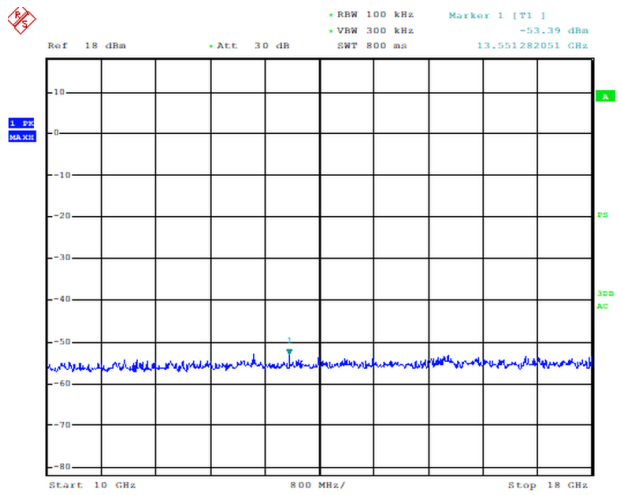
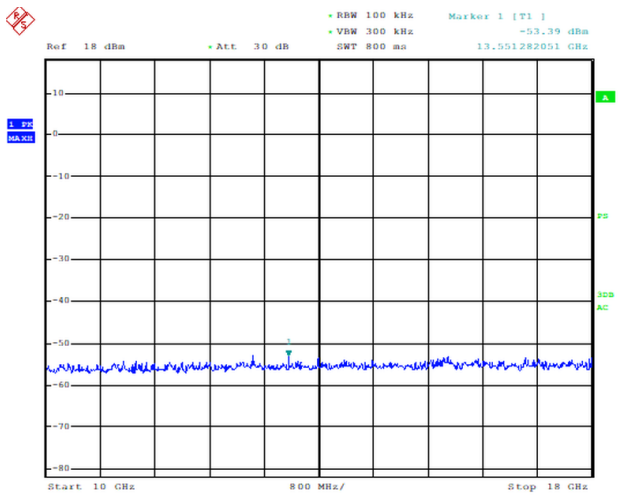
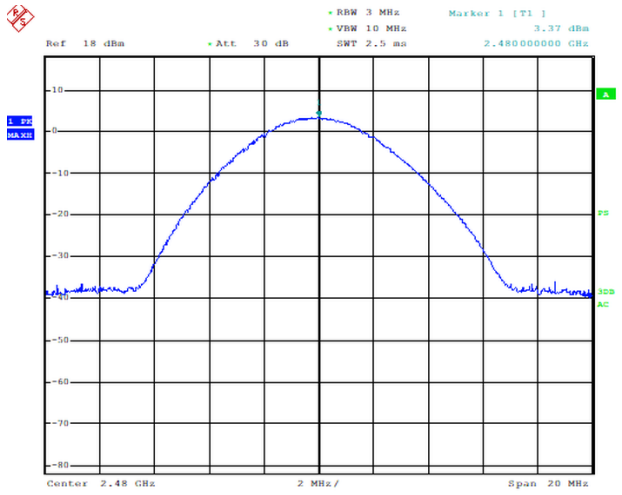
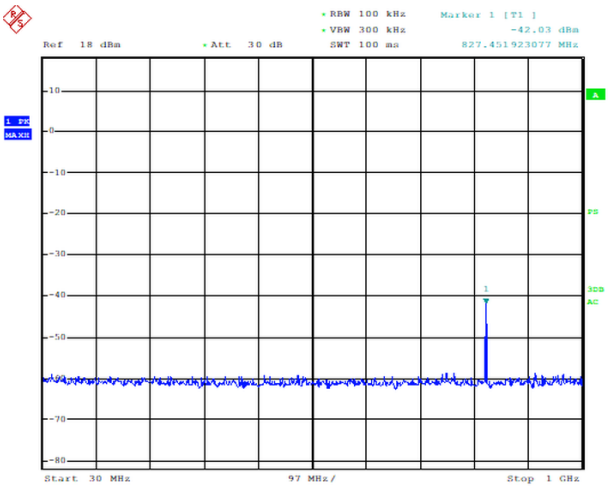
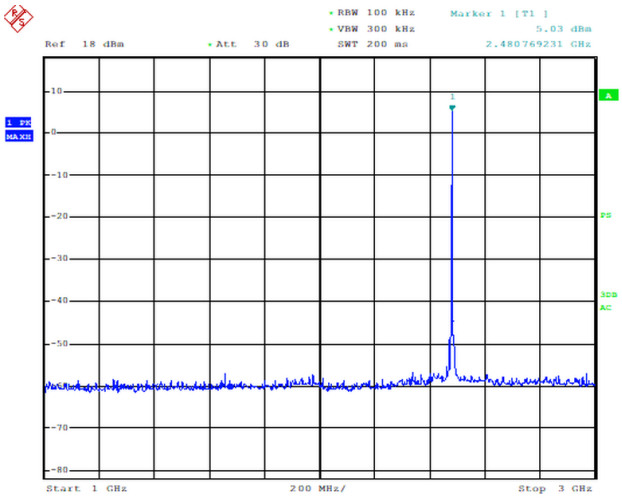
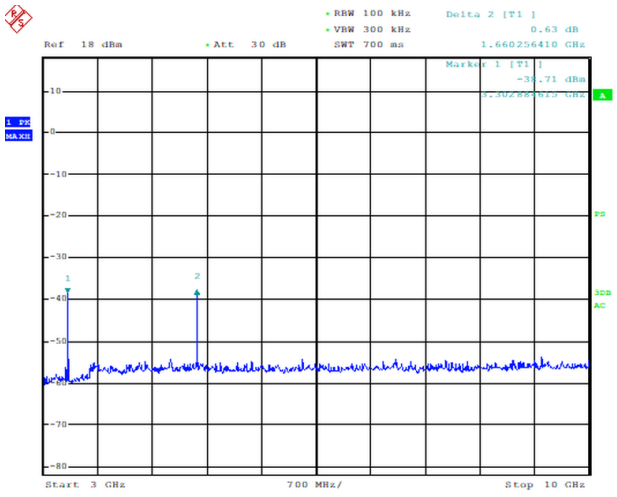
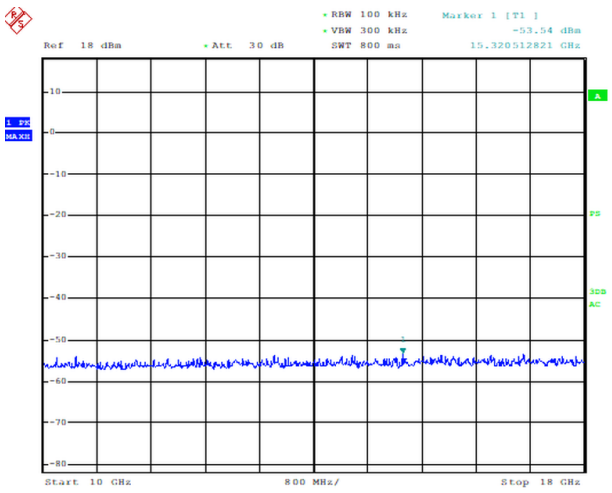
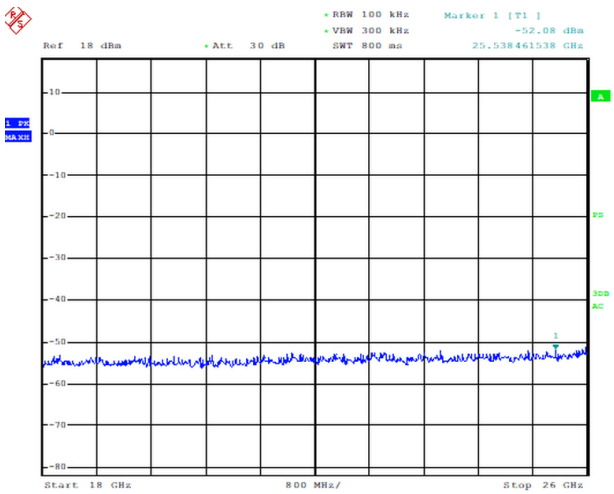
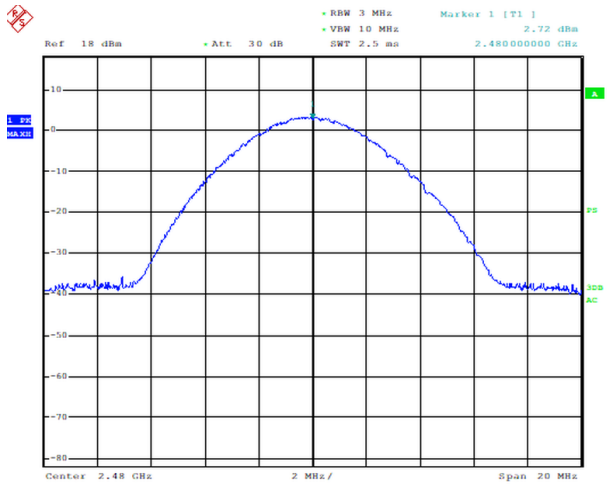
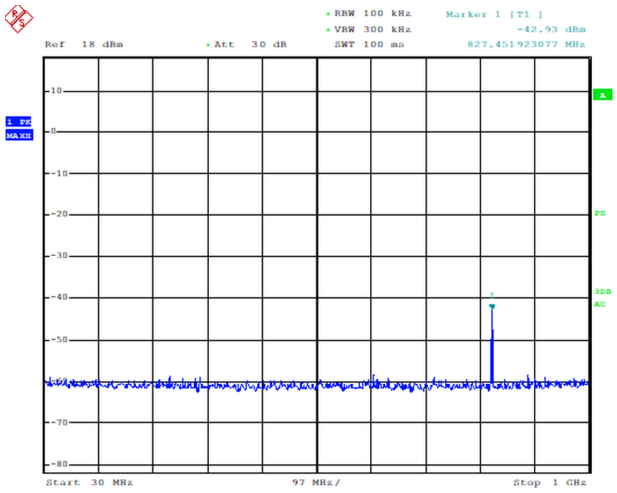
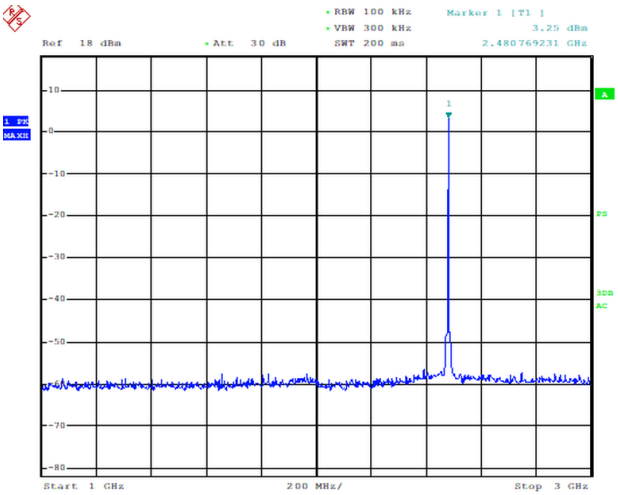
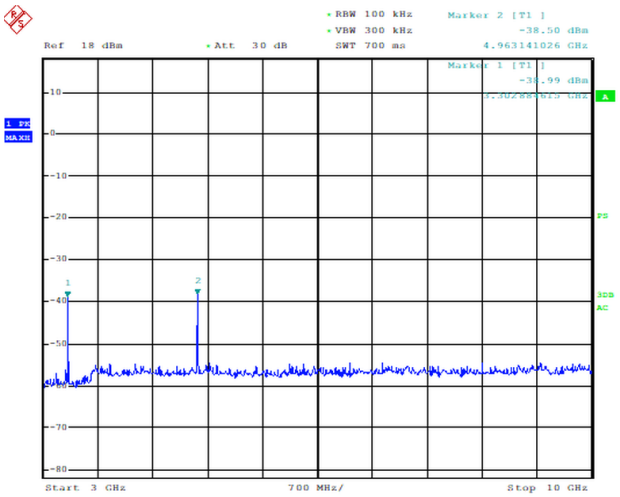
Frequency range: 10GHz – 18GHz	Frequency range: 18GHz – 26GHz
	

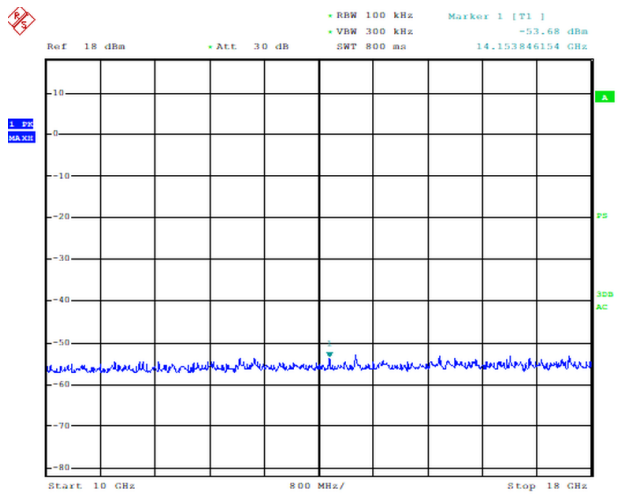
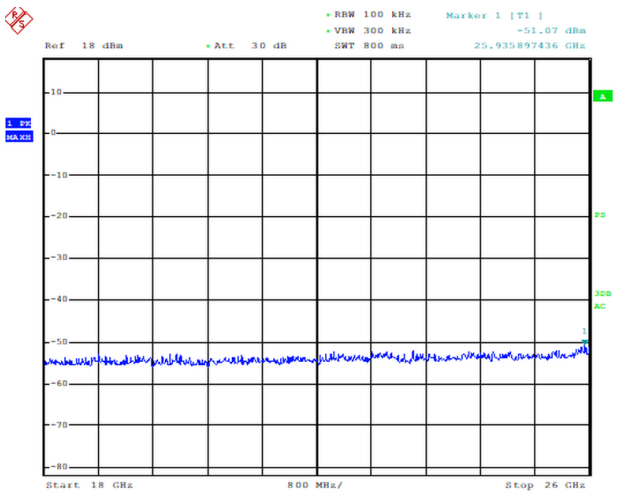
Frequency (MHz)	Measured power (dBm)	Fundamental Level (dBm)	Difference Peak / Spurious (dB)	Peak Limit at PK power –20dB (dBm)	Margin	Result
827,45	-41,72	3,38	45,10	-16,62	25,10	PASS
3302,88	-38,39		41,77		21,77	

