

ISED CABid: ES1909
Lab. Company Number: 4621A

Test report No:
86506RRF.001A3

Test Report

USA FCC Part 15.519, 15.521, 15.209
CANADA RSS-220, RSS-Gen

(*) Identification of item tested	Keyless Entry System
(*) Trademark	Bosch
(*) Model and /or type reference	PKAH3.1.C
(*) Derived model not tested	PKAH3.1.D
(*) Other identification of the product	FCC ID: 2AAJC-PKAH31Y IC: 24305-PKAH31Y
(*) Features	UWB HW version: 0323 SW version: 02.02.30
(*) Manufacturer	Robert Bosch GmbH Robert-Bosch-Platz 1, Gerlingen, 70839, Germany
Test method requested, standard	USA FCC Part 15.519 (10-1-25 Edition): Technical requirements for hand held UWB systems. USA FCC Part 15.521 (10-1-25 Edition): Technical requirements applicable to all UWB devices. USA FCC Part 15.209 (10-1-25 Edition): Radiated emission limits; general requirements. CANADA RSS-220 Issue 1, amendment 1 (July 2018). CANADA RSS-Gen Issue 5, amendment 2 (February 2021). ANSI C63.10-2020 / Cor.1-2023 / C63.10a-2024 / Errata to C63.10a-2024 : American National Standard for Testing Unlicensed Wireless Devices.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager
Date of issue	2026-10-07
Report template No	FDT08_27 (*) "Data provided by the client"

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Acronyms

Acronym ID	Acronym Description
BEL	Band Edge Left
BER	Band Edge Right
DC	Duty Cycle
Freq	Frequency
Freq Rng	Frequency Range
Lvl Meas Pk	Level Pre Measurement Peak
MP	Measurement Point
MU	Medium Utilization Factor
Max EIRP	Maximum Burst EIRP
Max RMS	Maximum Burst RMS
Max Tx Seq	Maximum Transmission Sequence Time
Min Tx Gap	Minimum Transmission Gap Time
Mod	Modulation
Occ Ch BW	Occupied Channel Bandwidth
PSD	Power Spectral Density
Pol	Polarization
Port	Active Port
T	Temperature
Unwanted Freq	Unwanted Emissions Frequency
Unwanted Lvl	Unwanted Emissions Level
Unwanted Lvl RMS	Unwanted Emissions Level RMS

Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification S.A.U. has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification S.A.U. at the time of performance of the test.

DEKRA Testing and Certification S.A.U. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Testing and Certification S.A.U.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification S.A.U. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification S.A.U. internal document PODT000.

The total uncertainty of the measurement system for the radiated emissions of EUT from 30 MHz to 1 GHz is: Measurement uncertainty $\leq \pm 5,35$ dB with factor ($k = 2$).

The total uncertainty of the measurement system for the radiated emissions of EUT from 1 GHz to 12.75 GHz is: Measurement uncertainty $\leq \pm 4,32$ dB with factor ($k = 2$).

The total uncertainty of the measurement system for the conducted testing of EUT is: RF Output Power: Measurement uncertainty $\leq \pm 0,99$ dB

Duty cycle, Tx Sequence and Tx Gap: Measurement uncertainty $\leq \pm 0,14$ %

Medium Utilisation: Measurement uncertainty $\leq \pm 0,14$ %

Power Spectral Density: Measurement uncertainty $\leq \pm 0,99$ dB

Adaptivity: Measurement uncertainty $\leq \pm 0,01$ %

Occupied Channel Bandwidth: Measurement uncertainty $\leq \pm 1,17$ %

Out-of-Band emissions: Measurement uncertainty $\leq \pm 0,89$ dB

Receiver blocking: Measurement uncertainty $\leq \pm 2,96$ dB

The total uncertainty of the measurement system for the conducted emissions of EUT from 30 MHz to 1 GHz is: Measurement uncertainty $\leq \pm 0.55$ dB with factor ($k = 2$).

The total uncertainty of the measurement system for the conducted emissions of EUT from 1 GHz to 12.75 GHz is: Measurement uncertainty $\leq \pm 1.53$ dB with factor ($k = 2$).

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested" and "Manufacturer").
2. Detailed description of the product: The product enables vehicle access using a smartphone. It is part of the keyless entry system with RADAR features.
3. In the following letter the manufacturer declares the similarity and equivalence of other variants.



Robert Bosch GmbH
Postfach 10 60 50
70049 Stuttgart
Visitor:
Mittlerer Pfad 9
70499 Stuttgart
Phone 0711 811-0
www.bosch.com

Similarity Declaration

Date: 31 July 2026

To whom it may concern:

We, **Robert Bosch GmbH**
Robert-Bosch-Platz 1, 70839 Gerlingen, GERMANY

hereby declare that the products:

Type of equipment:	Keyless Entry System
Brand name:	Bosch
Models name:	PKAH3.1.C and PKAH3.1.D
FCC ID:	2AAJC-PKAH31Y
IC:	24305-PKAH31Y

are functionally the same. They are identical in terms of Radio Frequency (RF), Electromagnetic Compatibility (EMC), and safety characteristics. Both products share the same core electronic design, components, materials, and construction relevant to compliance with applicable RF, EMC, and safety standards.

The sole difference lies in their housing mount types: PKAH3.1.C uses a retainer mount and PKAH3.1.D uses a bracket mount. This mechanical variation does not affect the RF and safety performance nor any other EMC characteristics of the devices.

Registered Office: Stuttgart, Registration Court: Amtsgericht Stuttgart, HRB 14000;
Chairman of the Supervisory Board: Prof. Dr. Stefan Asenkerschbaumer;
Managing Directors: Dr. Stefan Hartung, Dr. Christian Fischer, Frank Meyer, Dr. Markus Heyn
Dr. Markus Forschner, Stefan Grosch, , Dr. Tanja Rückert, Katja von Raven

Therefore, any testing, evaluations, or certifications performed on one model are considered fully representative of the other with respect to RF, EMC, and safety compliance.

Sincerely,


Digitally signed by
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DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results. The laboratory is not responsible for such information and it is not covered by accreditation.

Usage of samples

Samples under test have been selected by: The client.

Sample for Radiated Measurements:

Sample 01: S/01.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	86506B_1.1	Keyless Entry System	PKAH3.1.C	DEV8184-43	2026-07-08	Element Under Test
	83085C_150.1	USB A to B Cable	--	--	2025-09-18	Auxiliary Equipment
	83085C_124.1	CAN/LIN Interface	VN1640A	RBAU00002250	2025-09-18	Auxiliary Equipment
	83085C_154.1	Harness	--	--	2025-09-18	Auxiliary Equipment

Sample for Transmission Cessation test:

Sample 02: S/02.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/02	86506B_1.1	Keyless Entry System	PKAH3.1.C	DEV8184-43	2026-07-08	Element Under Test
	86506B_2.1	Keyless Entry System	PKAH3.1.C	DEV8184-44	2026-07-08	Auxiliary Equipment
	83085C_15.1	VGA - VGA Cable	--	--	2025-06-13	Auxiliary Equipment
	83085C_125.1	CAN/LIN Interface	VN1640A	RBAU00002031	2025-09-18	Auxiliary Equipment
	83085C_149.1	USB A to B Cable	--	--	2025-09-18	Auxiliary Equipment
	83085C_13.1	Harness	--	--	2025-06-13	Auxiliary Equipment

Test sample description

Port/Cable	Conductors/Cores	Max length	Attached during test	Shielded	Coupled to patient
Battery Positive	-	2	Yes	No	No
Battery Negative	-	2	Yes	No	No
CAN High	-	2	Yes	No	No
CAN Low	-	2	Yes	No	No
Antenna (for conducted samples only)	-	~0.004	Yes	Yes	No

Rated power supply.....:	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
		AC:					
		AC:					
	[X]	DC: 6.5-16V					
		DC:					
Rated Power.....:	approx. 4W DC under MAX load.						
Clock frequencies							
Other parameters							
Software version.....:	02.02.30						
Hardware version	0323						
Dimensions in cm (W x H x D).....:	Retainer: 9x4x1.5cm, Bracket: 9x6.5x1.5cm						
Mounting position		Table top equipment					
		Wall/Ceiling mounted equipment					
		Floor standing equipment					
		Hand-held equipment					
	[X]	Other: vehicle mounted					
Modules/parts.....:	Module/parts of test item			Type	Manufacturer		
	UWB C3 F005V05517-01 Bracket			UWB-Only	Bosch		
	UWB C3 F005V05519-01 Retainer			UWB-Only	Bosch		
Accessories (not part of the test item).....:	Description			Type	Manufacturer		
	PCAN-LWL (Optical Modem Pair, Optical Cable)				Peak		
	VN1640A CAN CASE with License				Vector		
	Test Wiring/Harness						
	CAN Termination Board						
	MISC: USB Cable, DB9 Cables, Power Cable, etc)						
Documents as provided by the applicant.....:	Description			File name	Issue date		
	Honda_Gen3_Setup_Guide_Dekra_v3.2 (Existing)			PDF	2026-05-12		
	Test Setup Guide for Dekra EN 065-3-3			PDF	--		

Identification of the client

Robert Bosch GmbH
Robert-Bosch-Platz 1, Gerlingen, 70839, Germany

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U. (B) C/ Severo Ochoa, 6 - Parque Tecnológico de Andalucía; 29590 Campanillas (Málaga)
Date (start)	2026-07-13
Date (finish)	2026-07-21

Document history

Report number	Date	Description
86506RRF.001	2026-08-21	Initial release.
86506RRF.001A1	2026-08-27	First modification. In the main page, the model names are corrected to PKAH3.1.C and PKAH3.1.D. This report cancels and replaces the previous 86506RRF.001.
86506RRF.001A2	2026-09-01	Second modification. Mynor typos are corrected. This report cancels and replaces the previous 86506RRF.001A1.
86506RRF.001A3	2026-10-06	Third modification. Transmission Cessation test is added for RADAR frames. This report cancels and replaces the previous 86506RRF.001A2.

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860mbar Max. = 1060mbar

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860mbar Max. = 1060mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860mbar Max. = 1060mbar

Remarks and comments

The tests have been performed by the technical personnel: Álvaro Gutiérrez.

Testing verdicts

Fail	F
Inconclusive	I
Not applicable	N/A
Not measured	N/M
Pass	P

List of equipment used during the test

Control No.	Equipment	Model	Manufacturer	Next Calibration
03783	PRE-AMPLIFIER G>30dB 1GHz- 18GHz	BLMA 0118-3A	BONN ELEKTRONIK	2027-04-07
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	--
06021	ATT 3 DB JFW 2W DC-6GHZ	50HN-03	JFW	2027-03-13
06142	PRE-AMPLIFIER G>38dB 30MHz- 6GHz	BLNA 0360-01N	BONN ELEKTRONIK	2026-07-30
06143	HYBRID BILOG ANTENNA 30MHz- 6GHz	3142E	ETS LINDGREN	2027-01-22
06496	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK	2026-12-01
06609	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2027-04-21
06791	SEMIANECHOIC ABSORBER LINED CHAMBER IV	FACT 3 200 STP	ETS LINDGREN	--
06792	SHIELDED ROOM	S101	ETS LINDGREN	--
10573	PRE-AMPLIFIER G>46dB 18-40 GHz	BLMA 1840-5G	BONN ELEKTRONIK	2027-04-07
04656	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2027-10-16
10304	EMI TEST RECEIVER 2Hz- 44GHz	ESW44	ROHDE AND SCHWARZ	2026-10-01

Summary

Ultra-Wideband (UWB): FCC PART 15 PARAGRAPH / RSS-220

Requirement – Test case	Verdict	Remark	Tested by	Location
FCC 15.519 (a)(1) / RSS-220 5.3.1. (b). UWB Transmission Cessation	P	--	AGN	(B)
FCC 15.519 (b) / RSS-220 5.1. (a) UWB Bandwidth	P	--	AGN	(B)
FCC 15.519 (c),(d), 15.521 (c) / RSS-220 5.3.1. (c),(d),(e), Annex. Section 4 (m): Radiated Emissions	P	--	AGN	(B)
FCC 15.519 (e) / RSS-220 5.3.1. (g) UWB Peak Level	P	--	AGN	(B)
RSS-Gen Section 6.7. 99% Occupied bandwidth	P	--	AGN	(B)
(B) C/ Severo Ochoa, 6 - Parque Tecnológico de Andalucía; 29590 Campanillas (Málaga)				

Appendix A: Test results

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FCC 15.519 (e) / RSS-220 5.3.1. (g) UWB Peak Level.....85

RSS-Gen Section 6.7. 99% Occupied bandwidth.....94

TEST CONDITIONS

(*) Declared by the Applicant

POWER SUPPLY (*):

Vmin: 6.5Vdc
Vnom: 12Vdc
Vmax: 16Vdc
Type of Power Supply: Battery

ANTENNA (*):

Type of Antenna: Integrated PCB monopole antenna
Maximum Declared Antenna Gain:
Ch5 Tx = 1.2 dBi ; Rx1/RxA = 3.8 dBi; Rx2/RxB = 5.1 dBi
Ch9 Tx = 3.1 dBi; Rx1/RxA = 3.4 dBi; Rx2/RxB = 4.3 dBi

TEST FREQUENCY FOR FCC:

Channels: Ch5 (6240 - 6740MHz) & Ch9 (7737- 8237MHz)

TEST FREQUENCY FOR CANADA:

Channels: Ch5 (6240 - 6740MHz) & Ch9 (7737- 8237MHz)

SOFTWARE POWER LEVELS (*):

Frame	CH5	CH9
CCC SP3	24	28
KF/RAD/Ecomini	20	28
RADAR Candidate1	N/A	Power Level 16
RADAR Candidate2	N/A	Power Level 28
RADAR Candidate3	N/A	Power Level 20
RADAR Candidate4	N/A	Power Level 36

RADIATED MEASUREMENTS:

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna is situated at a distance of 3 m for the frequency range 30 MHz-1000 MHz (30 MHz-1000 MHz Bilog Antenna) and at a distance of 1 m for the frequency range 960 MHz-40 GHz (960 MHz-17 GHz Double Ridge Horn Antenna and 17 GHz-40 GHz Horn Antenna).

For radiated emissions in the range 960 MHz-40 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

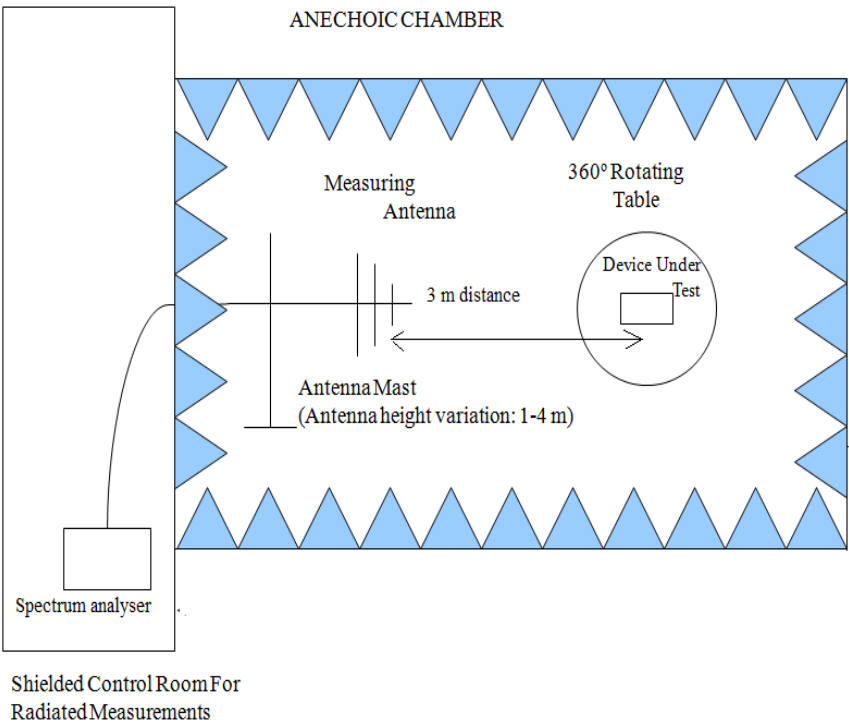
Note: A 1 m measurement distance was used as alternative procedure to prevent the extremely low-level UWB emissions from being masked by the receiver noise floor, using a horn antenna specifically calibrated for measurements at 1 m for the frequency range.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. For 3m measurements, the equipment under test was rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission. For 1m measurements, the three axis were explored, rotating 360° in order to find the worst case angle.

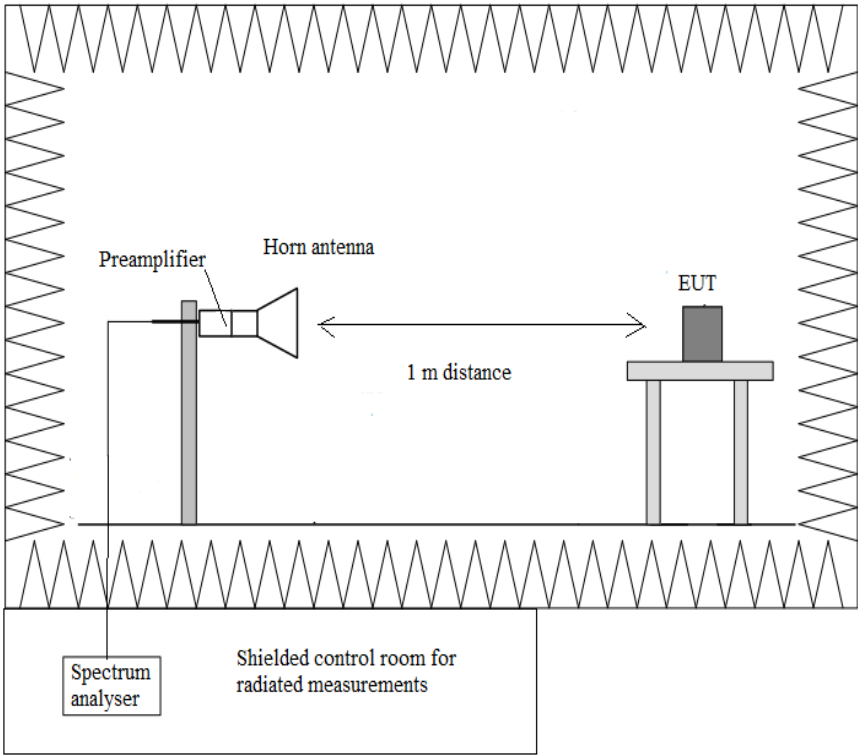
Measurements were made in both horizontal and vertical planes of polarization.

A resolution bandwidth (RBW) / video bandwidth (VBW) of 100 kHz / 300 kHz was used for frequencies below 960 MHz, and 1 MHz / 3 MHz for frequencies above 960 MHz. Other RBW/VBW settings may be used for exploratory measurements.

Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements above 960 MHz:



The three EUT axes are explored.

FCC 15.519 (a)(1) / RSS-220 5.3.1. (b). UWB Transmission Cessation

SPECIFICATION:

A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting.

RESULTS:

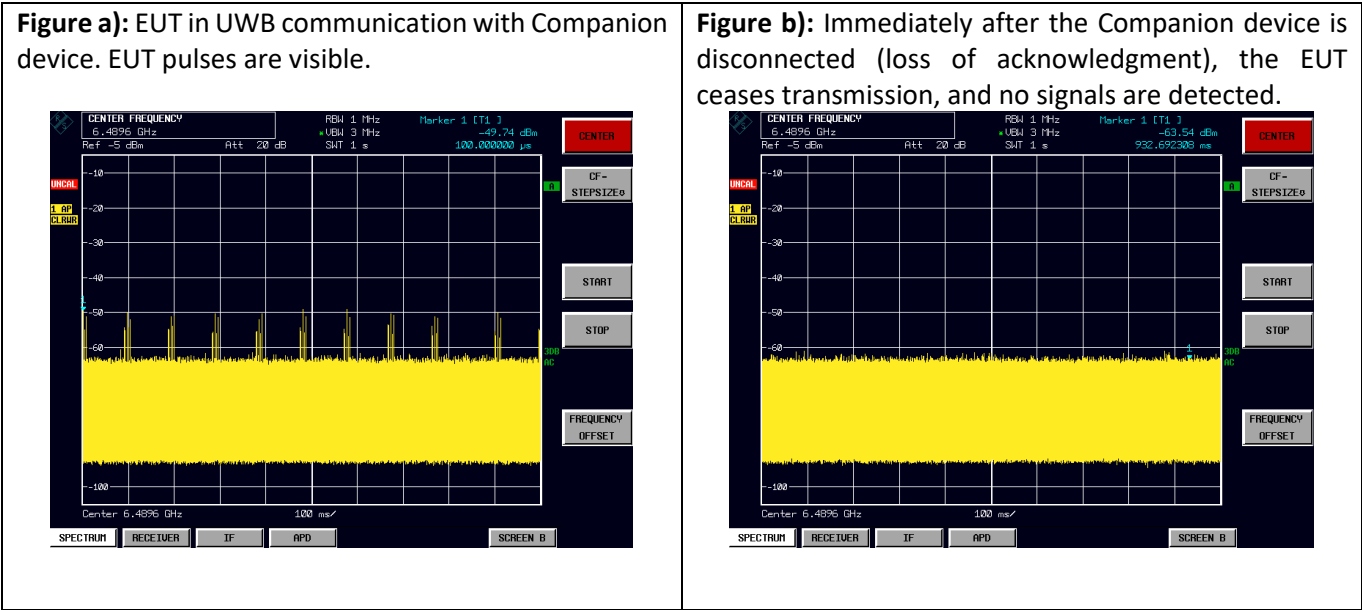
Test Methodology for mode: Communication with associated receiver.

- 1. Using the provided test software, the EUT (Responder) was configured to establish an active UWB ranging session with an associated receiver: Companion (Initiator).
- 2. Active communication (acknowledgement) was verified via the Spectrum Analyzer in Zero Span.
- 3. The Companion (Initiator) was then manually disconnected from the test.
- 4. The time taken for the EUT to cease transmission was monitored and recorded.

Measurement Data:

UWB Channel: CH 5 (6489.6 MHz). Representative Frame (Ranging): CCC SP3.

Parameter	Measured Value	Limit
Transmission Cessation Time	Instantaneous (< 1 second)	< 10 seconds



UWB Channel: CH 9 (7987.2 MHz). Representative Frame (Ranging): CCC SP3.

Parameter	Measured Value	Limit
Transmission Cessation Time	Instantaneous (< 1 second)	< 10 seconds

Figure c): EUT in UWB communication with Companion device. EUT pulses are visible.

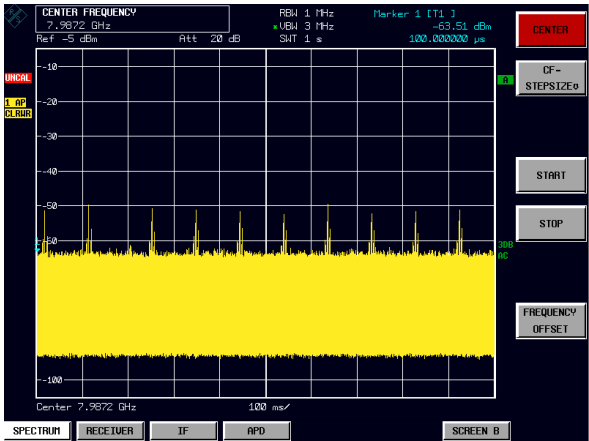
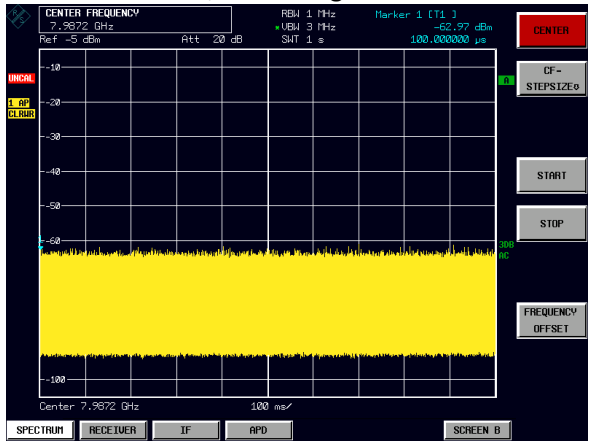


Figure d): Immediately after the Companion device is disconnected (loss of acknowledgment), the EUT ceases transmission, and no signals are detected.



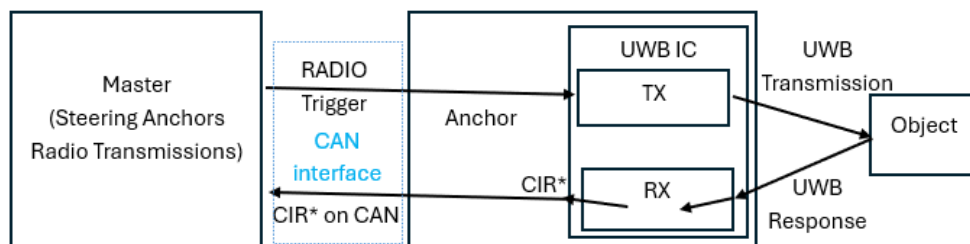
Verdict: PASS

Test Methodology for mode: Radar.

Analysis:

A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver.

For Radar mode, there is no separate associated receiver, as the receiver is integrated into the EUT itself.



For this mode, transmission cessation is controlled by the vehicle master ECU through defined deactivation conditions.

RADAR function	Deactivation scenario	Deactivation Mechanism
Child Presence Detection (CPD)	<ul style="list-style-type: none"> - Timeout (transmission stops 15 s after the start command) - Detection of a CPD event - No CIR response from anchor (120ms) 	Master sends CAN command to stop transmission
Intrusion Detection (ID)	<ul style="list-style-type: none"> - Detection of an ID event - Authenticated door unlock 	Master sends CAN command to stop transmission
Kick Sensor (KS)	<ul style="list-style-type: none"> - No authenticated key in the vicinity of the vehicle 	Master sends CAN command to stop transmission

For these cases, the EUT is required to stop transmitting when:

- The Master sends a CAN command to stop transmission, covering all the above deactivation scenarios.
- The Master power supply is switched OFF.

Setup:

- 1. Using the provided test software, the EUT was configured to transmit RADAR frames continuously.
- 2. UWB signal was verified via the Spectrum Analyzer in Zero Span mode.
- 3. A stop command was then sent to the EUT .
- 4. The time taken for the EUT to cease transmission was monitored and recorded.

Measurement Data:

UWB Channel: CH 9 (7987,2 MHz). Representative Frame (Radar): Candidate1.

