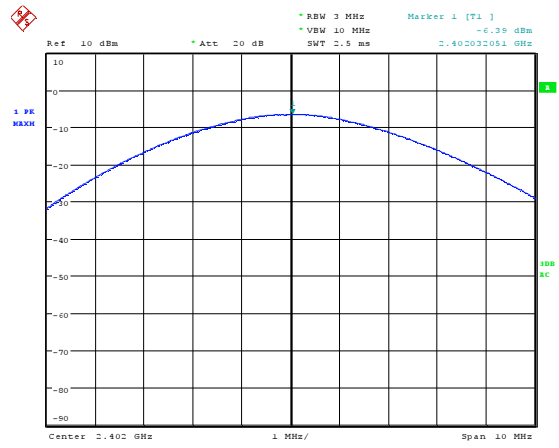
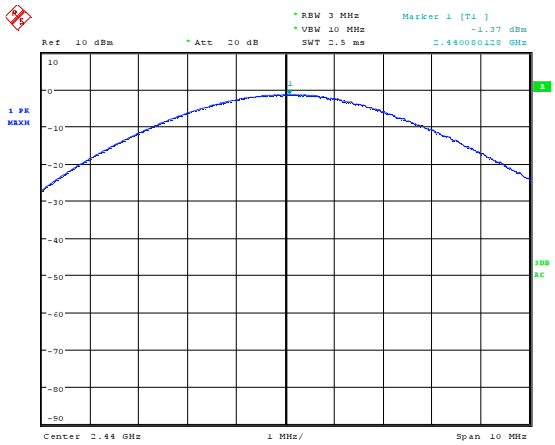
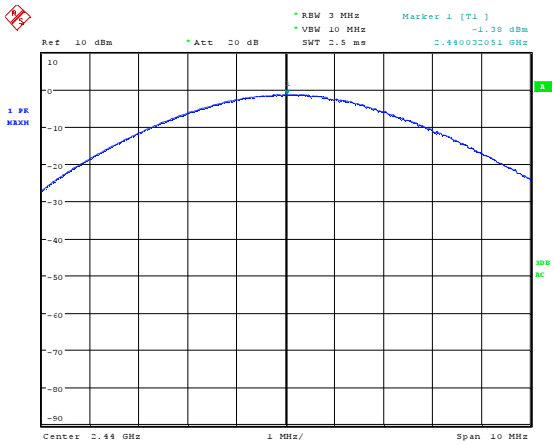
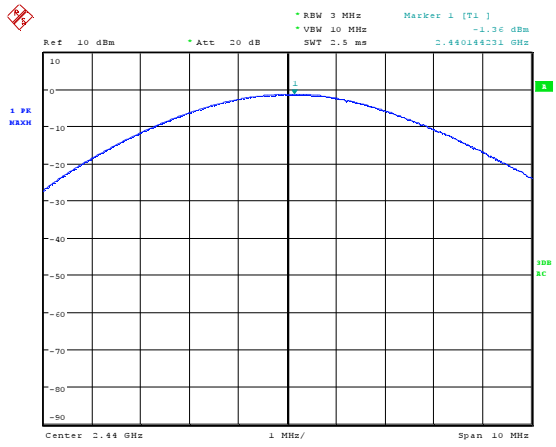
Channel (No.)	Frequency (MHz)	Conducted Output Power		Limit (W)	Plot
		(dBm)	(mW)		
Low	**2402**	**-2,32**	**0,586**	**1**	**1**
Low	**2402**	**-2,32**	**0,586**	**1**	**2**
Low	**2402**	**-2,30**	**0,588**	**1**	**3**

Graphical representation of RF power output	
Low Channel (2402 MHz)	
Operation Mode: #4 - Plot n°4	Operation Mode: #5 - Plot n°5
	
Operation Mode: #6 - Plot n°6	
	BLANK

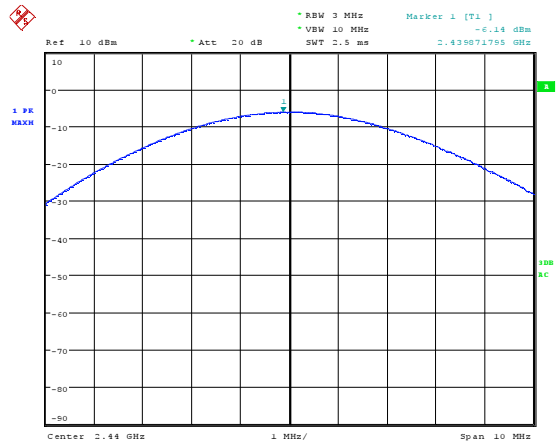
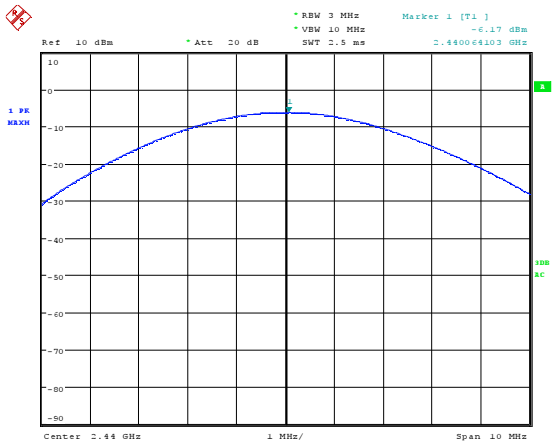
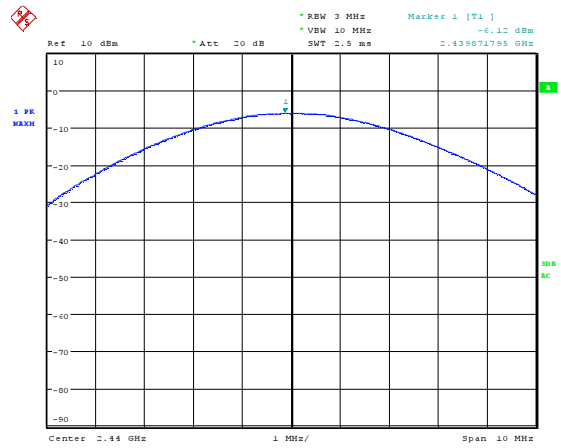
Channel (No.)	Frequency (MHz)	Conducted Output Power		Limit (W)	Plot
		(dBm)	(mW)		
Low	2402	-7,03	0,198	1	4
Low	2402	-7,03	0,198	1	5
Low	2402	-7,02	0,198	1	6

Graphical representation of RF power output	
Low Channel (2402 MHz)	
Operation Mode: #7 - Plot n°7	Operation Mode: #8 - Plot n°8
	
Operation Mode: #9 - Plot n°9	
	BLANK

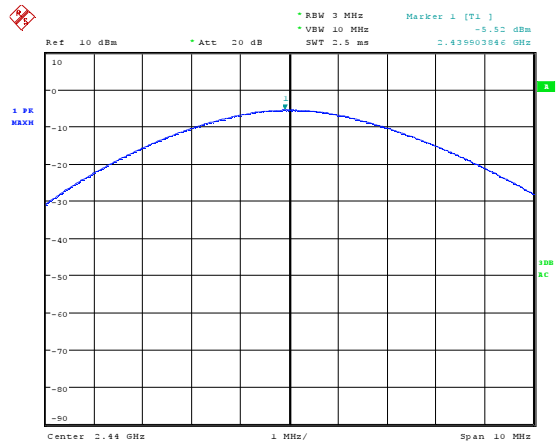
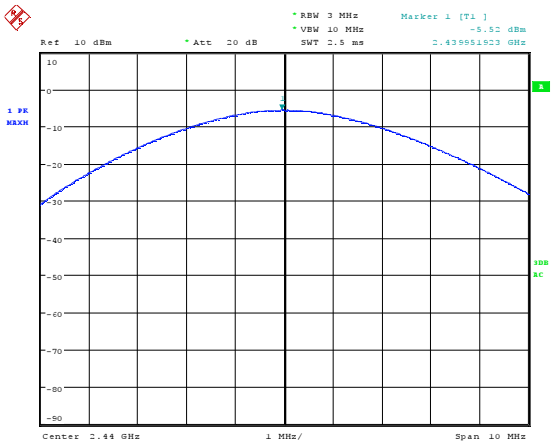
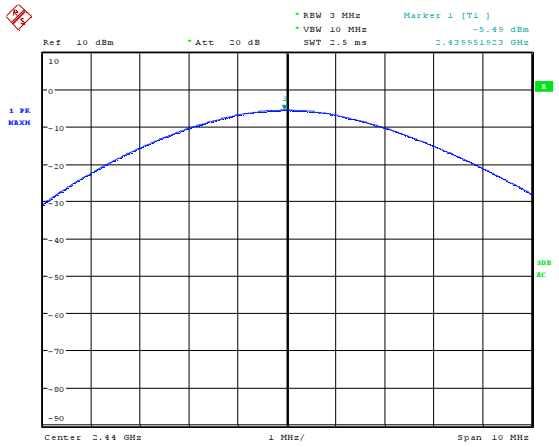
Channel (No.)	Frequency (MHz)	Conducted Output Power		Limit (W)	Plot
		(dBm)	(mW)		
Low	2402	-6,40	0,228	1	7
Low	2402	-6,41	0,228	1	8
Low	2402	-6,39	0,229	1	9

Graphical representation of RF power output	
Middle Channel (2440 MHz)	
Operation Mode: #1 - Plot n°10	Operation Mode: #2 - Plot n°11
	
Operation Mode: #3 - Plot n°12	
	BLANK

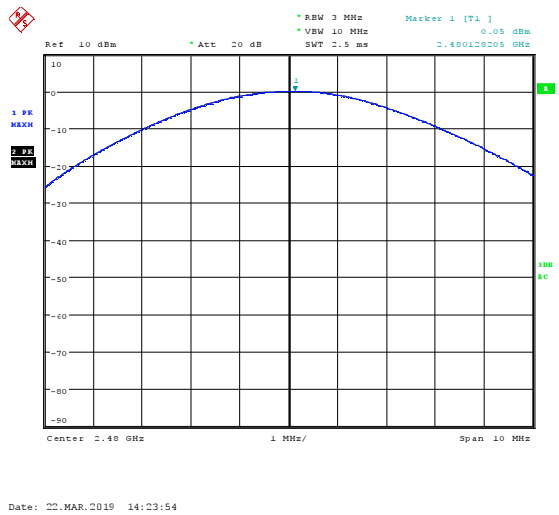
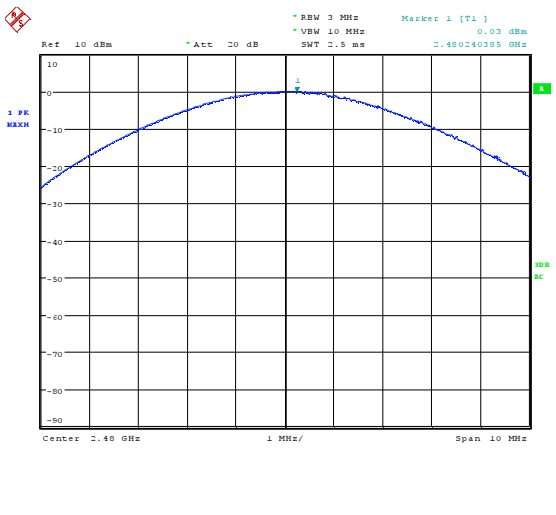
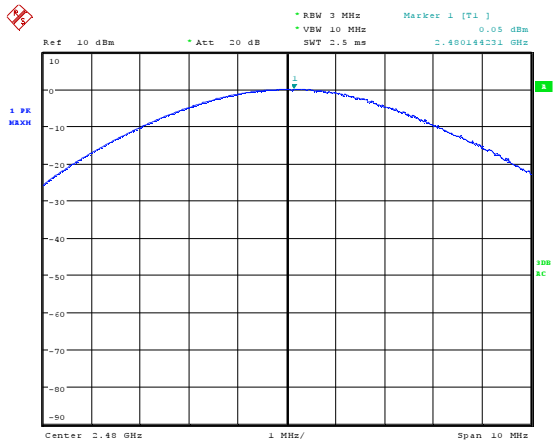
Channel (No.)	Frequency (MHz)	Conducted Output Power		Limit (W)	Plot
		(dBm)	(mW)		
Middle	2440	-1,37	0,729	1	10
Middle	2440	-1,38	0,727	1	11
Middle	2440	-1,36	0,731	1	12

Graphical representation of RF power output	
Middle Channel (2440 MHz)	
Operation Mode: #4 - Plot n°13	Operation Mode: #5 - Plot n°14
	
Operation Mode: #6 - Plot n°15	
	BLANK

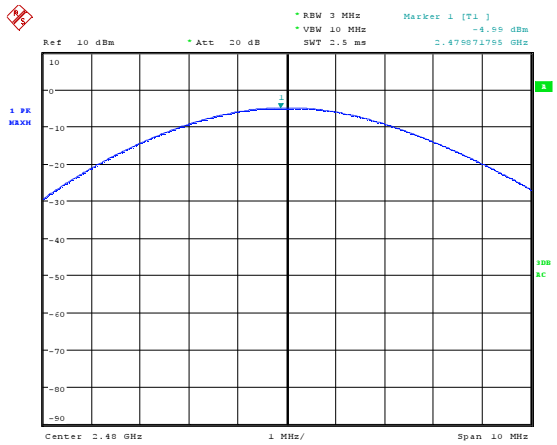
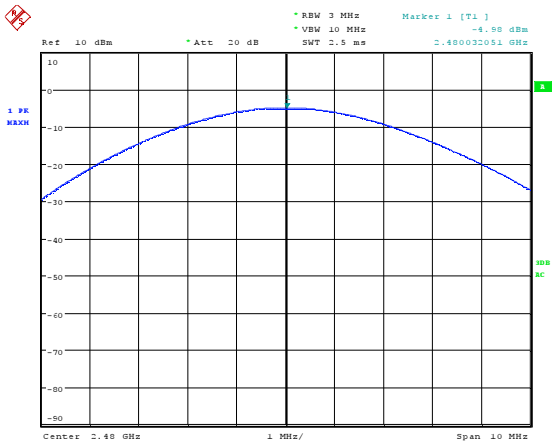
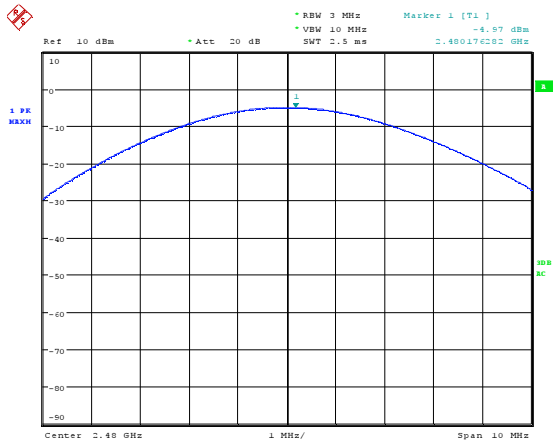
Channel (No.)	Frequency (MHz)	Conducted Output Power		Limit (W)	Plot
		(dBm)	(mW)		
Middle	2440	-6,14	0,243	1	13
Middle	2440	-6,17	0,241	1	14
Middle	2440	-6,12	0,244	1	15

Graphical representation of RF power output	
Middle Channel (2440 MHz)	
Operation Mode: #7 - Plot n°16	Operation Mode: #8 - Plot n°17
	
Operation Mode: #9 - Plot n°18	
	BLANK

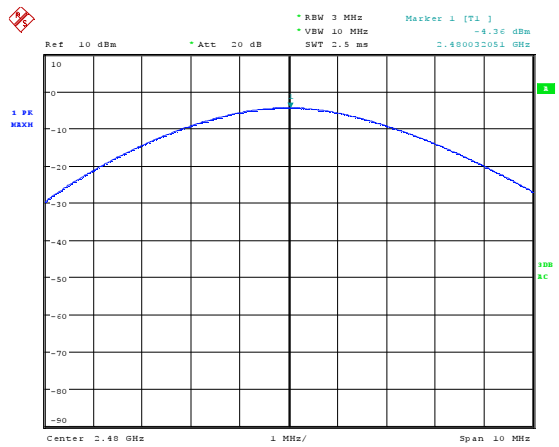
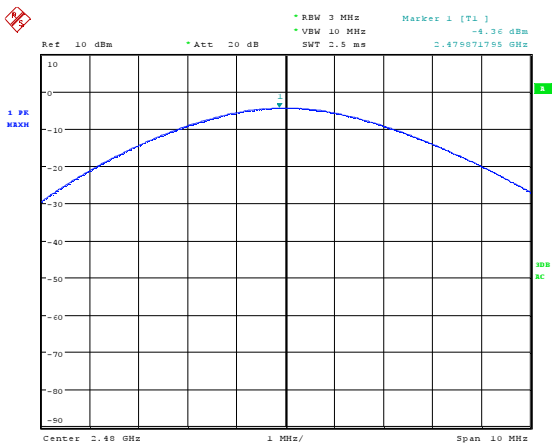
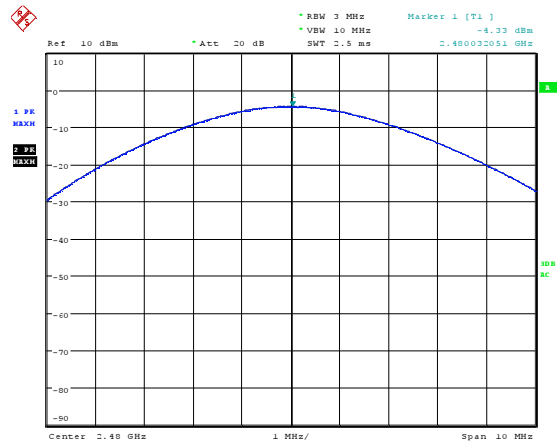
Channel (No.)	Frequency (MHz)	Conducted Output Power		Limit (W)	Plot
		(dBm)	(mW)		
Middle	2440	-5,52	0,280	1	16
Middle	2440	-5,52	0,280	1	17
Middle	2440	-5,49	0,282	1	18