Graphical presentation of RF radiated spurious emissions at the transmitter antenna terminal	
Operation mode: 3 (Channel 78 – Frequency 2480)	
Data rate: 3M_DH3_1010	
Fundamental	Frequency range: 30MHz – 1GHz
	
Frequency range: 1GHz – 3GHz	Frequency range: 3GHz – 10GHz
	

Frequency range: 10GHz – 18GHz	Frequency range: 18GHz – 26GHz
	

Frequency (MHz)	Measured power (dBm)	Fundamental Level (dBm)	Difference Peak / Spurious (dB)	Peak Limit at PK power –20dB (dBm)	Margin	Result
827,45	-42,03	3,37	45,40	-16,63	25,40	PASS
3302,88	-38,71		42,08		22,08	
4963,14	-39,34		42,71		22,71	

Graphical presentation of RF radiated spurious emissions at the transmitter antenna terminal	
Operation mode: 3 (Channel 78 – Frequency 2480)	
Data rate: 3M_DH5_1010	
Fundamental	Frequency range: 30MHz – 1GHz
	
Frequency range: 1GHz – 3GHz	Frequency range: 3GHz – 10GHz
	

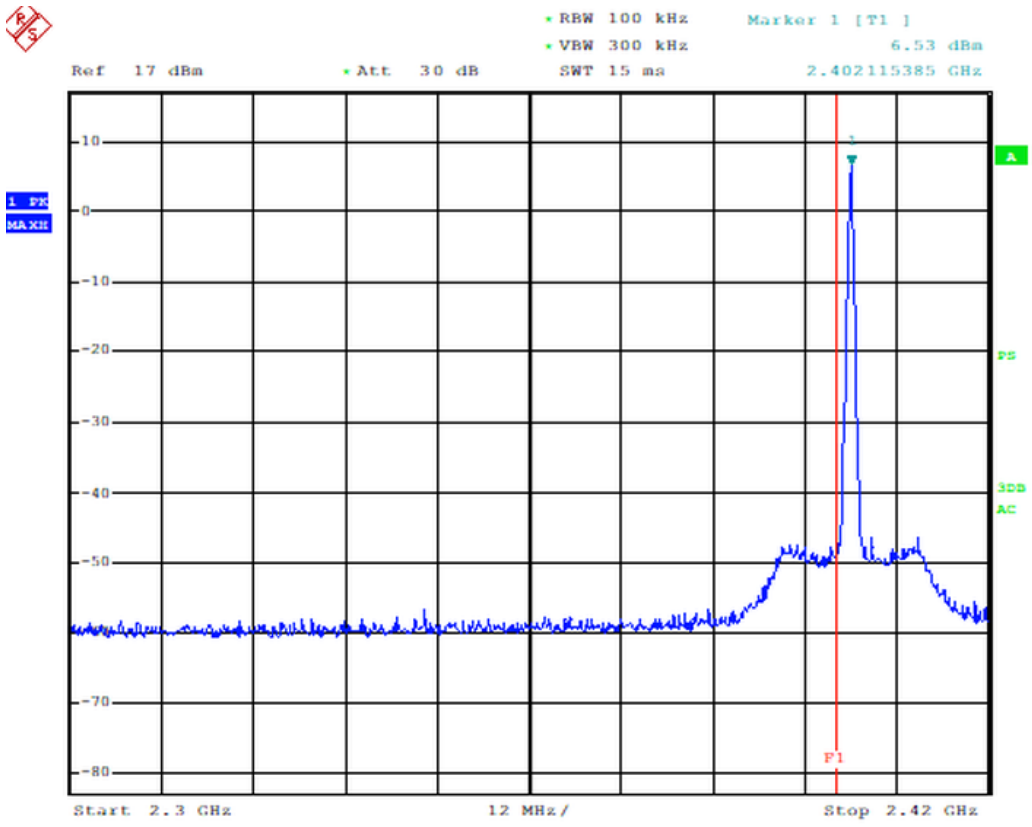
Frequency range: 10GHz – 18GHz	Frequency range: 18GHz – 26GHz
	

Frequency (MHz)	Measured power (dBm)	Fundamental Level (dBm)	Difference Peak / Spurious (dB)	Peak Limit at PK power –20dB (dBm)	Margin	Result
827,45	-42,93	2,72	45,65	-17,28	25,65	PASS
3302,88	-38,99		41,71		21,71	
4963,14	-38,50		41,22		21,22	

Band Edge	
Test date	04/04/2022
Applied Standard	Title 47 Part 15 Subpart C §15.247
Test method	According to Par. 8.7.2 (Marker-Delta method) of KDB 558074 D01 15.247 Meas Guidance v05r02 (and par. 6.10.4 of ANSI C63.10)
Temperature	23,1°
Humidity	54%
Tested by	Francesco Lombardi
Model	MP350
Internal Storage No.	1 (Storage no. A003216149-003)
Operating mode	1, 3, 4
Tested terminals	Antenna connector
Result	PASS

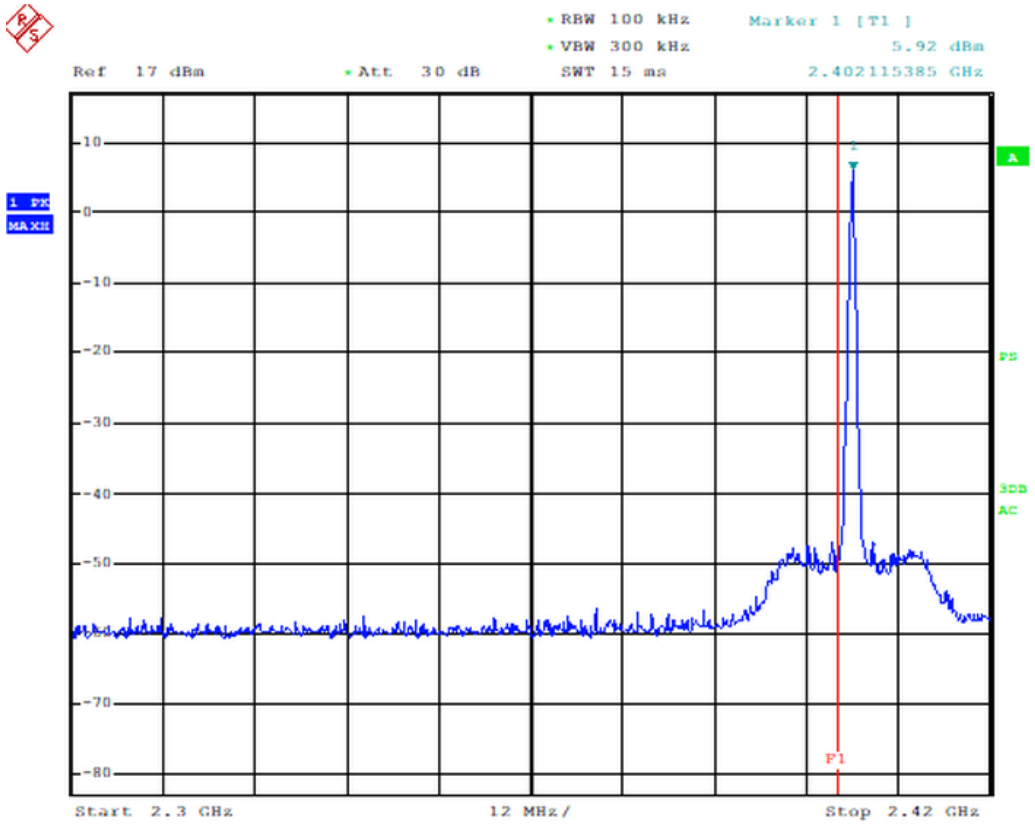
(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains 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)).

Graphical presentation of Lower Band-Edge
Operation mode: 1 (Channel 0 – Frequency 2402)
Data rate: 1M_DH1_1010



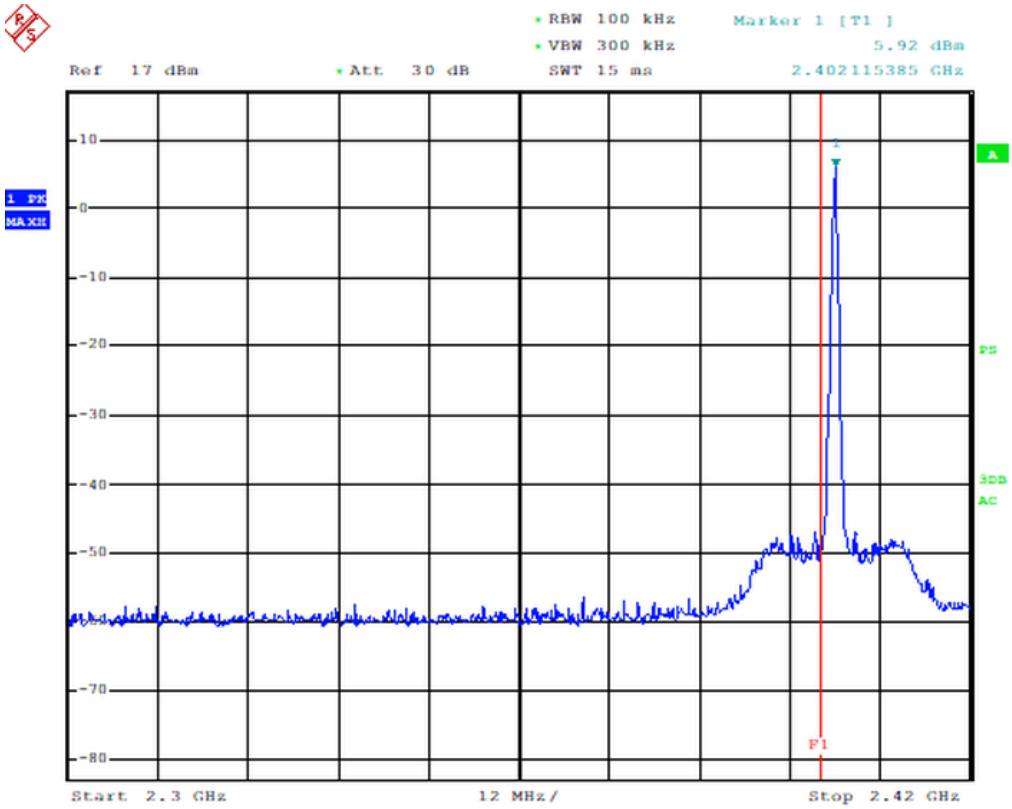
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,92	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 1 (Channel 0 – Frequency 2402)
Data rate: 1M_DH3_1010



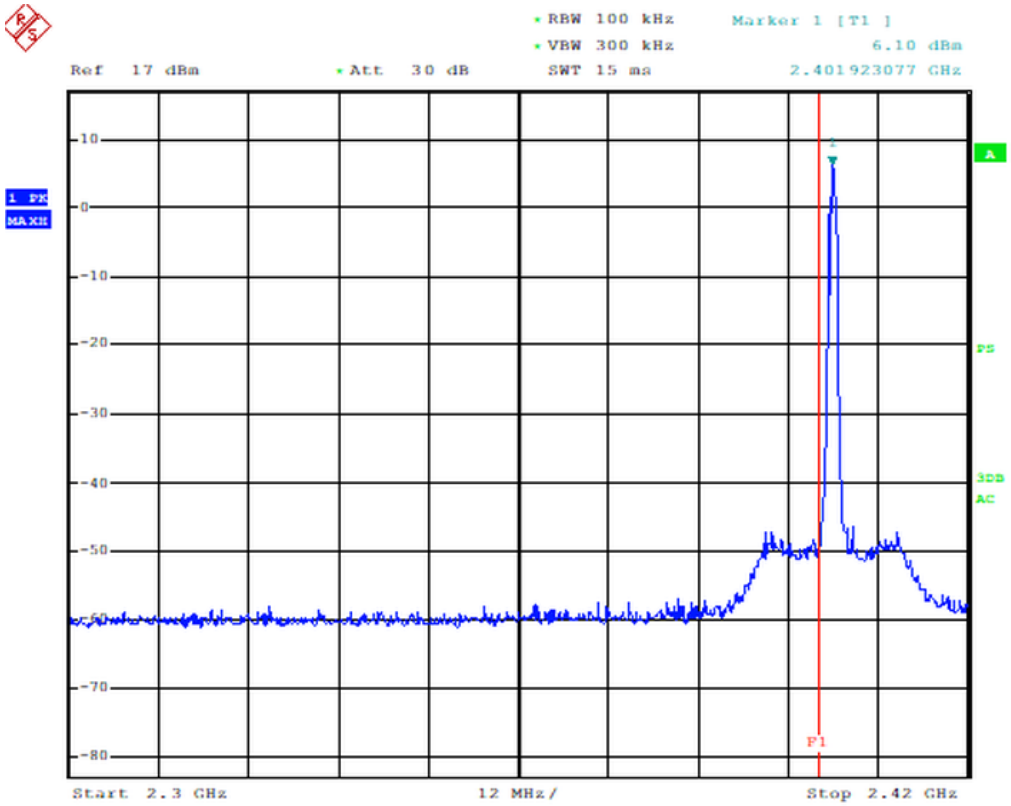
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,92	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 1 (Channel 0 – Frequency 2402)
Data rate: 1M_DH5_1010