Parameter	Measured Value	Limit
Transmission Cessation Time	Instantaneous (< 1 second)	< 10 seconds

Figure a): EUT transmitting RADAR frames. EUT pulses are visible.

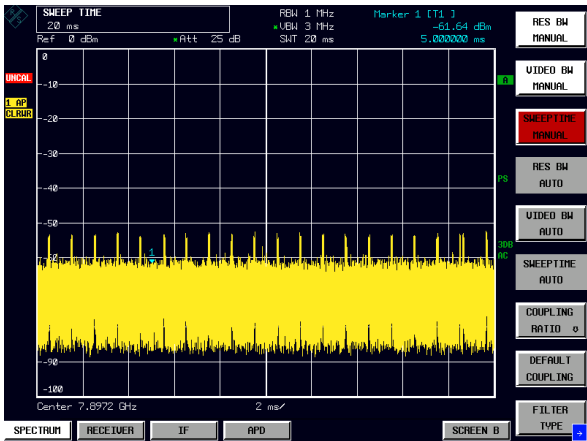
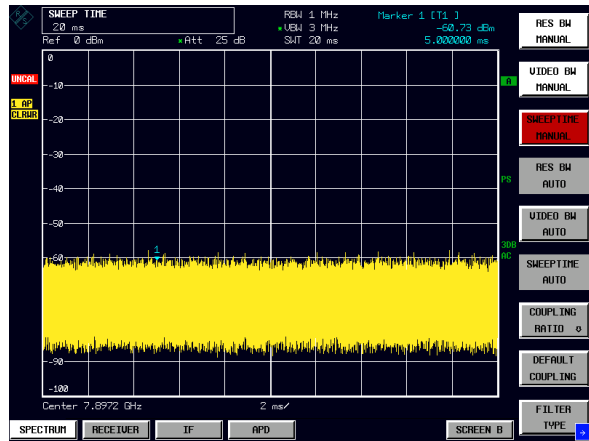


Figure b): Immediately after a stop command is received, the EUT ceases transmission and no signal is detected.



Results:

Scenarios	TX cessation time	Verdict
Stop command received covering all the deactivation scenarios	Instantaneous (< 1 second)	P
Failure of the Master power supply causes the EUT to switch OFF	Instantaneous (< 1 second)	P

Verdict: PASS

FCC 15.519 (b) / RSS-220 5.1. (a) UWB Bandwidth

SPECIFICATION:

- * FCC §15.503 (a) UWB bandwidth: For the purpose of this subpart, the UWB bandwidth is the frequency band bounded by the points that are 10 dB below the highest radiated emission, as based on the complete transmission system including the antenna. The upper boundary is designated f_H and the lower boundary is designated f_L . The frequency at which the highest radiated emission occurs is designated f_M .
- * FCC §15.503 (b) Center frequency: The center frequency, f_C , equals $(f_H + f_L)/2$.
- * FCC §15.503 (c) Fractional bandwidth: The fractional bandwidth equals $2(f_H - f_L)/(f_H + f_L)$.
- * FCC §15.503 (d) Ultra-wideband (UWB) transmitter: An intentional radiator that, at any point in time, has a fractional bandwidth equal to or greater than 0.20 or has a UWB bandwidth equal to or greater than 500 MHz, regardless of the fractional bandwidth.
- * FCC §15.519 (b): The UWB bandwidth of a device operating under the provisions of this section must be contained between 3100 MHz and 10600 MHz.
- * RSS-220 2: A UWB device is an intentional radiator that has either a -10 dB bandwidth of at least 500 MHz or a -10 dB fractional bandwidth greater than 0.2.
- * RSS-220 5.1. (a): The -10 dB bandwidth of the device shall be totally contained in the band 3.1-10.6 GHz.

"-10 dB bandwidth B_{-10} " and "-10 dB fractional bandwidth μ_{-10} " are defined as follows:

$$B_{-10} = f_H - f_L$$
$$\mu_{-10} = B_{-10}/f_C$$

where:

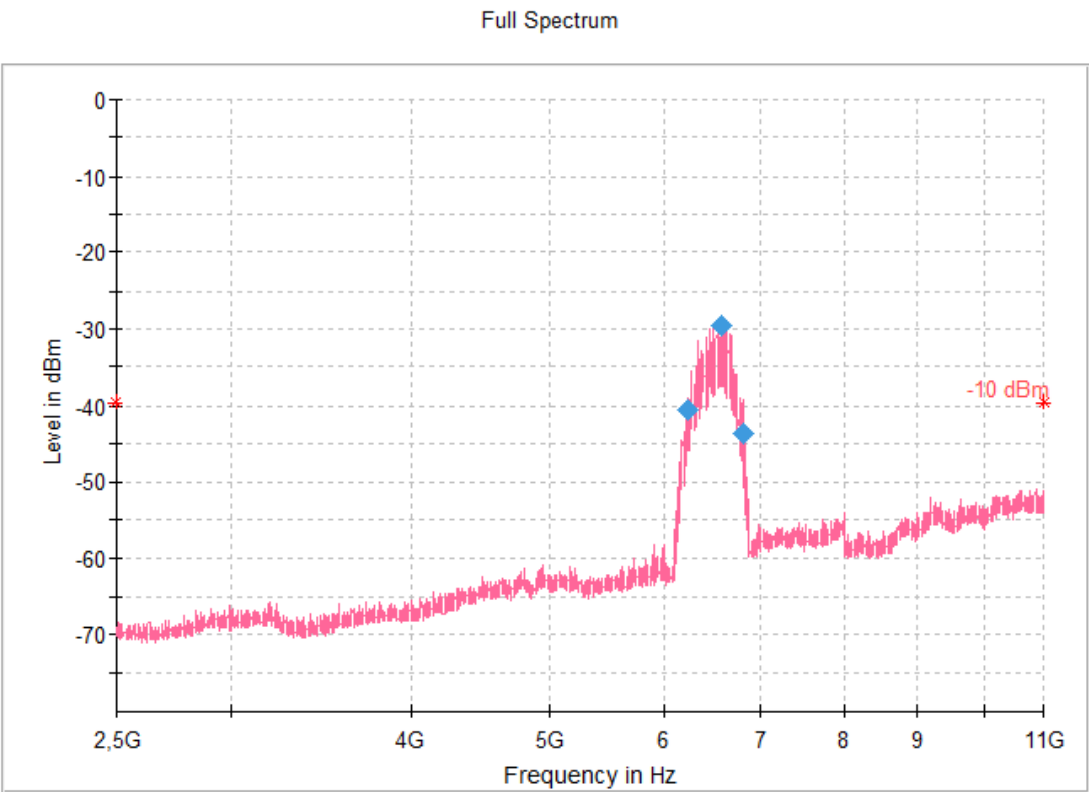
f_M is the frequency of maximum UWB transmission;
 f_H is the highest frequency at which the power spectral density of the UWB transmission is -10 dB relative to f_M ;
 f_L is the lowest frequency at which the power spectral density of the UWB transmission is -10 dB relative to f_M ; and
 $f_C = (f_H + f_L)/2$ is the centre frequency of the -10 dB bandwidth.

RESULTS:

· CH5, CCC SP3

Channel	FM (MHz)	FL (MHz)	FH (MHz)	FC (MHz)	B ₋₁₀ (MHz)	Min B ₋₁₀ (MHz)
6489,6 MHz (Ch5)	6565,550000	6233,200000	6800,150000	6516,675	566,95	500
Measurement uncertainty (kHz)	<± 130					

UWB Bandwidth



Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Azimuth (deg)
6233.200000	-40.59	150.0	1000.000	289.0
6565.550000	-29.59	150.0	1000.000	219.0
6800.150000	-43.72	150.0	1000.000	268.0

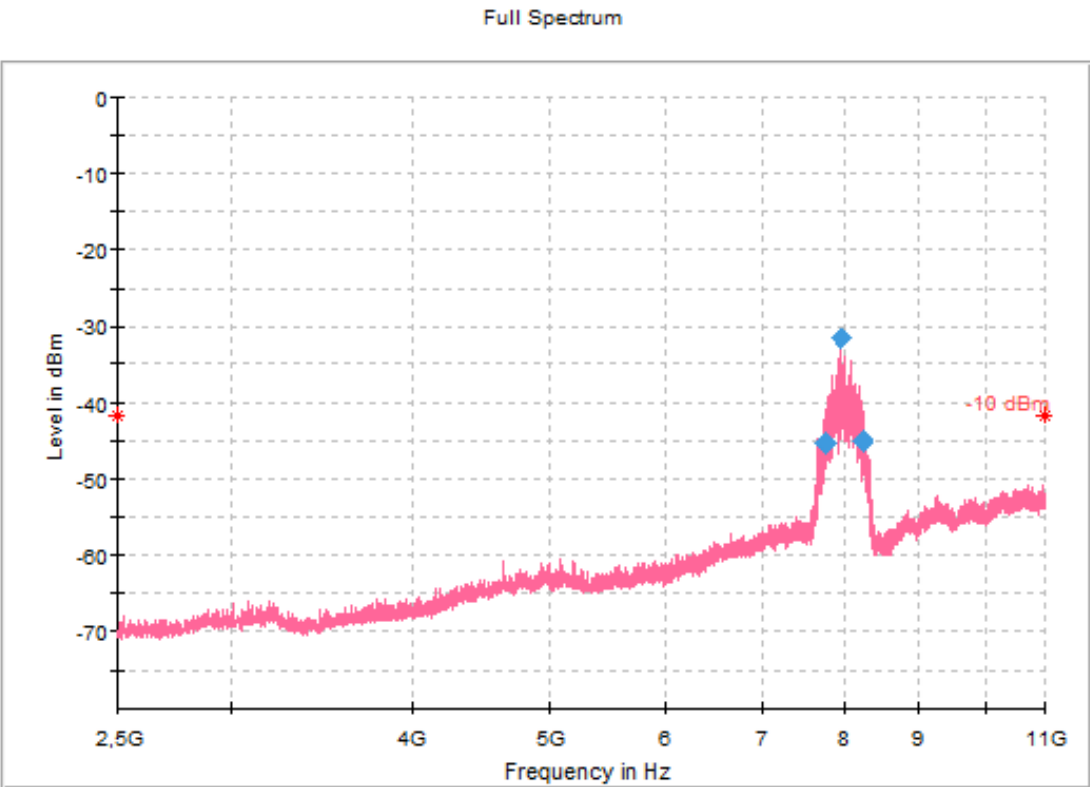
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 2,5 GHz - 11 GHz	850 kHz	PK+	1 MHz	0,15 s	0 dB

Verdict: PASS

· CH9, CCC SP3

Channel	FM (MHz)	FL (MHz)	FH (MHz)	FC (MHz)	B ₋₁₀ (MHz)	Min B ₋₁₀ (MHz)
7987,2 MHz (Ch9)	7949,350000	7735,150000	8237,500000	7986,325	502,35	500
Measurement uncertainty (kHz)	<± 130					

UWB Bandwidth



Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Azimuth (deg)
7735.150000	-45.33	150.0	1000.000	238.0
7949.350000	-31.56	150.0	1000.000	237.0
8237.500000	-45.14	150.0	1000.000	201.0

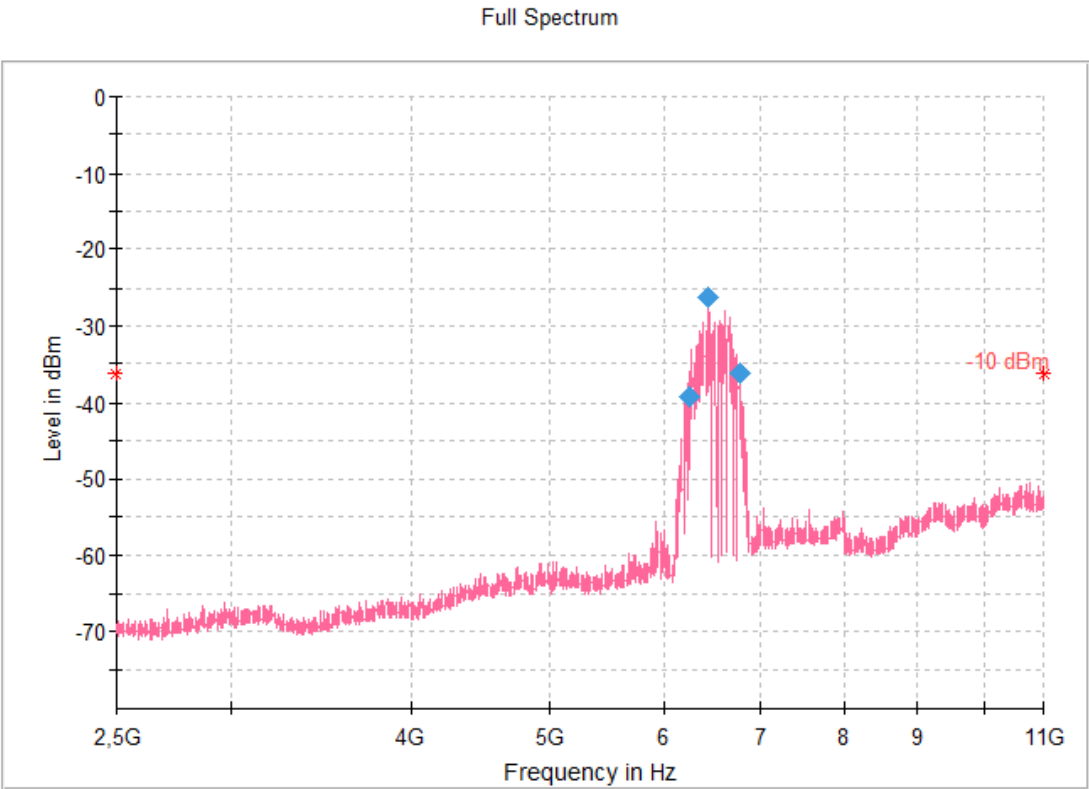
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 2,5 GHz - 11 GHz	850 kHz	PK+	1 MHz	0,15 s	0 dB

Verdict: PASS

· CH5, KF RAD Ecomini

Channel	FM (MHz)	FL (MHz)	FH (MHz)	FC (MHz)	B ₋₁₀ (MHz)	Min B ₋₁₀ (MHz)
6489,6 MHz (Ch5)	6438,050000	6252,750000	6759,350000	6506,05	506,6	500
Measurement uncertainty (kHz)	<± 130					

UWB Bandwidth



Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Azimuth (deg)
6252.750000	-39.26	150.0	1000.000	307.0
6438.050000	-26.24	150.0	1000.000	257.0
6759.350000	-36.30	150.0	1000.000	223.0

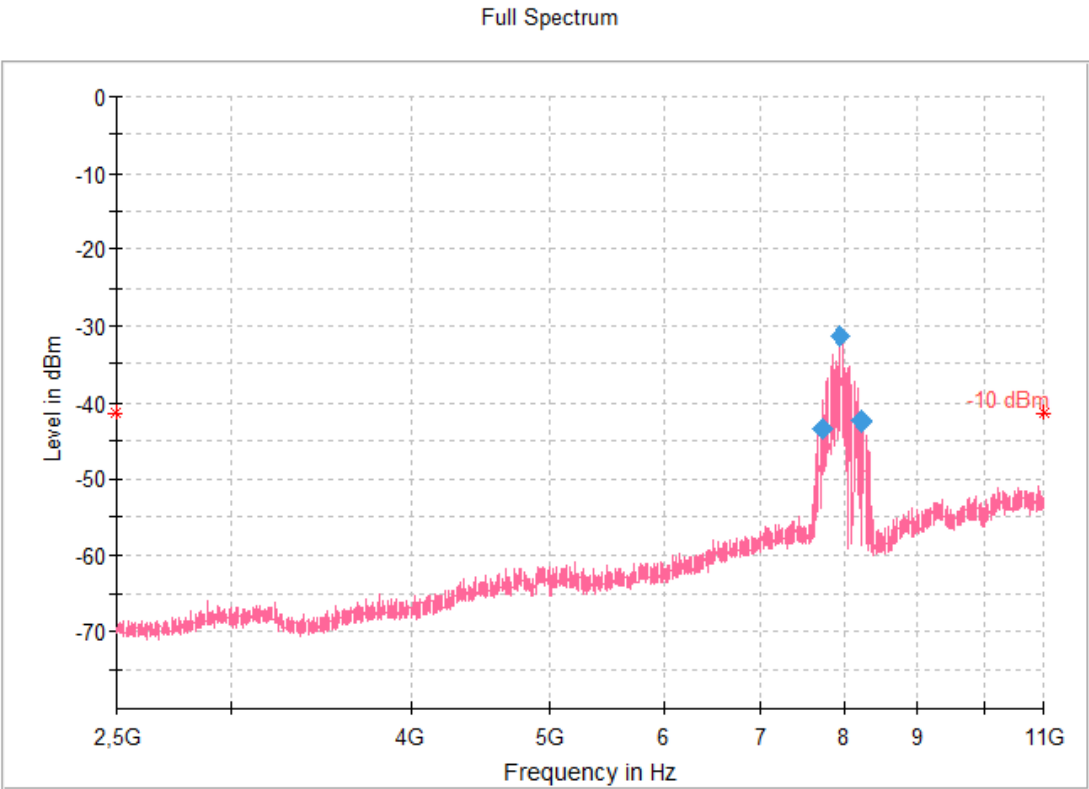
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 2,5 GHz - 11 GHz	850 kHz	PK+	1 MHz	0,15 s	0 dB

Verdict: PASS

· CH9, KF RAD Ecomini

Channel	FM (MHz)	FL (MHz)	FH (MHz)	FC (MHz)	B ₋₁₀ (MHz)	Min B ₋₁₀ (MHz)
7987,2 MHz (Ch9)	7951,050000	7730,900000	8234,950000	7982,925	504,05	500
Measurement uncertainty (kHz)	<± 130					

UWB Bandwidth



Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Azimuth (deg)
7730.900000	-43.47	150.0	1000.000	146.0
7951.050000	-31.37	150.0	1000.000	244.0
8234.950000	-42.40	150.0	1000.000	248.0

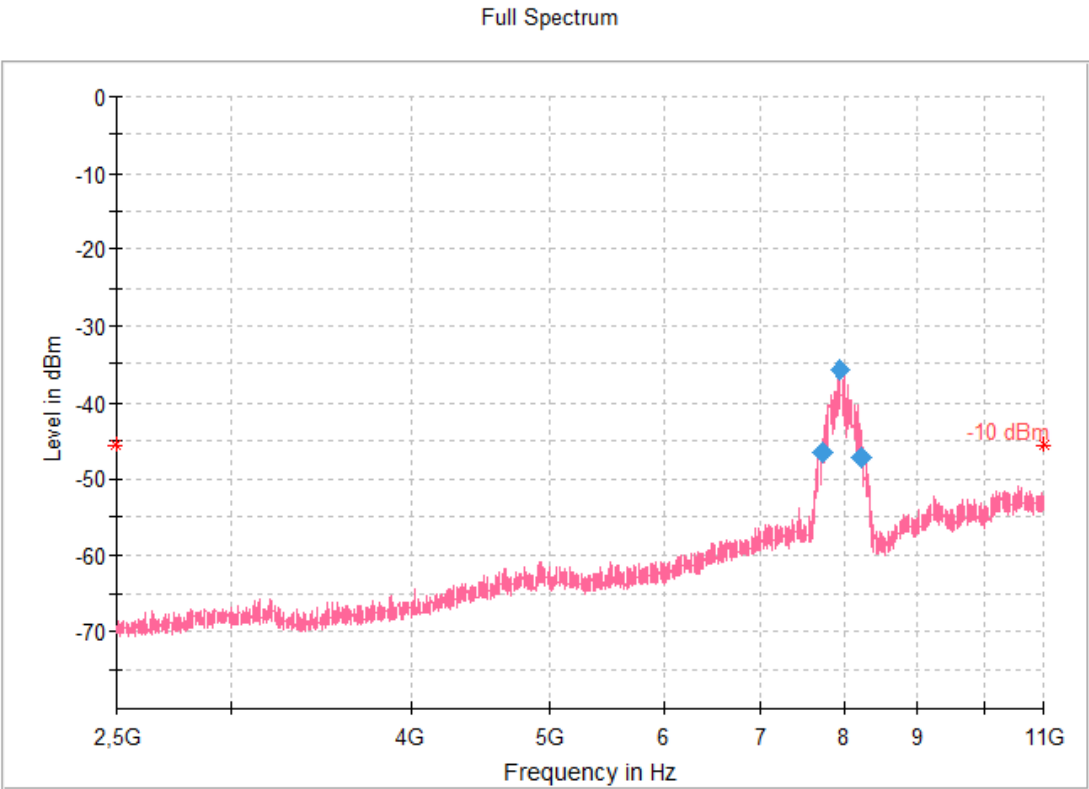
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 2,5 GHz - 11 GHz	850 kHz	PK+	1 MHz	0,15 s	0 dB

Verdict: PASS

· CH9, Candidate1 RADAR

Channel	FM (MHz)	FL (MHz)	FH (MHz)	FC (MHz)	B ₋₁₀ (MHz)	Min B ₋₁₀ (MHz)
7987,2 MHz (Ch9)	7945,100000	7721,550000	8234,950000	7978,25	513,4	500
Measurement uncertainty (kHz)	<± 130					

UWB Bandwidth



Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Azimuth (deg)
7721.550000	-46.53	150.0	1000.000	216.0
7945.100000	-35.66	150.0	1000.000	246.0
8234.950000	-47.08	150.0	1000.000	237.0

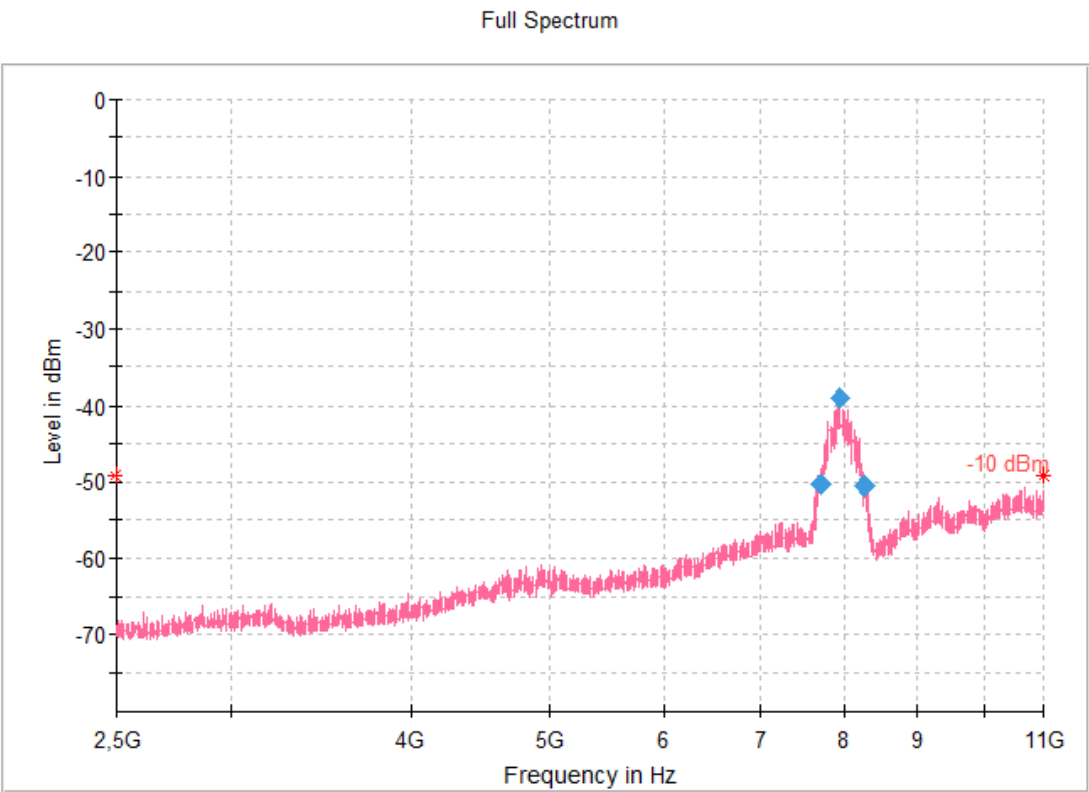
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 2,5 GHz - 11 GHz	850 kHz	PK+	1 MHz	0,15 s	0 dB

Verdict: PASS

CH9, Candidate2 RADAR

Channel	FM (MHz)	FL (MHz)	FH (MHz)	FC (MHz)	B ₋₁₀ (MHz)	Min B ₋₁₀ (MHz)
7987,2 MHz (Ch9)	7938,300000	7685,850000	8251,100000	7968,475	565,25	500
Measurement uncertainty (kHz)	<± 130					

UWB Bandwidth



Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Azimuth (deg)
7685.850000	-50.16	150.0	1000.000	230.0
7938.300000	-39.17	150.0	1000.000	237.0
8251.100000	-50.37	150.0	1000.000	247.0

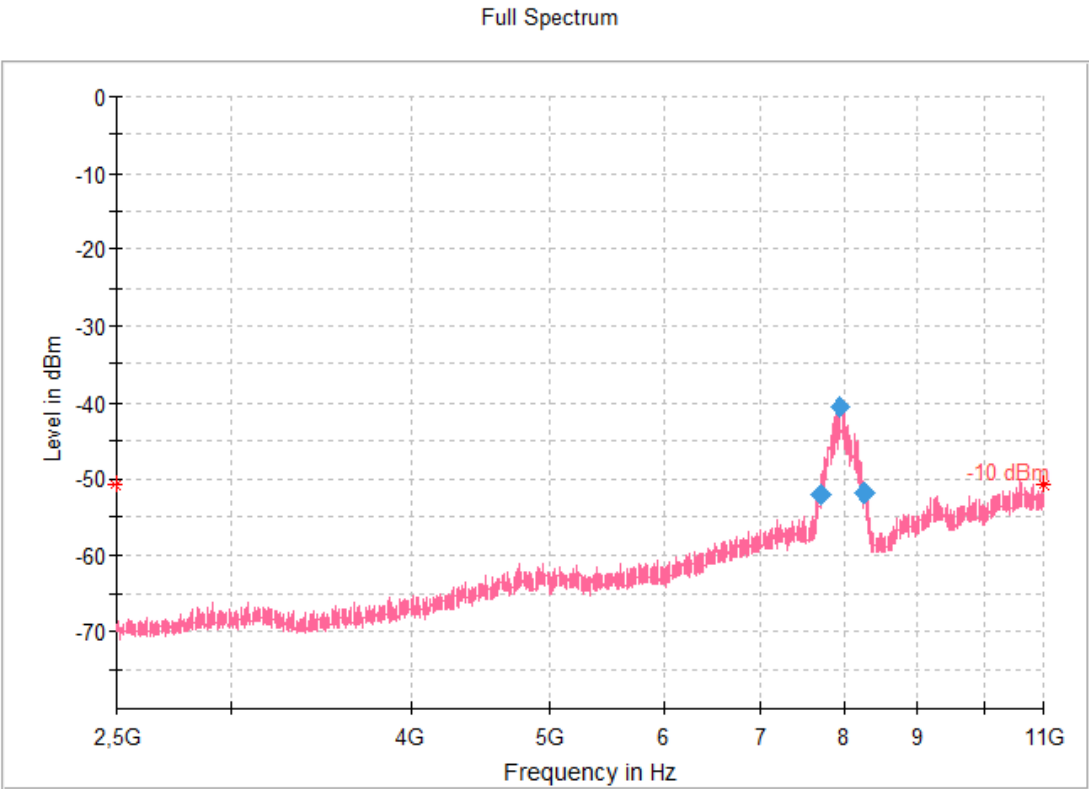
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 2,5 GHz - 11 GHz	850 kHz	PK+	1 MHz	0,15 s	0 dB