Graphical representation of RF power output	
High Channel (2480 MHz)	
Operation Mode: #1 - Plot n°19	Operation Mode: #2 - Plot n°20
	
Operation Mode: #3 - Plot n°21	
	BLANK

Channel (No.)	Frequency (MHz)	Conducted Output Power		Limit (W)	Plot
		(dBm)	(mW)		
High	2480	0,05	1,011	1	19
High	2480	0,03	1,006	1	20
High	2480	0,05	1,011	1	21

Graphical representation of RF power output	
High Channel (2480 MHz)	
Operation Mode: #4 - Plot n°22	Operation Mode: #5 - Plot n°23
	
Operation Mode: #6 - Plot n°24	
	BLANK

Channel (No.)	Frequency (MHz)	Conducted Output Power		Limit (W)	Plot
		(dBm)	(mW)		
High	2480	-4,99	0,317	1	22
High	2480	-4,98	0,317	1	23
High	2480	-4,97	0,318	1	24

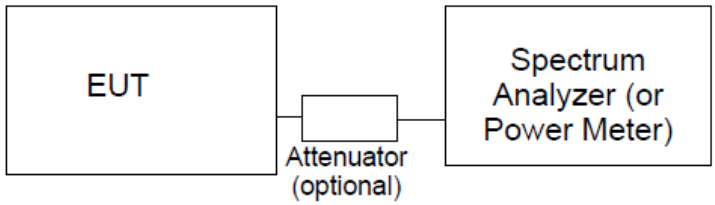
Graphical representation of RF power output	
High Channel (2480 MHz)	
Operation Mode: #7 - Plot n°25	Operation Mode: #8 - Plot n°26
	
Operation Mode: #9 - Plot n°27	
	BLANK

Channel (No.)	Frequency (MHz)	Conducted Output Power		Limit (W)	Plot
		(dBm)	(mW)		
High	2480	-4,36	0,366	1	25
High	2480	-4,36	0,366	1	26
High	2480	-4,33	0,369	1	27

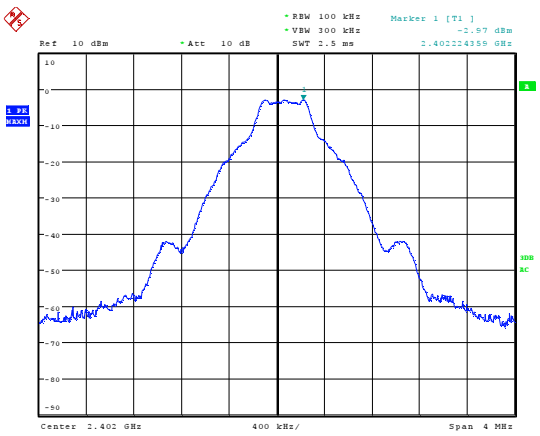
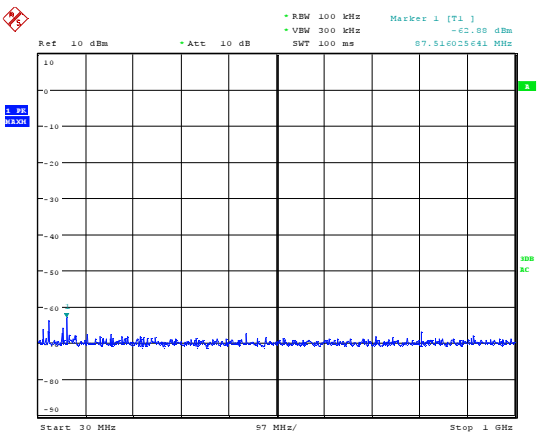
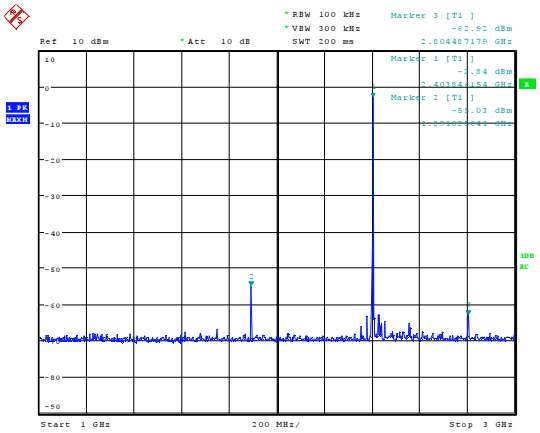
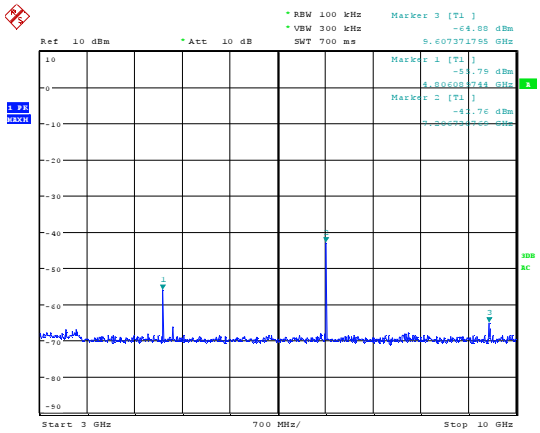
12.6 TEST: Out-of-band emissions			PASS
Parameters required prior to the test	Laboratory Ambient Temperature (°C)	15 to 35 °C	
	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	22°C	
	Relative Humidity (%)	50%	
	Air pressure (hPa)	1020	
—	Frequency	Application Point	
Fully configured sample tested at the power line frequency	12V dc	SMA Connector	
Equipment mode:	Operation mode	#3	
FCC Standard	§15.247 (D)		

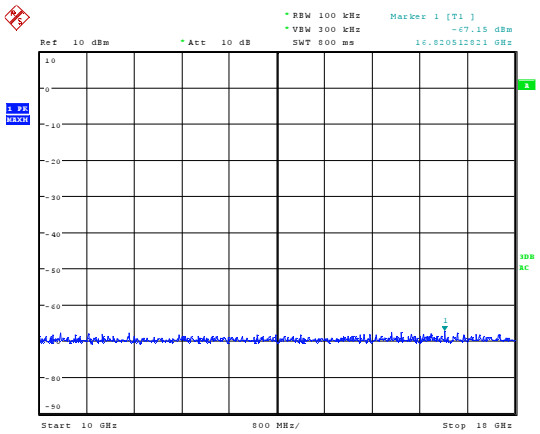
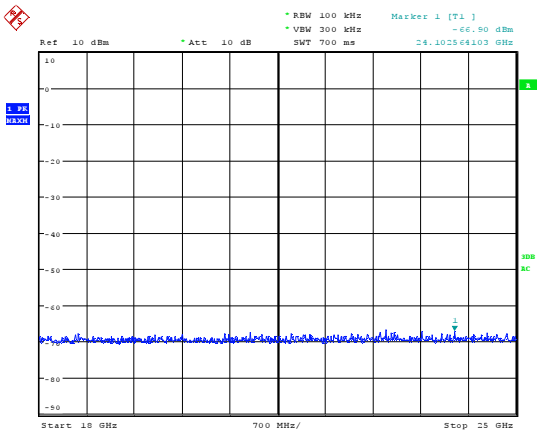
(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Further information to test setup

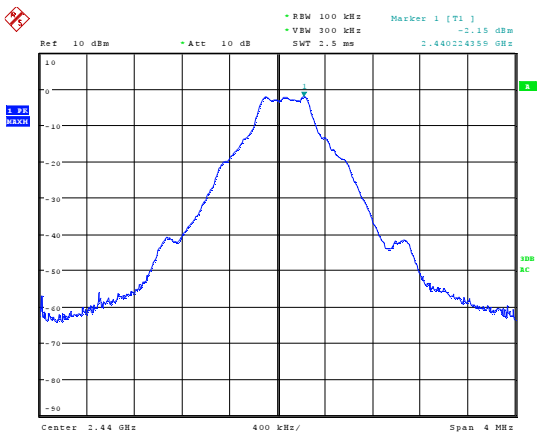
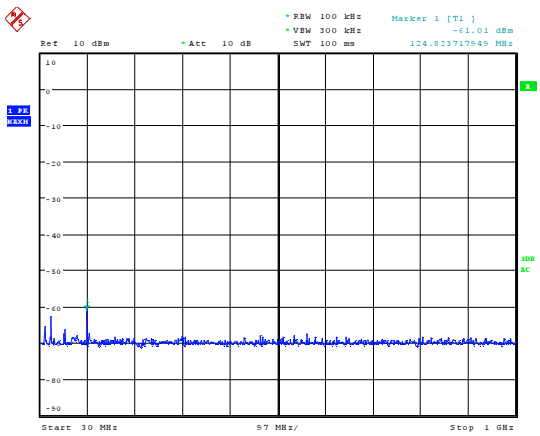
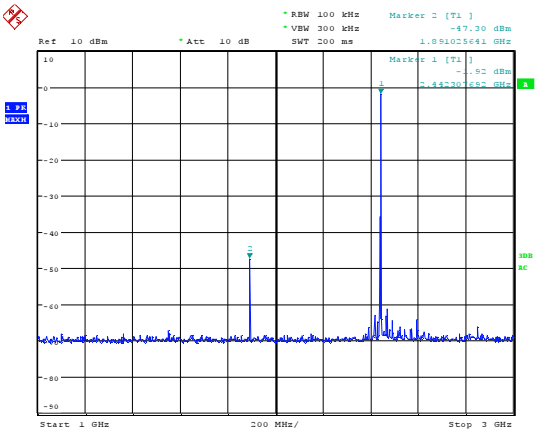
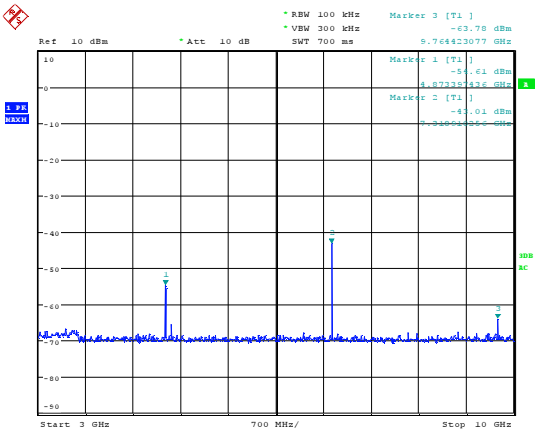


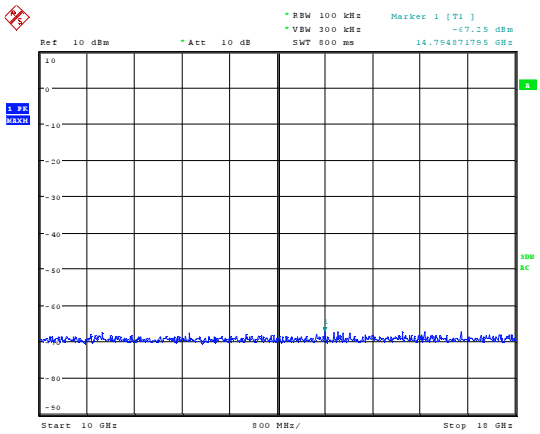
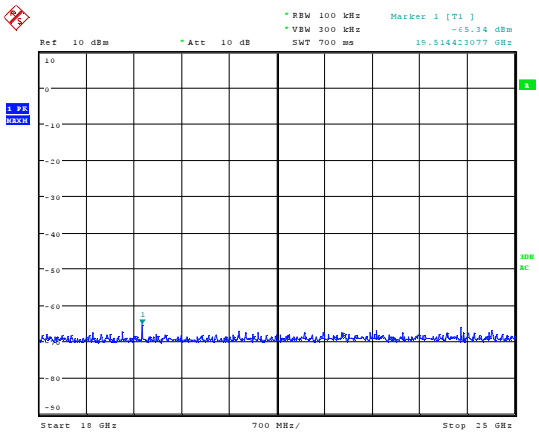
Test Equipment Used					
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due
EMI Test Receiver	R&S	ESU40	87020455	05/2018	05/2019
Highpass Filter	Wainwright Instr.	WHKX10-2520-2800-18000-40ss	87020799	05/2018	05/2019

Graphical representation of Antenna Port Spurious Emission - Conducted	
Operation Mode: #3 – Low Channel (2402 MHz)	
Fundamental frequency	Frequency: 30MHz – 1000MHz
	
Frequency: 1GHz – 3GHz	Frequency: 3GHz – 10GHz
	

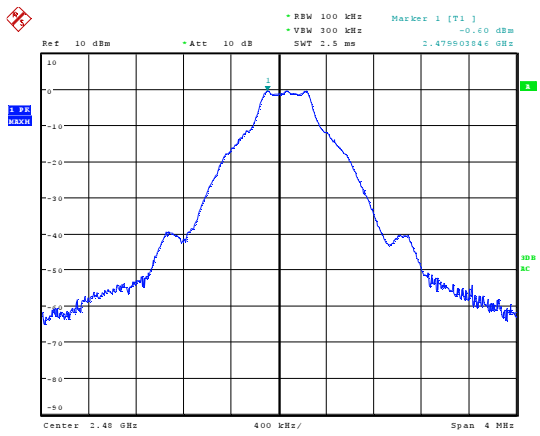
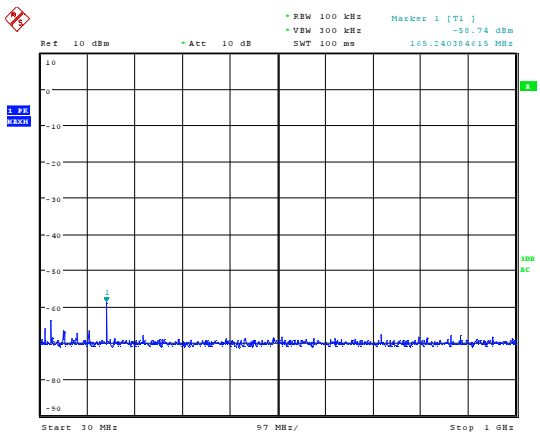
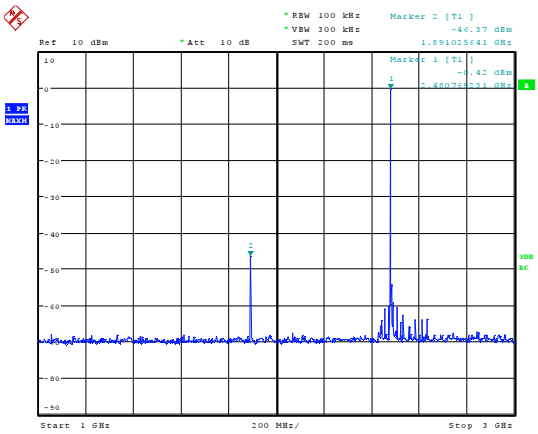
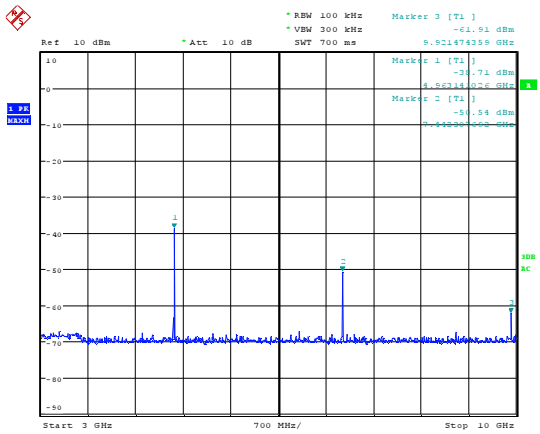
Frequency: 10GHz – 18GHz	Frequency: 18GHz – 25GHz
	

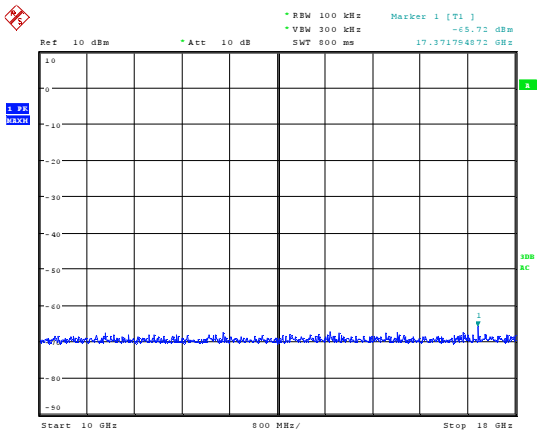
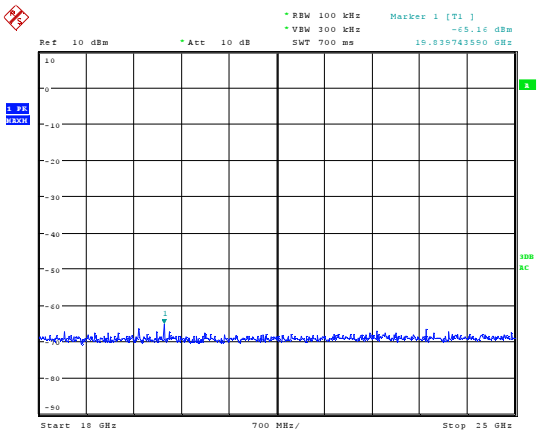
Frequency (MHz)	Level (dBm)	Fundamental Level (dBm)	Difference (dB)	Limit (at least) (dB)
87,51	-62,88	-2,97	59,91	20
1891,02	-55,03		52,06	
2804,48	-62,92		59,95	
4806,08	-55,79		52,82	
7206,73	-42,76		39,79	
9607,37	-64,88		61,91	
16820,5	-67,15		64,18	
24102,5	-66,90		63,93	