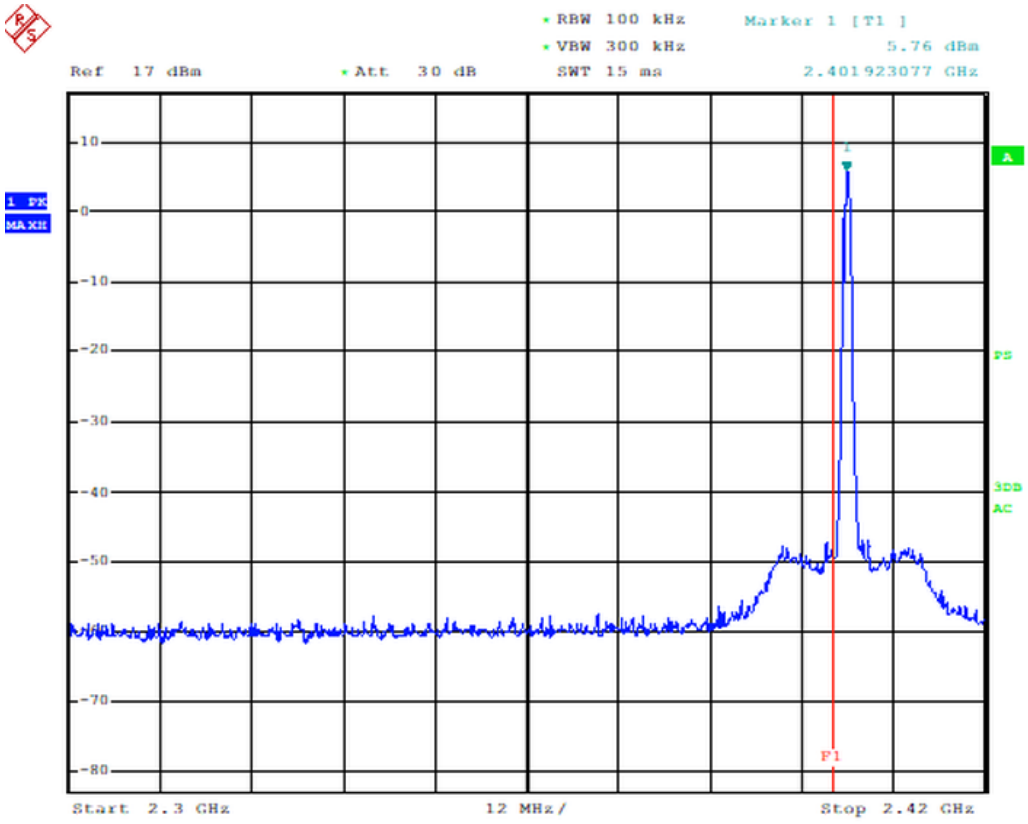
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,92	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 1 (Channel 0 – Frequency 2402)
Data rate: 2M_DH1_1010



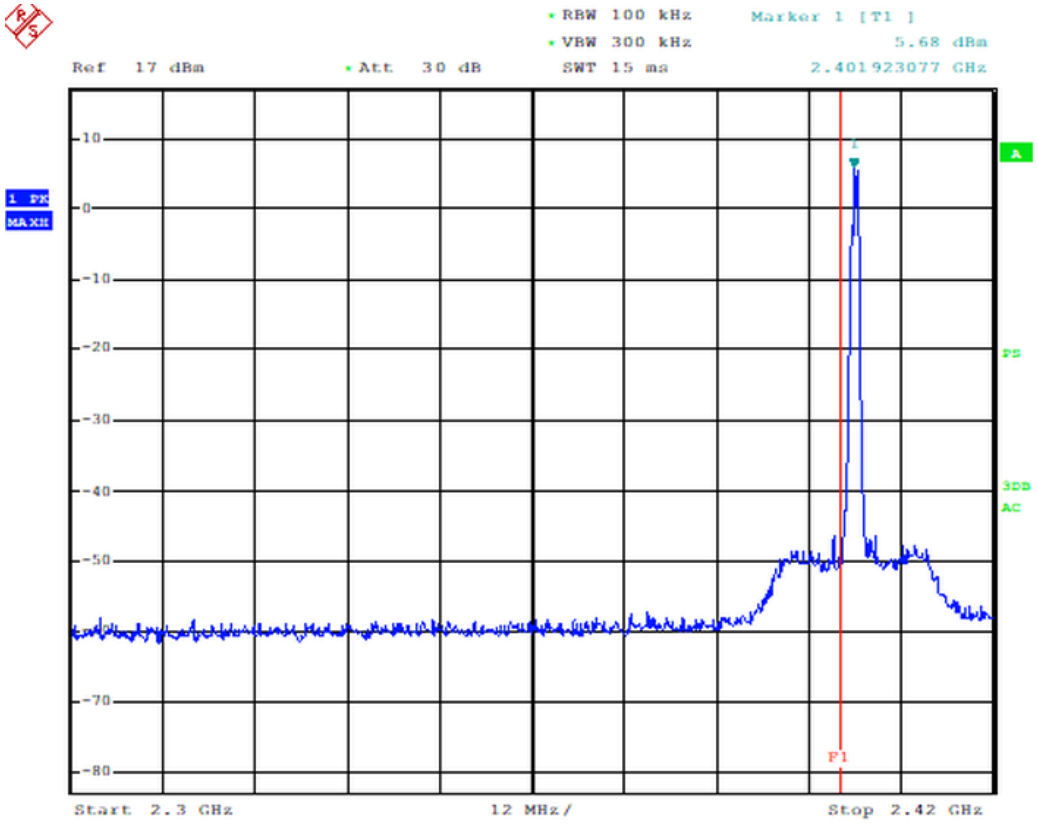
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	6,10	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 1 (Channel 0 – Frequency 2402)
Data rate: 2M_DH3_1010



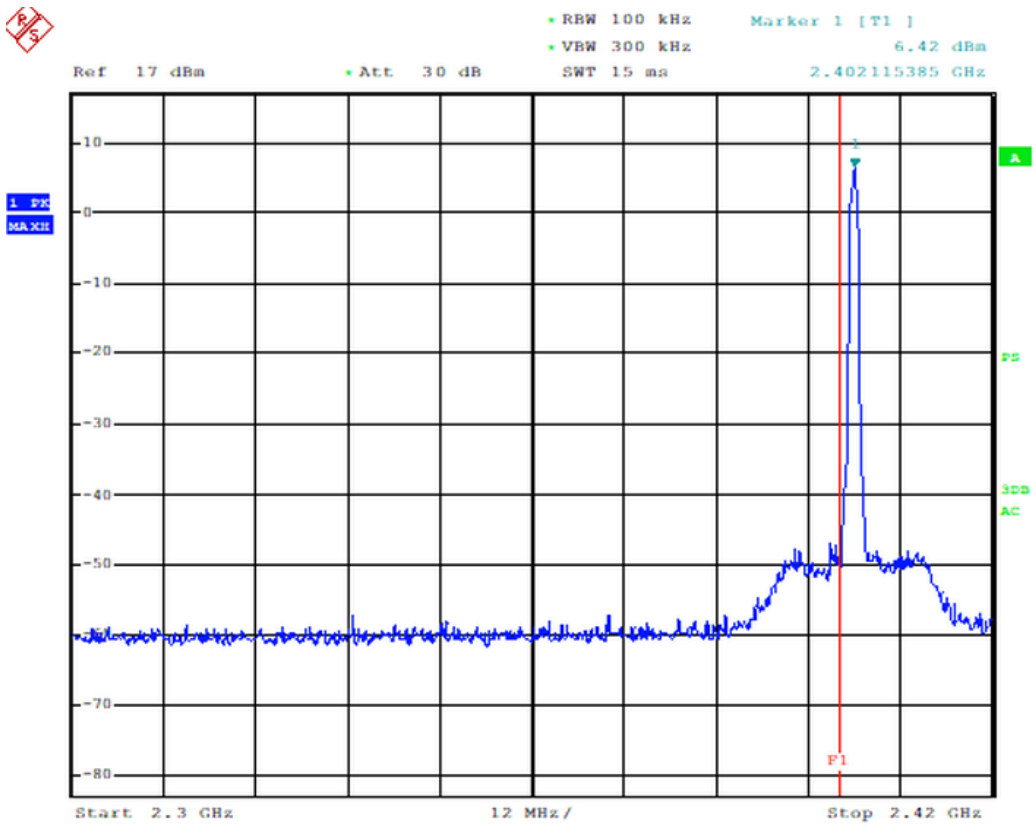
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,76	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 1 (Channel 0 – Frequency 2402)
Data rate: 2M_DH5_1010



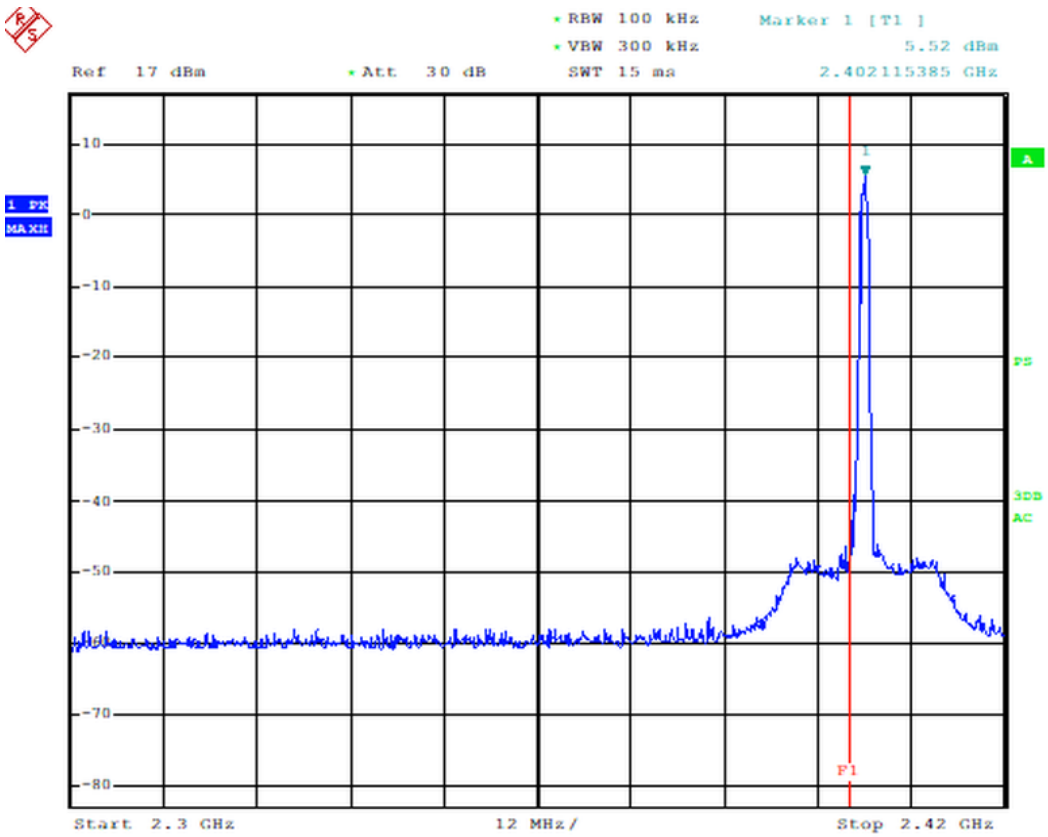
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,68	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 1 (Channel 0 – Frequency 2402)
Data rate: 3M_DH1_1010



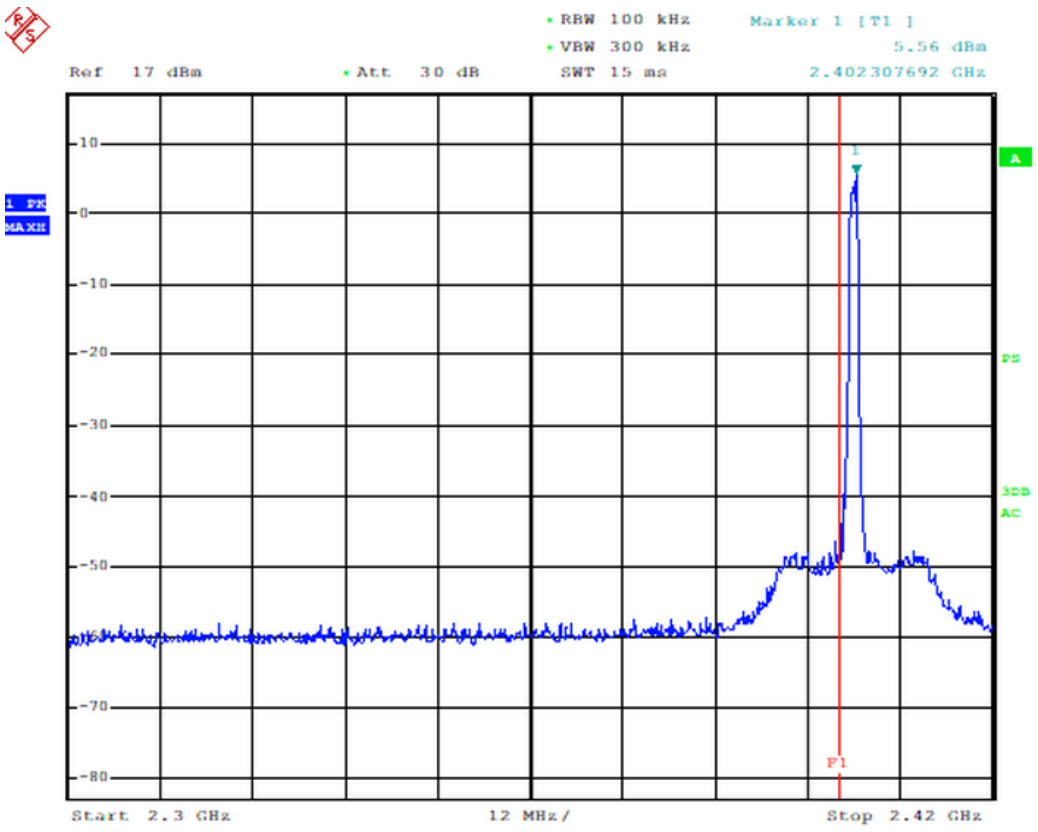
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	6,42	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 1 (Channel 0 – Frequency 2402)
Data rate: 3M_DH3_1010