Verdict: PASS

CH9, Candidate3 RADAR

Channel	FM (MHz)	FL (MHz)	FH (MHz)	FC (MHz)	B ₋₁₀ (MHz)	Min B ₋₁₀ (MHz)
7987,2 MHz (Ch9)	7956,150000	7705,400000	8252,800000	7979,1	547,4	500
Measurement uncertainty (kHz)	<± 130					

UWB Bandwidth



Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Azimuth (deg)
7705.400000	-52.04	150.0	1000.000	231.0
7956.150000	-40.65	150.0	1000.000	254.0
8252.800000	-51.90	150.0	1000.000	286.0

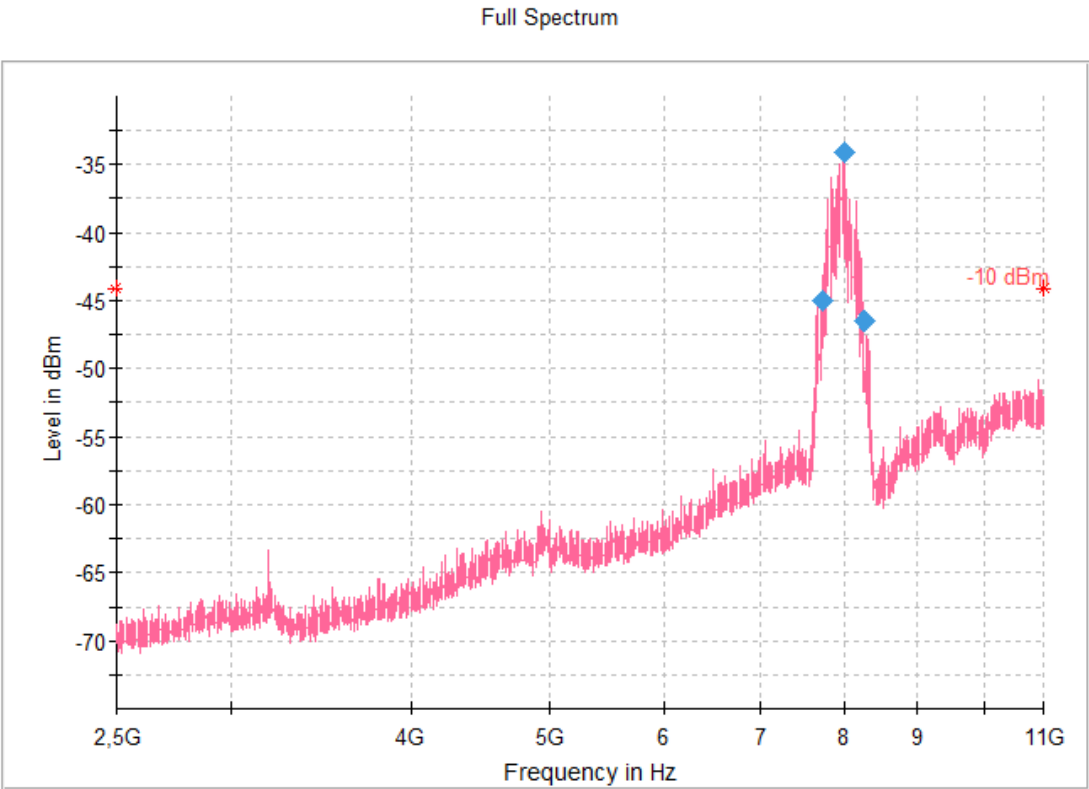
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 2,5 GHz - 11 GHz	850 kHz	PK+	1 MHz	0,15 s	0 dB

Verdict: PASS

CH9, Candidate4 RADAR

Channel	FM (MHz)	FL (MHz)	FH (MHz)	FC (MHz)	B ₋₁₀ (MHz)	Min B ₋₁₀ (MHz)
7987,2 MHz (Ch9)	7986,750000	7724,100000	8240,050000	7982,075	515,95	500
Measurement uncertainty (kHz)	<± 130					

UWB Bandwidth



Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Azimuth (deg)
7724.100000	-44.97	150.0	1000.000	214.0
7986.750000	-34.14	150.0	1000.000	215.0
8240.050000	-46.46	150.0	1000.000	240.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 2,5 GHz - 11 GHz	850 kHz	PK+	1 MHz	0,15 s	0 dB

Verdict: PASS

7FCC 15.519 (c),(d), 15.521 (c) / RSS-220 5.3.1. (c),(d),(e), Annex. Section 4 (m): Radiated Emissions

SPECIFICATION:

The radiated emissions at or below 960 MHz shall not exceed the emission levels in §15.209:

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

* §15.519 (c): The radiated emissions at or below 960 MHz from a device operating under the provisions of this section shall not exceed the emission levels in §15.209. The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

Frequency Range (MHz)	EIRP (dBm)
960-1610	-75.3
1610-1990	-63.3
1990-3100	-61.3
3100-10600	-41.3
Above 10600	-61.3

* §15.519 (d): In addition to the radiated emission limits specified in the table above, UWB transmitters shall not exceed the following average limits when measured using a resolution bandwidth of no less than 1 kHz:

Frequency Range (MHz)	EIRP (dBm)
1164-1240	-85.3
1559-1610	-85.3

* §15.521 (c): Emissions from digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in §15.209, rather than the limits specified above for EIRP, provided it can be clearly demonstrated that those emissions from the UWB device are due solely to emissions from digital circuitry contained within the transmitter and that the emissions are not intended to be radiated from the transmitter's antenna.

* RSS-220 5.3.1. (c): Radiated emissions at or below 960 MHz from a device shall not exceed the limits. Measurements of radiated emissions at and below 960 MHz are to be made using a CISPR quasi-peak detector. CISPR measurement bandwidth specifications are to be used.

Frequency Range (MHz)	Field strength ($\mu\text{V/m}$)	Measurement distance (m)	E.i.r.p (dBmW)
0.009-0.490	2400/F(kHz)	300	$10 \log (17.28 / F^2)$ (F in KHz)
0.490-1.705	24000/F(kHz)	30	$10 \log (17.28 / F^2)$ (F in KHz)
1.705 - 30.0	30	30	-45.7
30 - 88	100	3	-55.2
88 - 216	150	3	-51.7
216 - 960	200	3	-49.2

Note: The emission limits for the bands 9-90 kHz and 110-490 kHz are based on measurements employing an average emissions detector.

* RSS-220 5.3.1. (d): Radiated emissions above 960 MHz from a device shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz.

Frequency Range (MHz)	EIRP (dBm) in a RBW of 1 MHz
960-1610	-75.3
1610-4750	-70.0
4750-10600	-41.3
Above 10600	-61.3

* RSS-220 5.3.1. (e): In addition to the radiated emission limits specified in the table above, radiated emissions shall not exceed the following average limits when measured using a resolution bandwidth greater than or equal to 1 kHz. The measurements shall demonstrate compliance with the stated limits at whatever resolution bandwidth is used.

Frequency Range (MHz)	EIRP (dBm)
1164-1240	-85.3
1559-1610	-85.3

* RSS-220 Annex. Section 4 (m): Emissions from digital circuitry (used only to enable the operation of the UWB transmitter and that does not control additional functions or capabilities) shall comply with the average and peak power limits applicable to the UWB transmitter. If it can be clearly demonstrated that an emission from a UWB transmitter is due solely to emissions from digital circuitry contained within the transmitter, and that the emission is not intended to be radiated from the transmitter's antenna, the limits for emissions from digital circuitry prescribed in RSS-Gen apply to that emission rather than the UWB limits.

RESULTS:

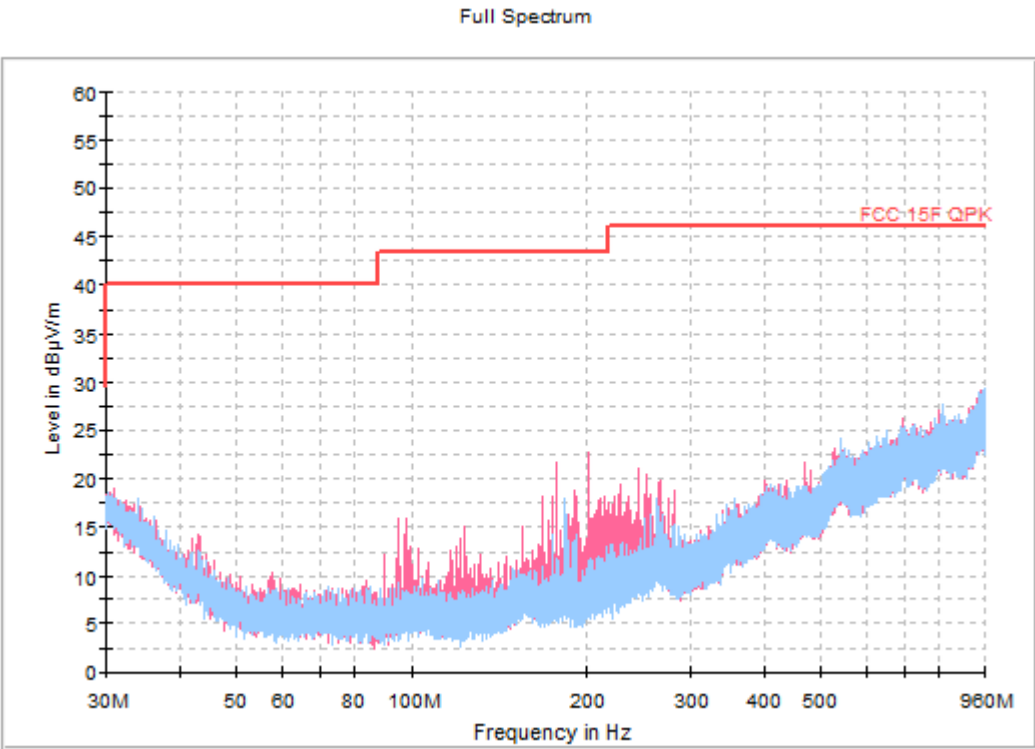
Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON. <u>CH5, Frame CCC SP3</u>	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P
	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
UWB TRANSMITTER ON. <u>CH9, Frame CCC SP3</u>	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P
	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
UWB TRANSMITTER ON. <u>CH5, Frame KF RAD Ecomini</u>	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P
	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
UWB TRANSMITTER ON. <u>CH9, Frame KF RAD Ecomini</u>	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P
	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON. <u>CH9, Frame Candidate1</u>	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P
	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
UWB TRANSMITTER ON. <u>CH9, Frame Candidate2</u>	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P
	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
UWB TRANSMITTER ON. <u>CH9, Frame Candidate3</u>	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P
	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
UWB TRANSMITTER ON. <u>CH9, Frame Candidate4</u>	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P
	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P
	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P
	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER OFF	960 MHz - 10.6 GHz §15.521 (c) / RSS-220 Annex. Section 4 (m)	N/A

UWB TRANSMITTER ON. CH5, Frame CCC SP3.

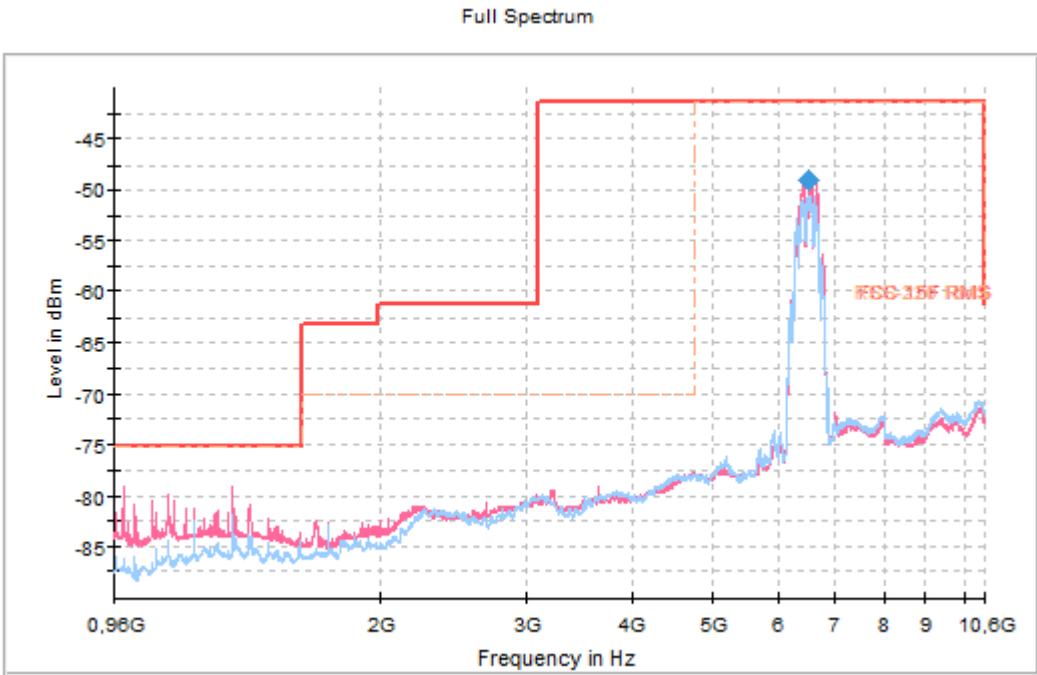
Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESR 7] 30 MHz - 960 MHz	9,3 kHz	PK+	100 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH5, Frame CCC SP3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



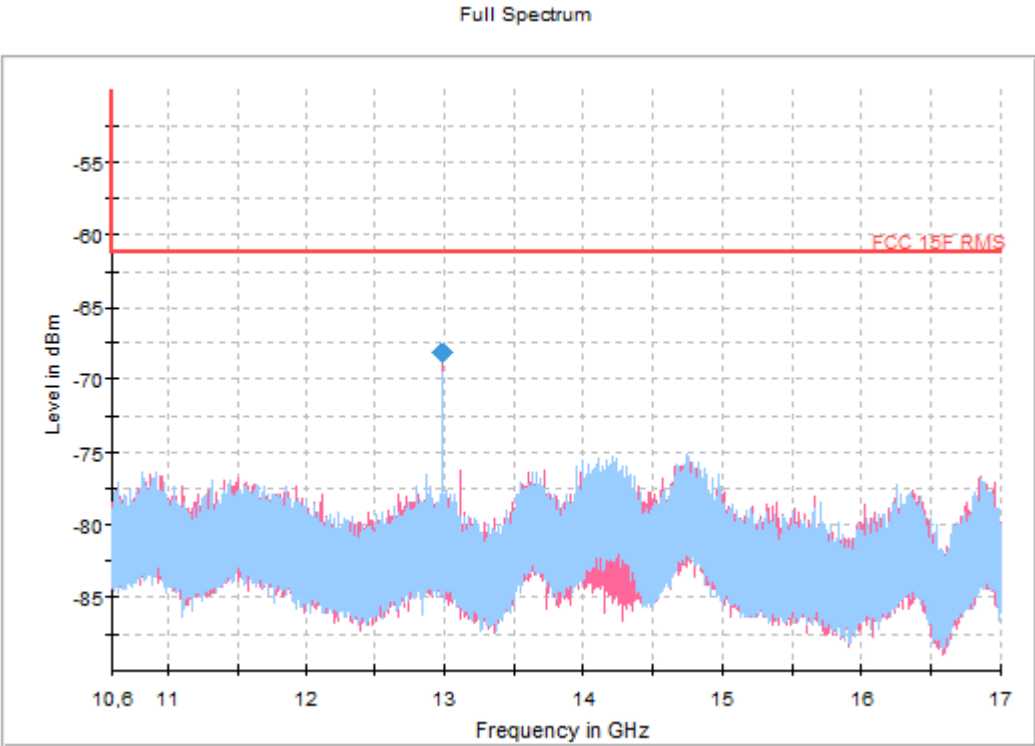
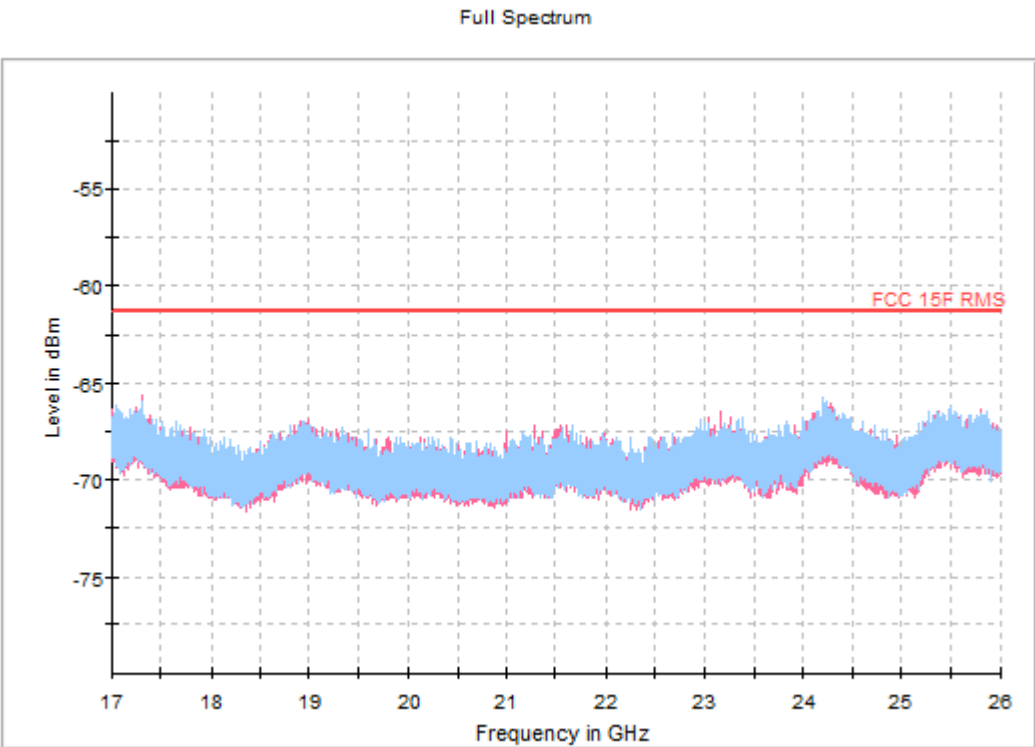
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)
6521.316000	-48.97	-41.30	7.67	20000.0	160.0	V	294.0

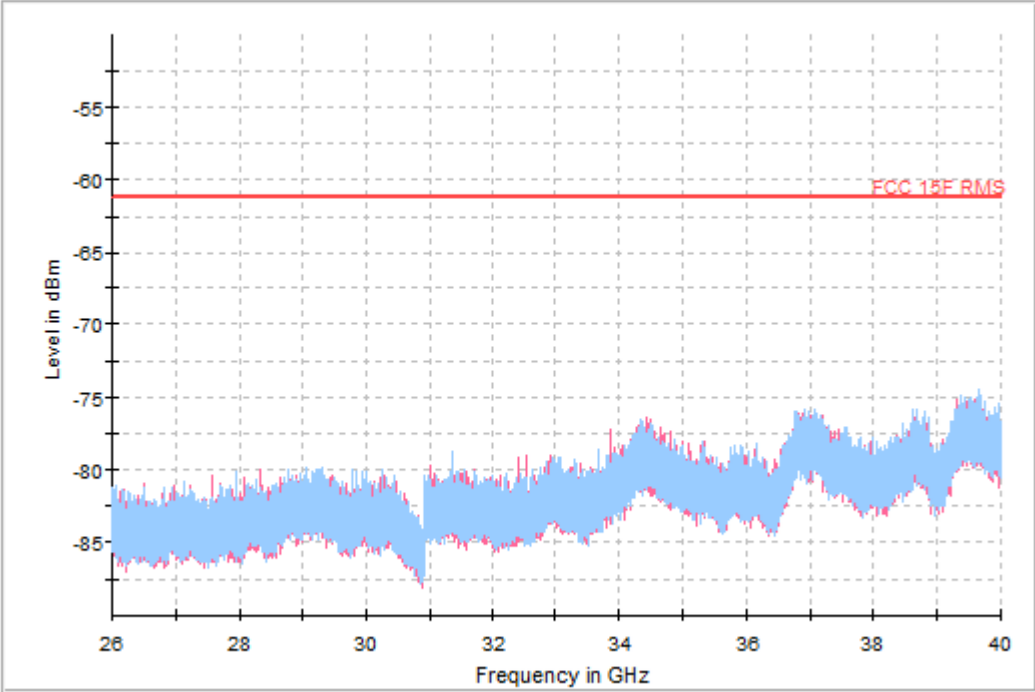
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
960 MHz - 10,6 GHz	482 kHz	RMS	1 MHz	20 s	0 dB

UWB TRANSMITTER ON. CH5, Frame CCC SP3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



Full Spectrum



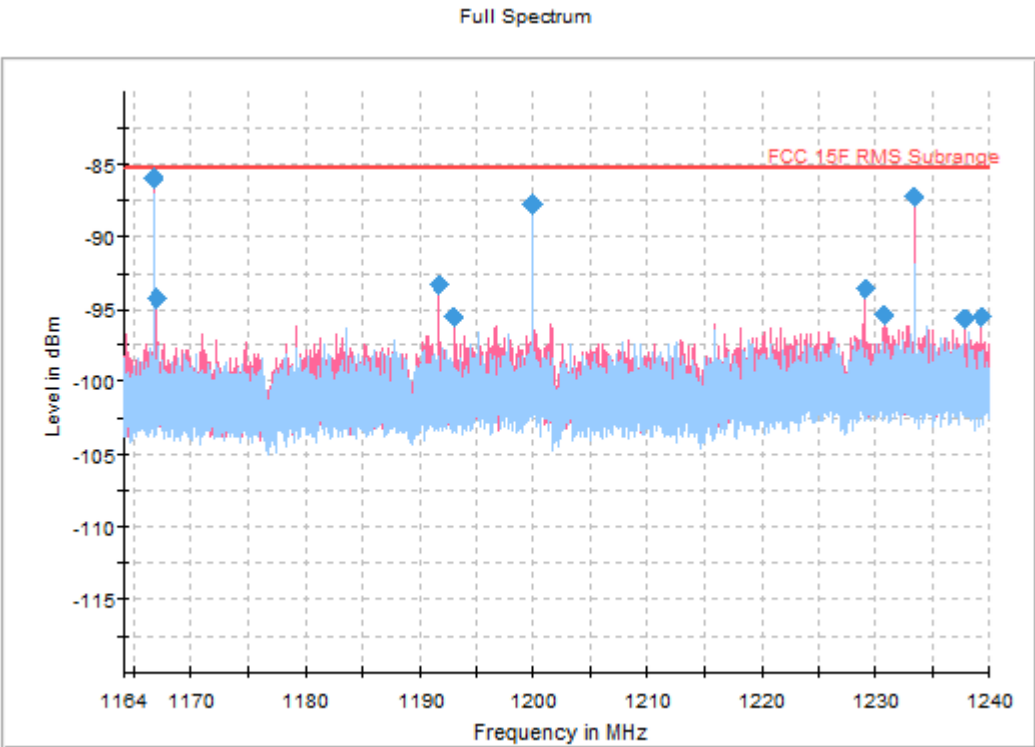
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
6610.500000	-10.52	0.00	10.52	150.0	50000.000	V	224.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
10,6 GHz - 14 GHz	34 kHz	RMS	100 kHz	1 s	0 dB
14 GHz - 17 GHz	30 kHz	RMS	100 kHz	1 s	0 dB
17 GHz - 26 GHz	90 kHz	RMS	1 MHz	1 s	0 dB
26 GHz - 40 GHz	140 kHz	RMS	300 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH5, Frame CCC SP3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



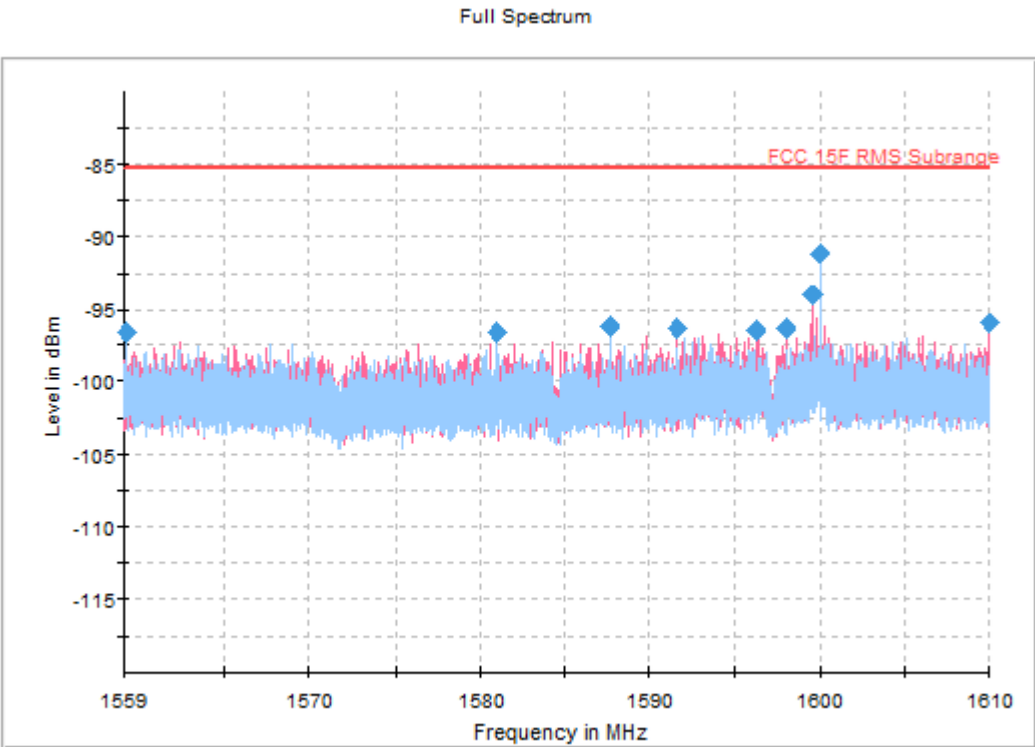
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1166.677480	-85.99	-85.30	0.69	1.0	10.000	V	117.0	
1166.952600	-94.26	-85.30	8.96	1.0	10.000	V	120.0	
1191.678440	-93.32	-85.30	8.02	1.0	10.000	V	349.0	
1193.060880	-95.57	-85.30	10.27	1.0	10.000	V	71.0	
1200.000440	-87.76	-85.30	2.46	1.0	10.000	H	207.0	
1229.178360	-93.61	-85.30	8.31	1.0	10.000	V	341.0	
1230.752320	-95.40	-85.30	10.10	1.0	10.000	V	85.0	
1233.345440	-87.28	-85.30	1.98	1.0	10.000	V	346.0	
1237.786120	-95.65	-85.30	10.35	1.0	10.000	V	321.0	
1239.412520	-95.47	-85.30	10.18	1.0	10.000	V	2.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,164 GHz - 1,24 GHz	760 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH5, Frame CCC SP3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