Graphical representation of Antenna Port Spurious Emission - Conducted	
Operation Mode: #3 – Middle Channel (2440 MHz)	
Fundamental frequency	Frequency: 30MHz – 1000MHz
	
Frequency: 1GHz – 3GHz	Frequency: 3GHz – 10GHz
	

Frequency: 10GHz – 18GHz	Frequency: 18GHz – 25GHz
	

Frequency (MHz)	Level (dBm)	Fundamental Level (dBm)	Difference (dB)	Limit (at least) (dB)
124,82	-61,01	-2,15	58,86	20
1891,02	-47,30		45,15	
4873,39	-54,61		52,46	
7318,91	-43,01		40,86	
9764,42	-63,78		61,63	
14794,8	-67,25		65,10	
19514,4	-65,34		63,19	

Graphical representation of Antenna Port Spurious Emission - Conducted	
Operation Mode: #3 – High Channel (2480 MHz)	
Fundamental frequency	Frequency: 30MHz – 1000MHz
	
Frequency: 1GHz – 3GHz	Frequency: 3GHz – 10GHz
	

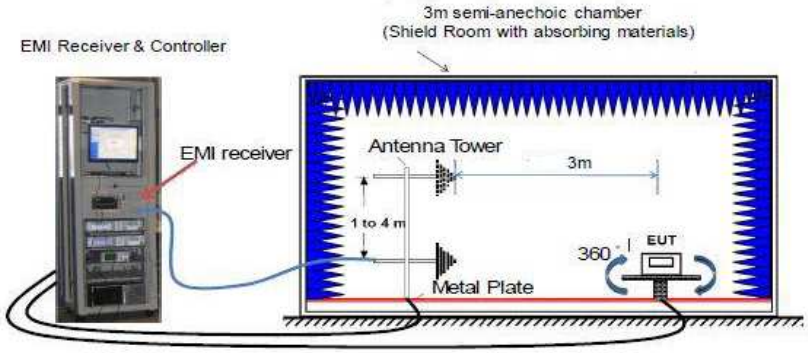
Frequency: 10GHz – 18GHz	Frequency: 18GHz – 25GHz
	

Frequency (MHz)	Level (dBm)	Fundamental Level (dBm)	Difference (dB)	Limit (at least) (dB)
165,24	-58,74	-0,60	58,14	20
1891,02	-46,37		45,77	
4963,14	-38,71		38,11	
7442,30	-50,54		49,94	
9921,47	-61,91		61,31	
17371,8	-65,72		65,12	
19839,7	-65,16		64,56	

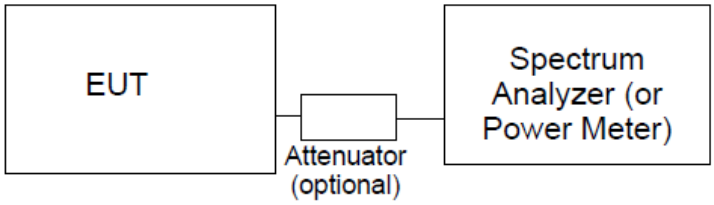
12.7 TEST: 100 kHz Bandwidth of Frequency Band Edges			PASS
Parameters required prior to the test	Laboratory Ambient Temperature (°C)	15 to 35 °C	
	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	21°C	
	Relative Humidity (%)	52%	
	Air pressure (hPa)	1020	
—	Frequency	Application Point	
Fully configured sample tested at the power line frequency	12Vdc	SMA Connector Enclosure	
Equipment mode:	Operation mode	#3 #6 #9 #10 #11 #12	
FCC Standard	§15.247 (D)		

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Further information to test setup (Radiated)



Further information to test setup (conducted)

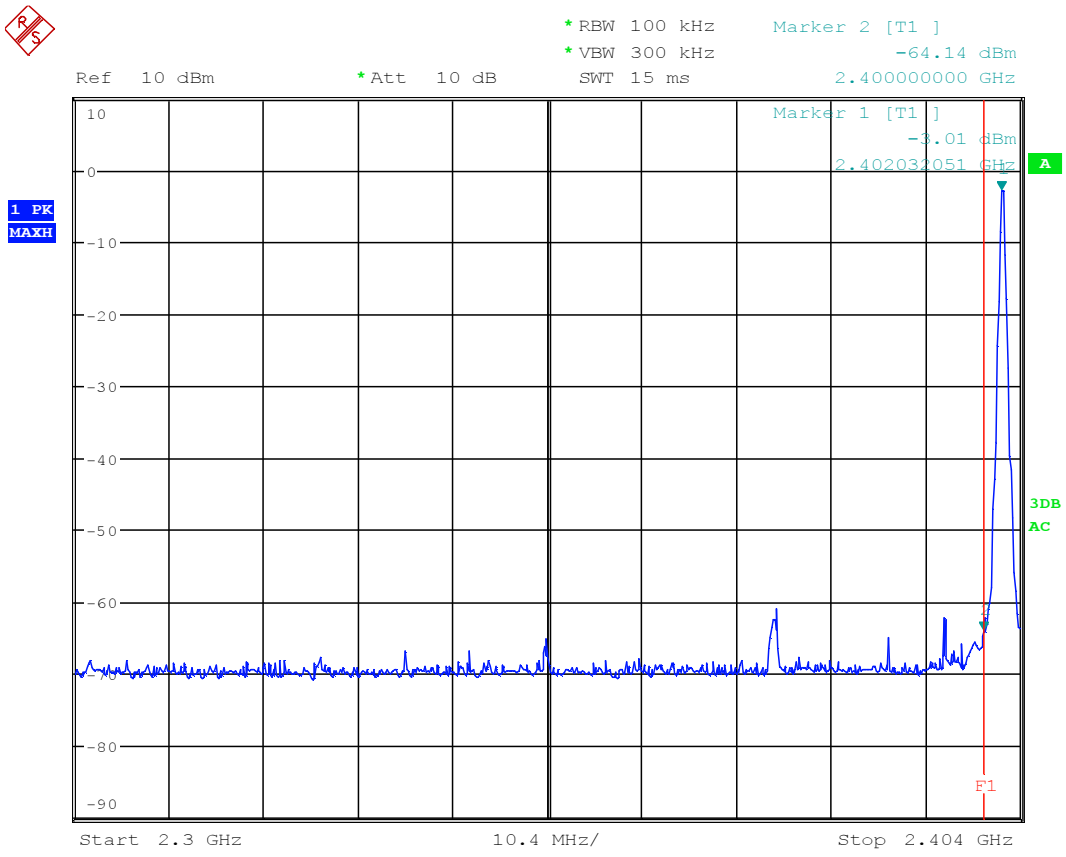


Test Equipment Used					
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due
CSSA	ETS Lindgren	FACT3	87020484	10/2016	10/2018
EMI Test Receiver	R&S	ESW44	87020967	06/2018	06/2019
EMI Test Receiver	R&S	ESU40	87020455	05/2018	05/2019
Antenna Horn with Preamplifier	ETS Lindgren	3117-PA	87020458	04/2017	04/2020

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Conducted

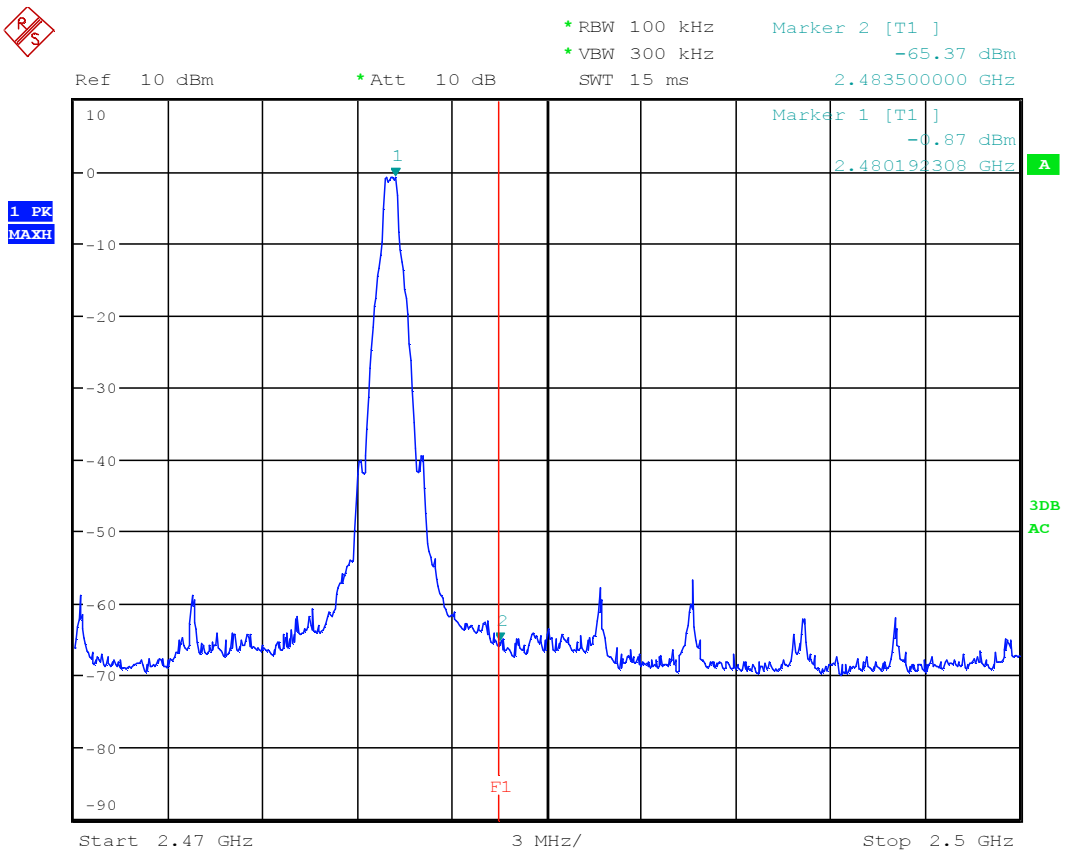
Operation Mode: #3 – Low Channel (2402 MHz)

Plot n°1



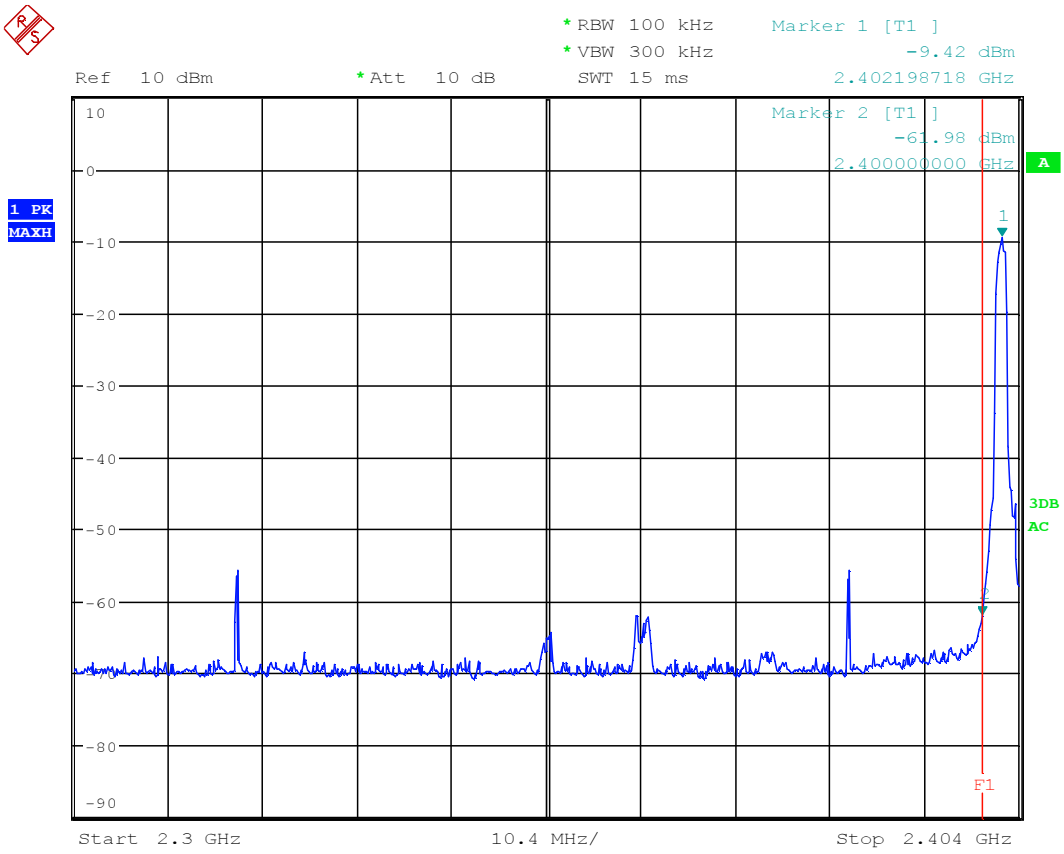
Frequency (MHz	Measured power at the band edge (dBm)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBm)	Margin (dB)
2400	**-64,14**	**-3,01**	**61,13**	**-23,01**	**41,13**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Conducted
Operation Mode: #3 – High Channel (2480 MHz)
Plot n°2



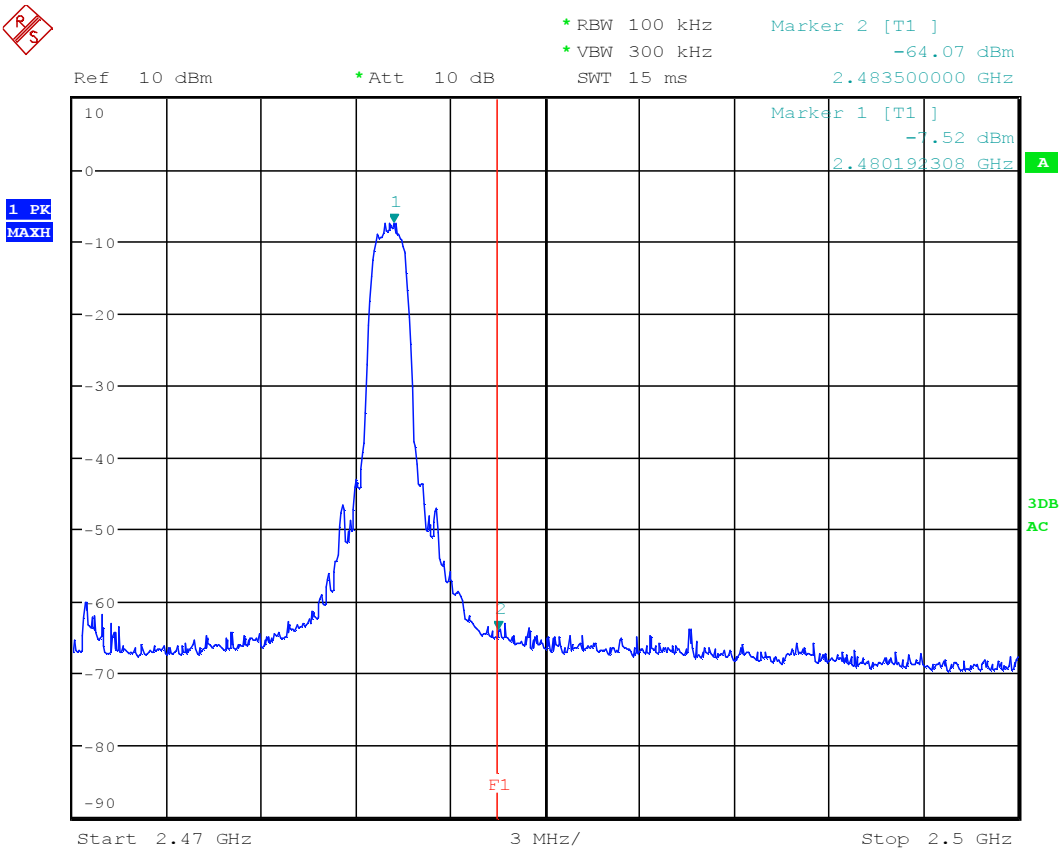
Frequency (MHz	Measured power at the band edge (dBm)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBm)	Margin (dB)
2483,5	**-65,37**	**-0,87**	**64,50**	**-20,87**	**44,50**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Conducted
Operation Mode: #6 – Low Channel (2402 MHz)
Plot n°3