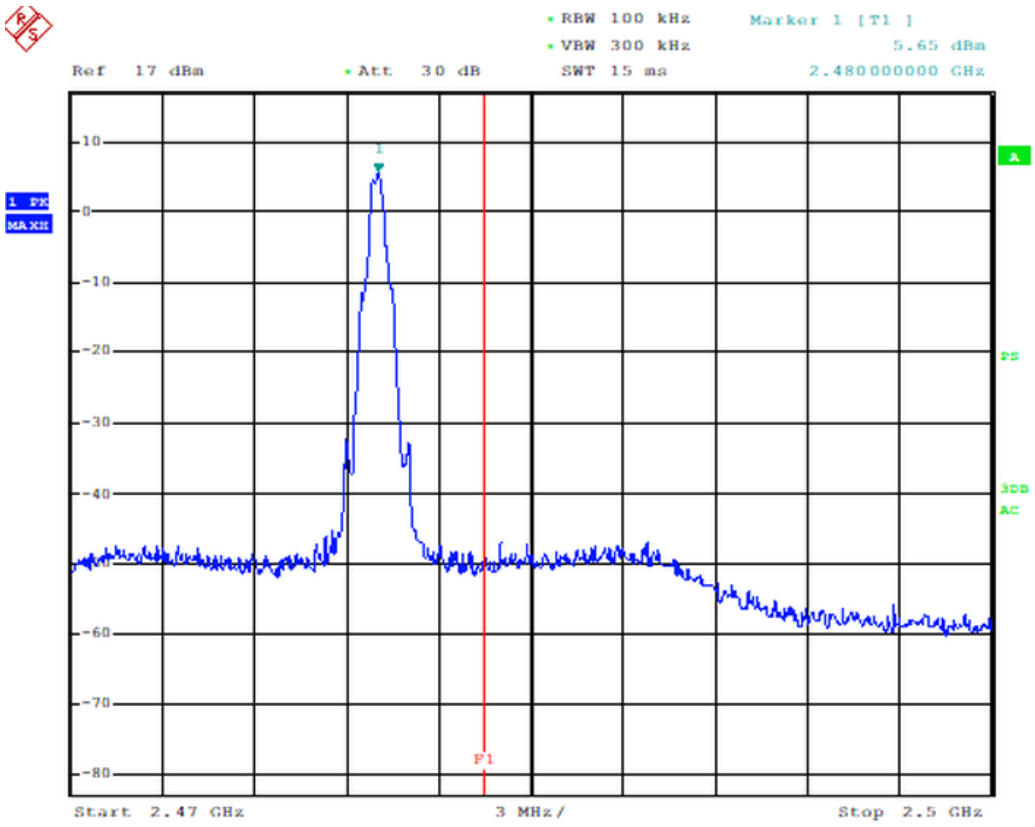
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,52	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 1 (Channel 0 – Frequency 2402)
Data rate: 3M_DH5_1010



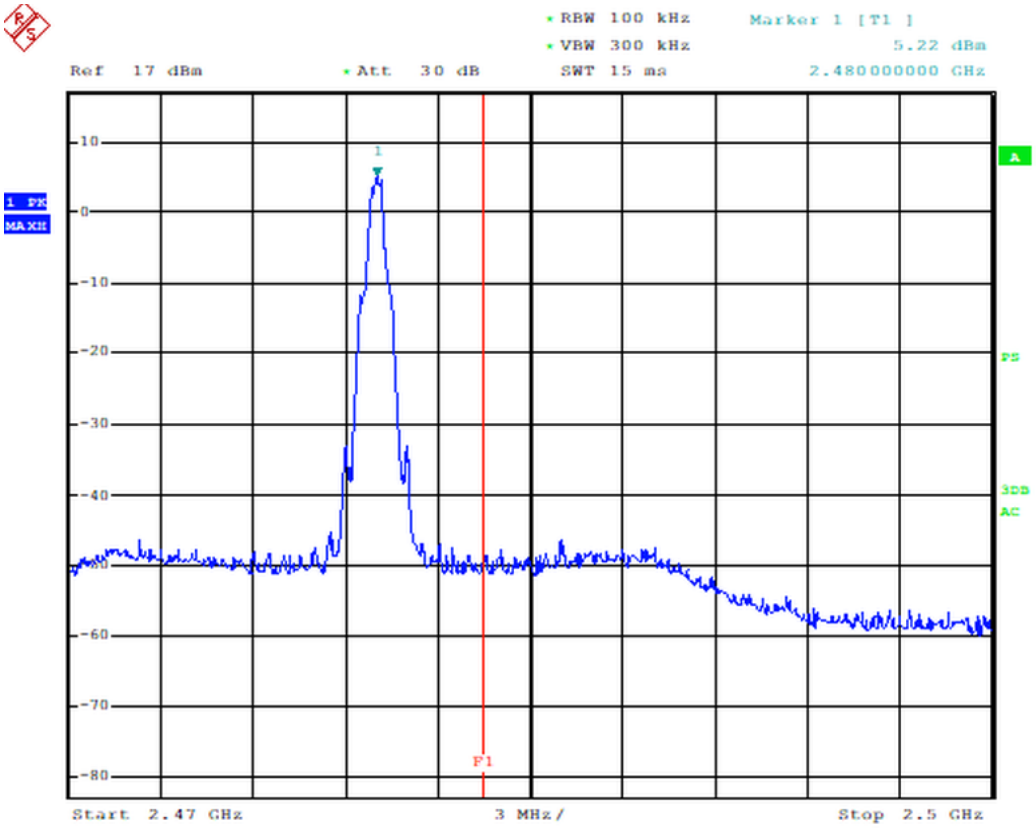
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,56	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 3 (Channel 78 – Frequency 2480)
Data rate: 1M_DH1_1010



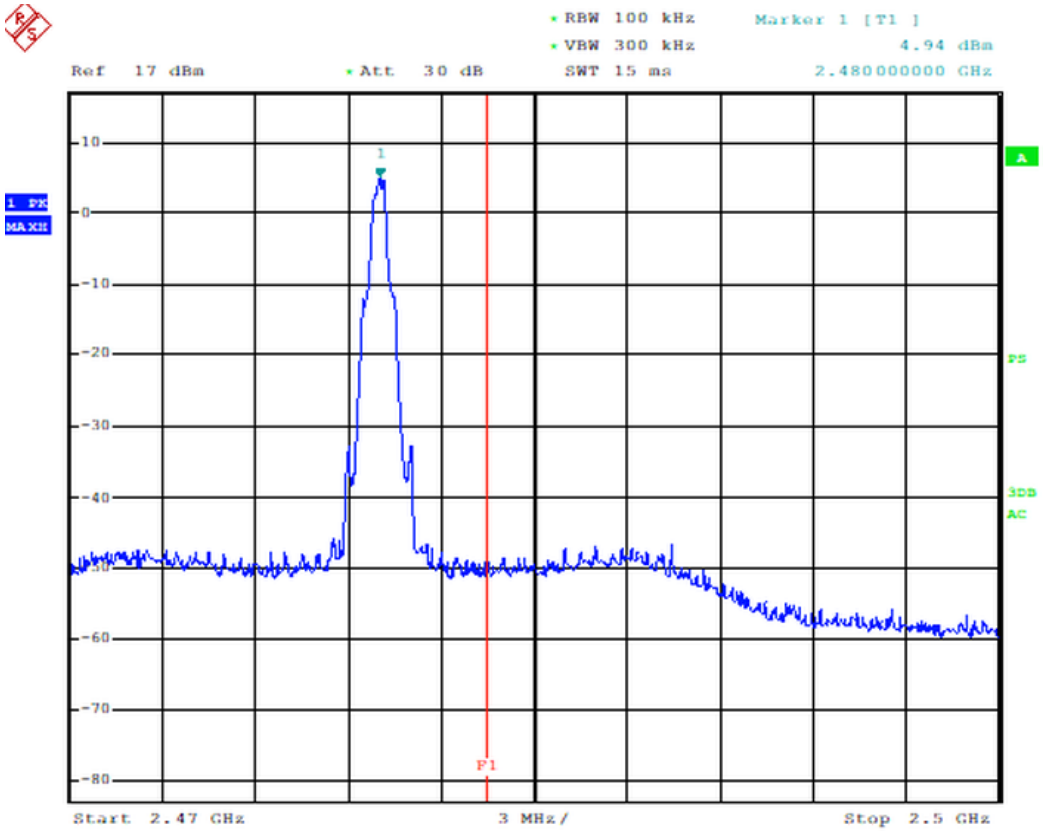
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2483,50	5,65	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 3 (Channel 78 – Frequency 2480)
Data rate: 1M_DH3_1010



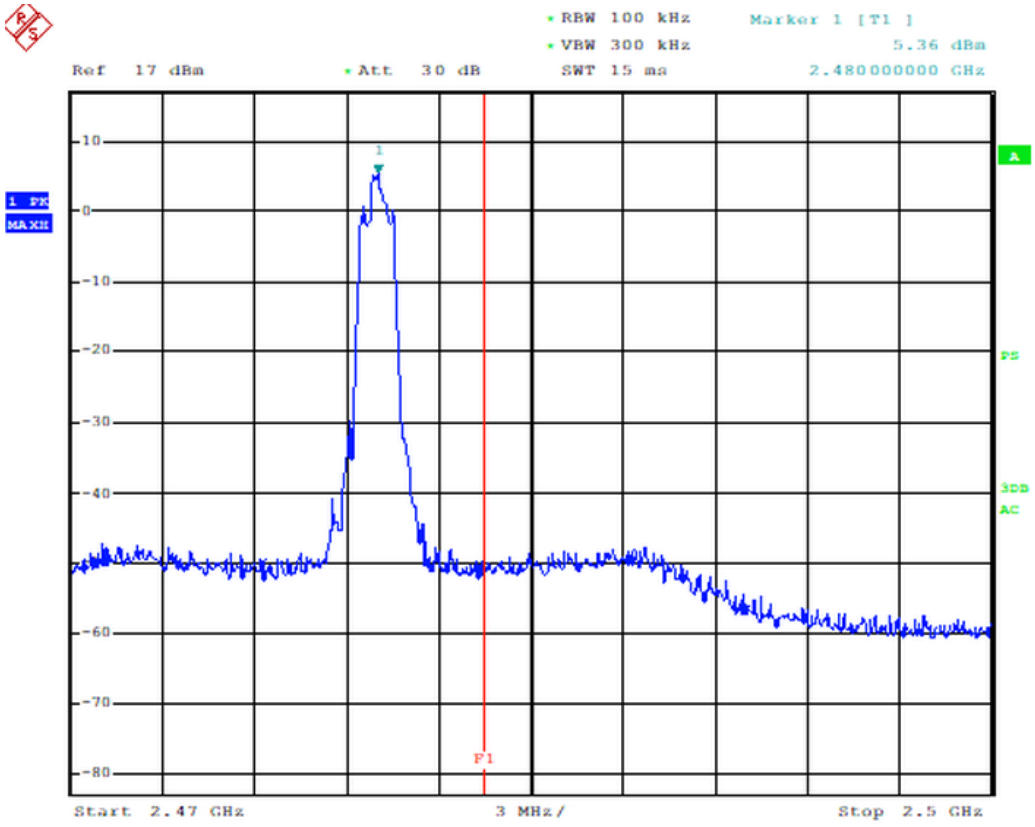
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2483,50	5,22	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 3 (Channel 78 – Frequency 2480)
Data rate: 1M_DH5_1010



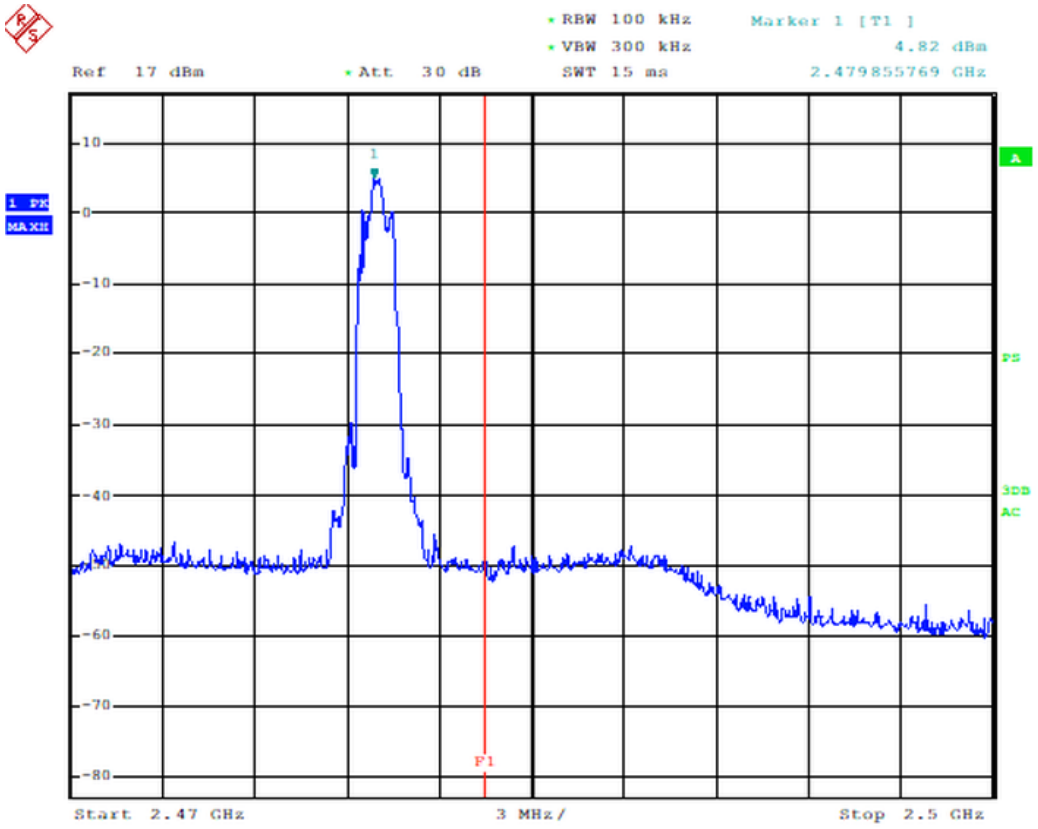
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2483,50	4,94	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 3 (Channel 78 – Frequency 2480)
Data rate: 2M_DH1_1010