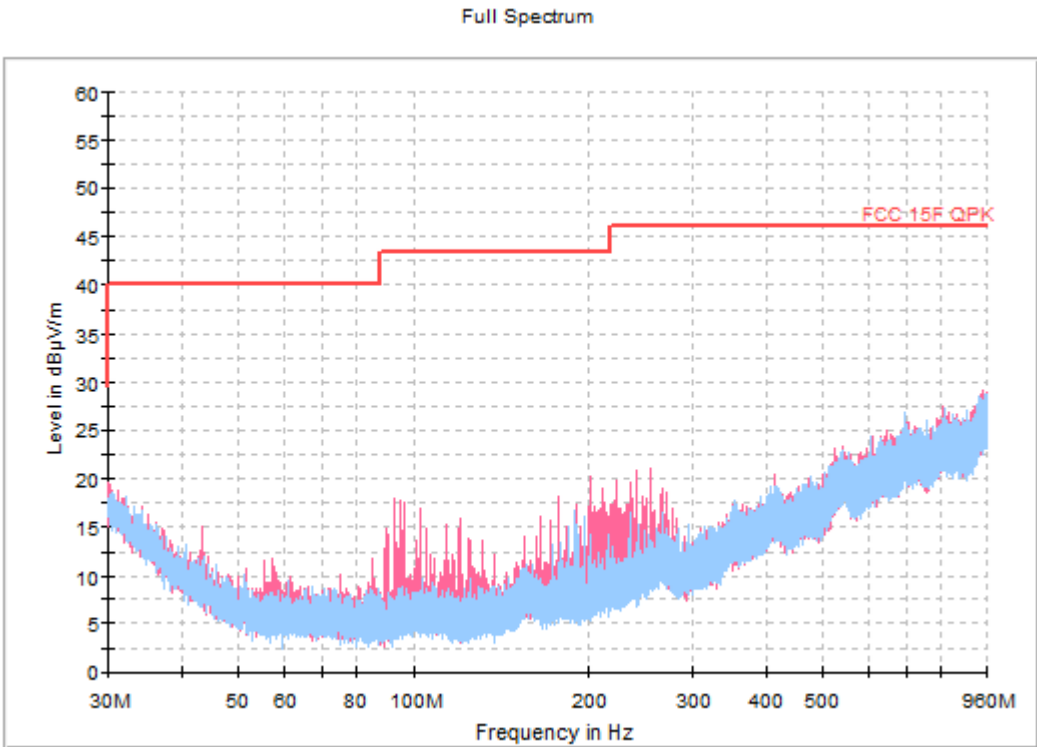
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1559.173910	-96.51	-85.30	11.21	1.0	10.000	H	194.0	
1581.011090	-96.63	-85.30	11.33	1.0	10.000	H	248.0	
1587.611000	-96.20	-85.30	10.90	1.0	10.000	H	12.0	
1591.669580	-96.33	-85.30	11.03	1.0	10.000	V	220.0	
1596.298850	-96.39	-85.30	11.09	1.0	10.000	V	342.0	
1598.043560	-96.30	-85.30	11.00	1.0	10.000	V	288.0	
1599.585800	-93.92	-85.30	8.62	1.0	10.000	V	209.0	
1600.000430	-91.17	-85.30	5.87	1.0	10.000	V	252.0	
1609.993880	-95.94	-85.30	10.64	1.0	10.000	V	248.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,559 GHz - 1,61 GHz	510 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame CCC SP3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P



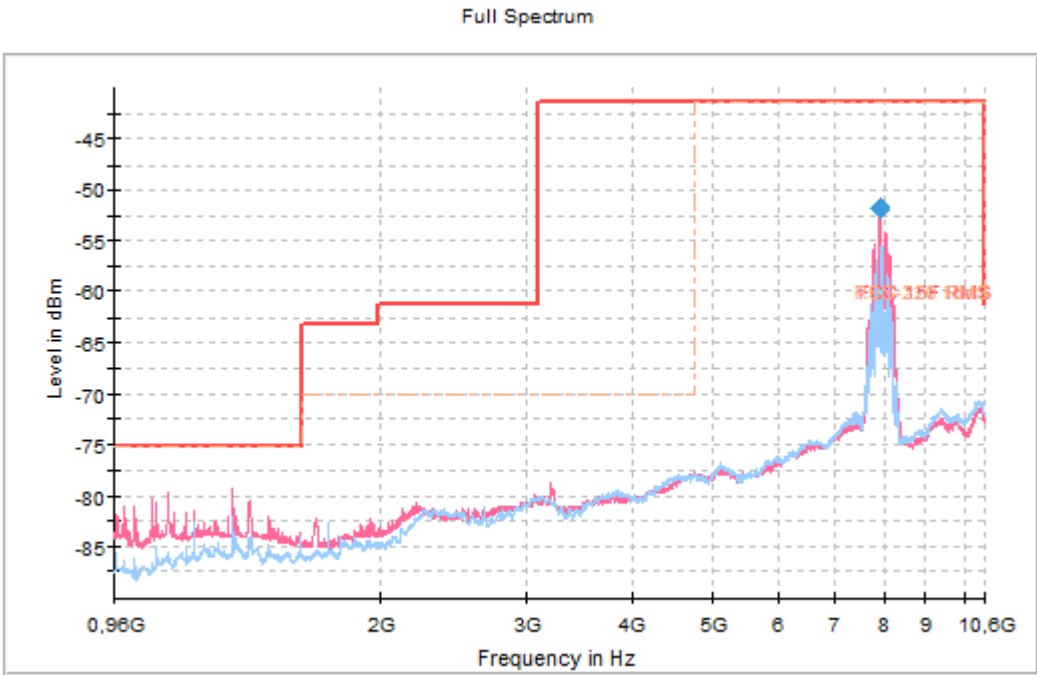
Final Result

Frequency (MHz)	MaxPeak (dBÂµV/	Limit (dBÂµV/	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
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Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESR 7]					
30 MHz - 960 MHz	9,3 kHz	PK+	100 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame CCC SP3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



Final Result

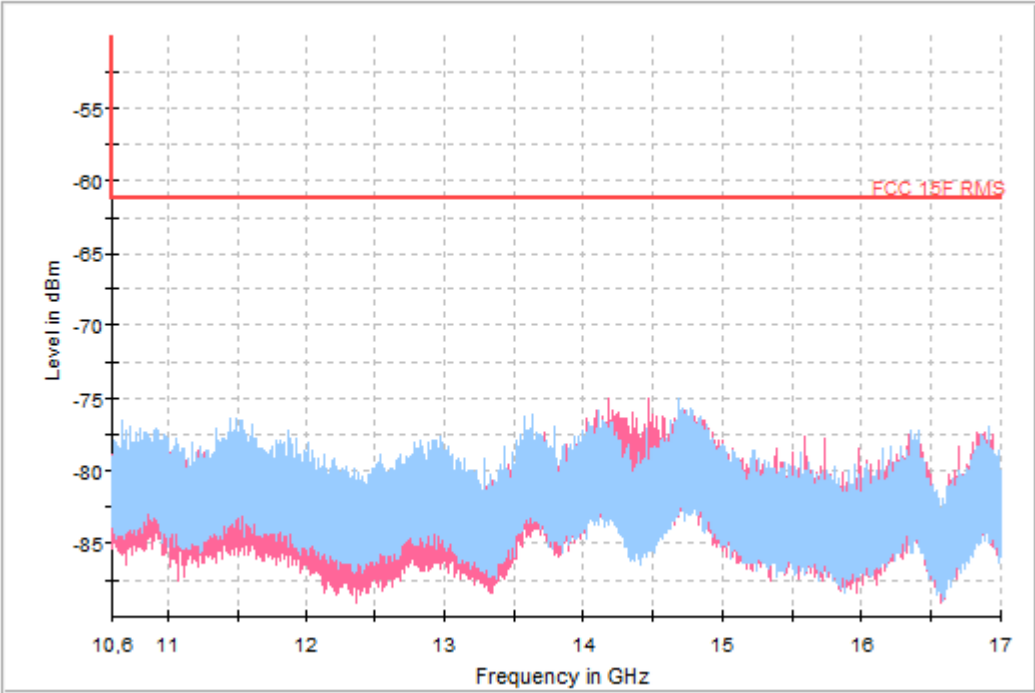
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)
7912.850000	-51.84	-41.30	10.54	20000.0	160.0	V	296.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
960 MHz - 10,6 GHz	482 kHz	RMS	1 MHz	20 s	0 dB

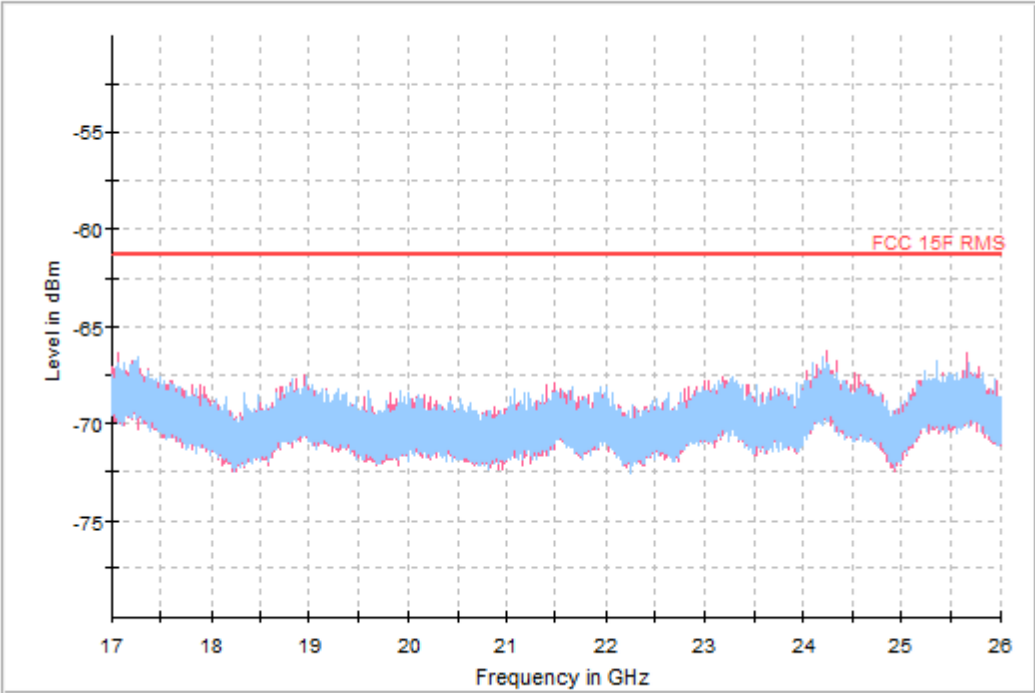
UWB TRANSMITTER ON. CH9, Frame CCC SP3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P

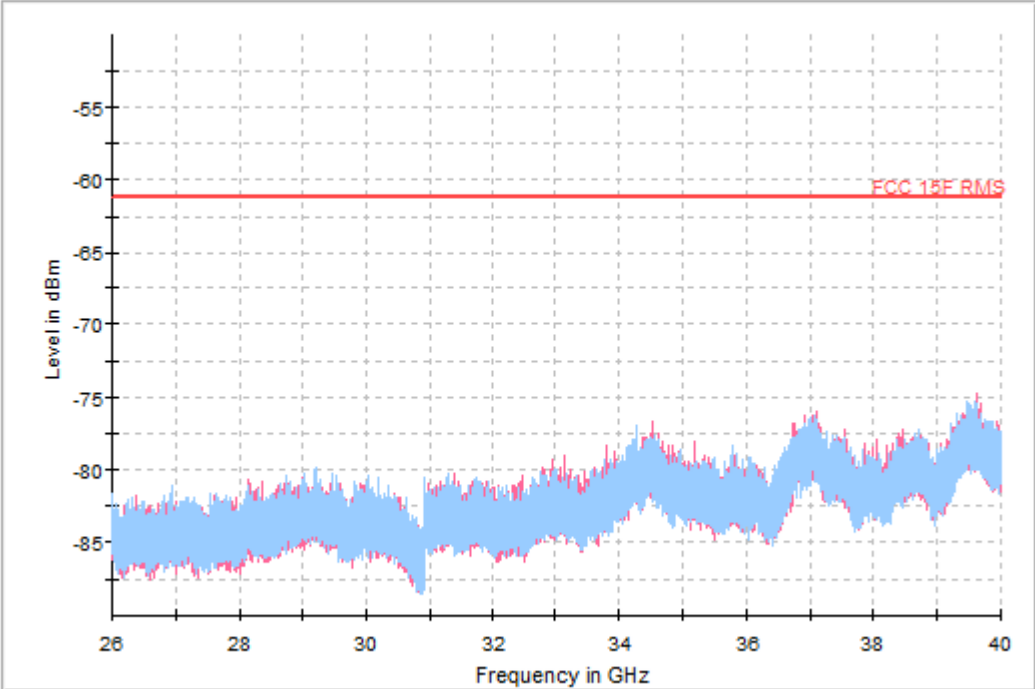
Full Spectrum



Full Spectrum



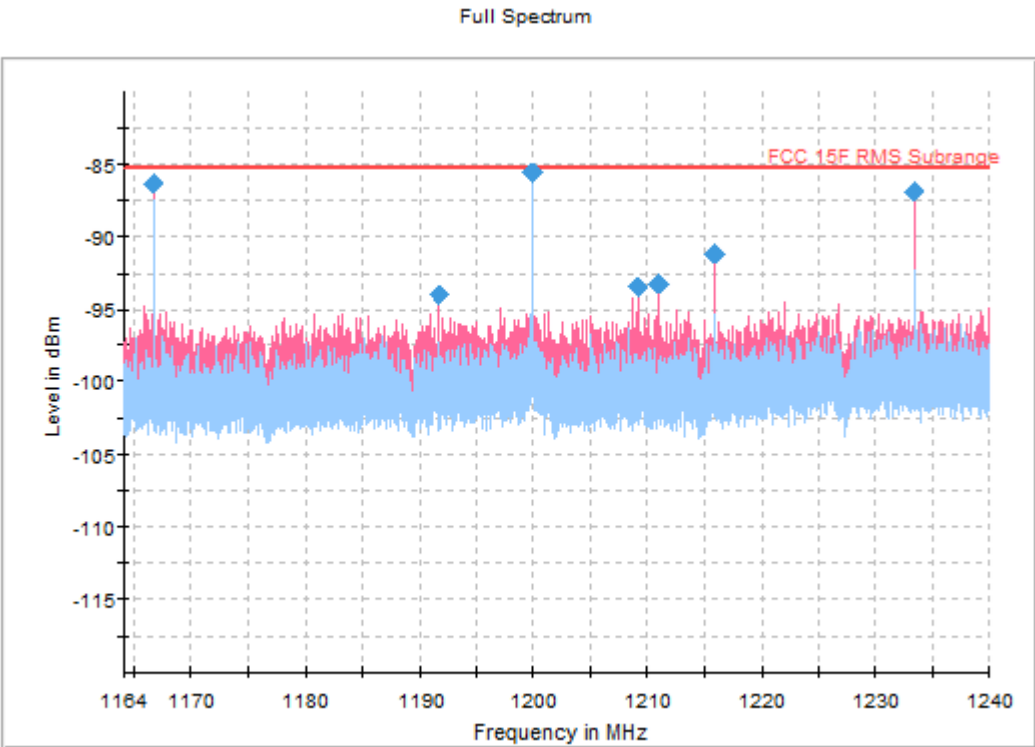
Full Spectrum



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
10,6 GHz - 14 GHz	34 kHz	RMS	100 kHz	1 s	0 dB
14 GHz - 17 GHz	30 kHz	RMS	100 kHz	1 s	0 dB
17 GHz - 26 GHz	90 kHz	RMS	1 MHz	1 s	0 dB
26 GHz - 40 GHz	140 kHz	RMS	300 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame CCC SP3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



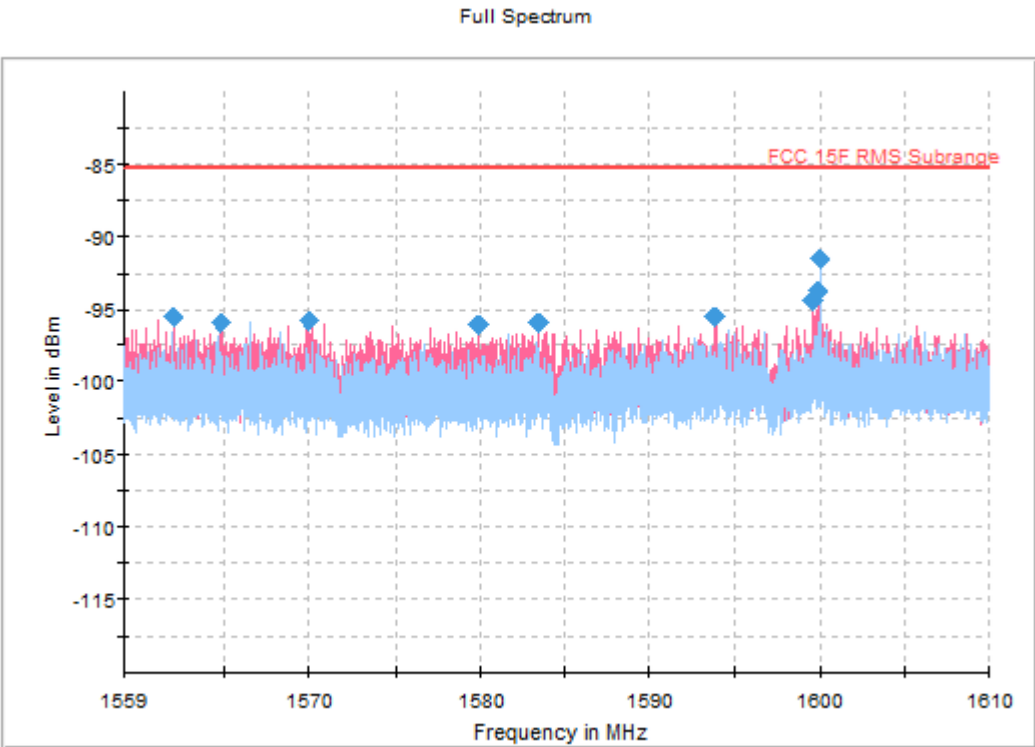
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1166.677480	-86.35	-85.30	1.05	1.0	10.000	V	177.0	
1191.678440	-94.03	-85.30	8.73	1.0	10.000	V	162.0	
1199.999680	-85.53	-85.30	0.23	1.0	10.000	H	72.0	
1209.164520	-93.43	-85.30	8.13	1.0	10.000	V	35.0	
1211.034120	-93.18	-85.30	7.88	1.0	10.000	V	35.0	
1215.968040	-91.09	-85.30	5.79	1.0	10.000	V	263.0	
1233.345440	-86.87	-85.30	1.57	1.0	10.000	V	261.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
1,164 GHz - 1,24 GHz	760 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame CCC SP3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



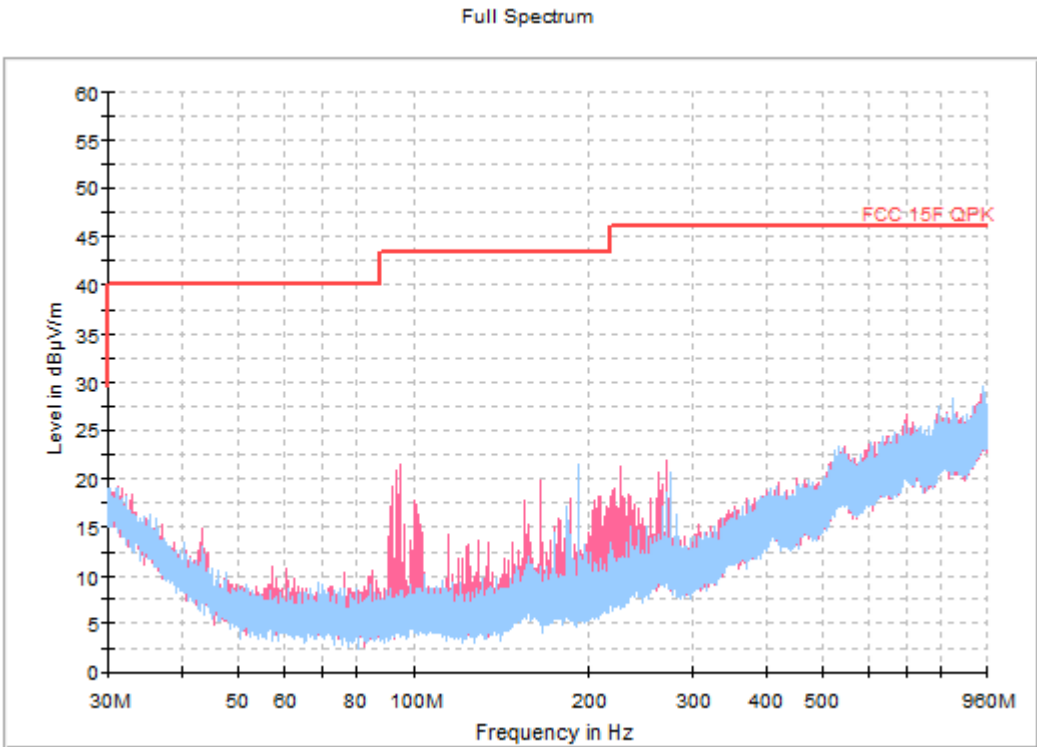
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1562.031950	-95.59	-85.30	10.29	1.0	10.000	V	145.0	
1564.714040	-95.87	-85.30	10.57	1.0	10.000	V	242.0	
1569.961430	-95.83	-85.30	10.53	1.0	10.000	V	330.0	
1579.891130	-95.99	-85.30	10.69	1.0	10.000	V	348.0	
1583.458070	-95.96	-85.30	10.66	1.0	10.000	V	332.0	
1593.903380	-95.59	-85.30	10.29	1.0	10.000	V	247.0	
1599.634760	-94.42	-85.30	9.12	1.0	10.000	V	183.0	
1599.964730	-93.73	-85.30	8.43	1.0	10.000	V	209.0	
1599.999920	-91.53	-85.30	6.23	1.0	10.000	H	129.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,559 GHz - 1,61 GHz	510 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH5, Frame KF RAD Ecomini.