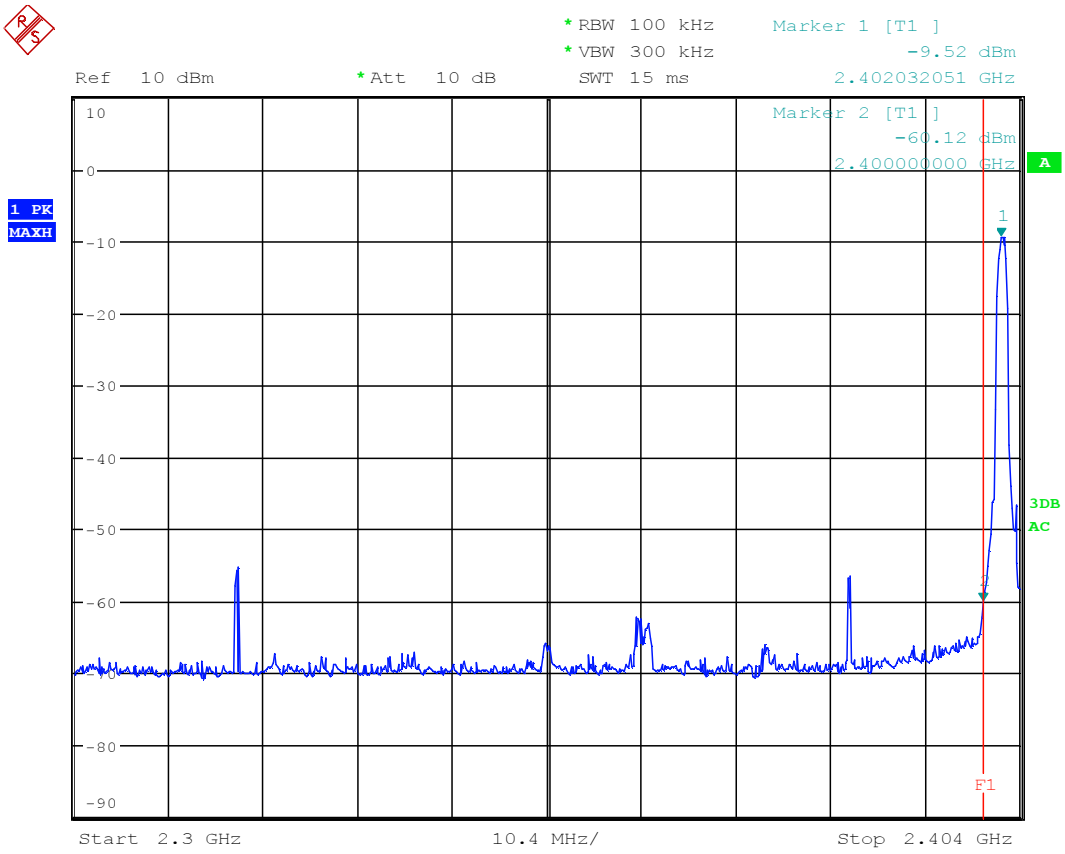
Frequency (MHz	Measured power at the band edge (dBm)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBm)	Margin (dB)
2400	**-61,98**	**-9,42**	**52,56**	**-29,42**	**32,56**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Conducted
Operation Mode: #6 – High Channel (2480 MHz)
Plot n°4



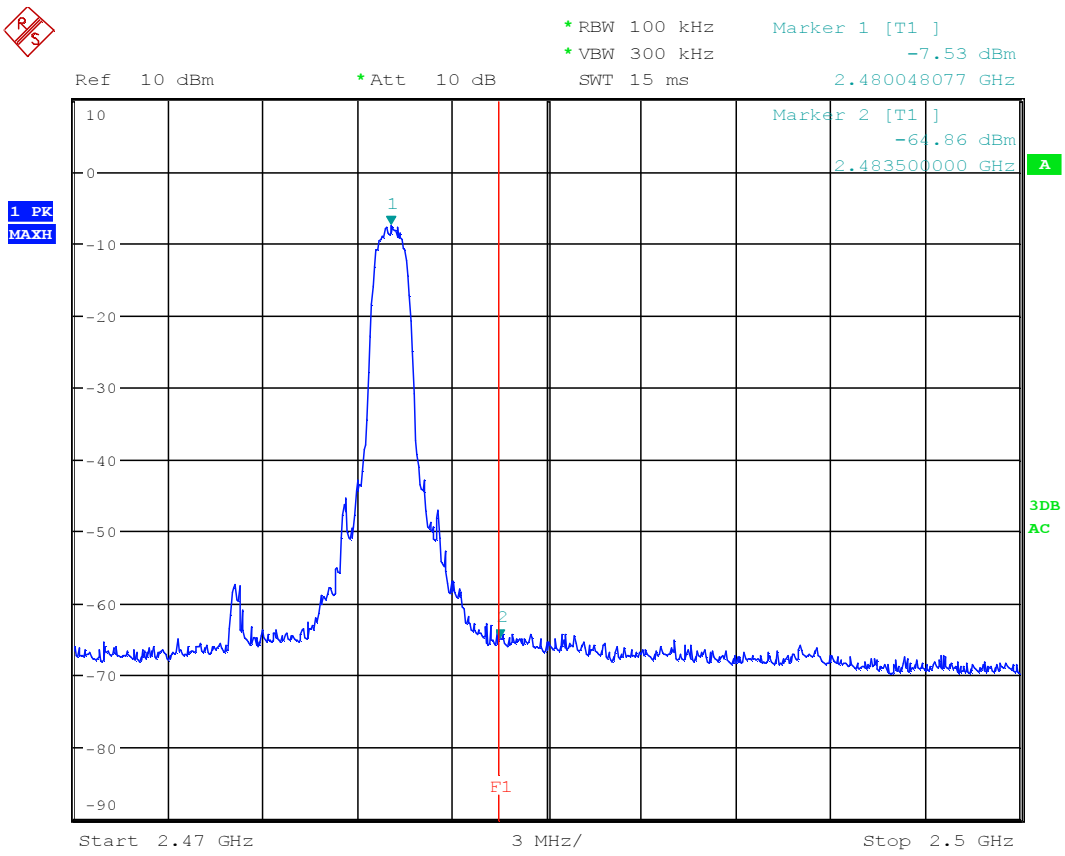
Frequency (MHz	Measured power at the band edge (dBm)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBm)	Margin (dB)
2483,5	**-64,07**	**-7,52**	**56,55**	**-27,52**	**36,55**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Conducted
Operation Mode: #9 – Low Channel (2402 MHz)
Plot n°5



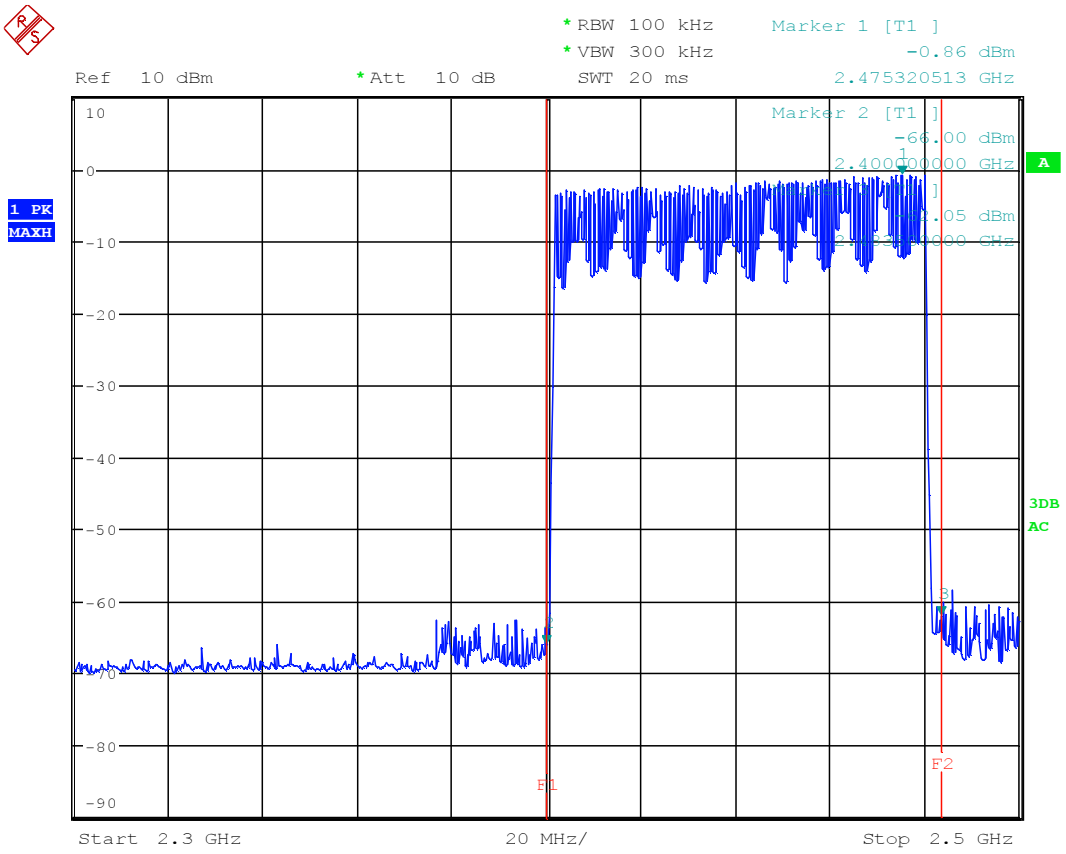
Frequency (MHz	Measured power at the band edge (dBm)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBm)	Margin (dB)
2400	**-60,12**	**-9,52**	**50,60**	**-29,52**	**30,60**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Conducted
Operation Mode: #6 – High Channel (2480 MHz)
Plot n°6



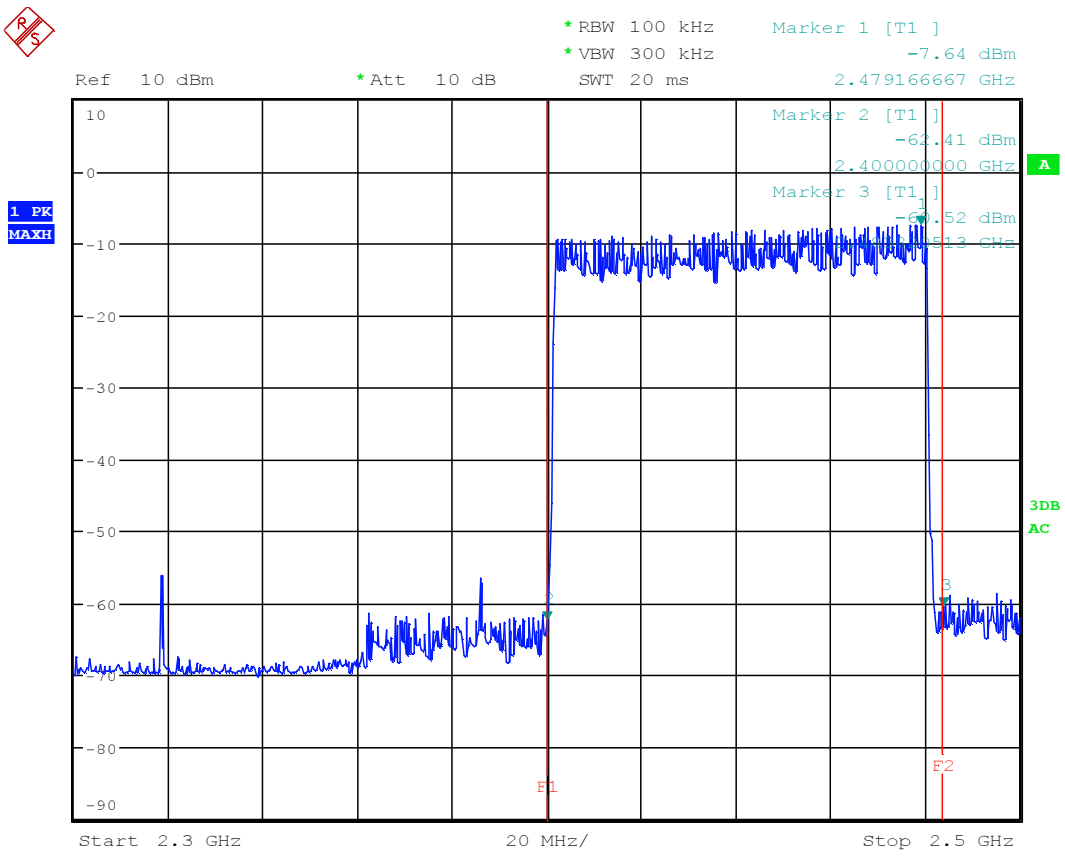
Frequency (MHz	Measured power at the band edge (dBm)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBm)	Margin (dB)
2483,5	**-64,86**	**-7,53**	**57,33**	**-27,53**	**37,33**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Conducted
Operation Mode: #10 – Hopping mode
Plot n°7



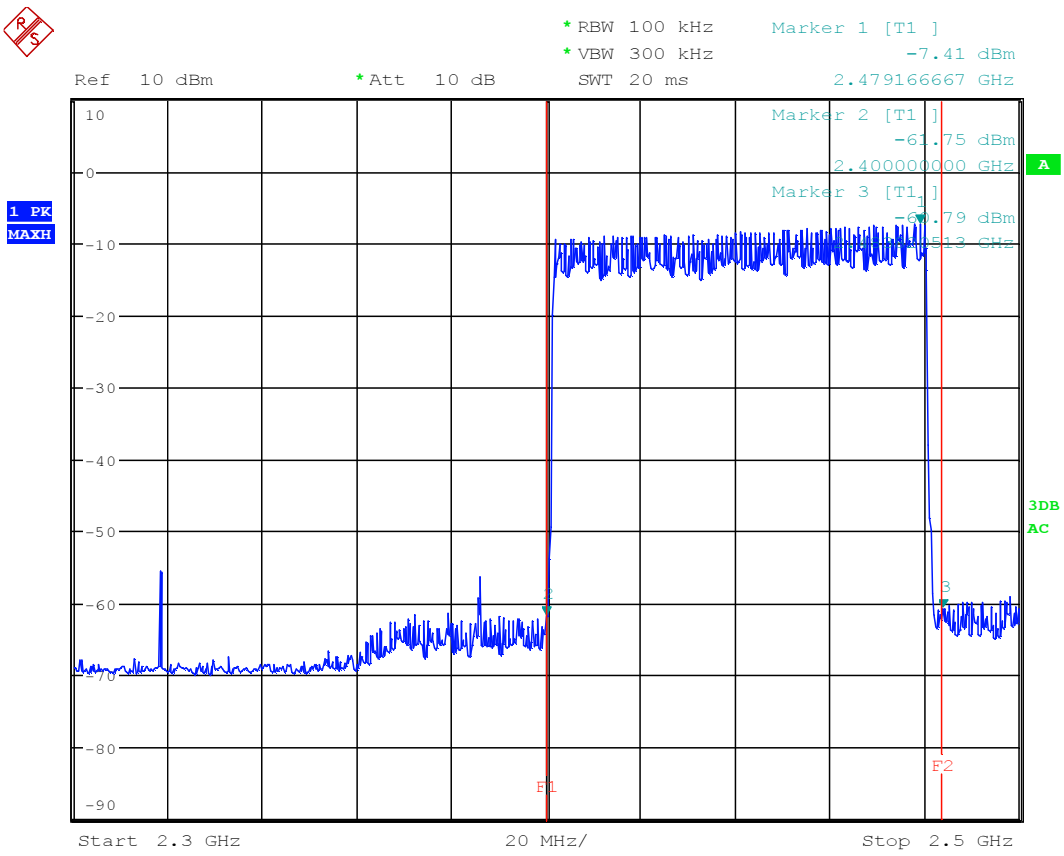
Frequency (MHz	Measured power at the band edge (dBm)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBm)	Margin (dB)
2400,00	**-66,00**	**-0,86**	**65,14**	**-20,86**	**45,14**
2483,50	**-62,05**	**-0,86**	**61,19**	**-20,86**	**41,19**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Conducted
Operation Mode: #11 – Hopping mode
Plot n°8



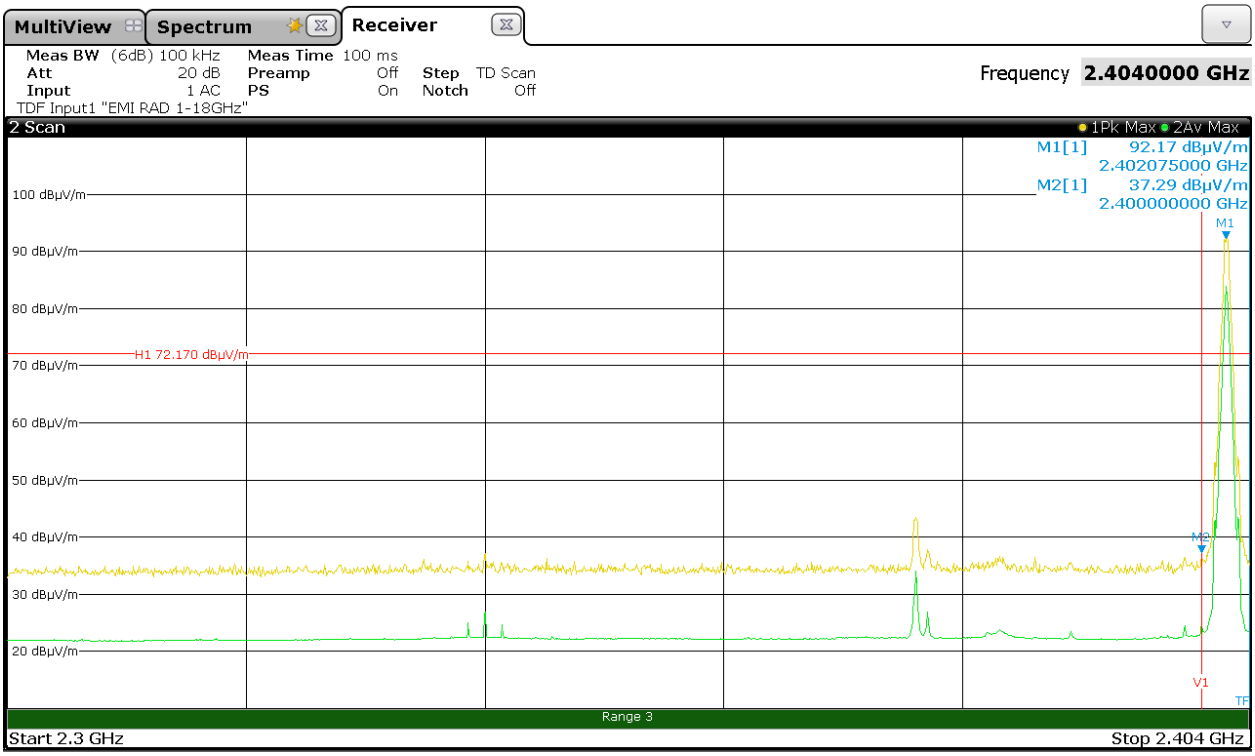
Frequency (MHz	Measured power at the band edge (dBm)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBm)	Margin (dB)
2400,00	**-62,41**	**-7,64**	**54,77**	**-27,64**	**34,77**
2483,50	**-60,52**	**-7,64**	**52,88**	**-27,64**	**32,88**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Conducted
Operation Mode: #12 – Hopping mode
Plot n°9