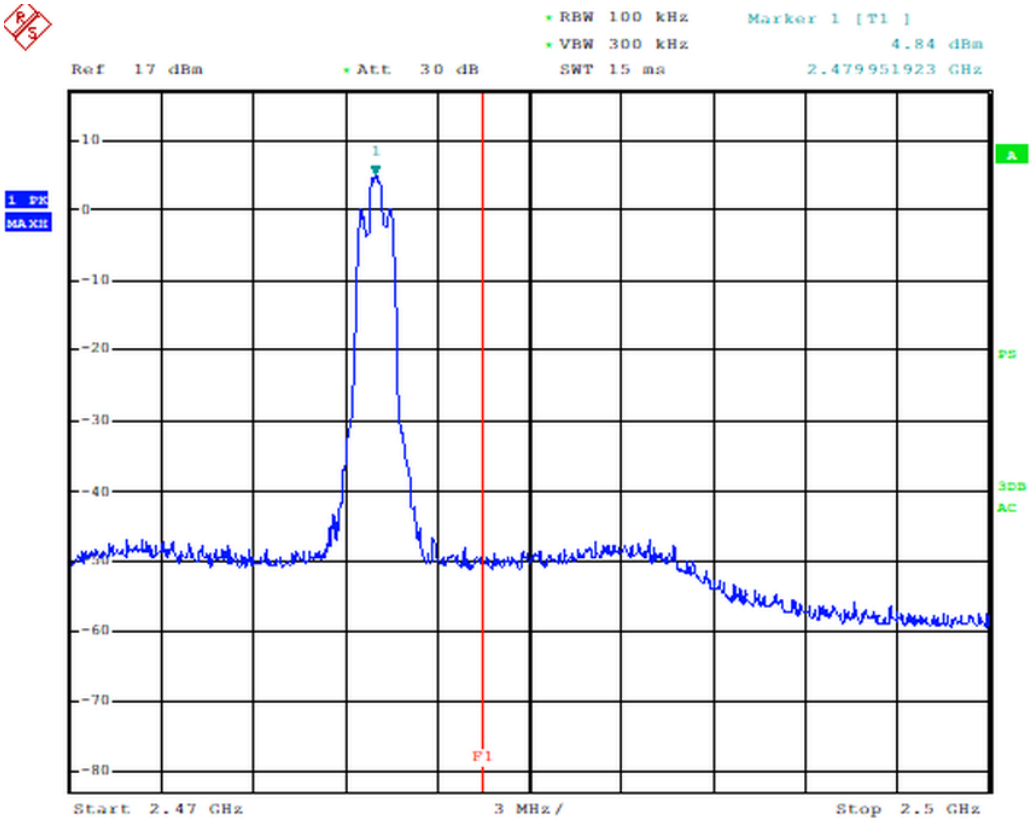
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2483,50	5,36	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 3 (Channel 78 – Frequency 2480)
Data rate: 2M_DH3_1010



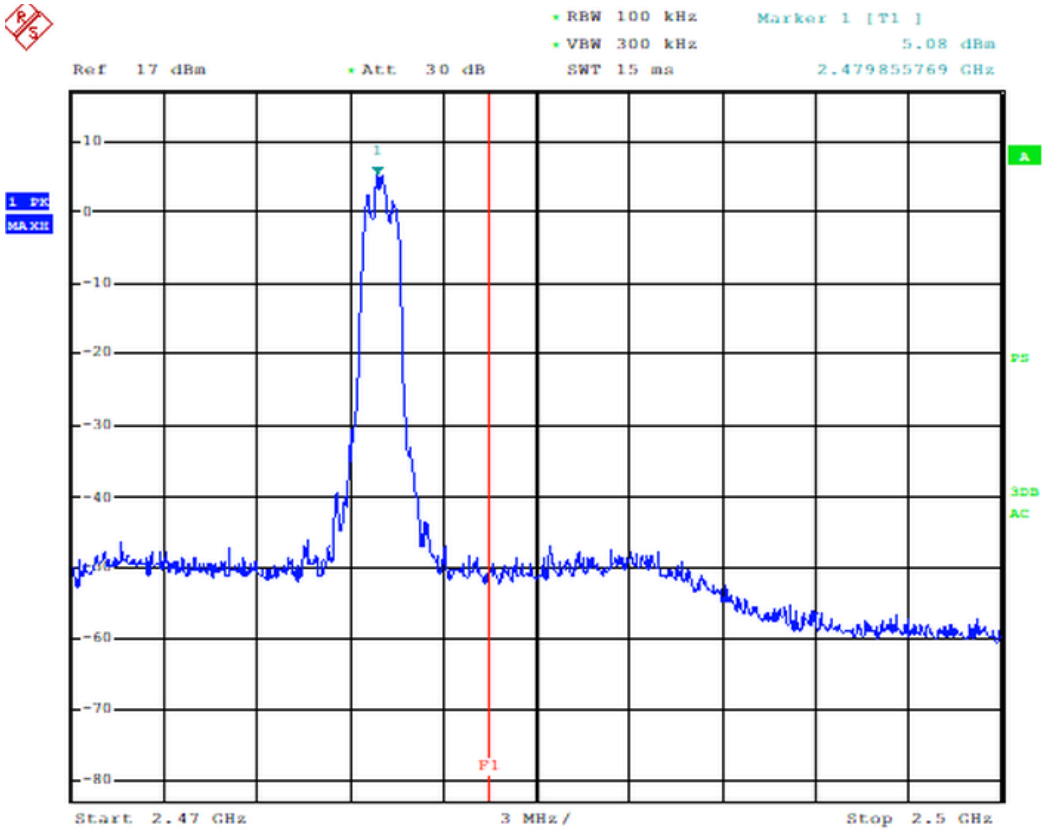
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2483,50	4,82	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 3 (Channel 78 – Frequency 2480)
Data rate: 2M_DH5_1010



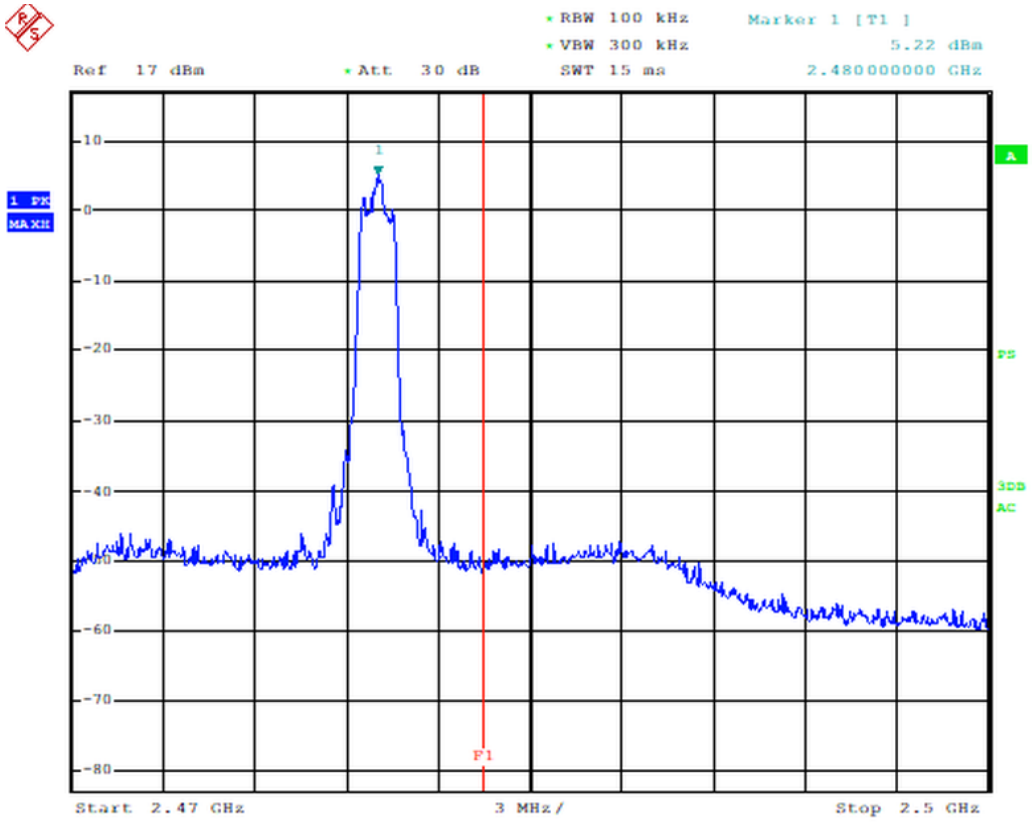
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2483,50	4,84	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 3 (Channel 78 – Frequency 2480)
Data rate: 3M_DH1_1010



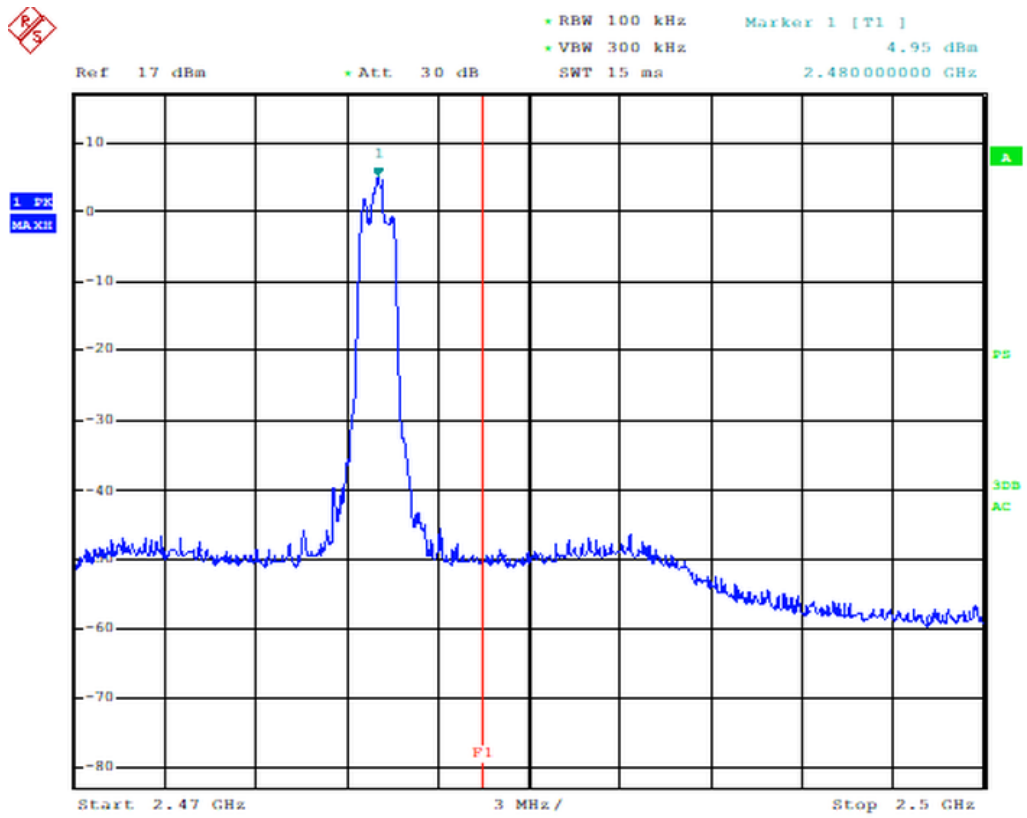
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2483,50	5,08	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 3 (Channel 78 – Frequency 2480)
Data rate: 3M_DH3_1010



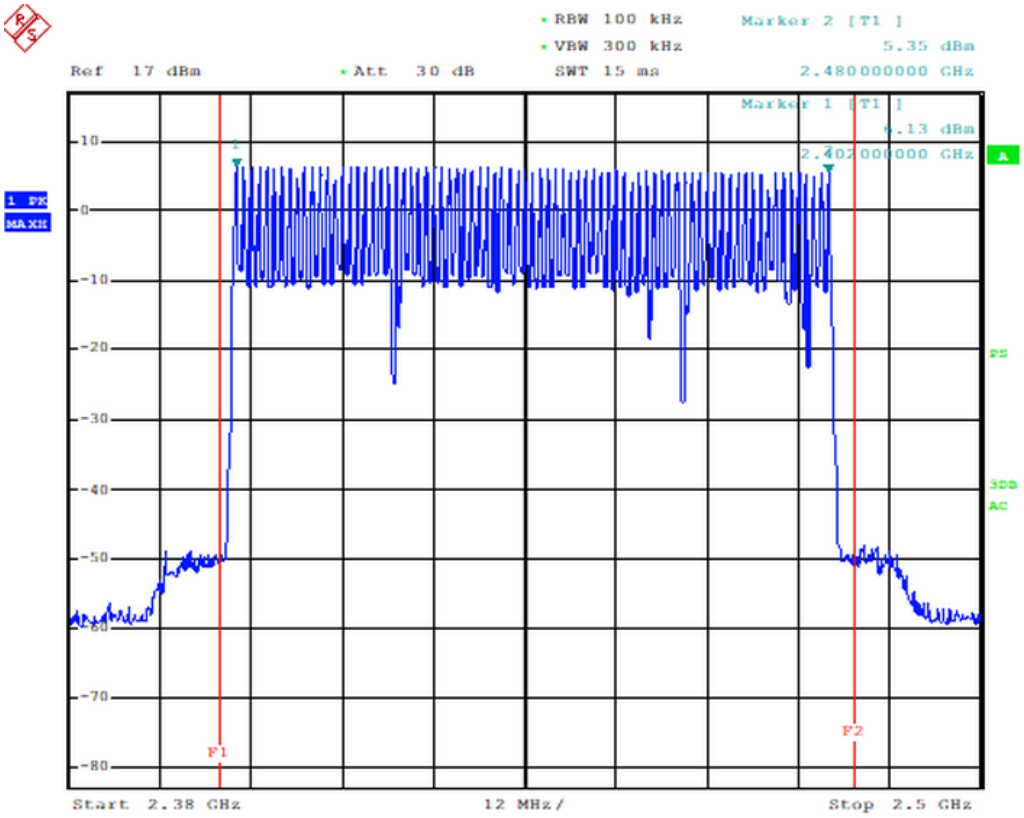
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2483,50	5,22	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 3 (Channel 78 – Frequency 2480)
Data rate: 3M_DH5_1010