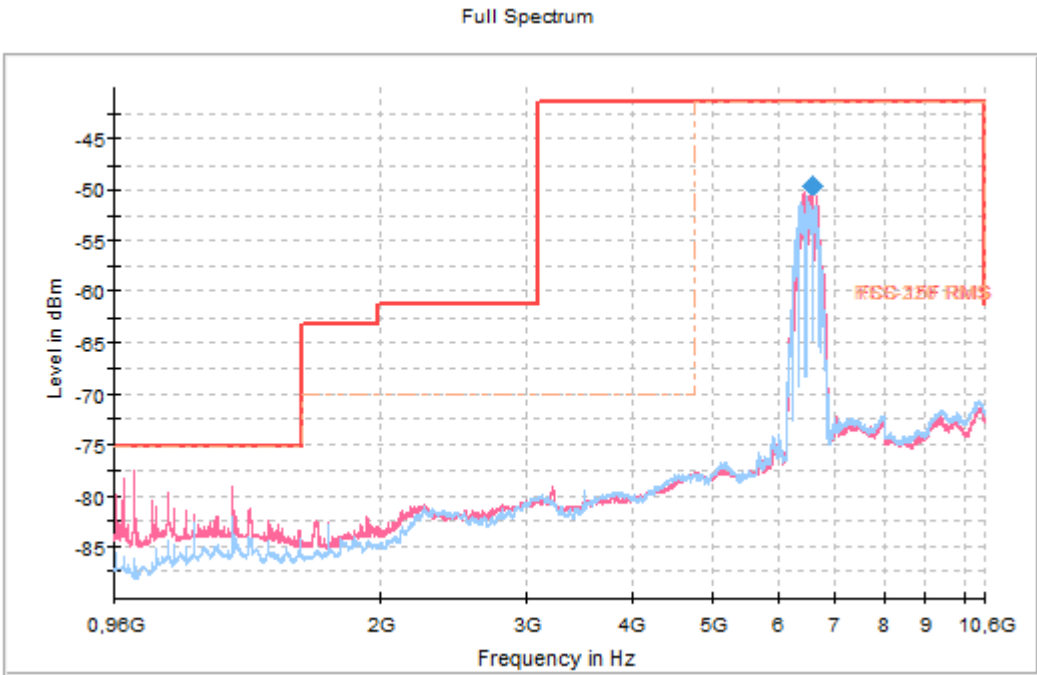
Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESR 7] 30 MHz - 960 MHz	9,3 kHz	PK+	100 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH5, Frame KF RAD Ecomini.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



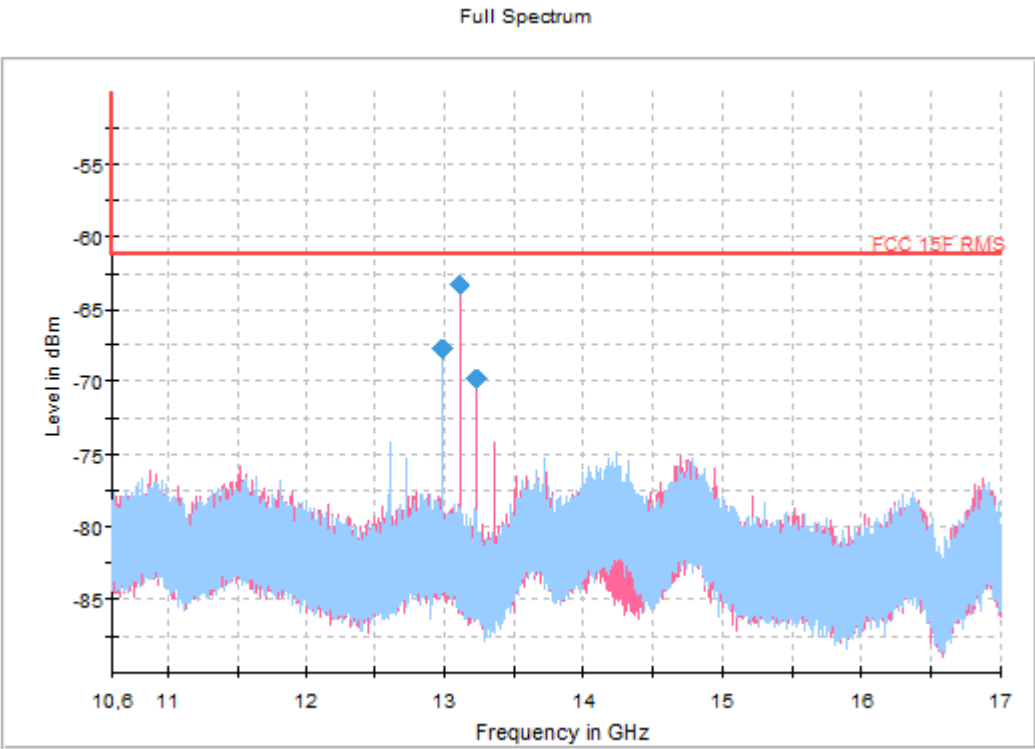
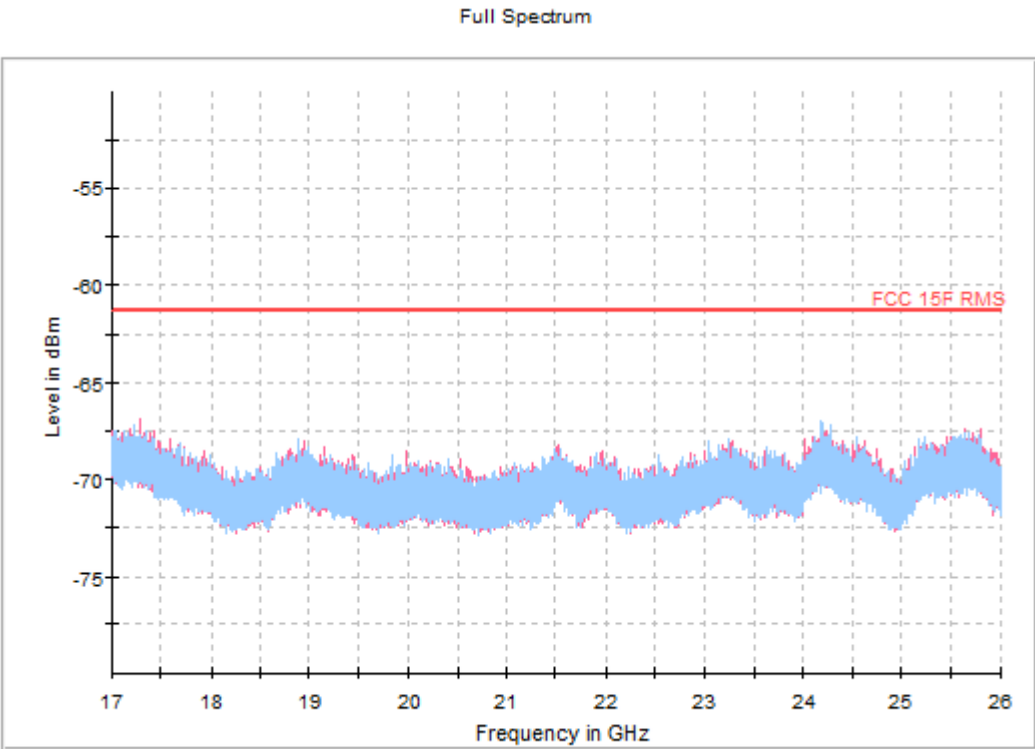
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)
6578.674000	-49.62	-41.30	8.32	20000.0	160.0	V	296.0

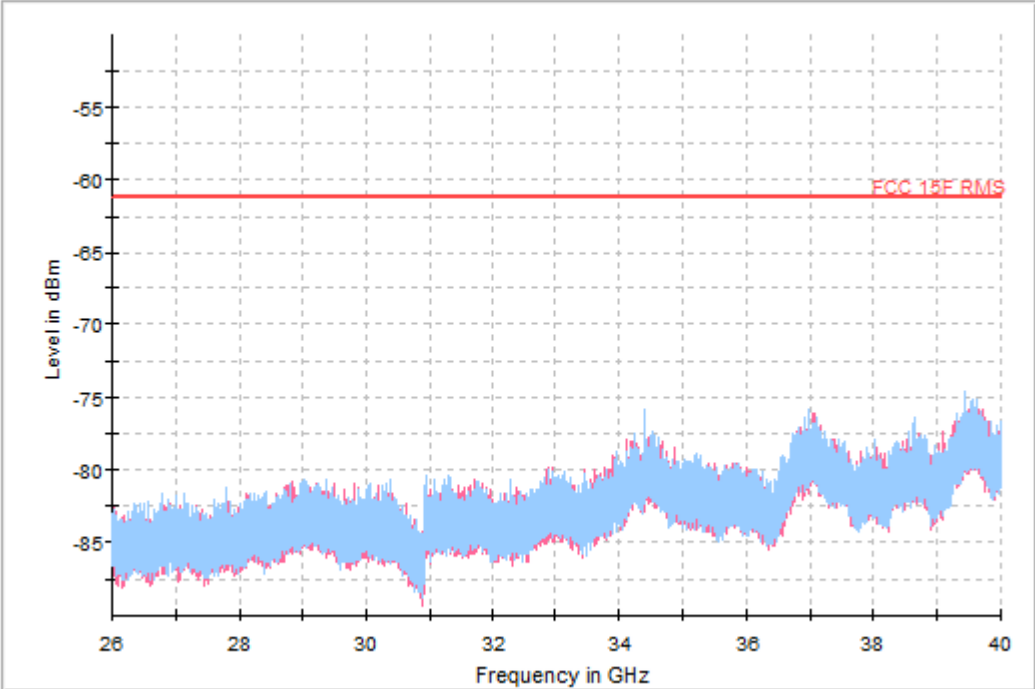
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
960 MHz - 10,6 GHz	482 kHz	RMS	1 MHz	20 s	0 dB

UWB TRANSMITTER ON. CH5, Frame KF RAD Ecomini.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



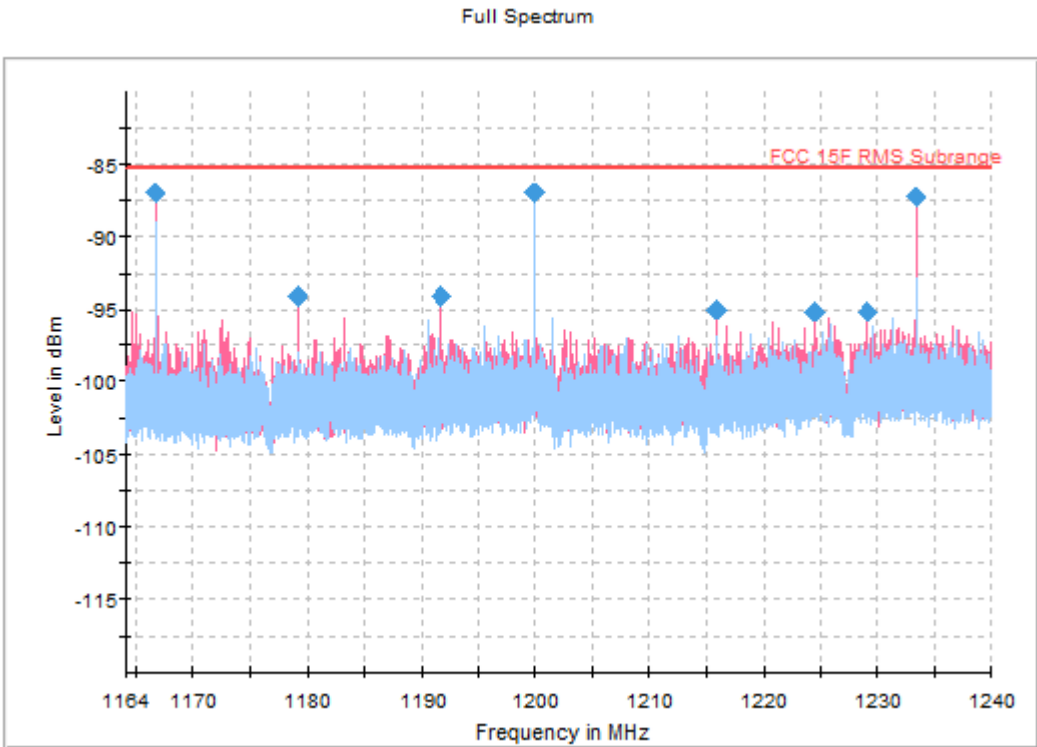
Full Spectrum



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
10,6 GHz - 14 GHz	34 kHz	RMS	100 kHz	1 s	0 dB
14 GHz - 17 GHz	30 kHz	RMS	100 kHz	1 s	0 dB
17 GHz - 26 GHz	90 kHz	RMS	1 MHz	1 s	0 dB
26 GHz - 40 GHz	140 kHz	RMS	300 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH5, Frame KF RAD Ecomini.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



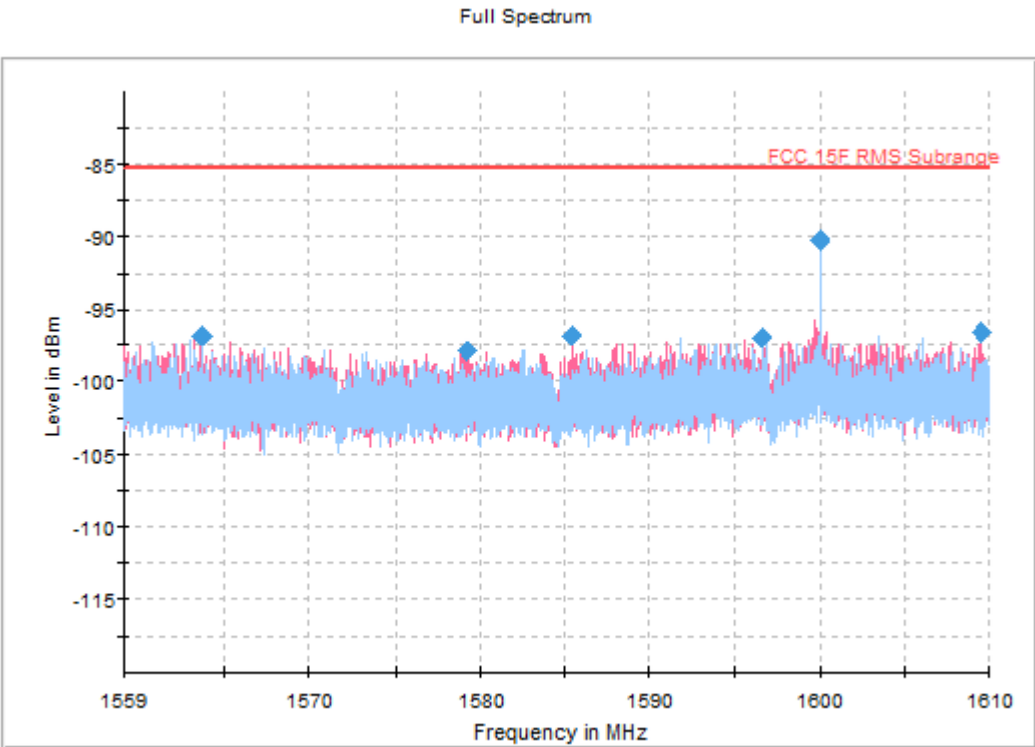
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1166.677480	-87.02	-85.30	1.72	1.0	10.000	V	302.0	
1179.177200	-94.14	-85.30	8.84	1.0	10.000	V	309.0	
1191.677680	-94.17	-85.30	8.87	1.0	10.000	V	309.0	
1200.000440	-87.04	-85.30	1.74	1.0	10.000	H	0.0	
1215.968800	-94.99	-85.30	9.69	1.0	10.000	V	258.0	
1224.439760	-95.16	-85.30	9.86	1.0	10.000	V	118.0	
1229.179120	-95.19	-85.30	9.89	1.0	10.000	V	344.0	
1233.345440	-87.20	-85.30	1.90	1.0	10.000	V	330.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,164 GHz - 1,24 GHz	760 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH5, Frame KF RAD Ecomini.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



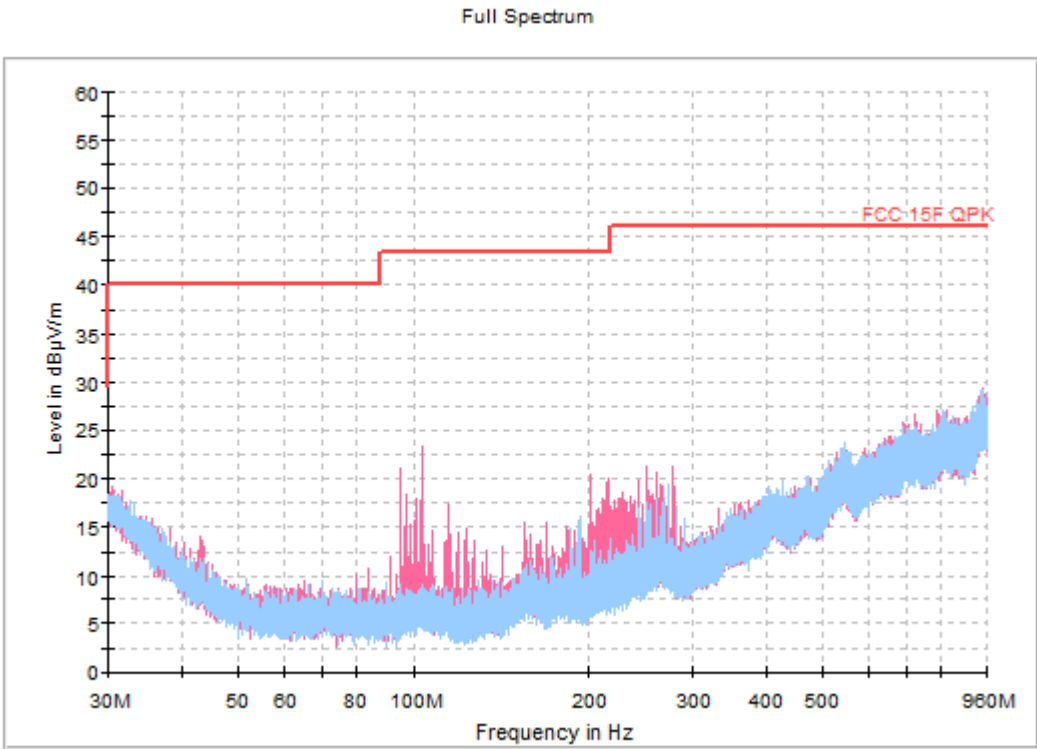
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1563.612440	-96.77	-85.30	11.47	1.0	10.000	V	312.0	
1579.256690	-97.80	-85.30	12.50	1.0	10.000	V	260.0	
1585.420550	-96.84	-85.30	11.54	1.0	10.000	V	297.0	
1596.567620	-96.90	-85.30	11.60	1.0	10.000	H	40.0	
1600.000430	-90.28	-85.30	4.98	1.0	10.000	H	307.0	
1609.604240	-96.54	-85.30	11.24	1.0	10.000	V	214.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,559 GHz - 1,61 GHz	510 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame KF RAD Ecomini.

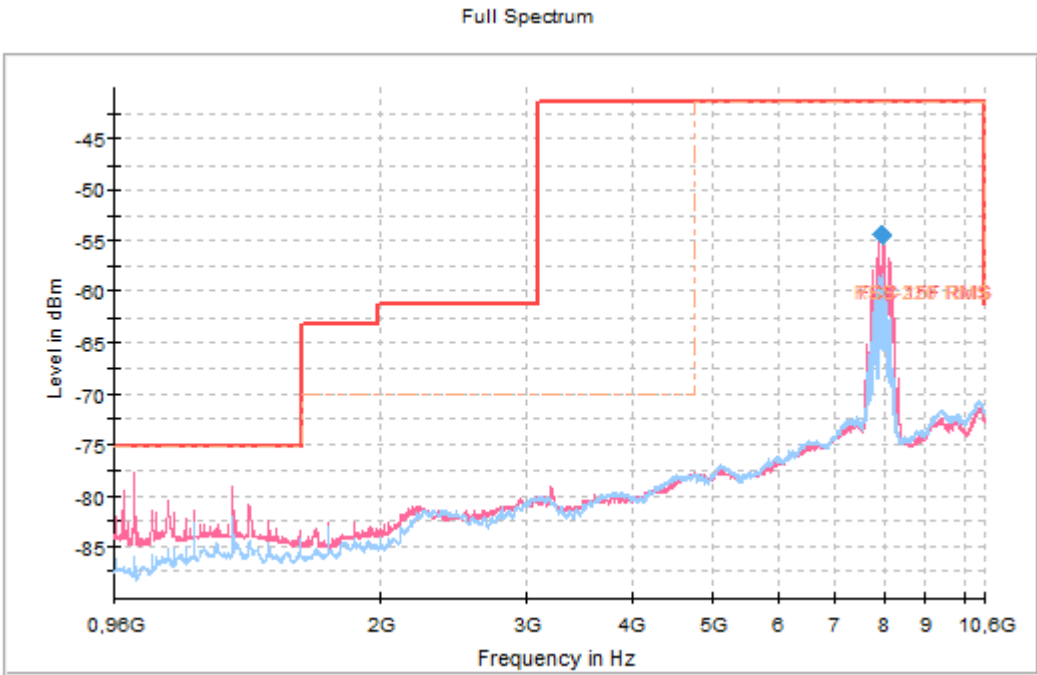
Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESR 7] 30 MHz - 960 MHz	9,3 kHz	PK+	100 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame KF RAD Ecomini.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



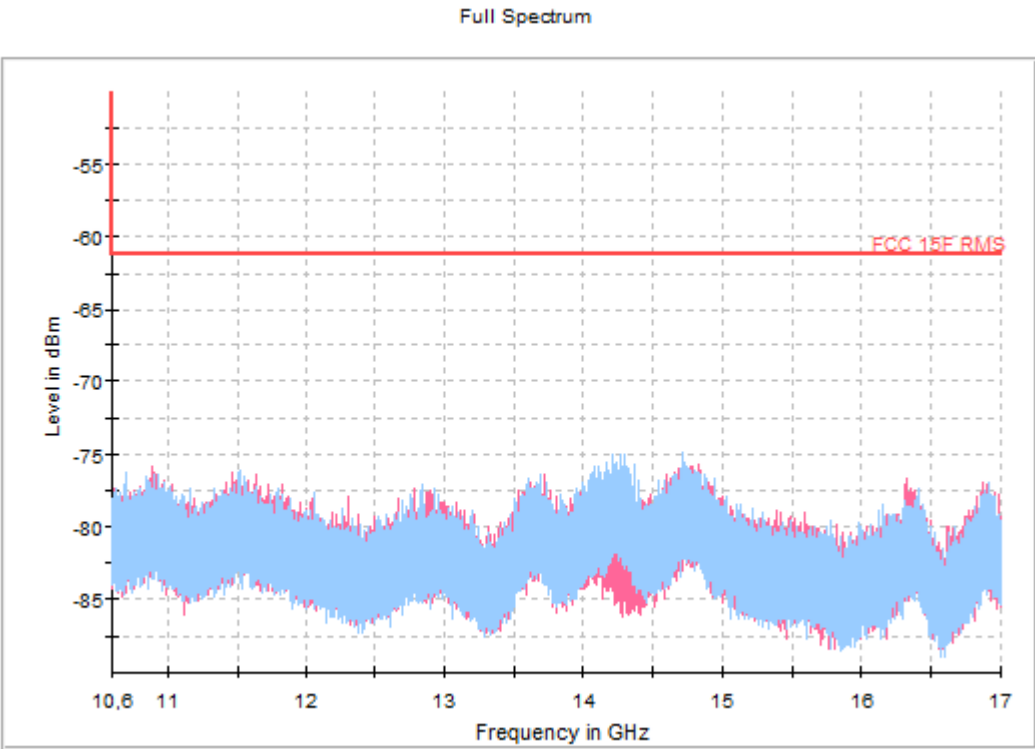
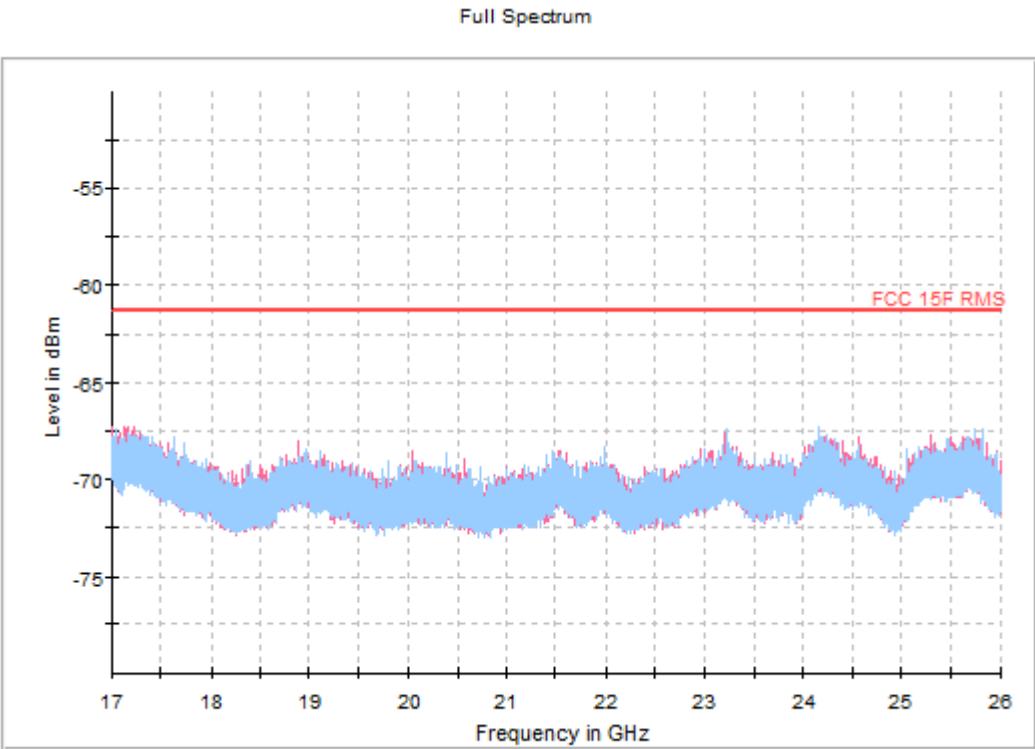
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)
7987.078000	-54.38	-41.30	13.08	20000.0	160.0	V	189.0

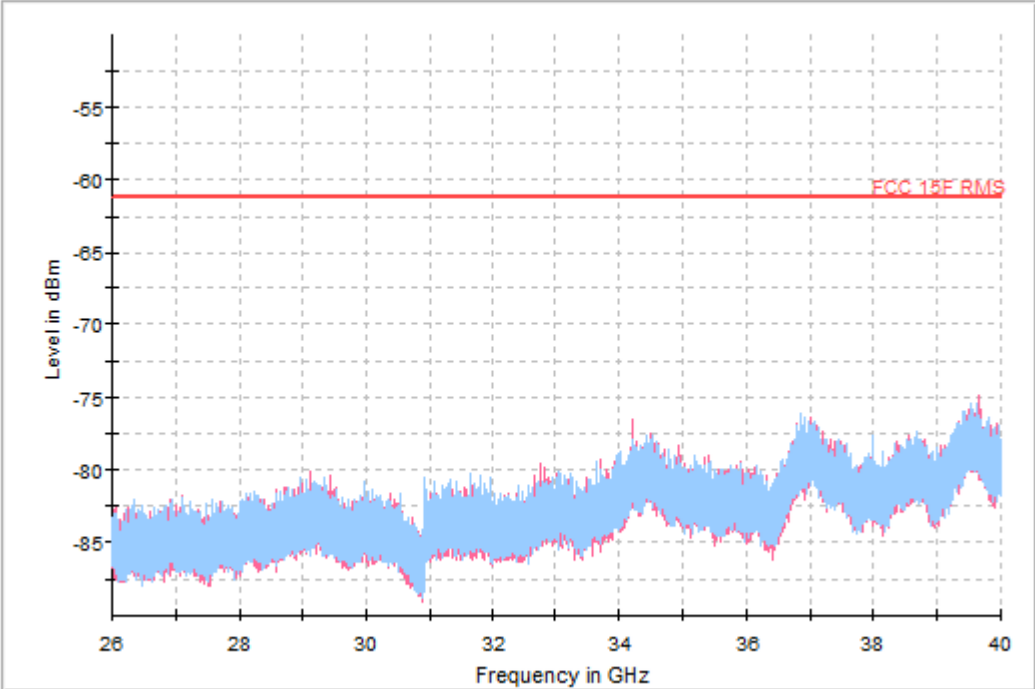
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
960 MHz - 10,6 GHz	482 kHz	RMS	1 MHz	20 s	0 dB

UWB TRANSMITTER ON. CH9, Frame KF RAD Ecomini.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