Frequency (MHz	Measured power at the band edge (dBm)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBm)	Margin (dB)
2400,00	**-61,75**	**-7,41**	**54,34**	**-27,41**	**34,34**
2483,50	**-60,79**	**-7,41**	**53,38**	**-27,41**	**33,38**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Radiated
Operation Mode: #3 – Low Channel (2402 MHz)
Plot n°10



Frequency (MHz	Measured power at the band edge (dBuV/m)	Measured peak power at fundamental frequency (dBuV/m)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBuV/m)	Margin (dB)
2400	**37,29**	**92,17**	**54,88**	**72,17**	**34,88**

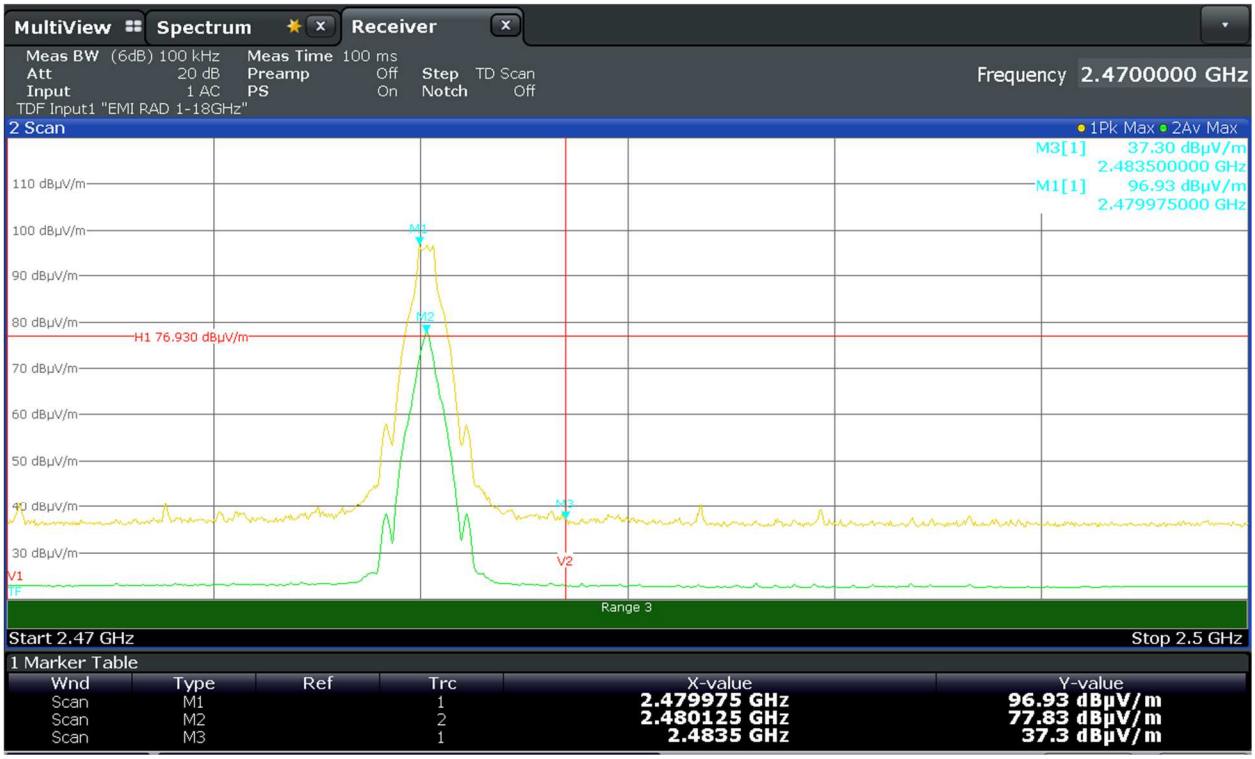
Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Radiated
Operation Mode: #6 – Low Channel (2402 MHz)
Plot n°11

Frequency (MHz	Measured power at the band edge (dBuV/m)	Measured peak power at fundamental frequency (dBuV/m)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBuV/m)	Margin (dB)
2400	**40,69**	**91,00**	**50,31**	**71,00**	**30,31**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Radiated
Operation Mode: #9 – Low Channel (2402 MHz)
Plot n°12

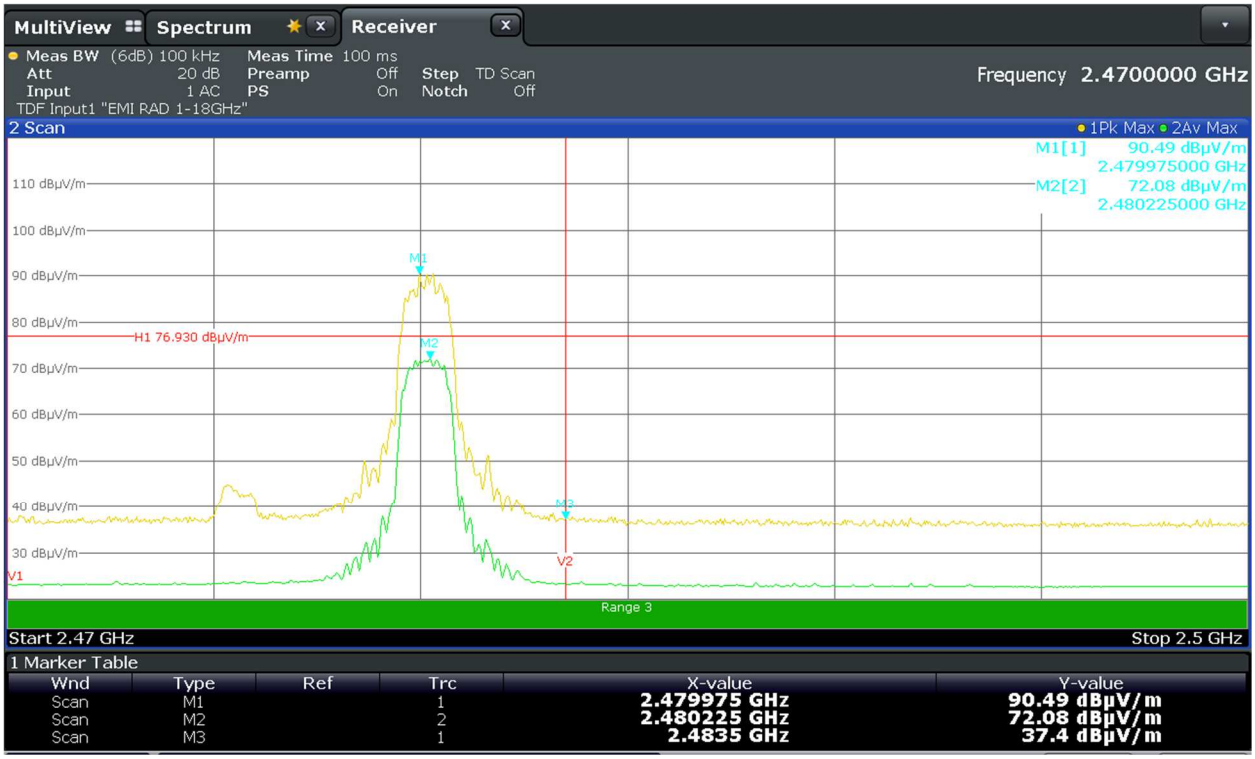
Frequency (MHz	Measured power at the band edge (dBuV/m)	Measured peak power at fundamental frequency (dBuV/m)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBuV/m)	Margin (dB)
2400	**43,79**	**90,96**	**47,17**	**70,96**	**27,17**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Radiated
Operation Mode: #3 – High Channel (2480 MHz)
Plot n°13



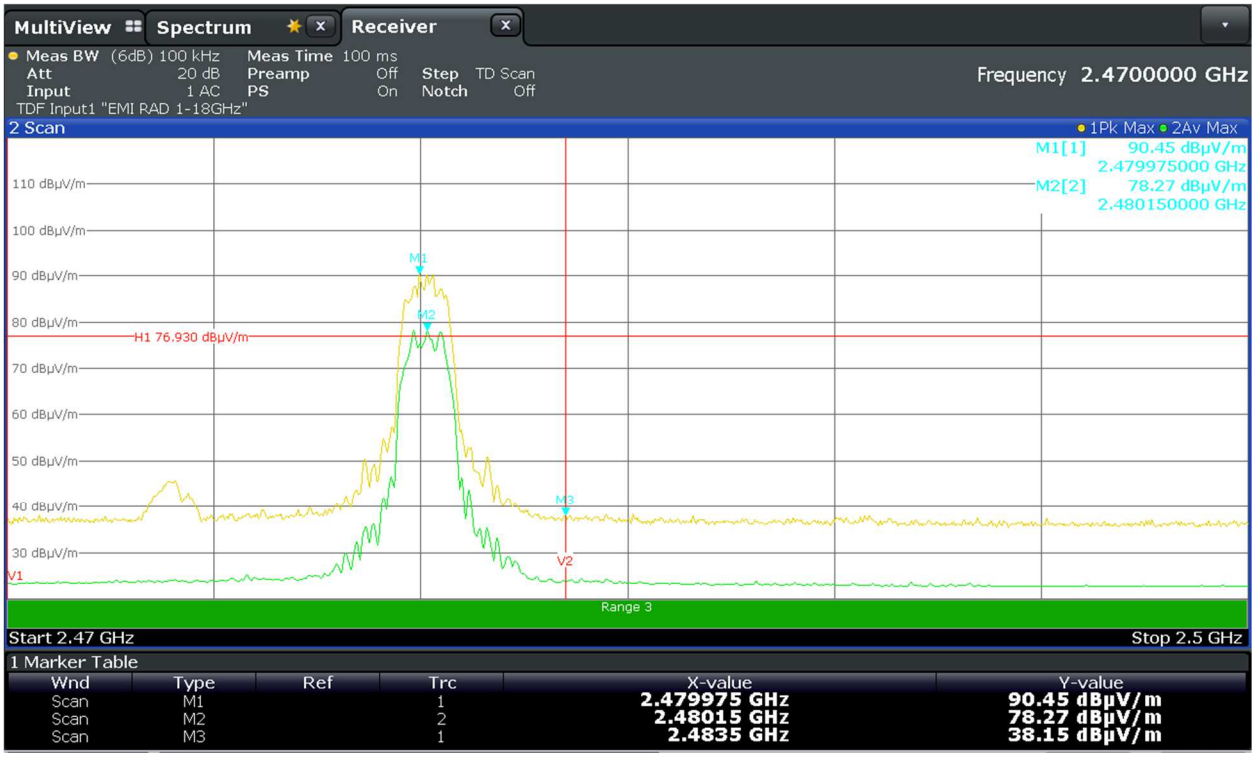
Frequency (MHz	Measured power at the band edge (dBuV/m)	Measured peak power at fundamental frequency (dBuV/m)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBuV/m)	Margin (dB)
2483,5	**37,30**	**96,93**	**59,63**	**76,93**	**39,63**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Radiated
Operation Mode: #6 – High Channel (2480 MHz)
Plot n°14



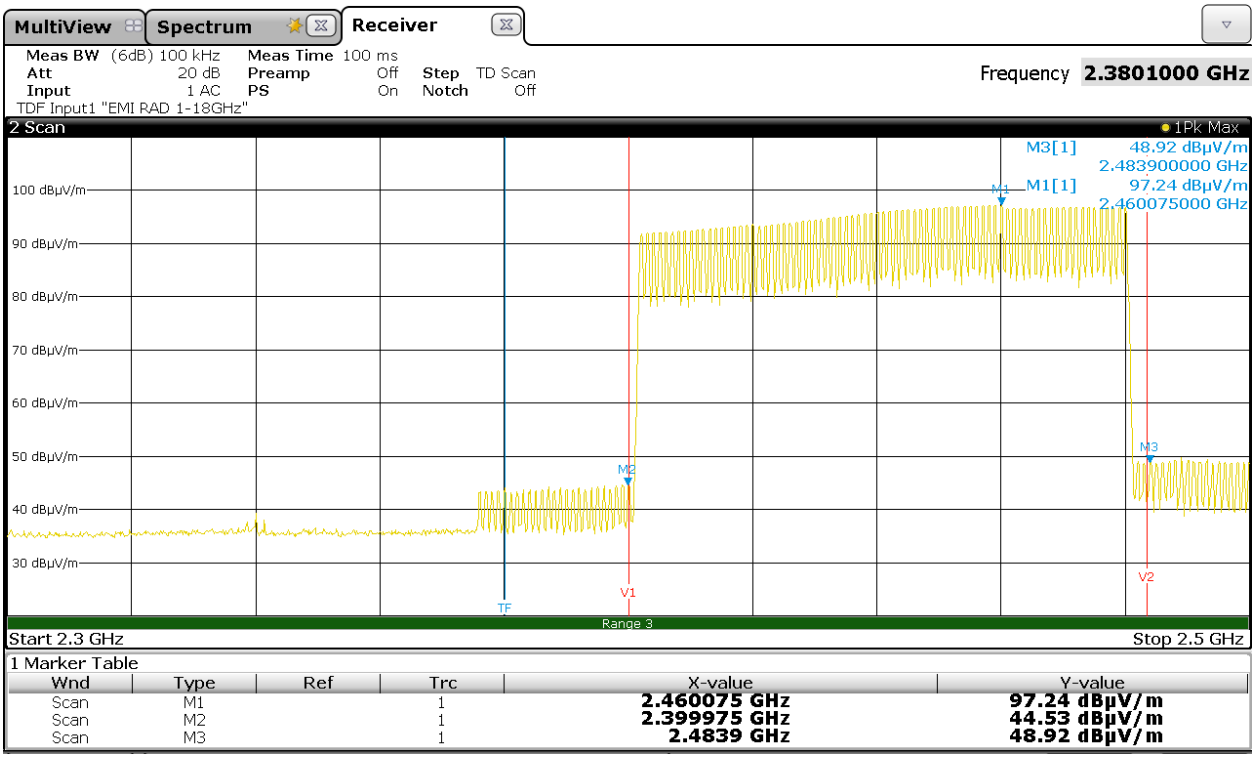
Frequency (MHz	Measured power at the band edge (dBuV/m)	Measured peak power at fundamental frequency (dBuV/m)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBuV/m)	Margin (dB)
2483,5	**37,40**	**90,49**	**53,09**	**70,49**	**33,49**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Radiated
Operation Mode: #9 – High Channel (2480 MHz)
Plot n°15



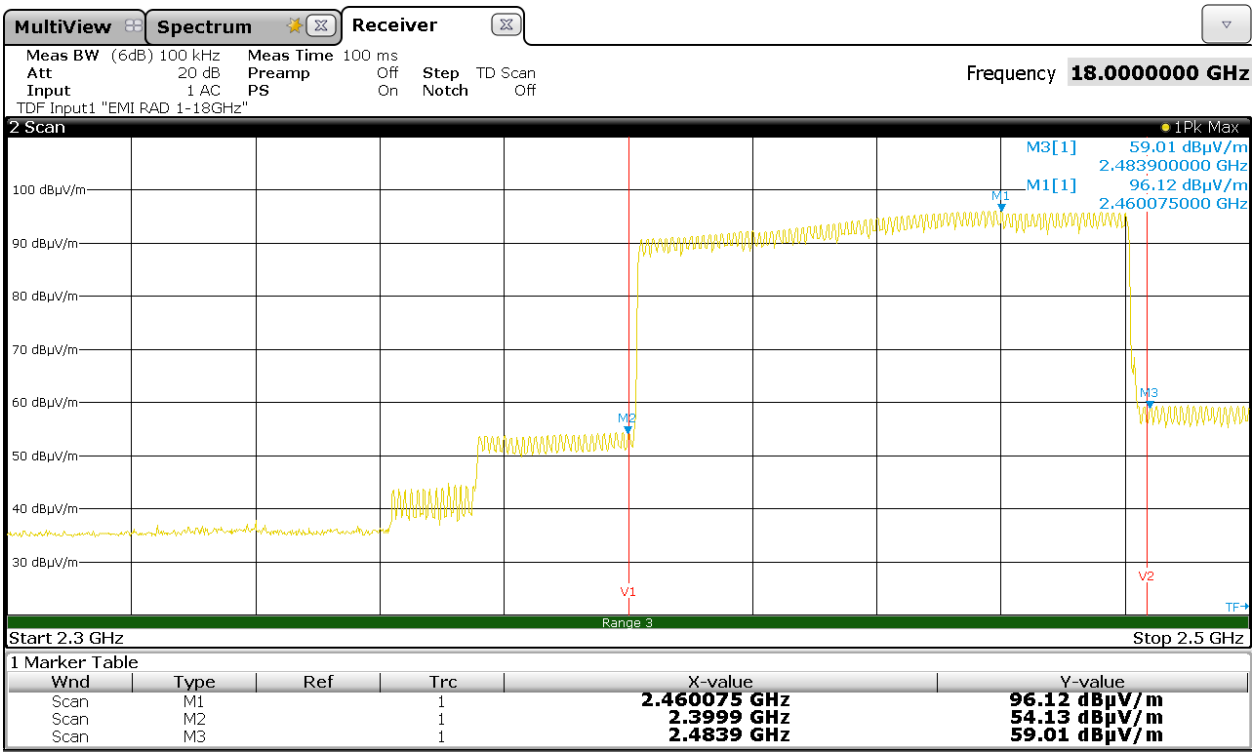
Frequency (MHz	Measured power at the band edge (dBuV/m)	Measured peak power at fundamental frequency (dBuV/m)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBuV/m)	Margin (dB)
2483,5	**38,15**	**90,45**	**52,30**	**70,45**	**32,30**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Radiated
Operation Mode: #10 – Hopping mode
Plot n°16