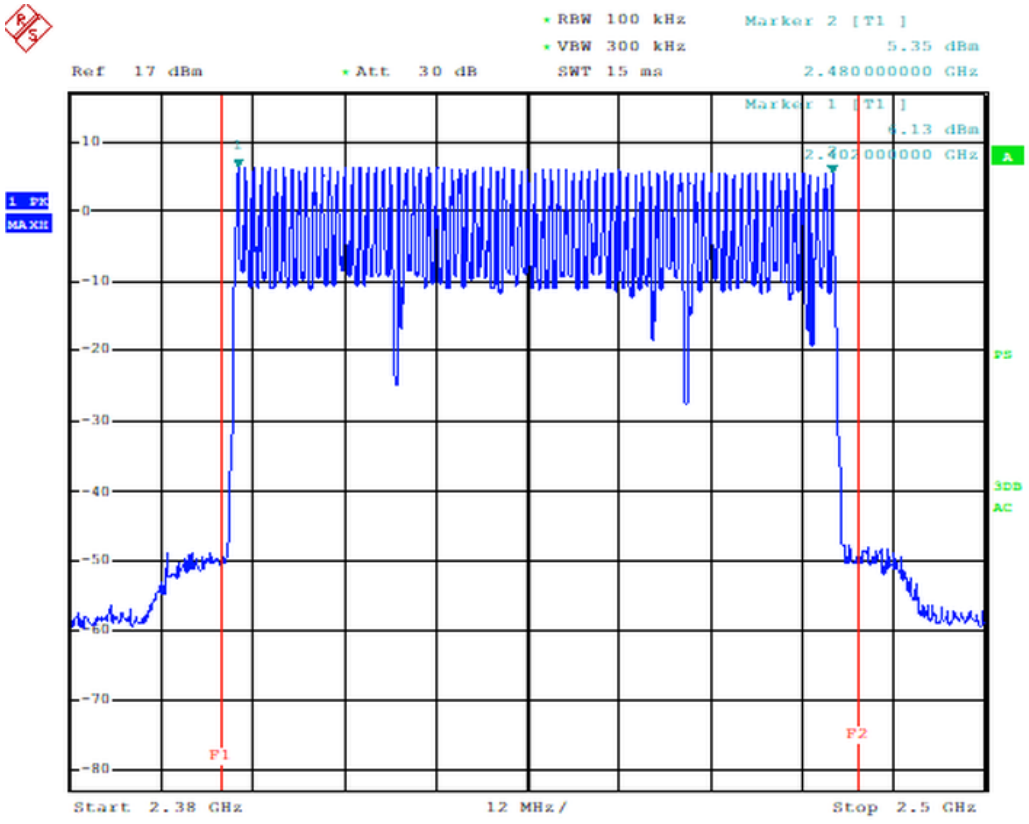
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2483,50	4,95	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 4 (Frequency Hopping mode)
Data rate: 1M_DH1_1010



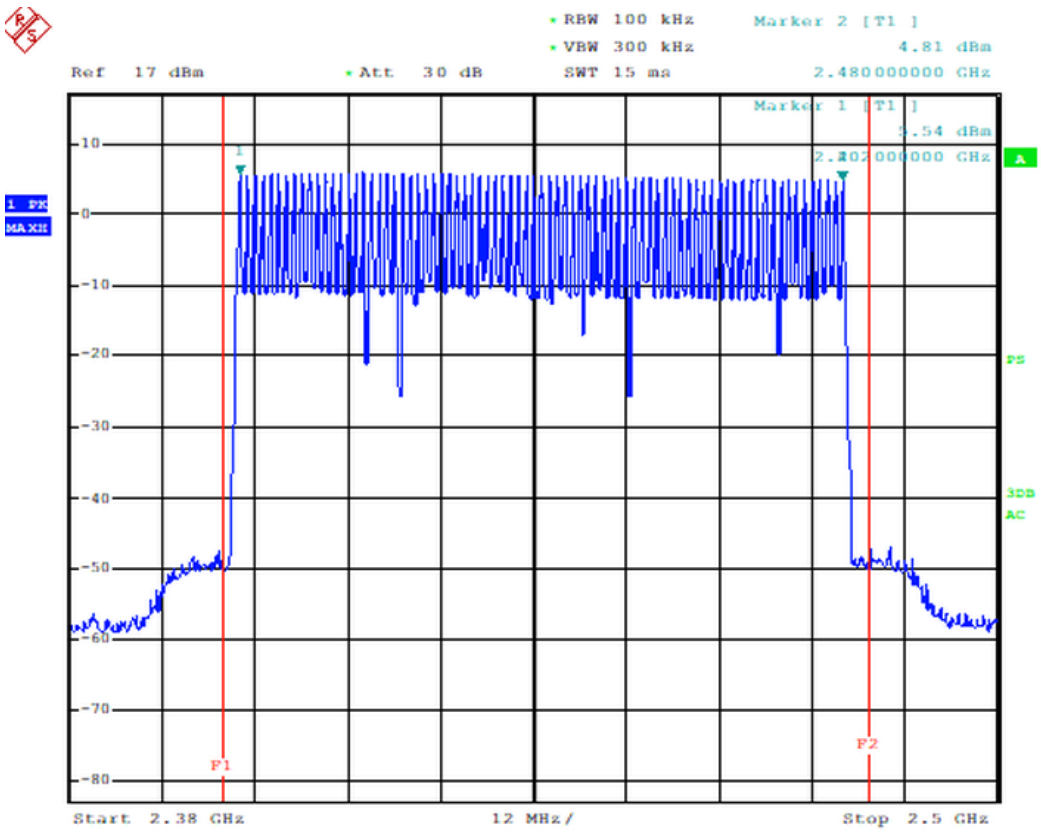
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	6,13	> 40	PASS
2483,50	5,35	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 4 (Frequency Hopping mode)
Data rate: 1M_DH3_1010



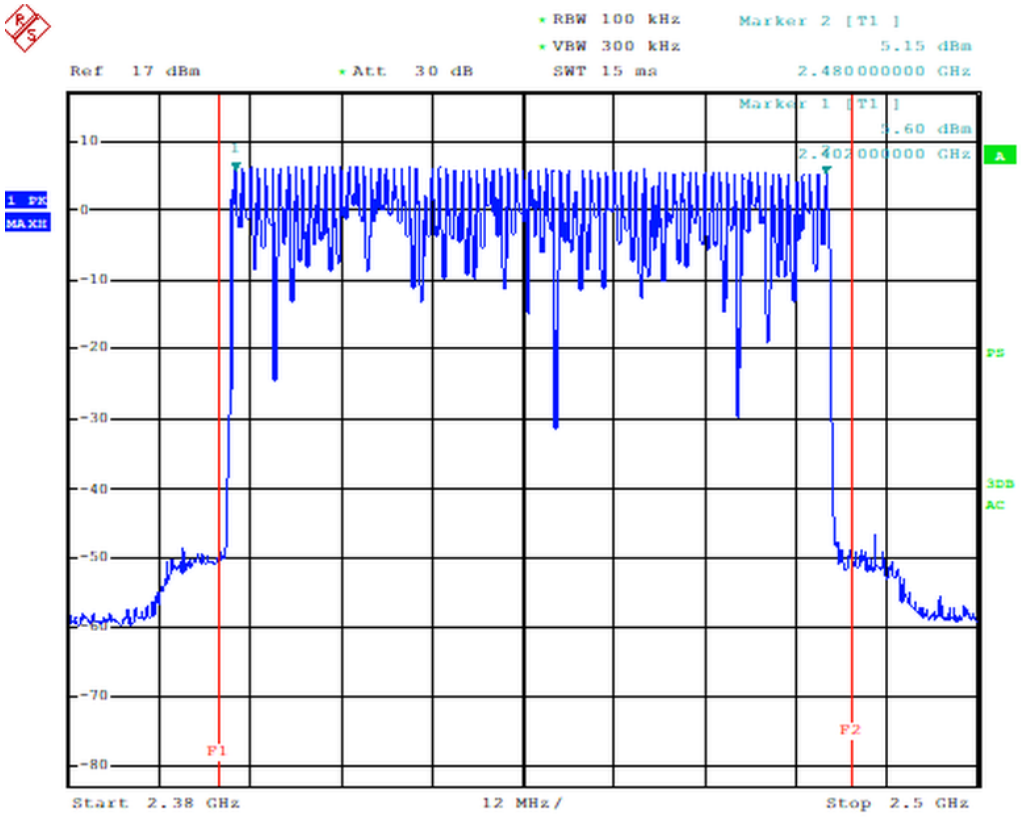
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	6,13	> 40	PASS
2483,50	5,35	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 4 (Frequency Hopping mode)
Data rate: 1M_DH5_1010



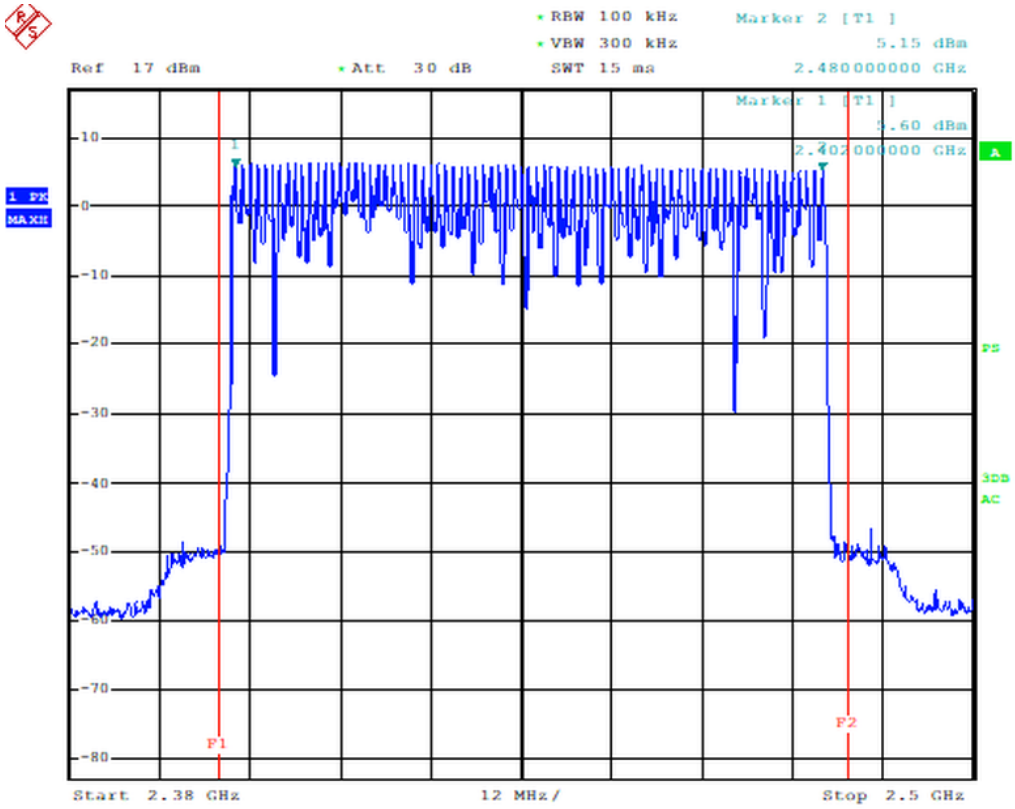
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,54	> 40	PASS
2483,50	4,81	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 4 (Frequency Hopping mode)
Data rate: 2M_DH1_1010



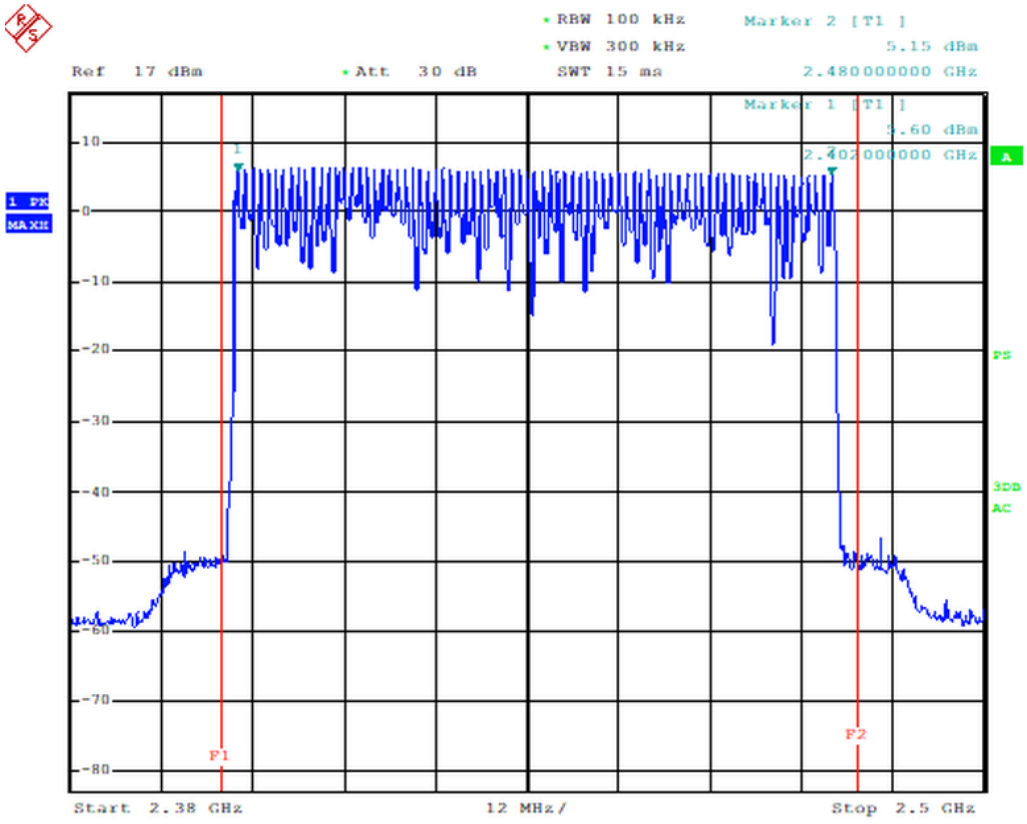
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,15	> 40	PASS
2483,50	5,60	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 4 (Frequency Hopping mode)
Data rate: 2M_DH3_1010