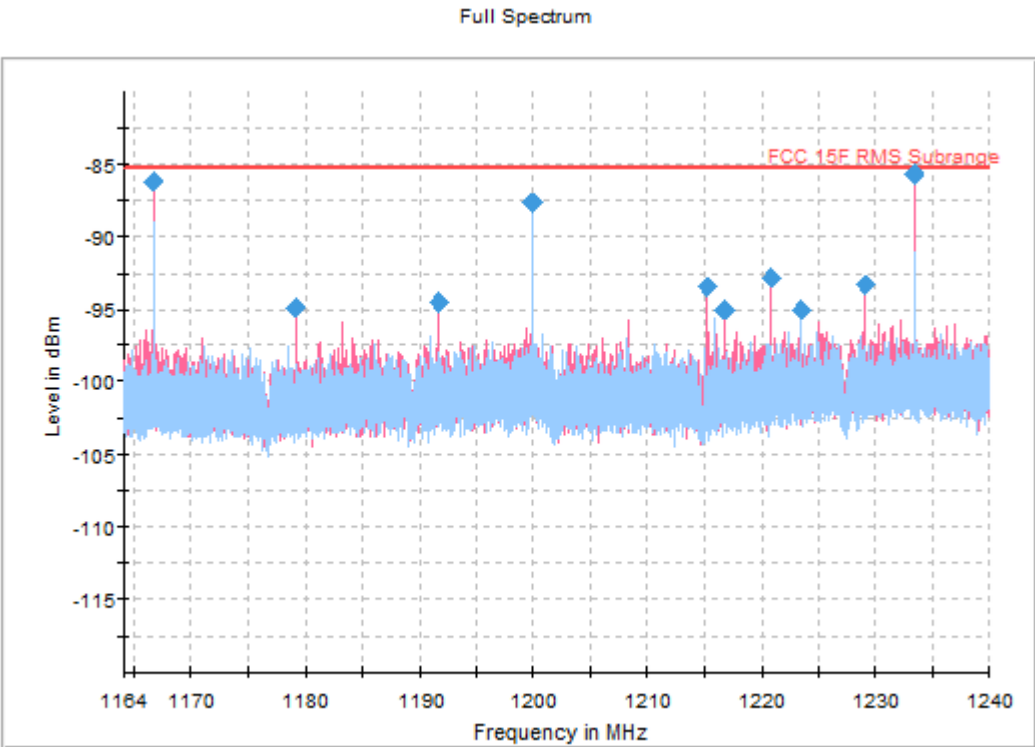
Full Spectrum



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
10,6 GHz - 14 GHz	34 kHz	RMS	100 kHz	1 s	0 dB
14 GHz - 17 GHz	30 kHz	RMS	100 kHz	1 s	0 dB
17 GHz - 26 GHz	90 kHz	RMS	1 MHz	1 s	0 dB
26 GHz - 40 GHz	140 kHz	RMS	300 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame KF RAD Ecomini.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



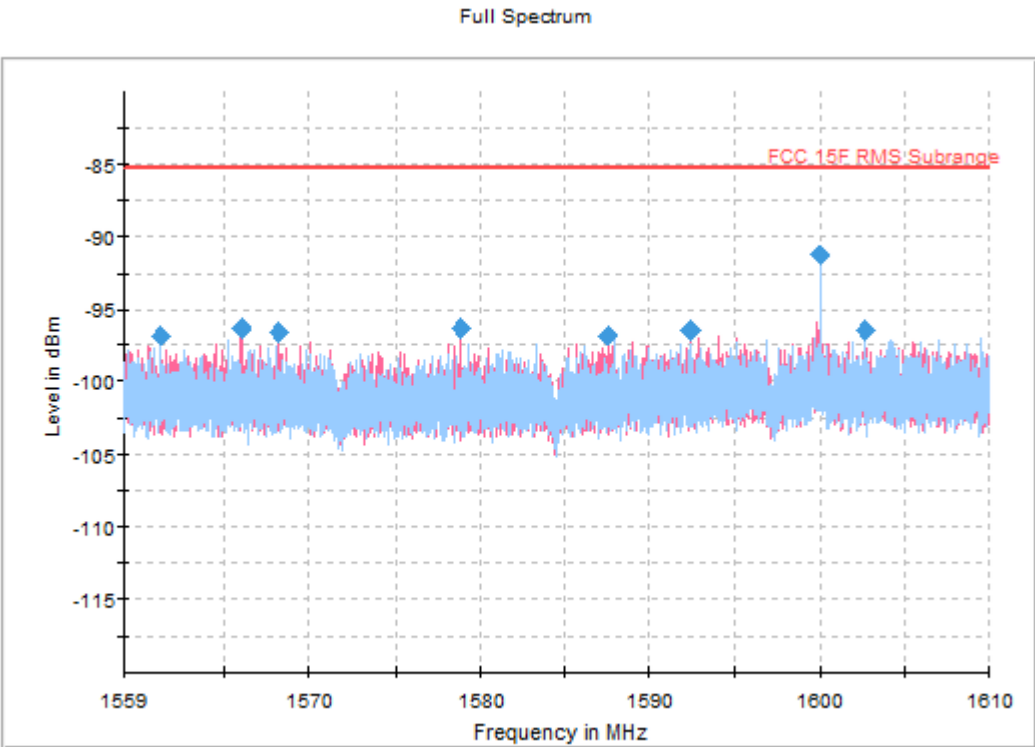
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1166.677480	-86.21	-85.30	0.91	1.0	10.000	V	314.0	
1179.177200	-94.95	-85.30	9.65	1.0	10.000	V	349.0	
1191.676920	-94.50	-85.30	9.20	1.0	10.000	V	63.0	
1199.999680	-87.64	-85.30	2.34	1.0	10.000	H	65.0	
1215.219440	-93.40	-85.30	8.10	1.0	10.000	V	170.0	
1216.679400	-94.98	-85.30	9.68	1.0	10.000	V	349.0	
1220.844960	-92.82	-85.30	7.52	1.0	10.000	V	349.0	
1223.555120	-95.05	-85.30	9.75	1.0	10.000	H	330.0	
1229.179120	-93.30	-85.30	8.00	1.0	10.000	V	349.0	
1233.345440	-85.67	-85.30	0.37	1.0	10.000	V	334.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
1,164 GHz - 1,24 GHz	760 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame KF RAD Ecomini.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



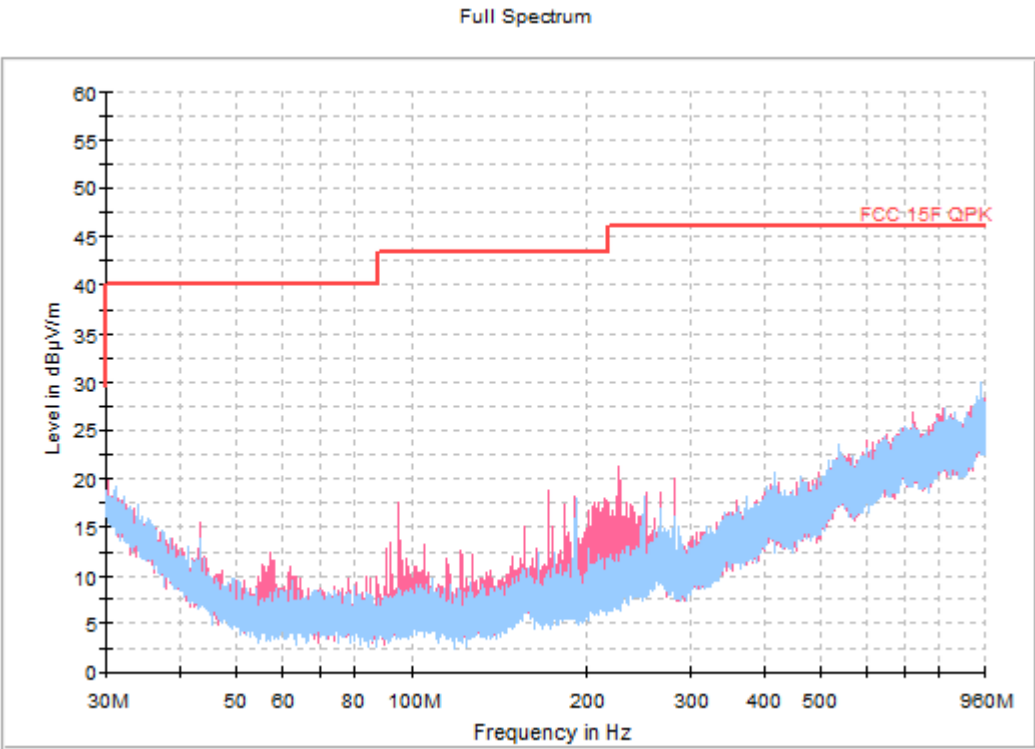
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1561.256750	-96.78	-85.30	11.48	1.0	10.000	H	289.0	
1565.915600	-96.36	-85.30	11.06	1.0	10.000	V	18.0	
1568.214170	-96.54	-85.30	11.24	1.0	10.000	V	111.0	
1578.962420	-96.30	-85.30	11.00	1.0	10.000	V	210.0	
1587.582950	-96.78	-85.30	11.48	1.0	10.000	V	108.0	
1592.427950	-96.40	-85.30	11.10	1.0	10.000	V	315.0	
1599.999920	-91.29	-85.30	5.99	1.0	10.000	H	307.0	
1602.704960	-96.46	-85.30	11.16	1.0	10.000	H	199.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,559 GHz - 1,61 GHz	510 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate1.

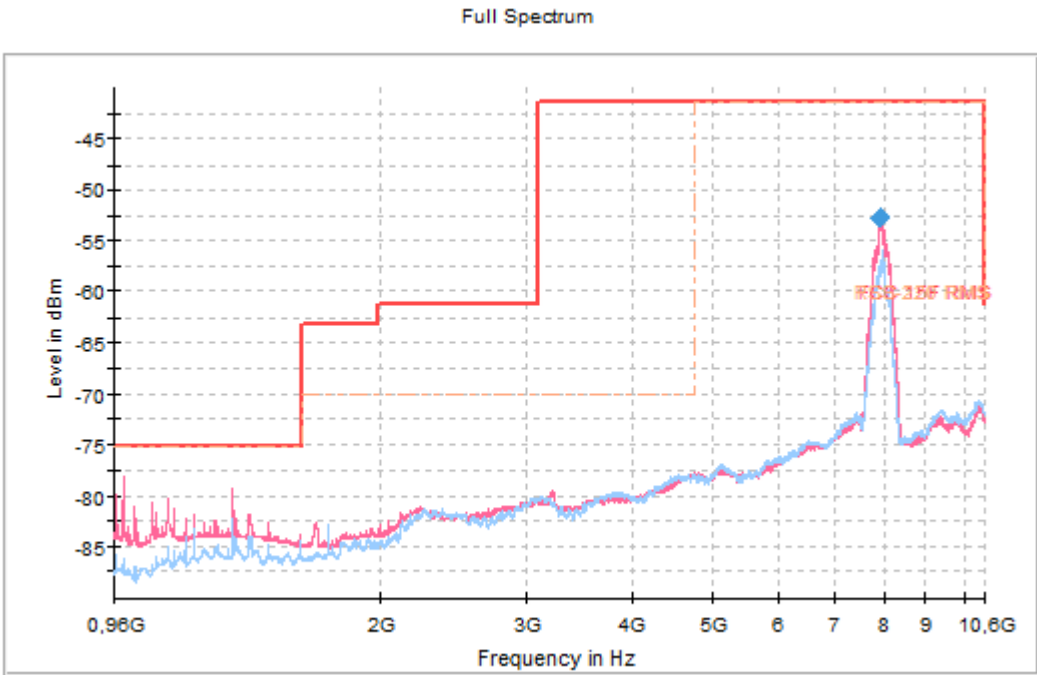
Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESR 7] 30 MHz - 960 MHz	9,3 kHz	PK+	100 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate1.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



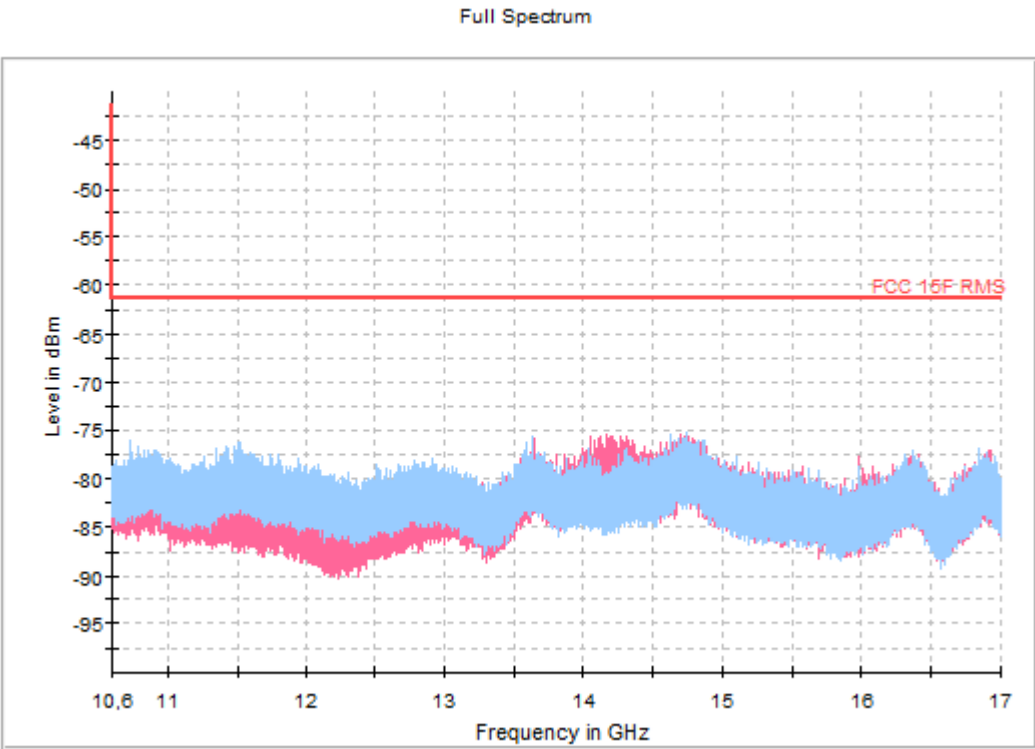
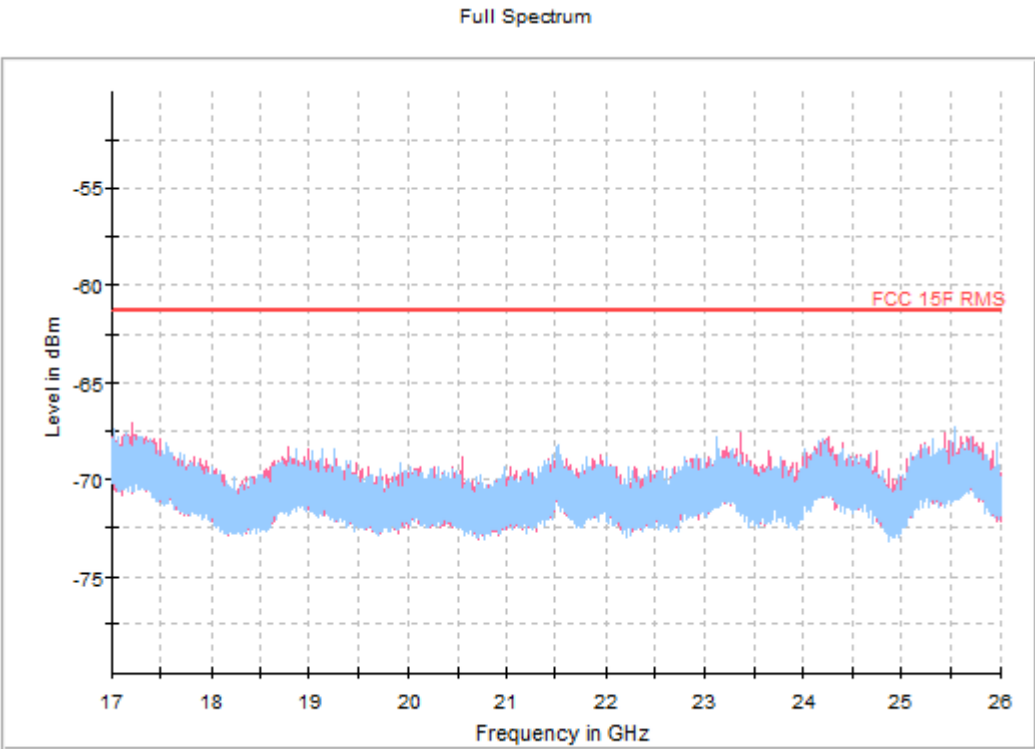
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)
7929.238000	-52.72	-41.30	11.42	20000.0	160.0	V	296.0

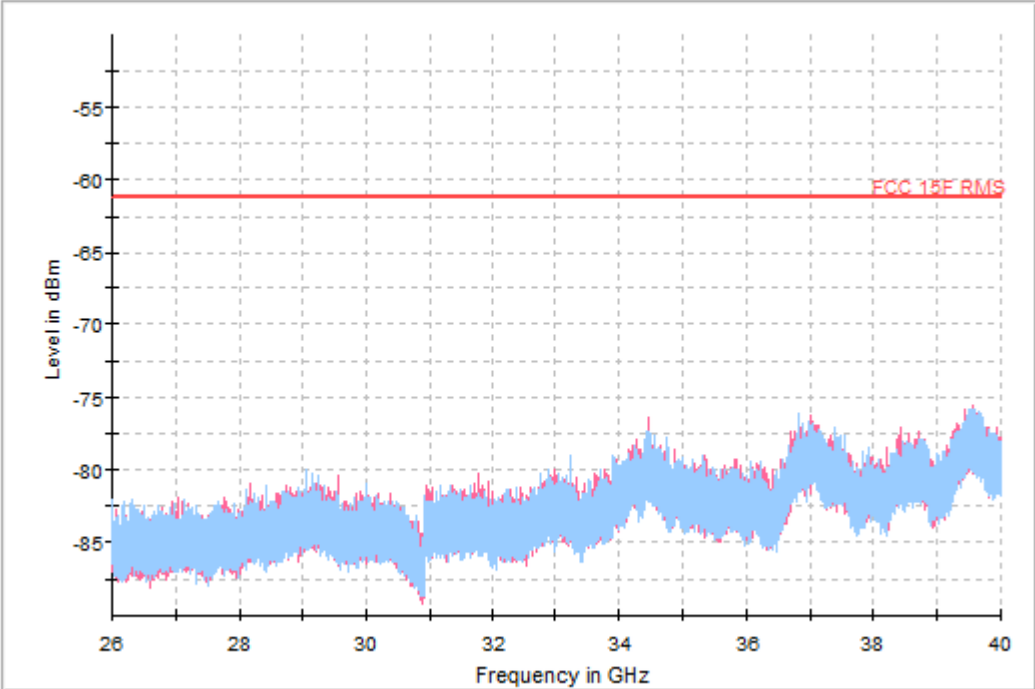
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
960 MHz - 10,6 GHz	482 kHz	RMS	1 MHz	20 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate1.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



Full Spectrum



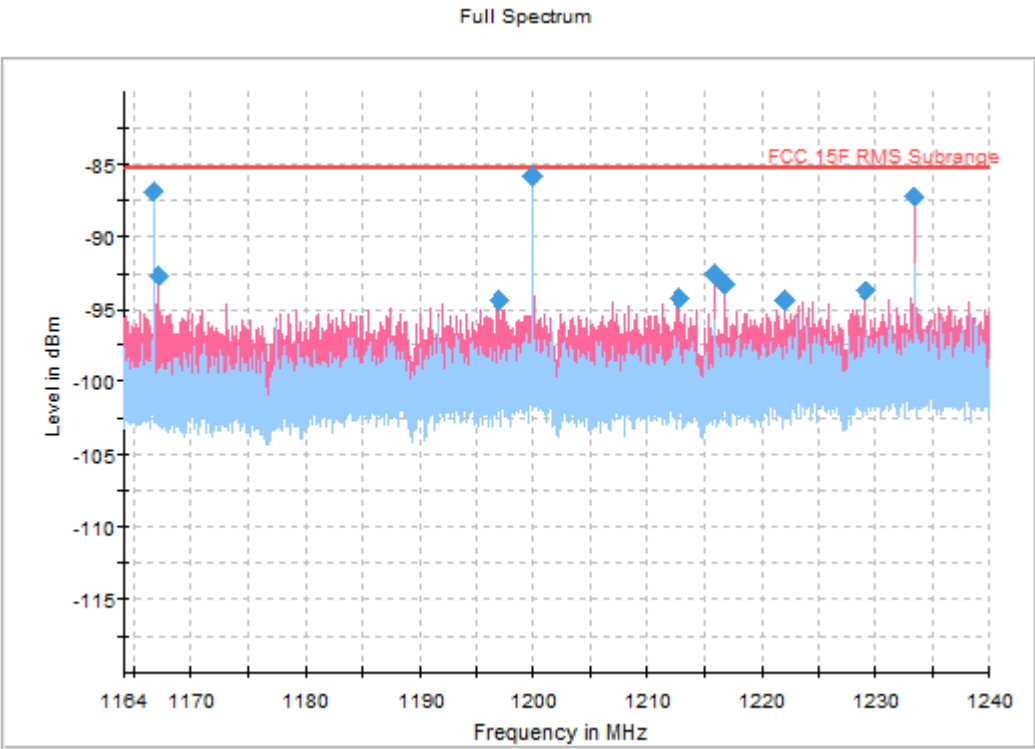
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
7936.820000	-19.74	0.00	19.74	150.0	50000.000	V	243.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
10,6 GHz - 14 GHz	34 kHz	RMS	100 kHz	1 s	0 dB
14 GHz - 17 GHz	30 kHz	RMS	100 kHz	1 s	0 dB
17 GHz - 26 GHz	90 kHz	RMS	1 MHz	1 s	0 dB
26 GHz - 40 GHz	140 kHz	RMS	300 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate1.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



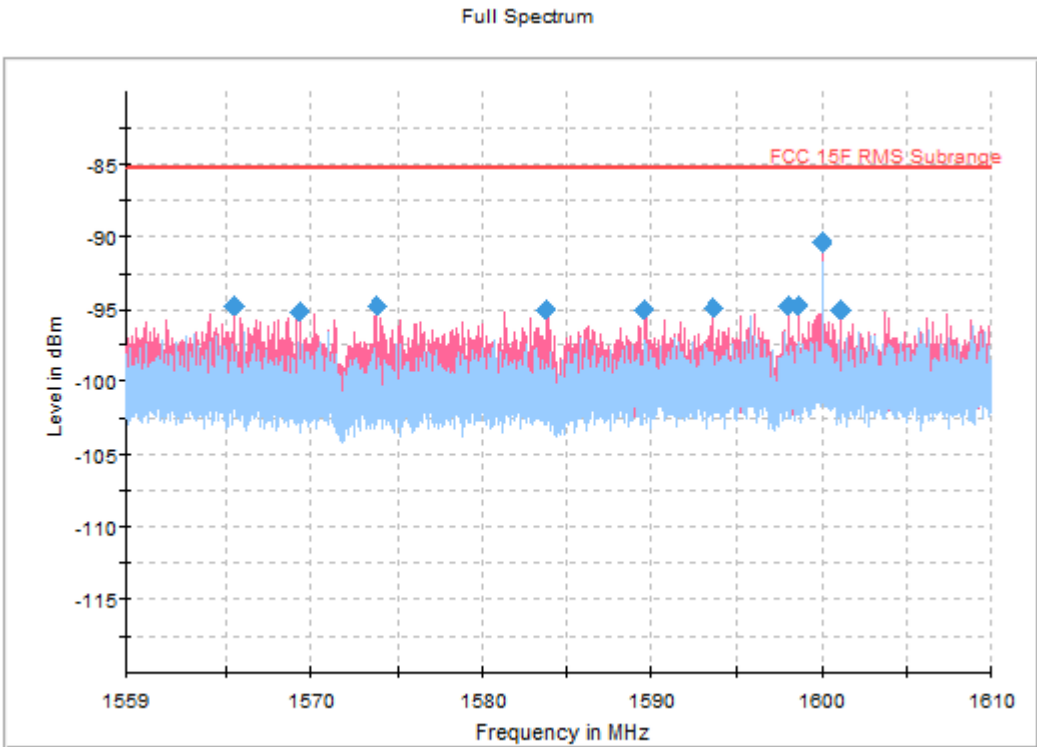
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1166.677480	-86.88	-85.30	1.58	1.0	10.000	V	166.0	
1167.109920	-92.75	-85.30	7.45	1.0	10.000	V	171.0	
1196.918640	-94.33	-85.30	9.03	1.0	10.000	V	93.0	
1199.999680	-85.78	-85.30	0.48	1.0	10.000	H	25.0	
1212.826200	-94.19	-85.30	8.89	1.0	10.000	V	0.0	
1215.967280	-92.61	-85.30	7.31	1.0	10.000	V	262.0	
1216.677880	-93.36	-85.30	8.06	1.0	10.000	V	151.0	
1221.980400	-94.35	-85.30	9.05	1.0	10.000	V	74.0	
1229.179880	-93.71	-85.30	8.41	1.0	10.000	V	256.0	
1233.345440	-87.25	-85.30	1.95	1.0	10.000	V	354.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,164 GHz - 1,24 GHz	760 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate1.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



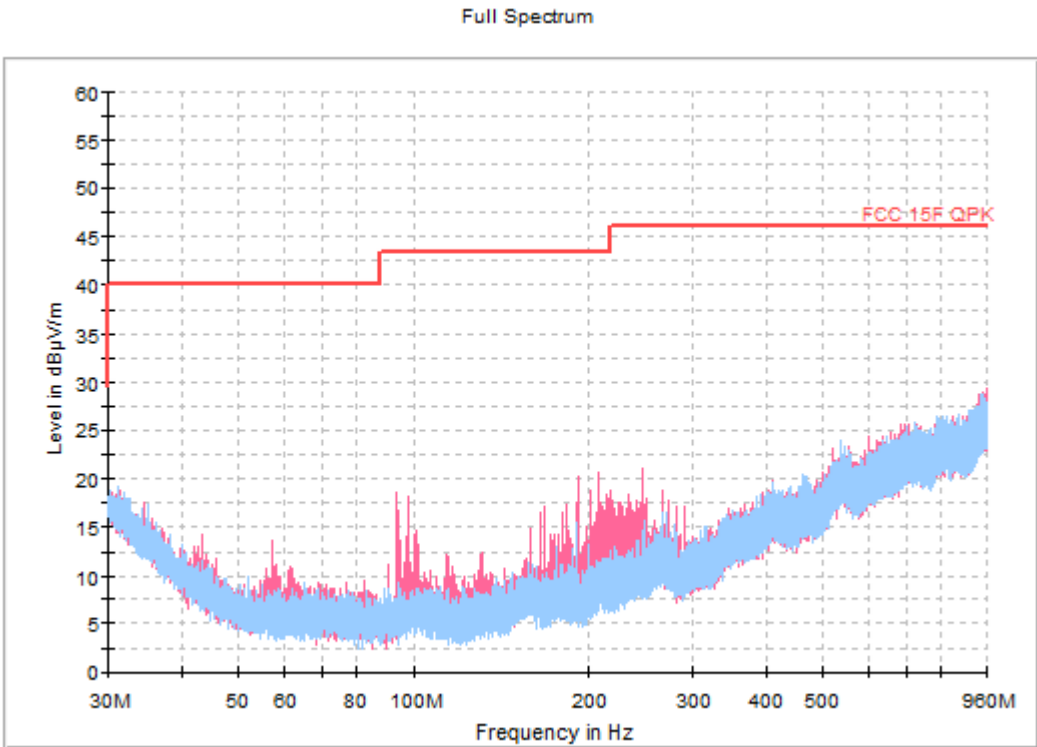
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1565.373980	-94.79	-85.30	9.49	1.0	10.000	V	222.0	
1569.332600	-95.09	-85.30	9.79	1.0	10.000	V	262.0	
1573.770620	-94.77	-85.30	9.47	1.0	10.000	V	200.0	
1583.814560	-95.03	-85.30	9.73	1.0	10.000	V	147.0	
1589.492900	-95.03	-85.30	9.73	1.0	10.000	V	268.0	
1593.668780	-94.93	-85.30	9.63	1.0	10.000	V	260.0	
1598.103740	-94.74	-85.30	9.44	1.0	10.000	V	242.0	
1598.590280	-94.72	-85.30	9.42	1.0	10.000	V	102.0	
1600.000430	-90.39	-85.30	5.09	1.0	10.000	V	46.0	
1601.193830	-94.99	-85.30	9.69	1.0	10.000	V	56.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
1,559 GHz - 1,61 GHz	510 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate2.