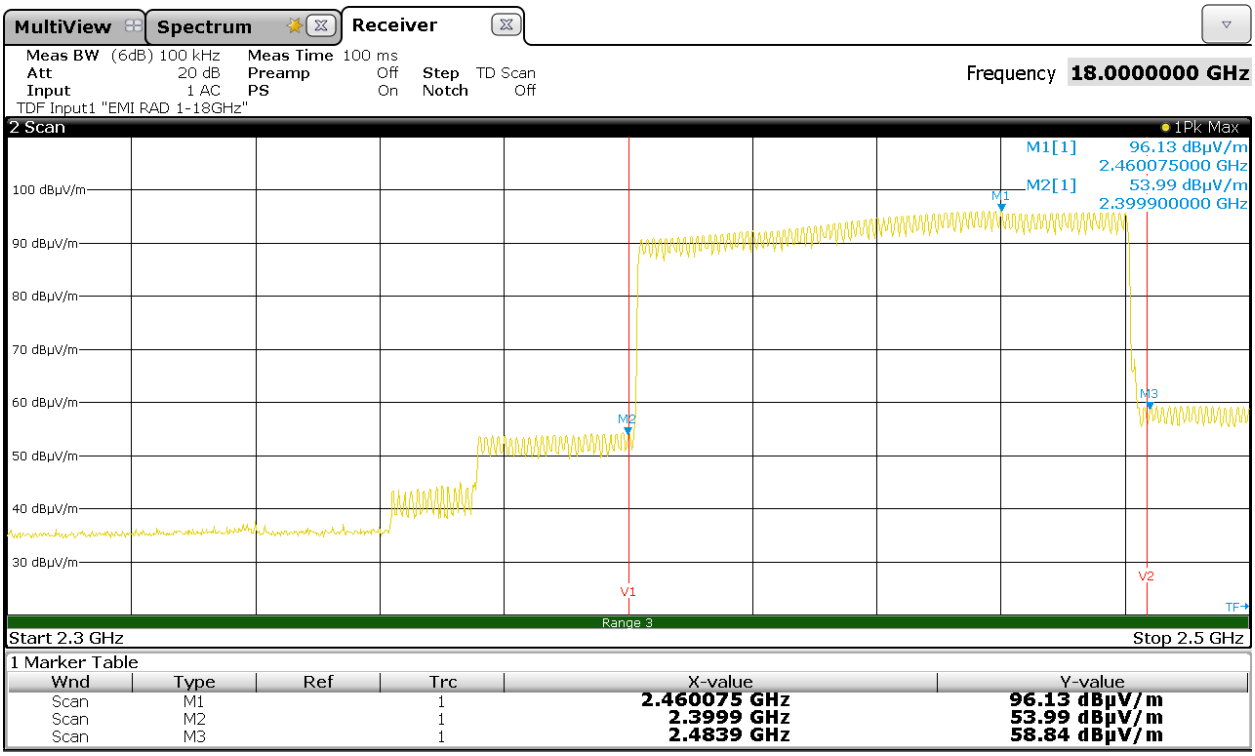
Frequency (MHz	Measured power at the band edge (dBuV/m)	Measured peak power at fundamental frequency (dBuV/m)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBuV/m)	Margin (dB)
2400,0	**44,53**	**97,24**	**52,71**	**77,24**	**32,71**
2483,5	**48,92**	**97,24**	**48,32**	**77,24**	**28,32**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Radiated
Operation Mode: #11 – Hopping mode
Plot n°17

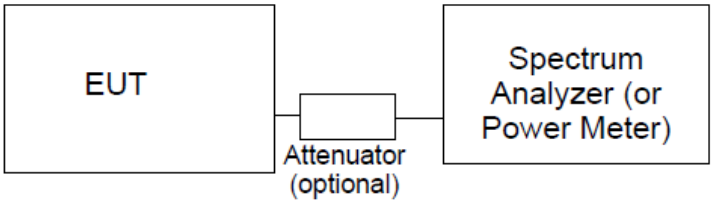


Frequency (MHz	Measured power at the band edge (dBuV/m)	Measured peak power at fundamental frequency (dBuV/m)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBuV/m)	Margin (dB)
2400,0	**54,13**	**96,12**	**41,99**	**76,12**	**21,99**
2483,5	**59,01**	**96,12**	**37,11**	**76,12**	**17,11**

Graphical representation of 100 kHz Bandwidth of Frequency Band Edges - Radiated
Operation Mode: #12 – Hopping mode
Plot n°18

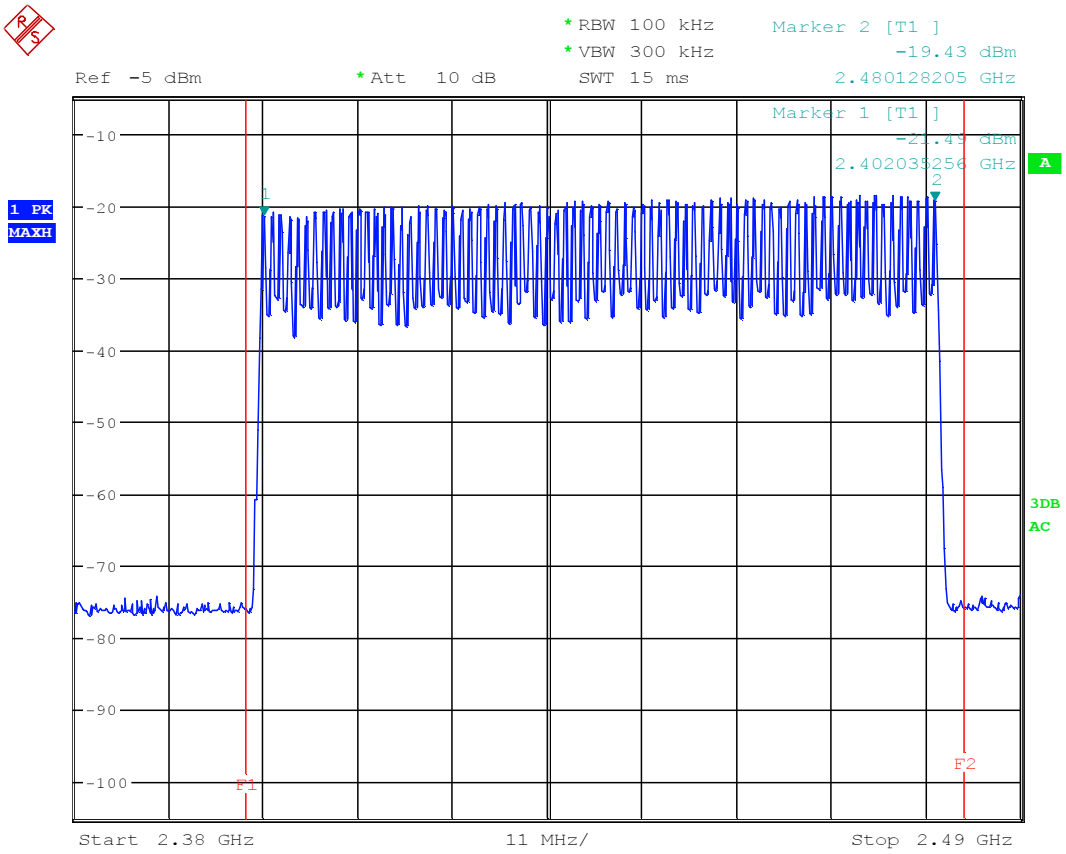


Frequency (MHz	Measured power at the band edge (dBuV/m)	Measured peak power at fundamental frequency (dBuV/m)	Difference Peak / band edge (dB)	Peak Limit at PK power –20 dB (dBuV/m)	Margin (dB)
2400,0	**53,99**	**96,13**	**42,14**	**76,13**	**22,14**
2483,5	**58,84**	**96,13**	**37,29**	**76,13**	**17,29**

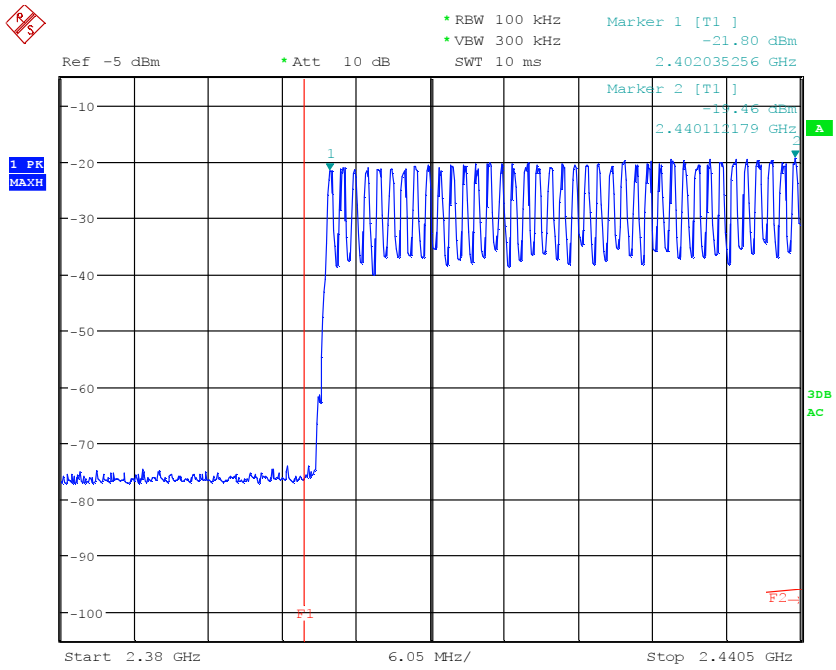
12.8 TEST: Number of Hopping frequencies			PASS
Parameters required prior to the test	Laboratory Ambient Temperature (°C)	15 to 35 °C	
	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	22°C	
	Relative Humidity (%)	36%	
	Air pressure (hPa)	1033	
—	Power Supply & Frequency	Application Point	
Fully configured sample tested at the power line frequency	12V dc	Sma connector	
Equipment mode:	Operation mode	#10	
FCC Standard	§15.247 (A) (1) (III)		
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.			
Further information to test setup			

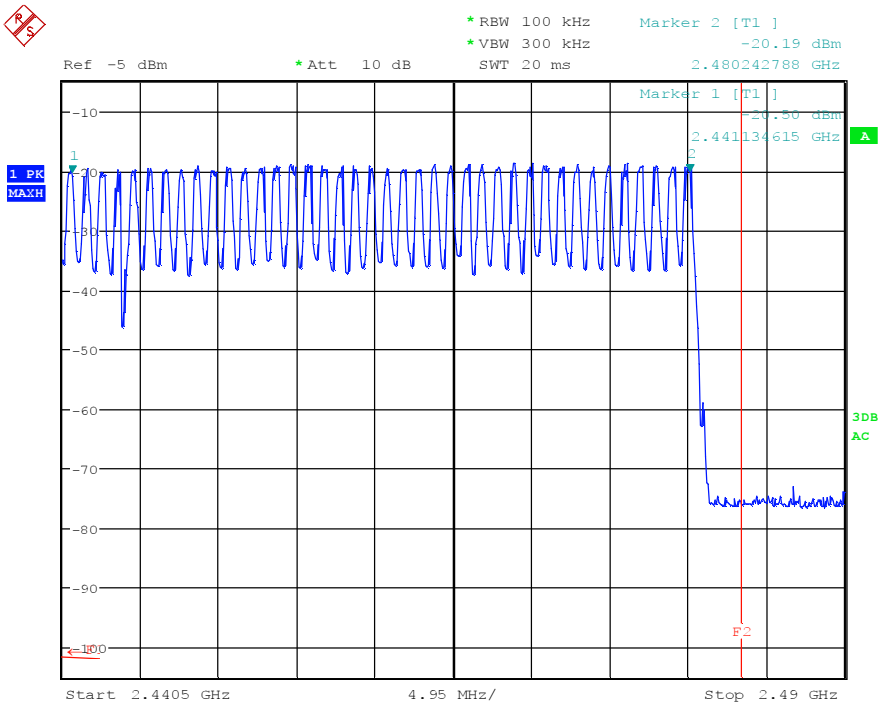
Test Equipment Used					
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due
EMI Test Receiver	R&S	ESU40	87020455	05/2018	05/2019

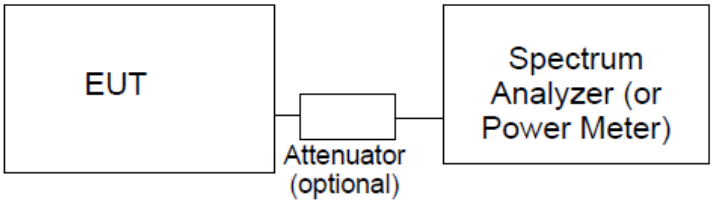
Graphical rapresentation
Operation Mode: #10
Number of Hopping Frequencies: 79



Graphical rapresentation
Operation Mode: #10
Number of Hopping Frequencies: 79

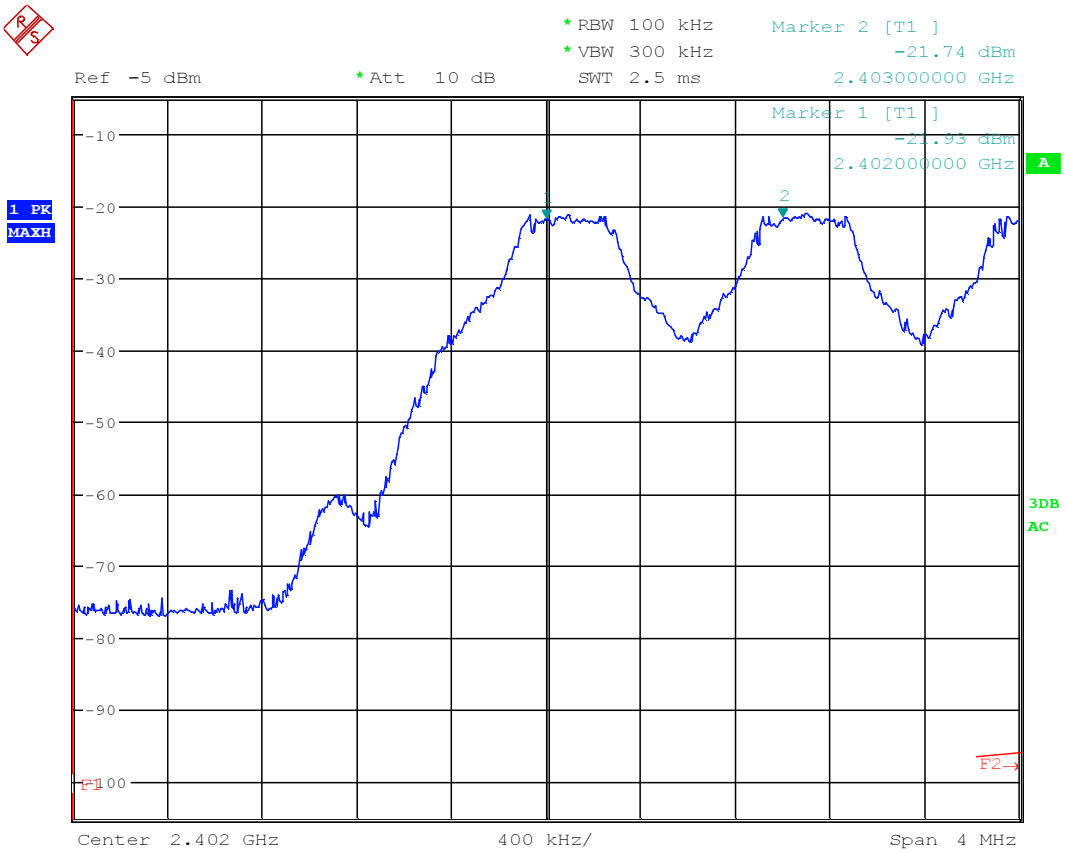




12.9 TEST: Carrier frequency separation			PASS
Parameters required prior to the test	Laboratory Ambient Temperature (°C)	15 to 35 °C	
	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	23°C	
	Relative Humidity (%)	36%	
	Air pressure (hPa)	1033	
—	Power Supply & Frequency	Application Point	
Fully configured sample tested at the power line frequency	12V dc	Sma connector	
Equipment mode:	Operation mode	#10	
FCC Standard	§15.247 (A) (1)		
FHSs shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, FHSs operating in the band 2400-2483.5 MHz may have hopping channel carrier frequencies that are separated by 25 kHz or two thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided that the systems operate with an output power no greater than 0.125 W.			
Further information to test setup			