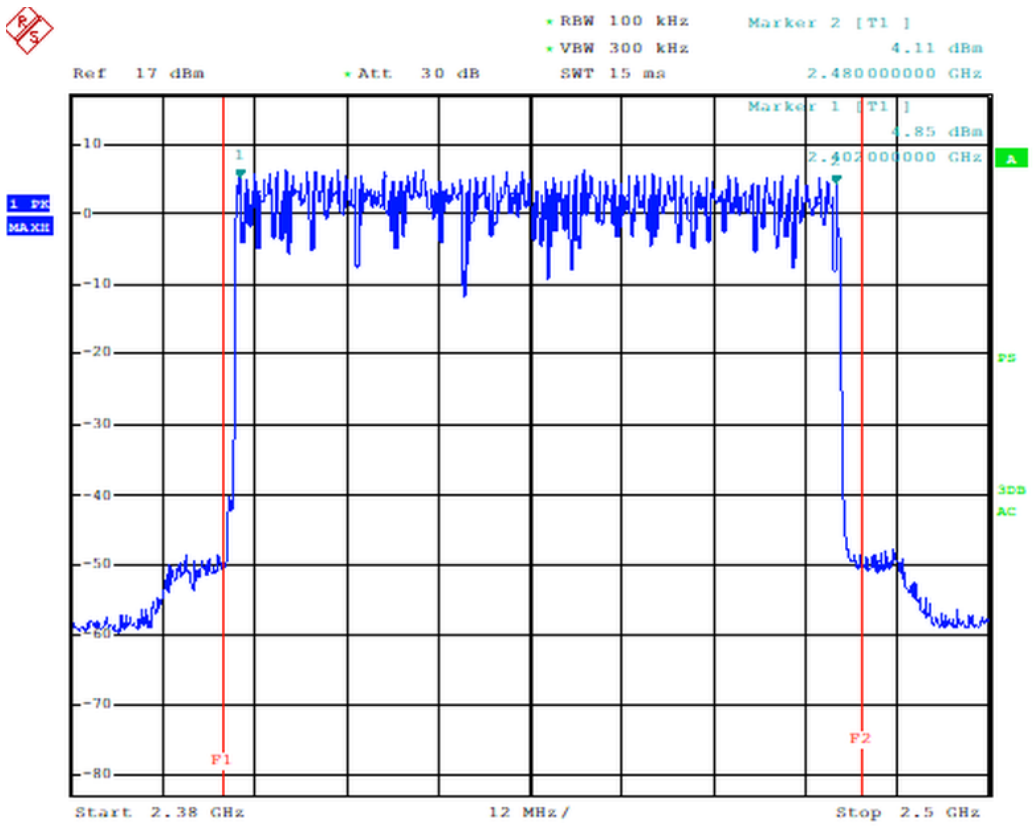
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,15	> 40	PASS
2483,50	5,60	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 4 (Frequency Hopping mode)
Data rate: 2M_DH5_1010



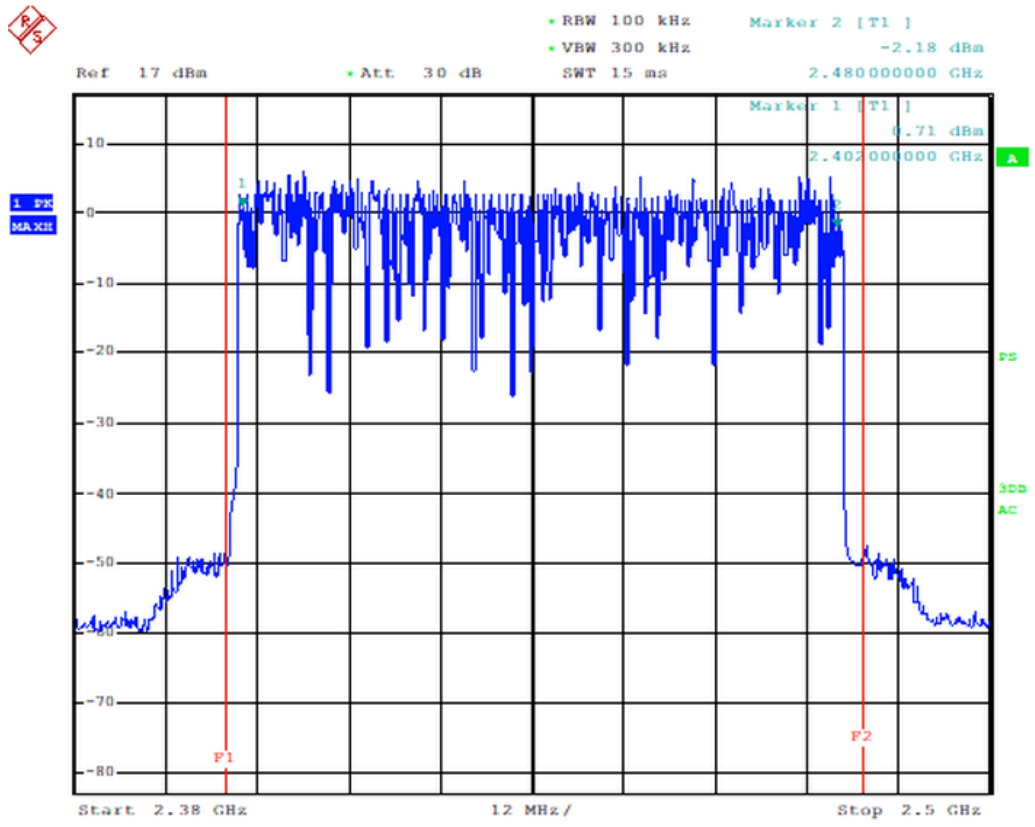
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	5,15	> 40	PASS
2483,50	5,60	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 4 (Frequency Hopping mode)
Data rate: 3M_DH1_1010



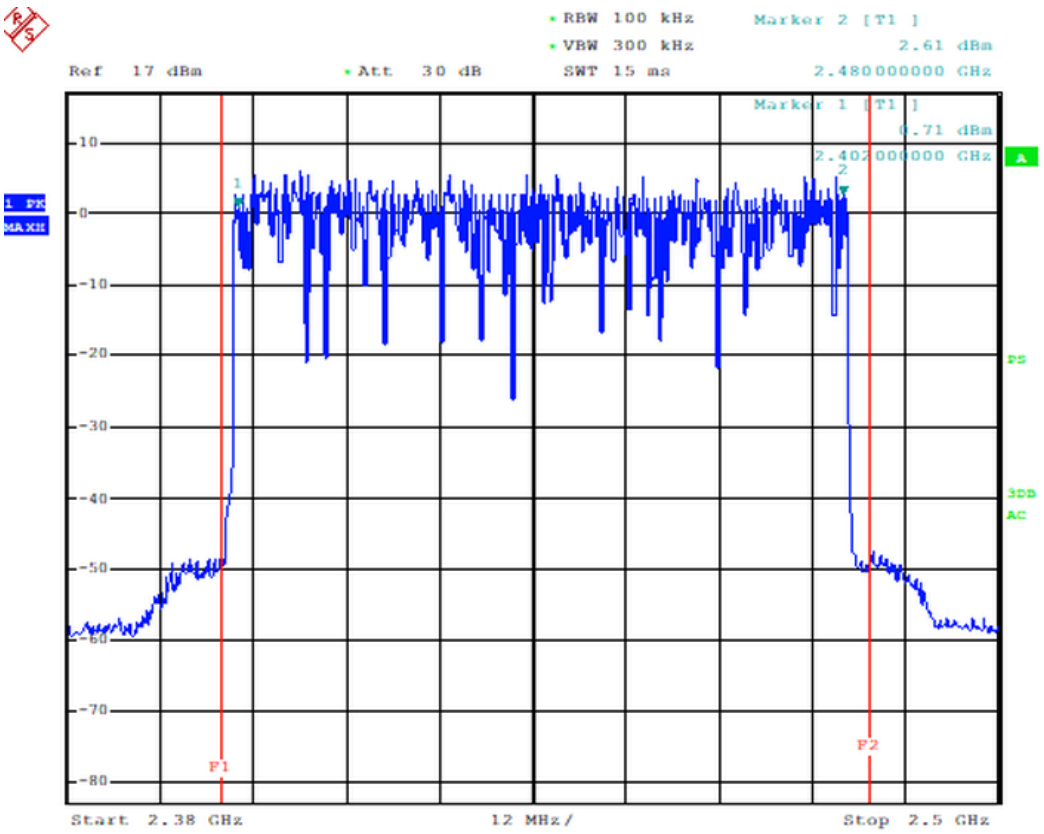
Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	4,85	> 40	PASS
2483,50	4,11	> 40	PASS

Graphical presentation of Lower Band-Edge
Operation mode: 4 (Frequency Hopping mode)
Data rate: 3M_DH3_1010



Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	0,71	> 40	PASS
2483,50	-2,18	> 40	PASS

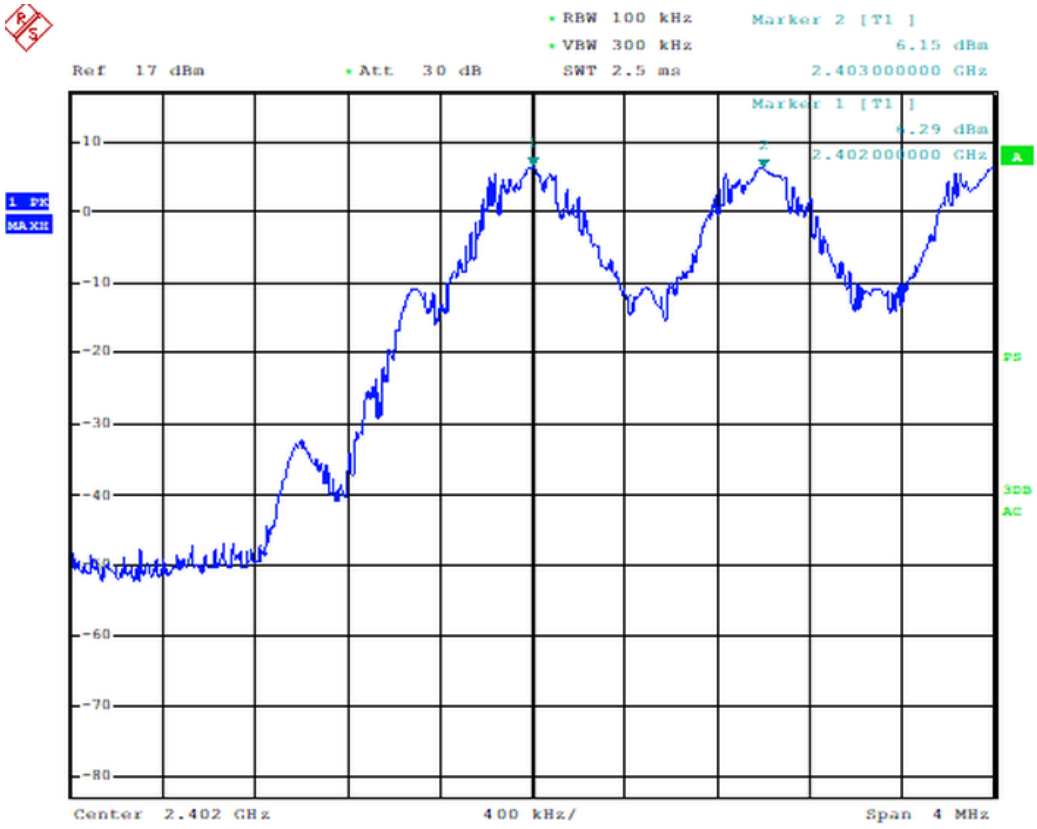
Graphical presentation of Lower Band-Edge
Operation mode: 4 (Frequency Hopping mode)
Data rate: 3M_DH5_1010



Frequency (MHz)	Measured peak power at fundamental frequency (dBm)	Difference Peak / band edge (dBm)	Result
2400,00	0,71	> 40	PASS
2483,50	2,61	> 40	PASS