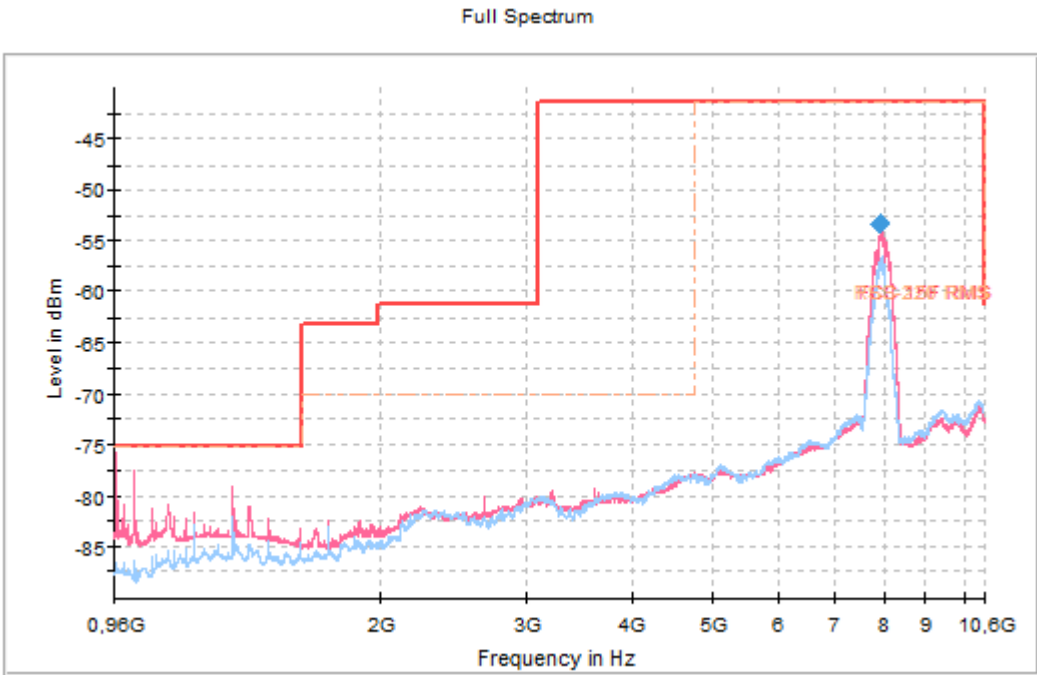
Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESR 7] 30 MHz - 960 MHz	9,3 kHz	PK+	100 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate2.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



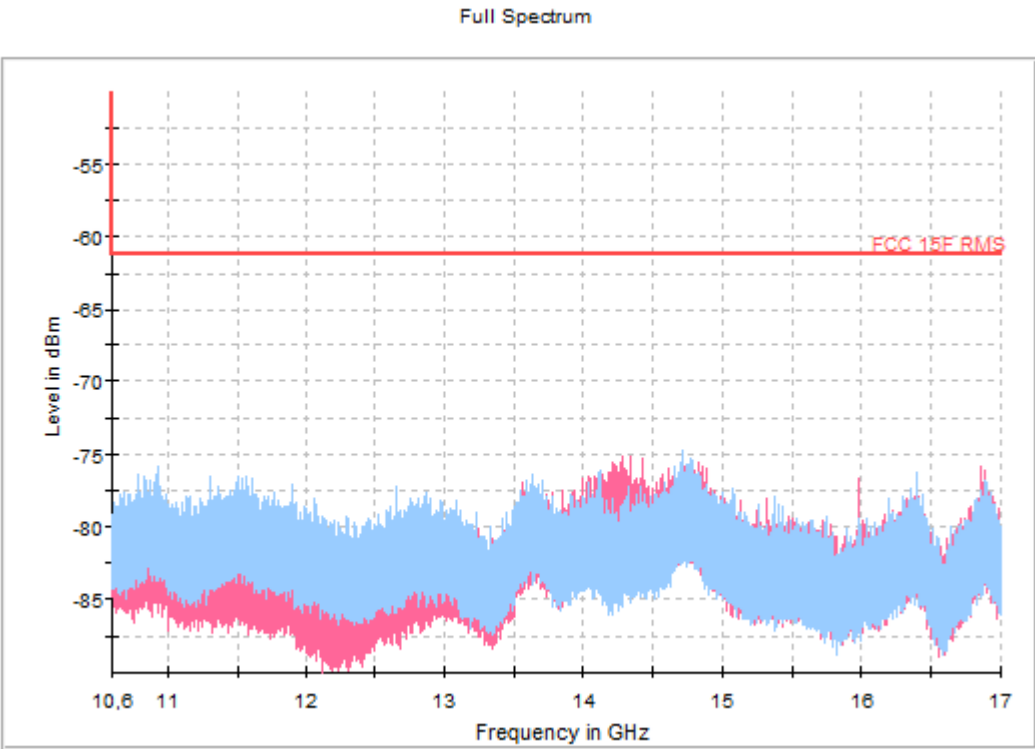
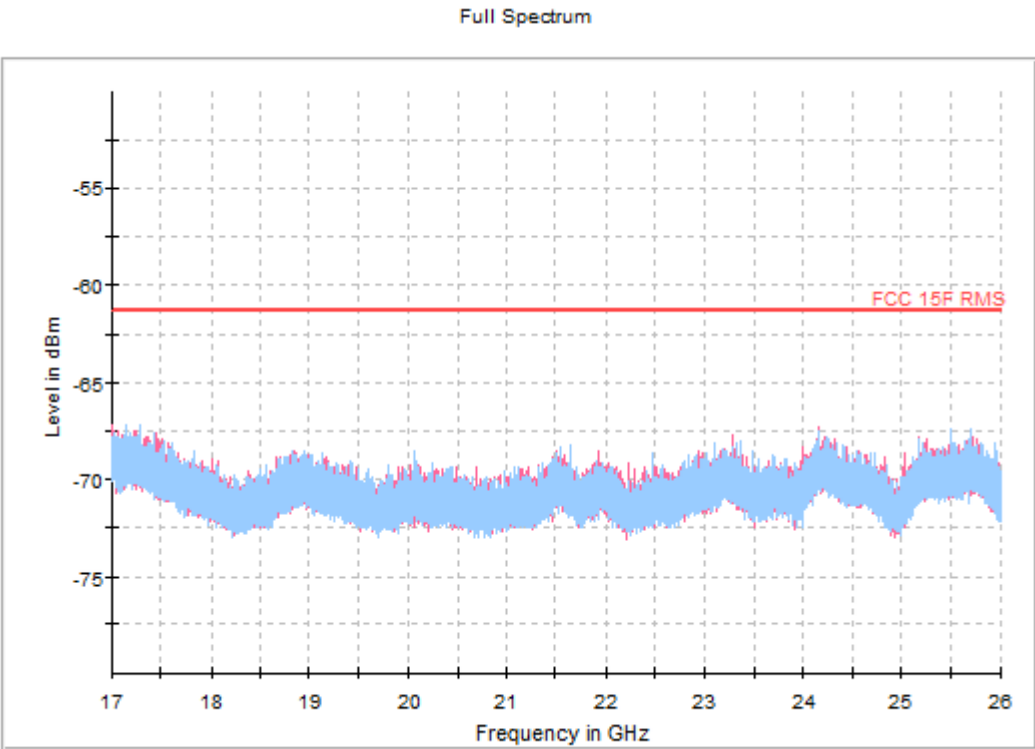
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)
7941.288000	-53.21	-41.30	11.91	20000.0	160.0	V	189.0

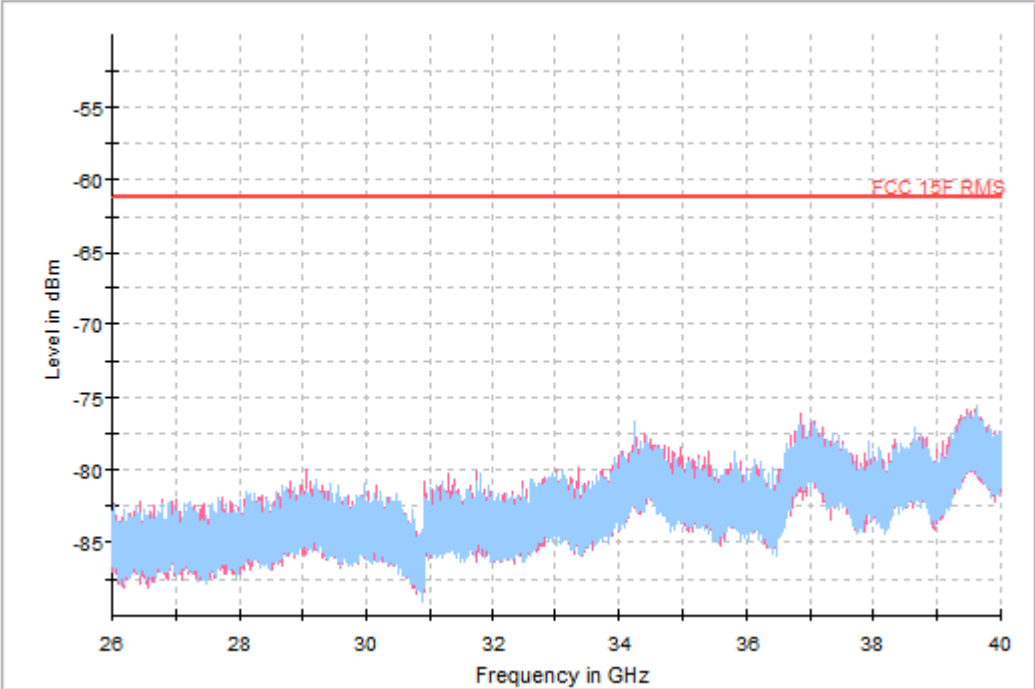
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
960 MHz - 10,6 GHz	482 kHz	RMS	1 MHz	20 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate2.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



Full Spectrum



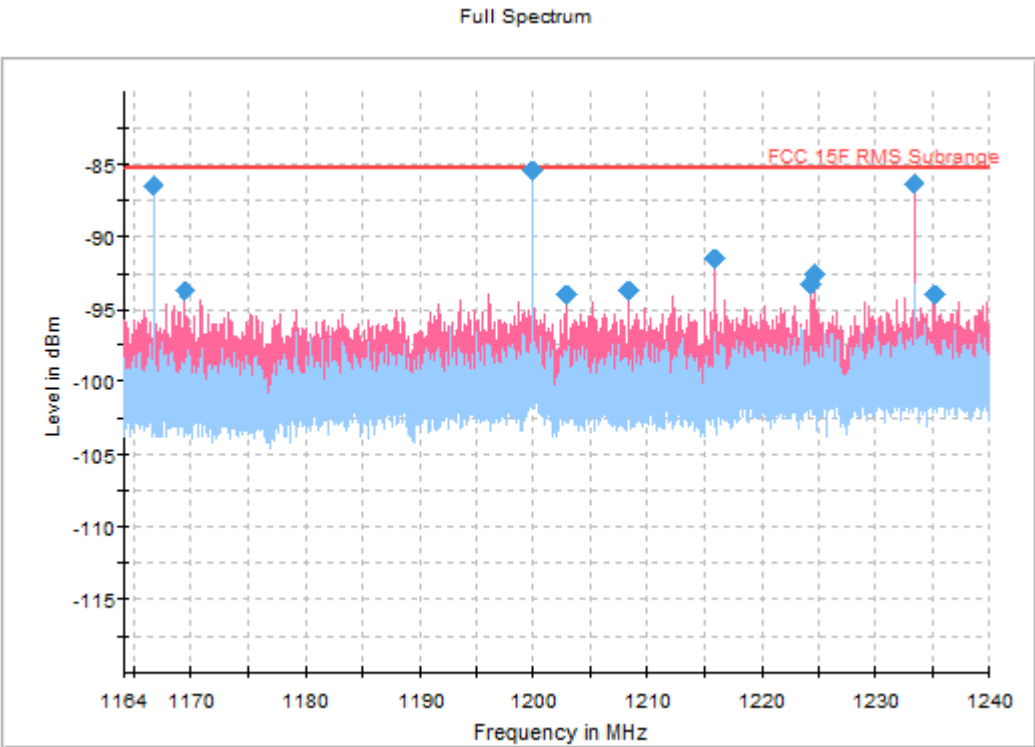
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
7928.560000	-23.15	0.00	23.15	150.0	50000.000	V	244.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
10,6 GHz - 14 GHz	34 kHz	RMS	100 kHz	1 s	0 dB
14 GHz - 17 GHz	30 kHz	RMS	100 kHz	1 s	0 dB
17 GHz - 26 GHz	90 kHz	RMS	1 MHz	1 s	0 dB
26 GHz - 40 GHz	140 kHz	RMS	300 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate2.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



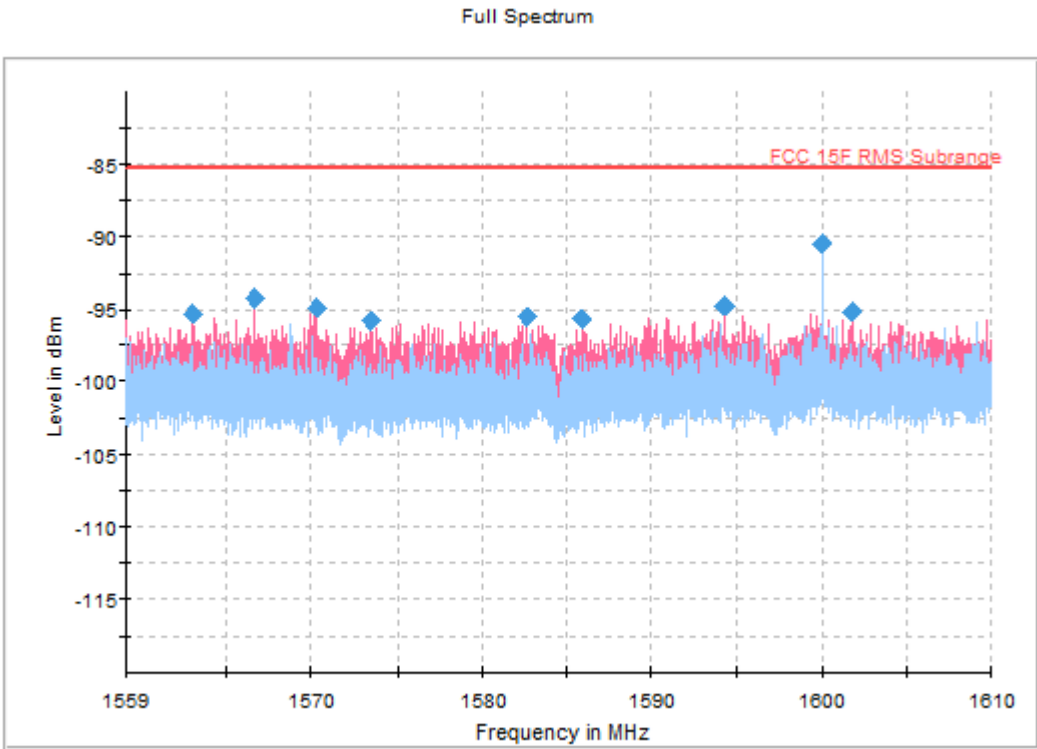
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1166.677480	-86.44	-85.30	1.14	1.0	10.000	V	304.0	
1169.470480	-93.77	-85.30	8.47	1.0	10.000	V	34.0	
1200.000440	-85.41	-85.30	0.11	1.0	10.000	H	112.0	
1202.965960	-93.98	-85.30	8.68	1.0	10.000	V	306.0	
1208.344480	-93.75	-85.30	8.45	1.0	10.000	V	336.0	
1215.968040	-91.50	-85.30	6.20	1.0	10.000	V	258.0	
1224.340960	-93.28	-85.30	7.98	1.0	10.000	V	145.0	
1224.698160	-92.57	-85.30	7.27	1.0	10.000	V	64.0	
1233.345440	-86.36	-85.30	1.06	1.0	10.000	V	346.0	
1235.220360	-93.99	-85.30	8.69	1.0	10.000	V	9.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,164 GHz - 1,24 GHz	760 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate2.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



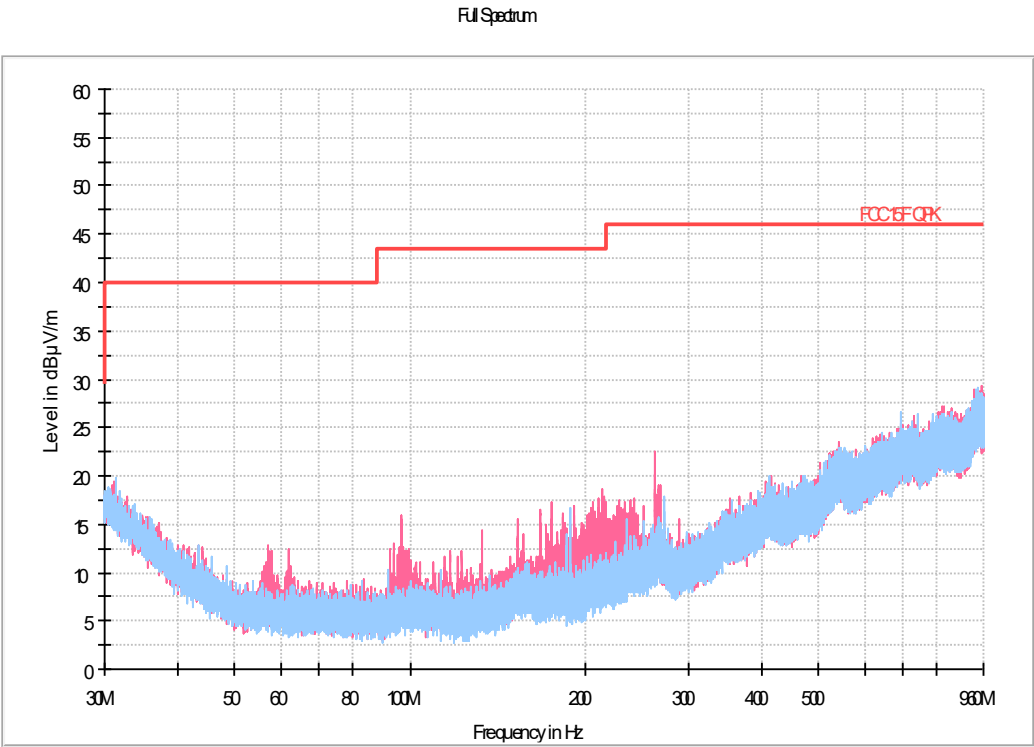
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1562.981060	-95.27	-85.30	9.97	1.0	10.000	V	102.0	
1566.676520	-94.30	-85.30	9.00	1.0	10.000	V	42.0	
1570.234790	-94.89	-85.30	9.59	1.0	10.000	V	345.0	
1573.439120	-95.73	-85.30	10.43	1.0	10.000	V	213.0	
1582.712960	-95.50	-85.30	10.20	1.0	10.000	V	115.0	
1585.879550	-95.61	-85.30	10.31	1.0	10.000	V	102.0	
1594.269050	-94.74	-85.30	9.44	1.0	10.000	V	213.0	
1600.000940	-90.55	-85.30	5.25	1.0	10.000	V	259.0	
1601.852240	-95.18	-85.30	9.88	1.0	10.000	V	104.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,559 GHz - 1,61 GHz	510 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate3.

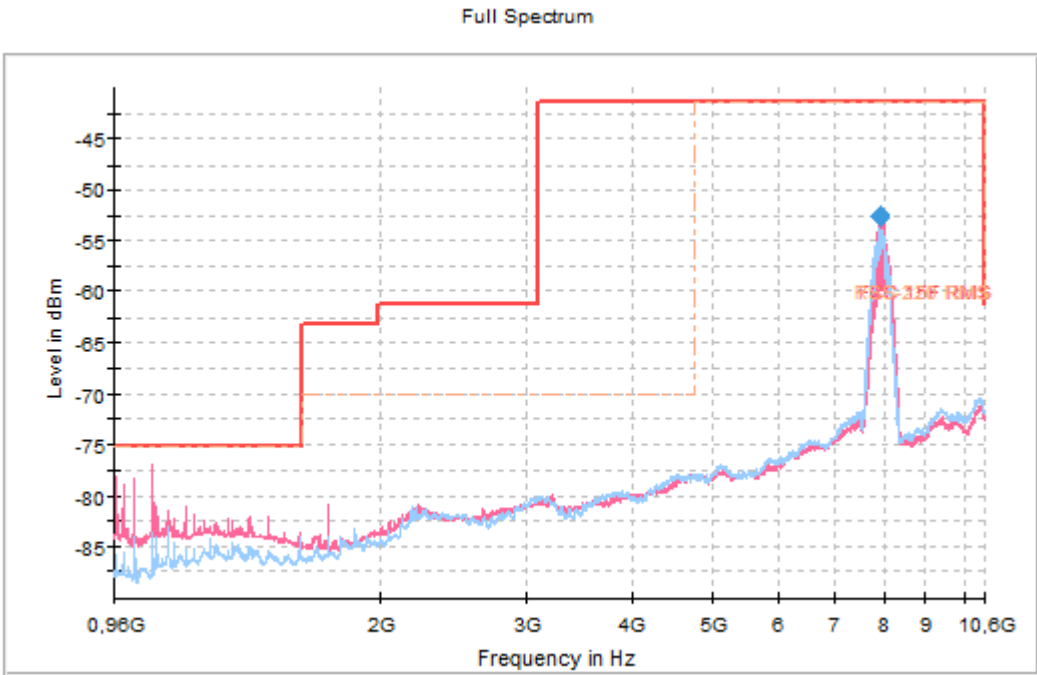
Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESR 7] 30 MHz - 960 MHz	9,3 kHz	PK+	100 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



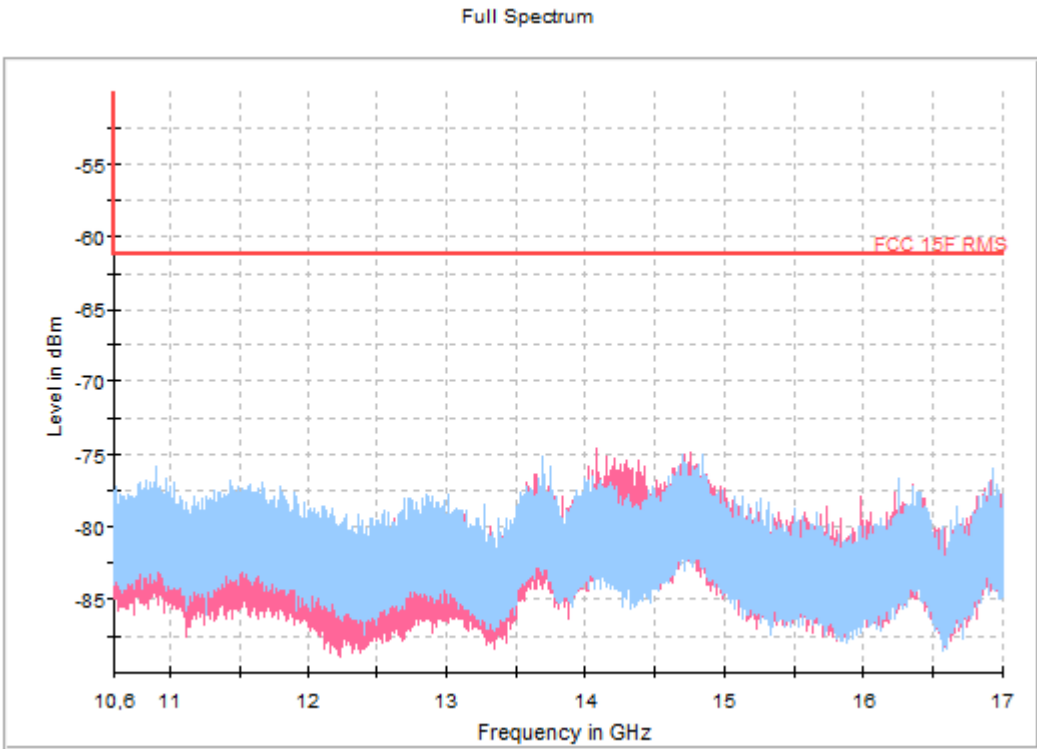
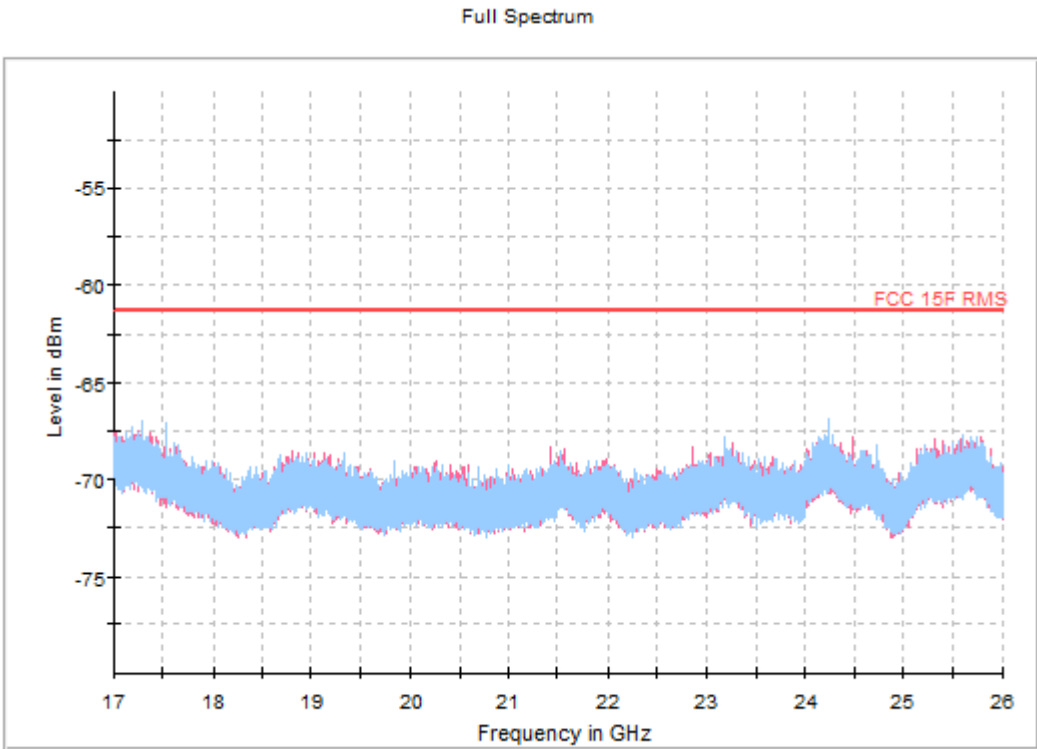
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)
7951.892000	-52.56	-41.30	11.26	20000.0	160.0	V	295.0