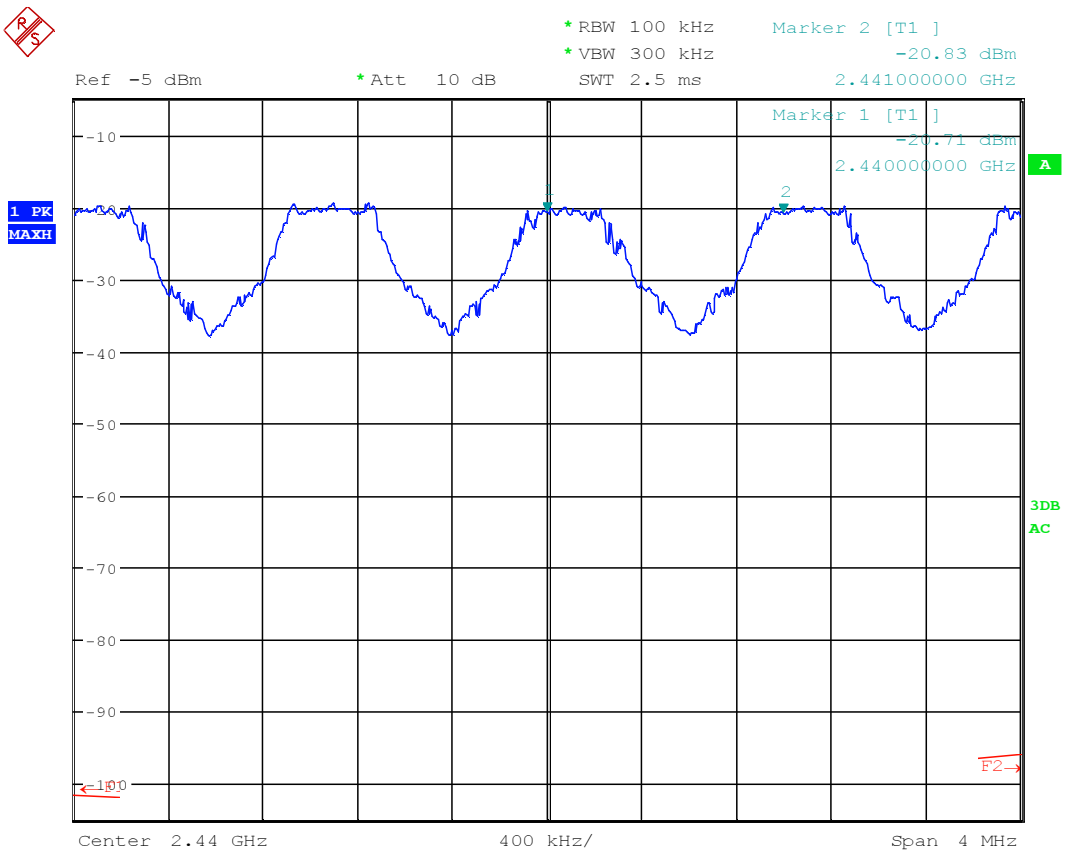
Test Equipment Used					
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due
EMI Test Receiver	R&S	ESU40	87020455	05/2018	05/2019

Graphical representation of carrier frequency separation
Operation Mode: #10
Plot n°1



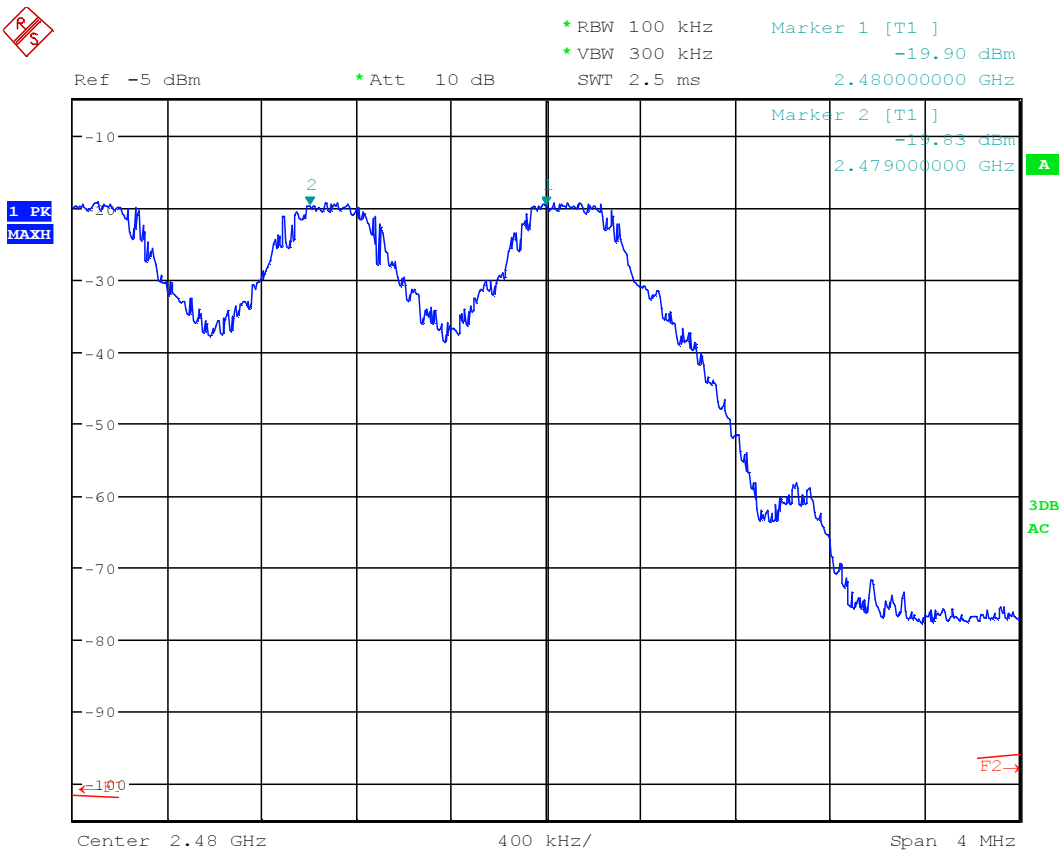
Channel (No.)	Carrier frequency separation (kHz)	Limit (kHz)	Plot (No.)
1-2 (Low)	**1000**	**≥25kHz**	**1**

Graphical representation of carrier frequency separation
Operation Mode: #10
Plot n°2

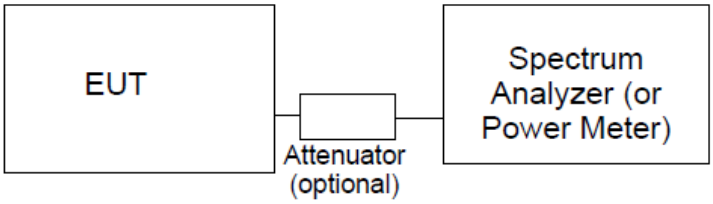


Channel (No.)	Carrier frequency separation (kHz)	Limit (kHz)	Plot (No.)
39-40 (Middle)	1000	≥25kHz	2

Graphical representation of carrier frequency separation
Operation Mode: #10
Plot n°3



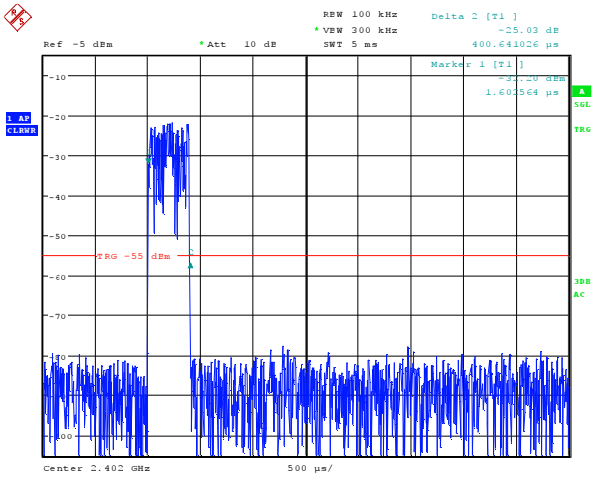
Channel (No.)	Carrier frequency separation (kHz)	Limit (kHz)	Plot (No.)
78-79 (High)	1000	≥25kHz	3

12.10 TEST: Average time of occupancy			PASS
Parameters required prior to the test	Laboratory Ambient Temperature (°C)	15 to 35 °C	
	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	23°C	
	Relative Humidity (%)	36%	
	Air pressure (hPa)	1033	
—	Power Supply & Frequency	Application Point	
Fully configured sample tested at the power line frequency	12V dc	Sma connector	
Equipment mode:	Operation mode	#10 #11 #12	
FCC Standard	§15.247 (A) (1) (III)		
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.			
Further information to test setup			

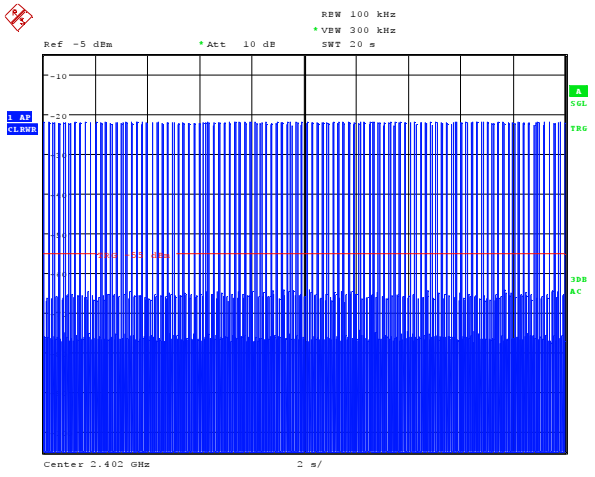
Test Equipment Used					
Description	Manufacturer	Model	Identifier	Calibration date	Calibration due
EMI Test Receiver	R&S	ESU40	87020455	05/2018	05/2019

Results					
Operation Mode: #10 (DH1 Packet)					
Channel (No.)	**Single packet duration (ms)**	**Number of hops in 31,6 s**	**Average time of occupancy (ms) in a period of 31,6s**	**Limit of Average time of occupancy (ms)**	**Plot (No.)**
1 (Low)	0,400	229	91,6	400	1÷2

Plot n°1 and n°2



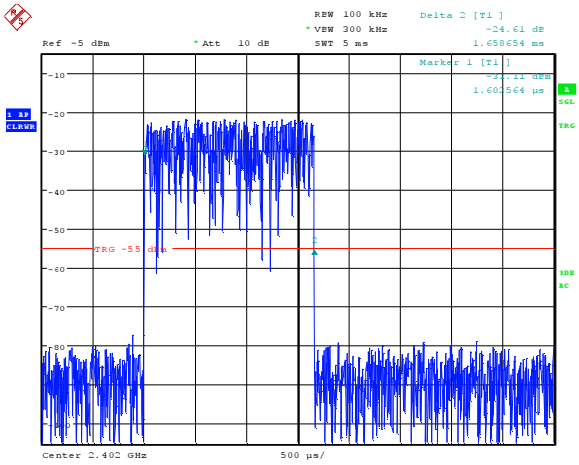
Single burst duration



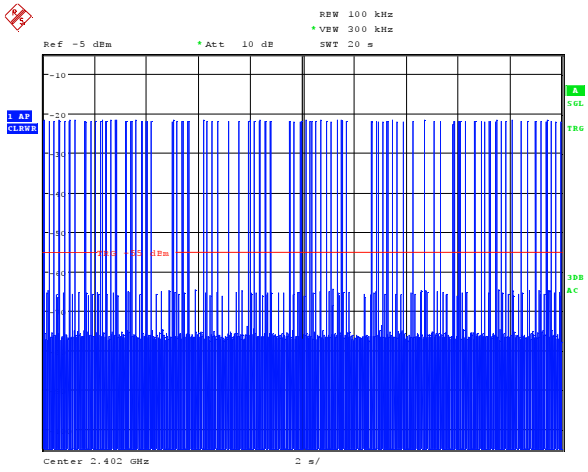
N° of bursts in 20 sec.

Results					
Operation Mode: #10 (DH3 Packet)					
Channel (No.)	**Single packet duration (ms)**	**Number of hops in 31,6 s**	**Average time of occupancy (ms) in a period of 31,6s**	**Limit of Average time of occupancy (ms)**	**Plot (No.)**
1 (Low)	1,659	133	220,647	400	3÷4

Plot n°3 and n°4



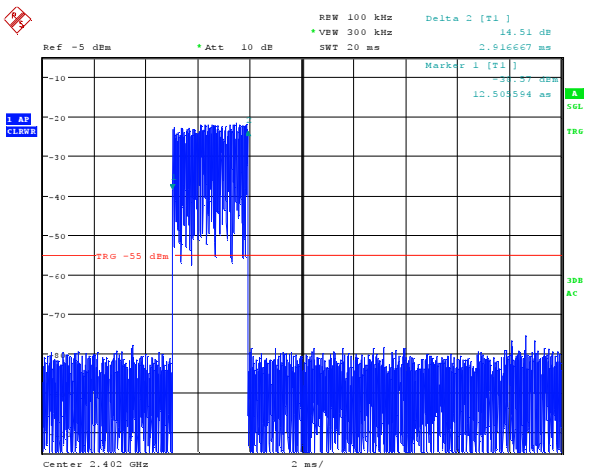
Single burst duration



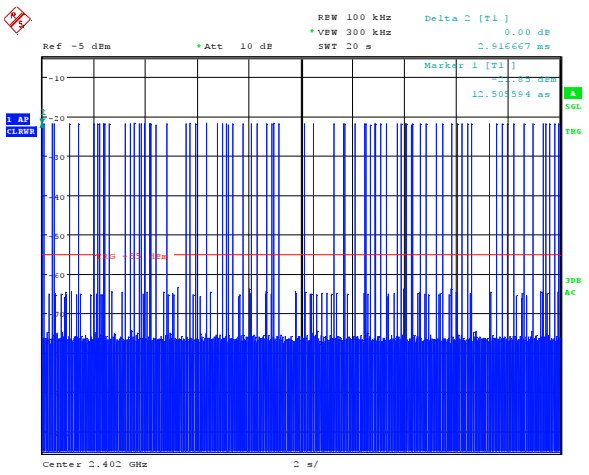
N° of bursts in 20 sec.

Results					
Operation Mode: #10 (DH5 Packet)					
Channel (No.)	**Single packet duration (ms)**	**Number of hops in 31,6 s**	**Average time of occupancy (ms) in a period of 31,6s**	**Limit of Average time of occupancy (ms)**	**Plot (No.)**
1 (Low)	2,917	114	332,538	400	5÷6

Plot n°5 and n°6



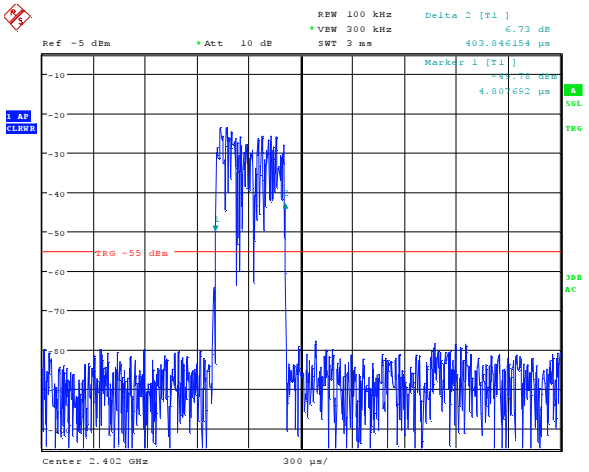
Single burst duration



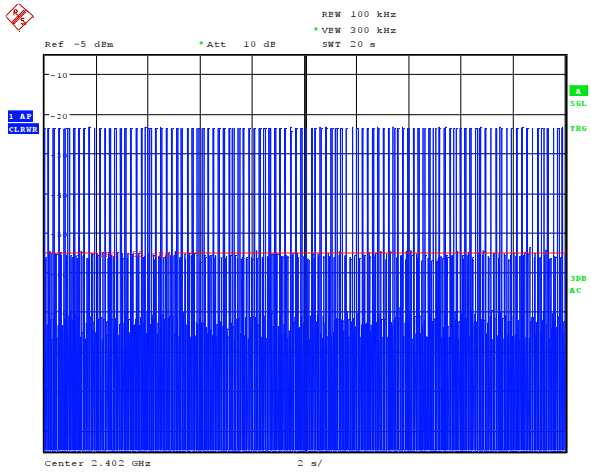
N° of bursts in 20 sec.