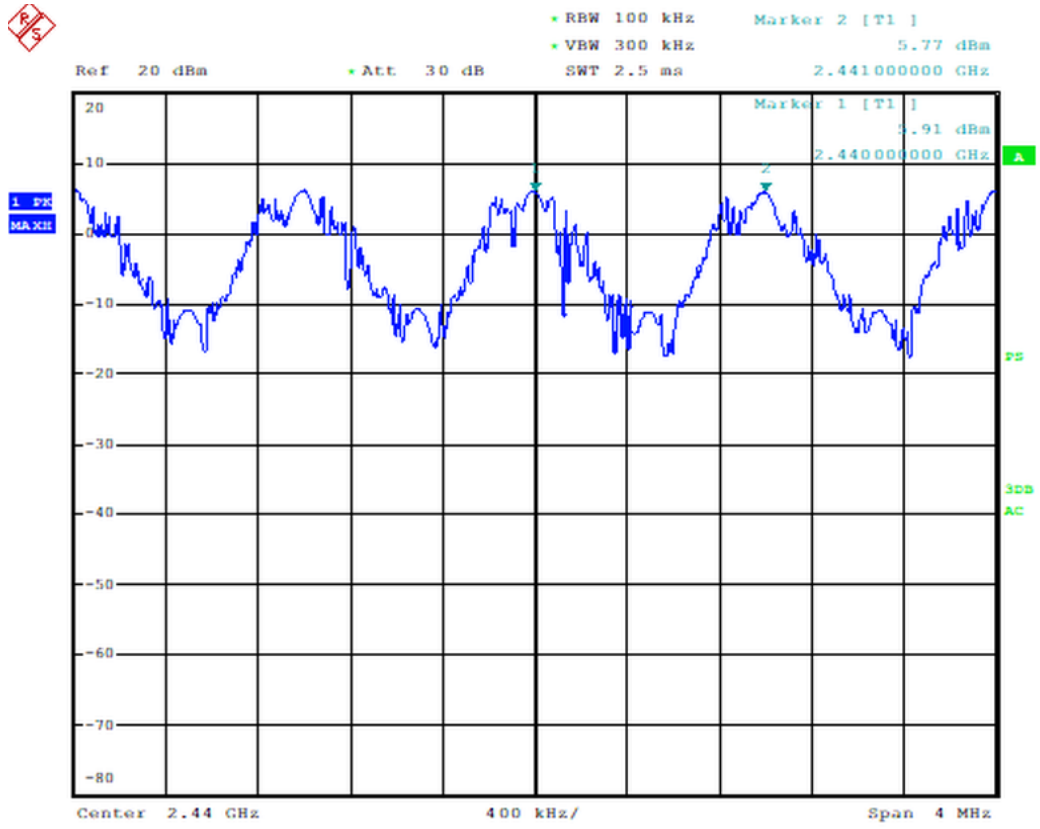
Carrier frequency (Hopping Channel) Separation	
Test date	04/04/2022
Applied Standard	Title 47 Part 15 Subpart C §15.247
Test method	According to Par. 9 of KDB 558074 D01 15.247 Meas Guidance v05r02 (and par. 7.8.2 of ANSI C63.10)
Temperature	23,1°
Humidity	54%
Tested by	Francesco Lombardi
Model	MP350
Internal Storage No.	1 (Storage no. A003216149-003)
Operating mode	4
Tested terminals	Antenna connector
Result	PASS
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 pseudo randomly 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.	

Graphical presentation of carrier frequency separation
Operation mode: 4
Data rate: 2M_DH1_1010 (worst case)



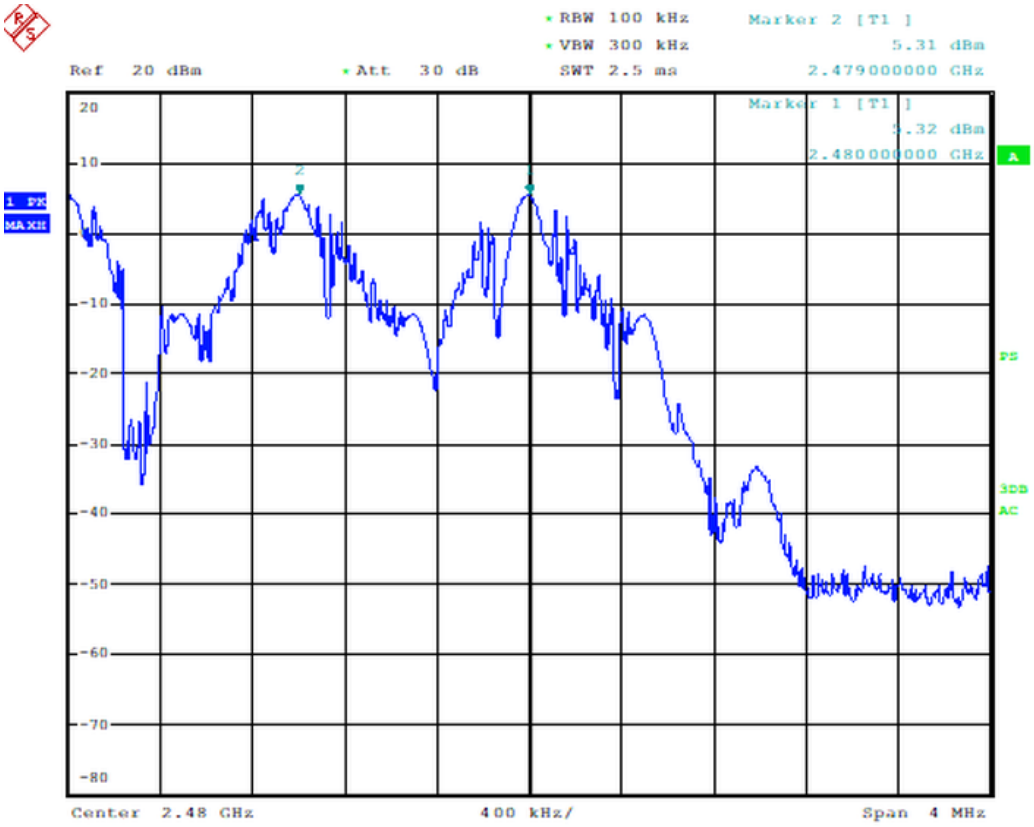
Channel (No.)	Carrier frequency separation (kHz)	Limit (kHz)	Result
1-2 (Low)	1000	≥25kHz	PASS

Graphical presentation of carrier frequency separation
Operation mode: 4
Data rate: 2M_DH1_1010 (worst case)



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

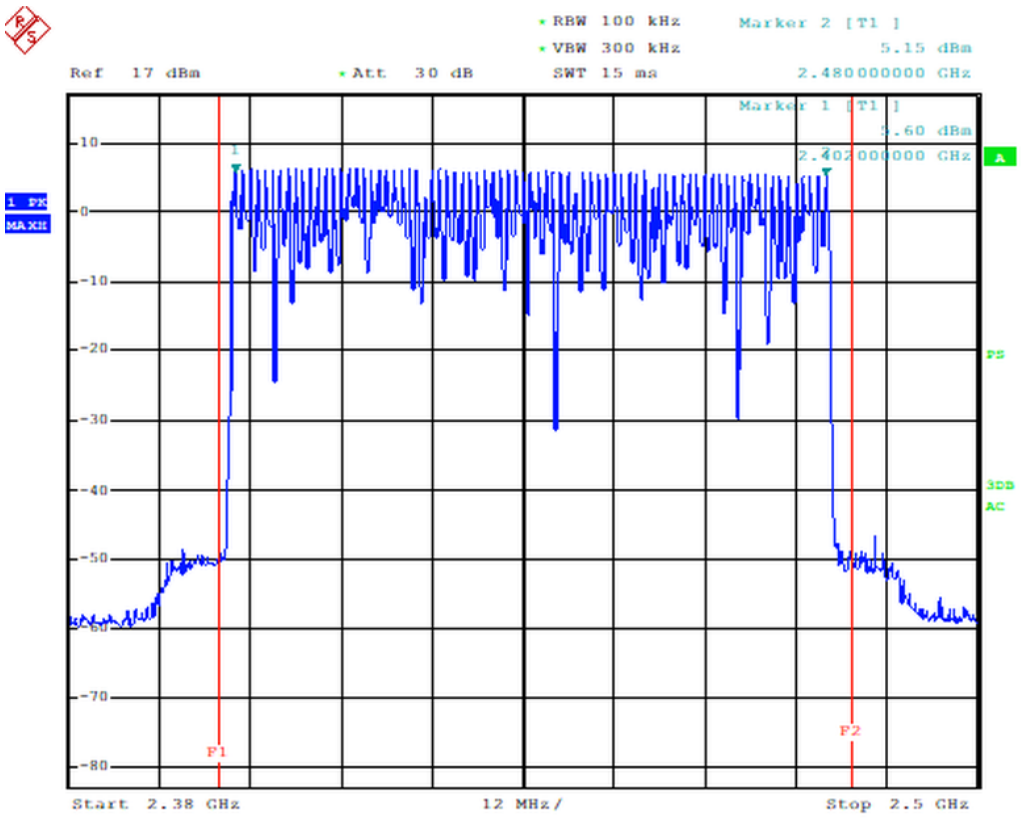
Graphical presentation of carrier frequency separation
Operation mode: 4
Data rate: 2M_DH1_1010 (worst case)



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

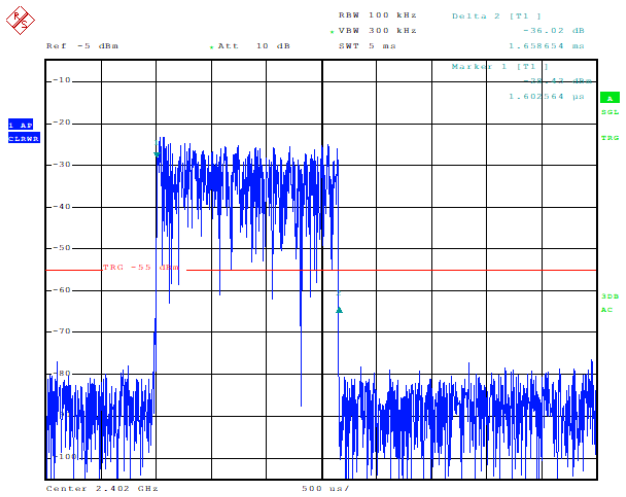
Number of Hopping frequencies	
Test date	04/04/2022
Applied Standard	Title 47 Part 15 Subpart C §15.247
Test method	According to Par. 9 of KDB 558074 D01 15.247 Meas Guidance v05r02 (and par. 7.8.3 of ANSI C63.10)
Temperature	23,1°
Humidity	54%
Tested by	Francesco Lombardi
Model	MP350
Internal Storage No.	1 (Storage no. A003216149-003)
Operating mode	4
Tested terminals	Antenna connector
Result	PASS
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.	

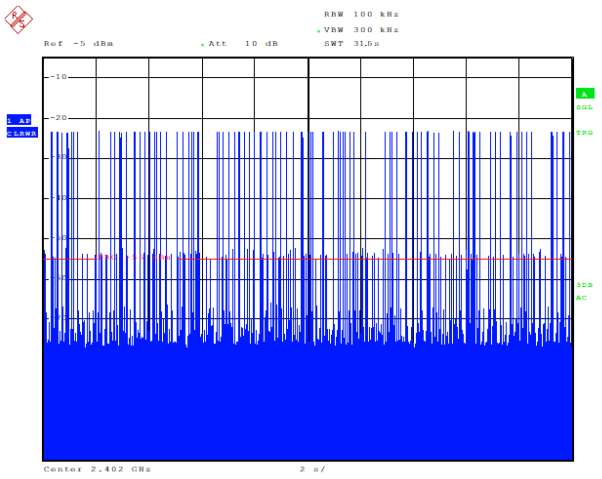
Graphical presentation of Number of hopping frequencies
Operation mode: 4 (Frequency Hopping mode)
Data rate: 2M_DH1_1010 (worst case)
Number of Hopping Frequencies: 79



Time of occupancy (dwell time)	
Test date	04/04/2022
Applied Standard	Title 47 Part 15 Subpart C §15.247
Test method	According to Par. 9 of KDB 558074 D01 15.247 Meas Guidance v05r02 (and par. 7.8.4 of ANSI C63.10)
Temperature	23,1°
Humidity	54%
Tested by	Francesco Lombardi
Model	MP350
Internal Storage No.	1 (Storage no. A003216149-003)
Operating mode	4
Tested terminals	Antenna connector
Result	PASS
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.	

Graphical presentation of average time of occupancy
Operation mode: 4
Data rate: 2M_DH3_1010 (worst case)





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) in a period of 31,6s	Result
1,659	88	145,992	400	PASS

Additional provisions to the general radiated emission limitations	
Test date	31/03/2022
Applied Standard	Title 47 Part 15 Subpart C §15.215
Test method	---
Temperature	23,1°
Humidity	54%
Tested by	Francesco Lombardi
Model	MP350
Internal Storage No.	1 (Storage no. A003216149-003)
Operating mode	---
Tested terminals	Antenna connector
Result	PASS

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 the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.	VERDICT
	PASS

15. List of test equipment

Equipment	Type	Inventory no.	Manufacturer	Last calibration date	Calibration due date
Test stand: Radiated emissions (9KHz – 26GHz)					
Semi-anechoic Chamber	FACT3	2782378	ETS Lindgren	05/2020	05/2022
Loop Antenna	EMCO	6512	2782356	07/2020	07/2023
BiConiLog Antenna	3142-E	2782348	ETS Lindgren	05/2020	05/2023
Preamplified Horn Antenna	3117-PA	2782349	ETS Lindgren	08/2020	08/2023
Preamplified Horn Antenna	3160-09	2782350	ETS Lindgren	09/2020	09/2023
Highpass Filter	WHKX10-2520-2800-180	2782704	Wainwrigth Instruments	12/2021	12/2022
EMI Receiver	ESW44	2782867	Rohde&Schwarz	06/2021	06/2022
Software EMC32	10.60.15	---	Rohde&Schwarz	---	---
Test stand: Maximum Conducted Peak Output Power					
EMI Receiver	ESU40	2782345	Rohde&Schwarz	11/2021	11/2022
Test stand: 20db Bandwidth					
EMI Receiver	ESU40	2782345	Rohde&Schwarz	11/2021	11/2022
Test stand: Out-of-band emissions					
EMI Receiver	ESU40	2782345	Rohde&Schwarz	11/2021	11/2022
Test stand: Band Edge					
EMI Receiver	ESU40	2782345	Rohde&Schwarz	11/2021	11/2022
Test stand: Carrier frequency (Hopping Channel) Separation					
EMI Receiver	ESU40	2782345	Rohde&Schwarz	11/2021	11/2022
Test stand: Number of Hopping Channels Used					
EMI Receiver	ESU40	2782345	Rohde&Schwarz	11/2021	11/2022
Test stand: Time of occupancy (dwell time)					
EMI Receiver	ESU40	2782345	Rohde&Schwarz	11/2021	11/2022

--- END OF TEST REPORT ---