Results					
Operation Mode: #11 (2-DH1 Packet)					
Channel (No.)	**Single packet duration (ms)**	**Number of hops in 31,6 s**	**Average time of occupancy (ms) in a period of 31,6s**	**Limit of Average time of occupancy (ms)**	**Plot (No.)**
1 (Low)	0,403	224	90,272	400	7÷8

Plot n°7 and n°8



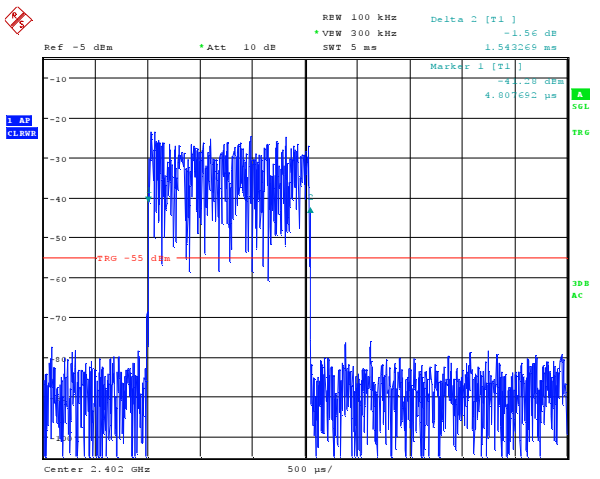
Single burst duration



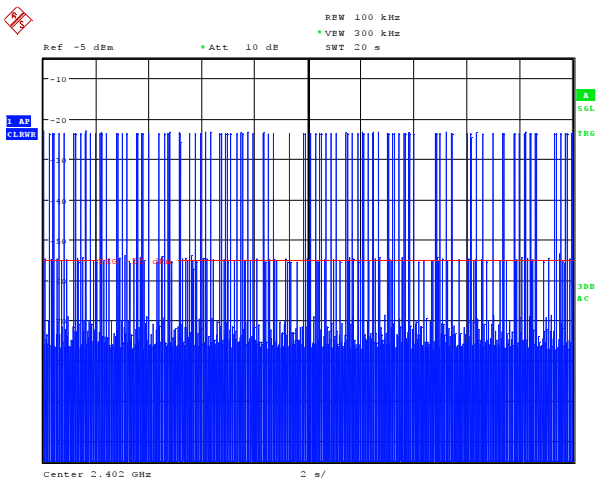
N° of bursts in 20 sec.

Results					
Operation Mode: #11 (2-DH3 Packet)					
Channel (No.)	**Single packet duration (ms)**	**Number of hops in 31,6 s**	**Average time of occupancy (ms) in a period of 31,6s**	**Limit of Average time of occupancy (ms)**	**Plot (No.)**
1 (Low)	1,543	145	223,735	400	9÷10

Plot n°9 and n°10



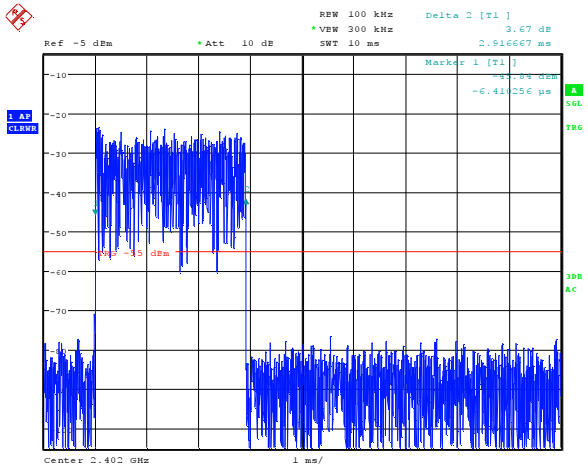
Single burst duration



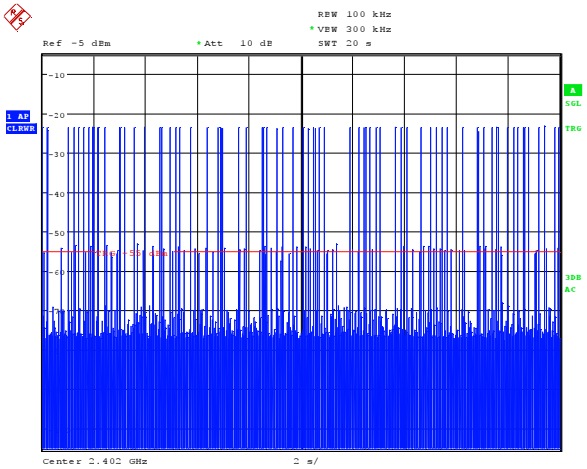
N° of bursts in 20 sec.

Results					
Operation Mode: #11 (2-DH5 Packet)					
Channel (No.)	**Single packet duration (ms)**	**Number of hops in 31,6 s**	**Average time of occupancy (ms) in a period of 31,6s**	**Limit of Average time of occupancy (ms)**	**Plot (No.)**
1 (Low)	2,917	108	315,036	400	11÷12

Plot n°11 and n°12



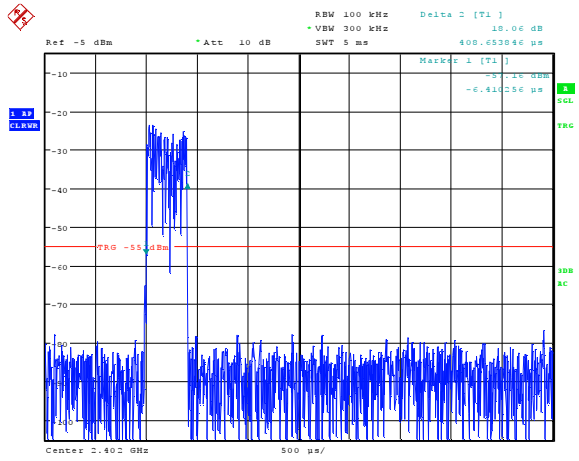
Single burst duration



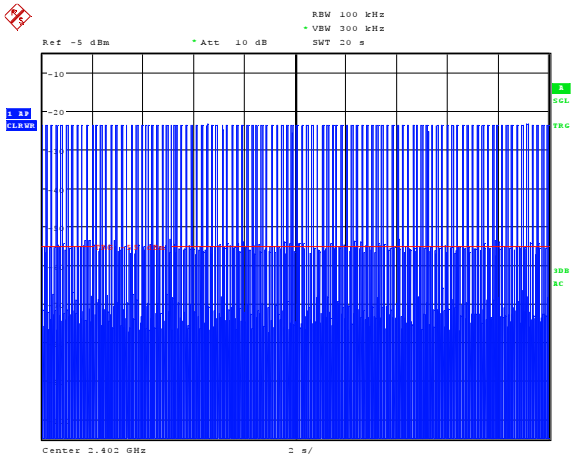
N° of bursts in 20 sec.

Results					
Operation Mode: #12 (3-DH1 Packet)					
Channel (No.)	**Single packet duration (ms)**	**Number of hops in 31,6 s**	**Average time of occupancy (ms) in a period of 31,6s**	**Limit of Average time of occupancy (ms)**	**Plot (No.)**
1 (Low)	0,408	251	102,497	400	13÷14

Plot n°13 and n°14



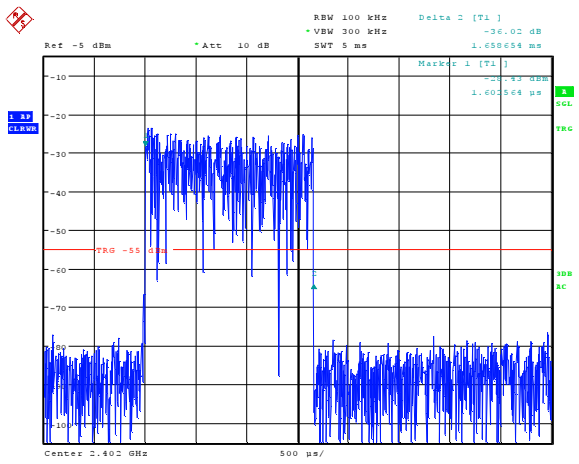
Single burst duration



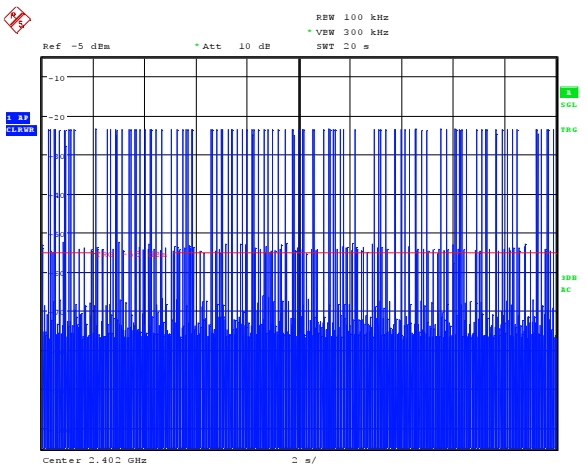
N° of bursts in 20 sec.

Results					
Operation Mode: #12 (3-DH3 Packet)					
Channel (No.)	**Single packet duration (ms)**	**Number of hops in 31,6 s**	**Average time of occupancy (ms) in a period of 31,6s**	**Limit of Average time of occupancy (ms)**	**Plot (No.)**
1 (Low)	1,659	139	230,601	400	15÷16

Plot n°15 and n°16



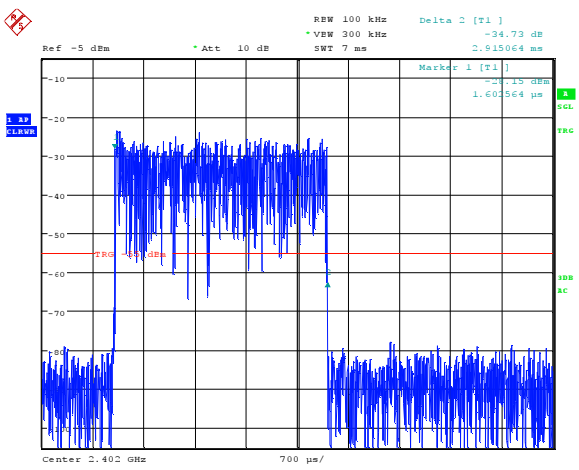
Single burst duration



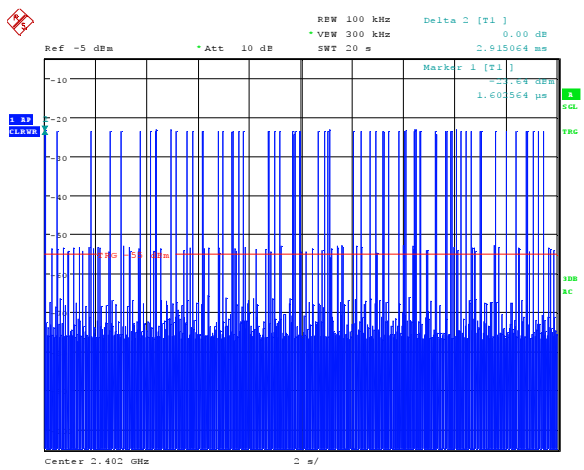
N° of bursts in 20 sec.

Results					
Operation Mode: #12 (3-DH5 Packet)					
Channel (No.)	**Single packet duration (ms)**	**Number of hops in 31,6 s**	**Average time of occupancy (ms) in a period of 31,6s**	**Limit of Average time of occupancy (ms)**	**Plot (No.)**
1 (Low)	2,915	95	276,925	400	17÷18

Plot n°17 and n°18



Single burst duration



N° of bursts in 20 sec.

12.11 TEST: Additional provisions to the general radiated emission limitations.			PASS
Parameters required prior to the test	Laboratory Ambient Temperature (°C)	15 to 35 °C	
	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	24°C	
	Relative Humidity (%)	37%	
	Air pressure (hPa)	1020	
—	Frequency	Application Point	
Fully configured sample tested at the power line frequency	12V dc	---------	
Equipment mode:	Operation mode	#1 #2 #3 #4 #5 #6 #7 #8 #9	
FCC Standard	§15.215 (A) (B) (C)		
(A) The regulations in §§ 15.217-15.257 provide alternatives to the general radiated emission limits for intentional radiators operating in specified frequency bands. Unless otherwise stated, there are no restrictions as to the types of operation permitted under these sections.			
(B) In most cases, unwanted emissions outside of the frequency bands shown in these alternative provisions must be attenuated to the emission limits shown in Section 15.209. In no case shall the level of the unwanted emissions from an intentional radiator operating under these additional provisions exceed the field strength of the fundamental emission.			VERDICT PASS
(C) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least			VERDICT PASS

12.12 TEST: RF Exposure Requirements			PASS
Parameters required prior to the test	Laboratory Ambient Temperature (°C)	15 to 35 °C	
	Relative Humidity (%)	30 to 60 %	
Parameters recorded during the test	Laboratory Ambient Temperature (°C)	---	
	Relative Humidity (%)	---	
	Air pressure (hPa)	1020	
—	Frequency	Application Point	
Fully configured sample tested at the power line frequency	12V dc	---	
Equipment mode:	Operation mode	#1 #2 #3 #4 #5 #6 #7 #8 #9	
FCC Standard	§ 1.1310 (1) (B)		
Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines § 1.1310, table (1) (b)			
EUT classification (fixed, mobile or portable devices)	Fixed equipment used in Uncontrolled Exposure environment		
Limits Freq. Range 1500÷100000MHz	According to 447498 D01 General RF Exposure Guidance v06 (See table below)		

Appendix A

***SAR Test Exclusion Thresholds* for 100 MHz – 6 GHz and ≤ 50 mm**

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	*SAR Test Exclusion Threshold* (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

Operation Mode: #1						
CH	Frequency	Conducted Output Power	Conducted Output Power (P)	Numeric Gain (G)	Distance (r)	SAR Test Exclusion Thresholds (mW)
	(MHz)	(dBm)	(mW)		(mm)	
Low	2402	-2,32	0,586	1,122	5	10,08
Mid	2440	-1,37	0,729	1,122	5	10,01
High	2480	+0,05	1,011	1,122	5	9,94
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT at the distance of 5mm.						

Operation Mode: #2						
CH	Frequency	Conducted Output Power	Conducted Output Power (P)	Numeric Gain (G)	Distance (r)	SAR Test Exclusion Thresholds (mW)
	(MHz)	(dBm)	(mW)		(mm)	
Low	2402	-2,32	0,586	1,122	5	10,08
Mid	2440	-1,38	0,727	1,122	5	10,01
High	2480	+0,03	1,006	1,122	5	9,94
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT at the distance of 5mm.						

Operation Mode: #3						
CH	Frequency	Conducted Output Power	Conducted Output Power (P)	Numeric Gain (G)	Distance (r)	SAR Test Exclusion Thresholds (mW)
	(MHz)	(dBm)	(mW)		(mm)	
Low	2402	-2,30	0,588	1,122	5	10,08
Mid	2440	-1,36	0,731	1,122	5	10,01
High	2480	+0,05	1,011	1,122	5	9,94
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT at the distance of 5mm.						

Operation Mode: #4						
CH	Frequency	Conducted Output Power	Conducted Output Power (P)	Numeric Gain (G)	Distance (r)	SAR Test Exclusion Thresholds (mW)
	(MHz)	(dBm)	(mW)		(mm)	
Low	2402	-7,03	0,198	1,122	5	10,08
Mid	2440	-6,14	0,243	1,122	5	10,01
High	2480	-4,99	0,317	1,122	5	9,94
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT at the distance of 5mm.						

Operation Mode: #5						
CH	Frequency	Conducted Output Power	Conducted Output Power (P)	Numeric Gain (G)	Distance (r)	SAR Test Exclusion Thresholds (mW)
	(MHz)	(dBm)	(mW)		(mm)	
Low	2402	-7,03	0,198	1,122	5	10,08
Mid	2440	-6,17	0,241	1,122	5	10,01
High	2480	-4,98	0,317	1,122	5	9,94
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT at the distance of 5mm.						

Operation Mode: #6						
CH	Frequency	Conducted Output Power	Conducted Output Power (P)	Numeric Gain (G)	Distance (r)	SAR Test Exclusion Thresholds (mW)
	(MHz)	(dBm)	(mW)		(mm)	
Low	2402	-7,02	0,198	1,122	5	10,08
Mid	2440	-6,12	0,244	1,122	5	10,01
High	2480	-4,97	0,318	1,122	5	9,94
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT at the distance of 5mm.						

Operation Mode: #7						
CH	Frequency	Conducted Output Power	Conducted Output Power (P)	Numeric Gain (G)	Distance (r)	SAR Test Exclusion Thresholds (mW)
	(MHz)	(dBm)	(mW)		(mm)	
Low	2402	-6,40	0,228	1,122	5	10,08
Mid	2440	-5,52	0,280	1,122	5	10,01
High	2480	-4,36	0,366	1,122	5	9,94
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT at the distance of 5mm.						

Operation Mode: #8						
CH	Frequency	Conducted Output Power	Conducted Output Power (P)	Numeric Gain (G)	Distance (r)	SAR Test Exclusion Thresholds (mW)
	(MHz)	(dBm)	(mW)		(mm)	
Low	2402	-6,41	0,228	1,122	5	10,08
Mid	2440	-5,51	0,280	1,122	5	10,01
High	2480	-4,36	0,366	1,122	5	9,94
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT at the distance of 5mm.						

Operation Mode: #9						
CH	Frequency	Conducted Output Power	Conducted Output Power (P)	Numeric Gain (G)	Distance (r)	SAR Test Exclusion Thresholds (mW)
	(MHz)	(dBm)	(mW)		(mm)	
Low	2402	-6,39	0,229	1,122	5	10,08
Mid	2440	-5,49	0,282	1,122	5	10,01
High	2480	-4,33	0,369	1,122	5	9,94
VERDICT						
The EUT Radiated Power density at evaluation distance is WHITIN THE LIMIT at the distance of 5mm.						

13. ANNEX	
Photographic Documentation	
External photo	See Report n° 28111852 007 Annex1
Internal photo	See Report n° 28111852 007 Annex2
Set-up photo	See Report n° 28111852 007 Annex3

END OF TEST REPORT