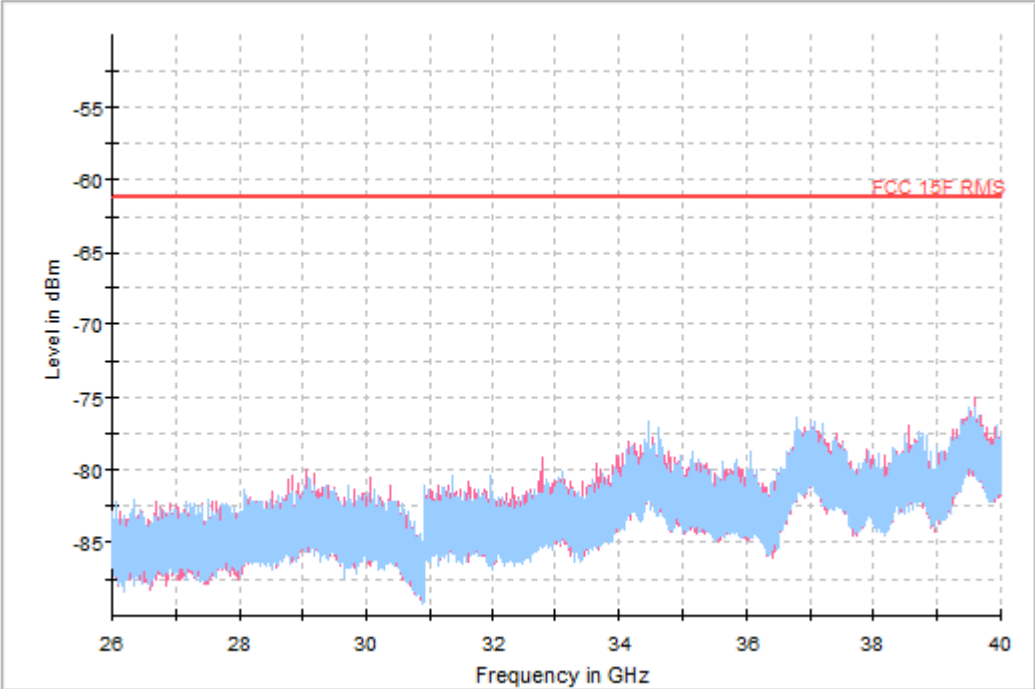
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
960 MHz - 10,6 GHz	482 kHz	RMS	1 MHz	20 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



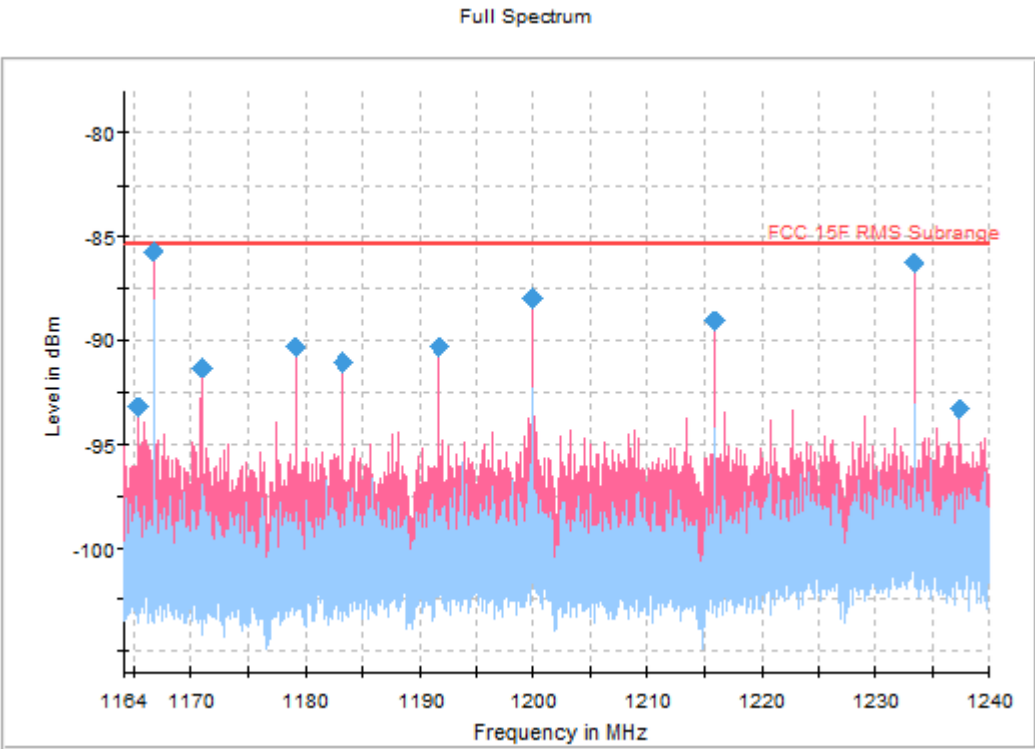
Full Spectrum



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
10,6 GHz - 14 GHz	34 kHz	RMS	100 kHz	1 s	0 dB
14 GHz - 17 GHz	30 kHz	RMS	100 kHz	1 s	0 dB
17 GHz - 26 GHz	90 kHz	RMS	1 MHz	1 s	0 dB
26 GHz - 40 GHz	140 kHz	RMS	300 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



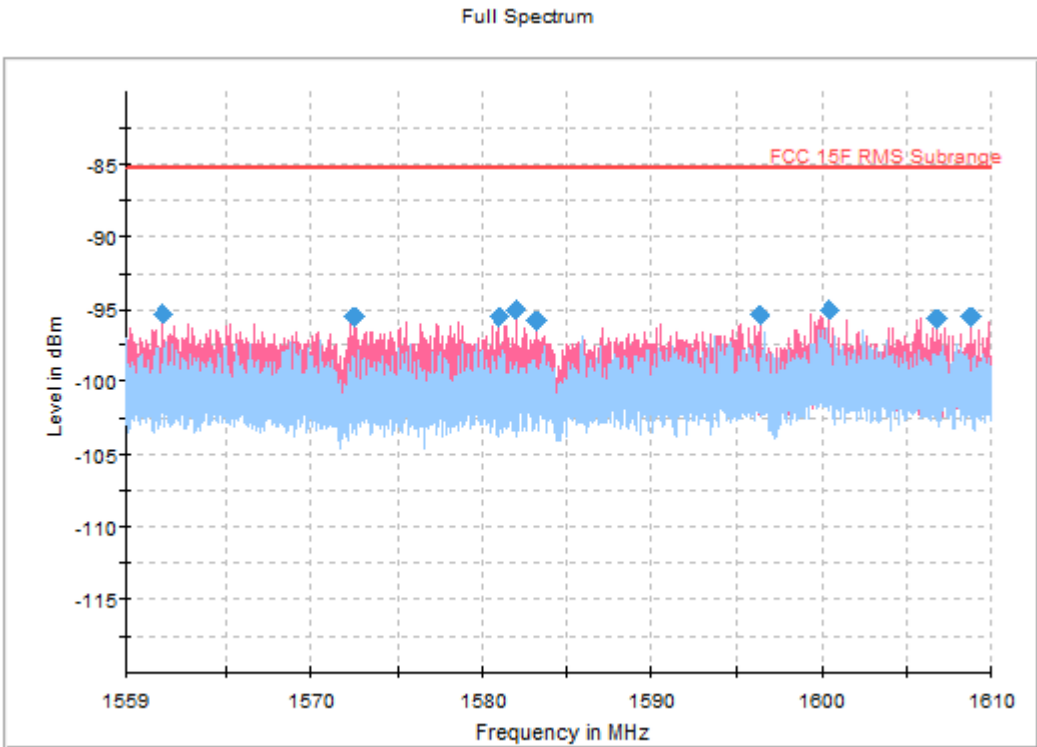
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1165.301880	-93.23	-85.30	7.93	1.0	10.000	V	189.0	
1166.677480	-85.74	-85.30	0.44	1.0	10.000	V	181.0	
1170.844560	-91.36	-85.30	6.06	1.0	10.000	V	192.0	
1179.177960	-90.31	-85.30	5.01	1.0	10.000	V	195.0	
1183.345040	-91.09	-85.30	5.79	1.0	10.000	V	185.0	
1191.678440	-90.29	-85.30	4.99	1.0	10.000	V	187.0	
1200.000440	-87.98	-85.30	2.68	1.0	10.000	V	233.0	
1215.968040	-89.08	-85.30	3.78	1.0	10.000	V	185.0	
1233.345440	-86.24	-85.30	0.94	1.0	10.000	V	205.0	
1237.437280	-93.33	-85.30	8.03	1.0	10.000	V	318.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,164 GHz - 1,24 GHz	760 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate3.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



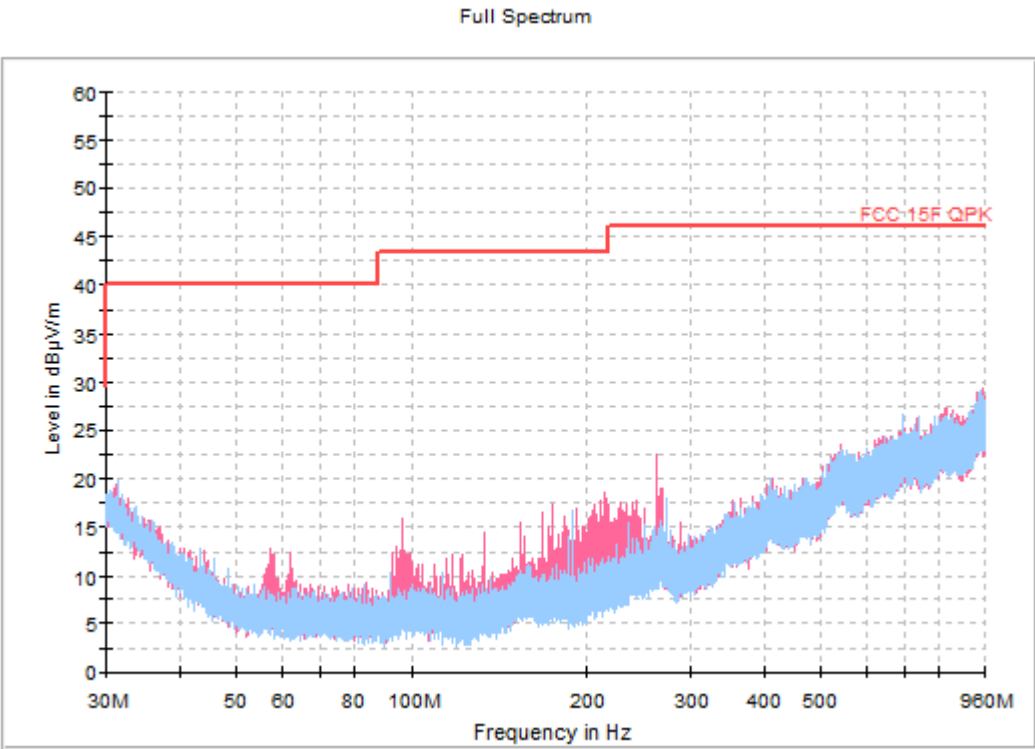
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1561.216460	-95.30	-85.30	10.00	1.0	10.000	V	300.0	
1572.496130	-95.58	-85.30	10.28	1.0	10.000	V	158.0	
1580.967740	-95.57	-85.30	10.27	1.0	10.000	V	255.0	
1581.984170	-95.02	-85.30	9.72	1.0	10.000	V	281.0	
1583.243360	-95.81	-85.30	10.51	1.0	10.000	V	43.0	
1596.350360	-95.46	-85.30	10.16	1.0	10.000	V	215.0	
1600.512980	-95.07	-85.30	9.77	1.0	10.000	V	286.0	
1606.748750	-95.69	-85.30	10.39	1.0	10.000	V	88.0	
1608.822410	-95.53	-85.30	10.23	1.0	10.000	V	10.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,559 GHz - 1,61 GHz	510 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate4.

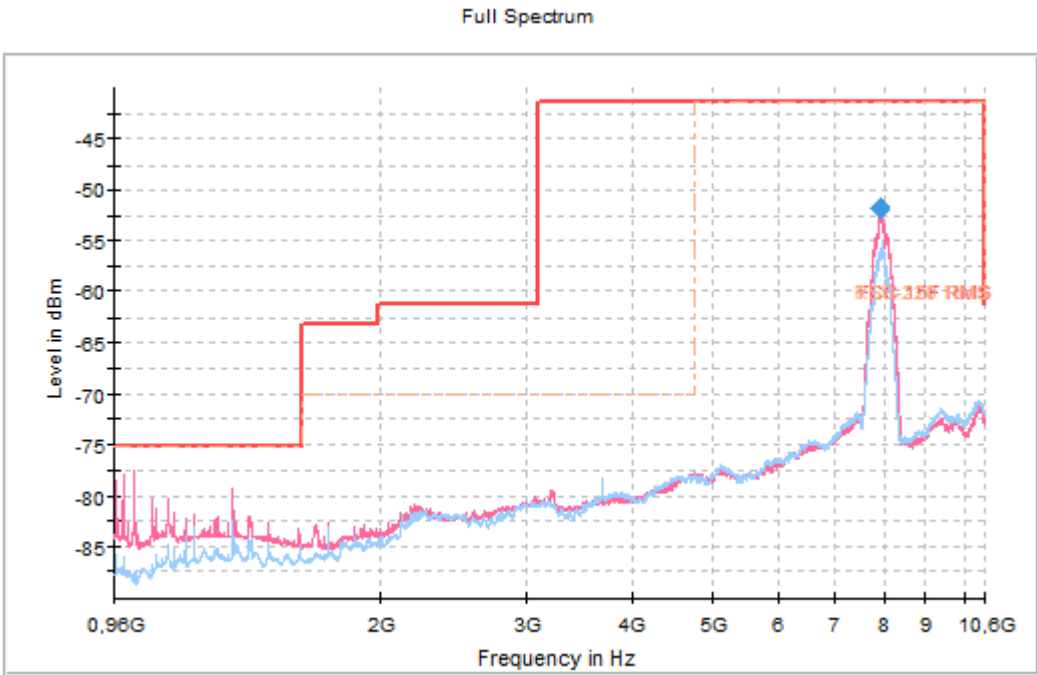
Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	30 MHz - 1 GHz §15.209 / RSS-220 5.3.1. (c)	P



Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESR 7] 30 MHz - 960 MHz	9,3 kHz	PK+	100 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate4.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	960 MHz - 10.6 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P

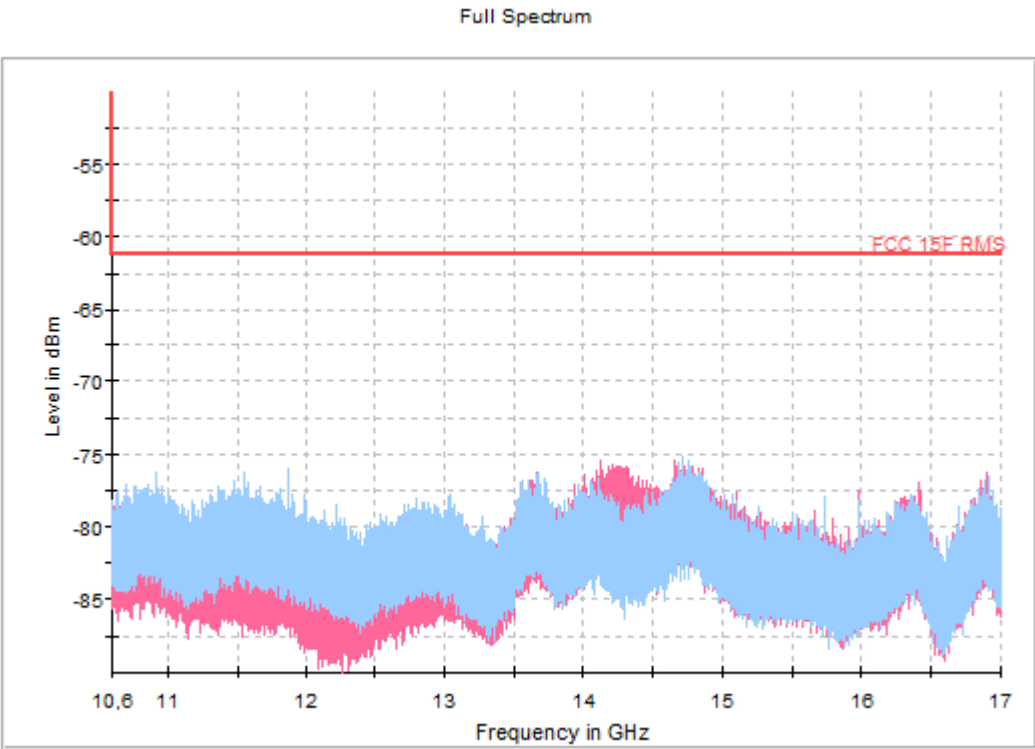
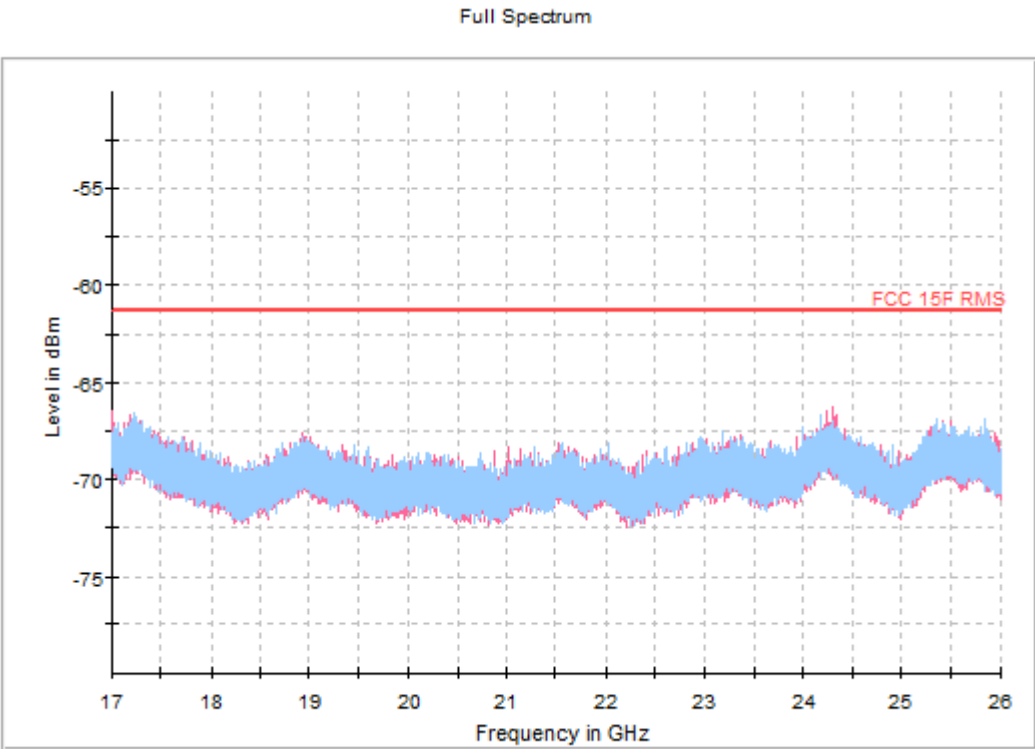


Final Result

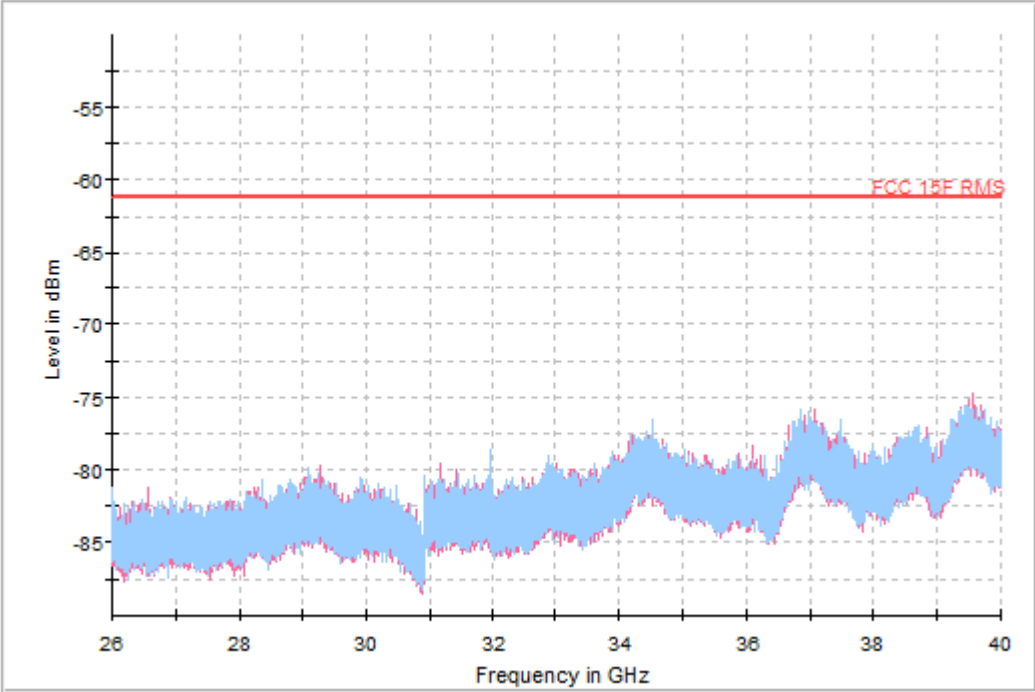
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)
7933.576000	-51.73	-41.30	10.43	20000.0	160.0	V	296.0

UWB TRANSMITTER ON. CH9, Frame Candidate4.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	10.6 – 40 GHz §15.519 (c) / RSS-220 5.3.1. (d)	P



Full Spectrum



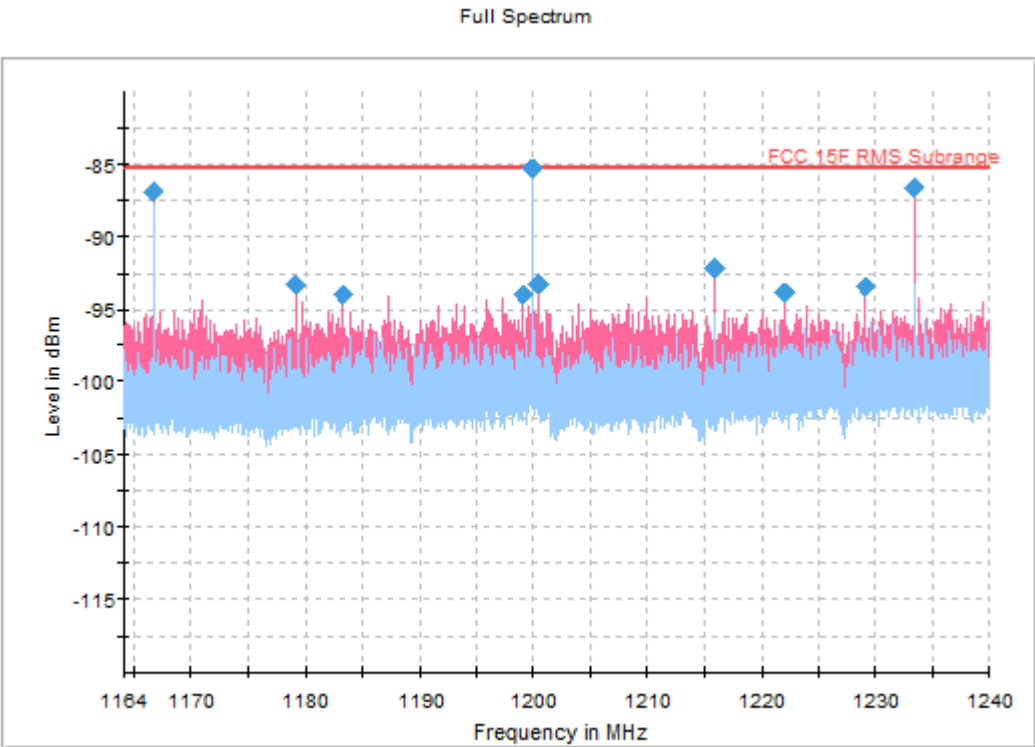
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
7998.180000	-14.44	0.00	14.44	150.0	50000.000	V	243.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44]					
10,6 GHz - 14 GHz	34 kHz	RMS	100 kHz	1 s	0 dB
14 GHz - 17 GHz	30 kHz	RMS	100 kHz	1 s	0 dB
17 GHz - 26 GHz	90 kHz	RMS	1 MHz	1 s	0 dB
26 GHz - 40 GHz	140 kHz	RMS	300 kHz	1 s	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate4.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.164 -1.240 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



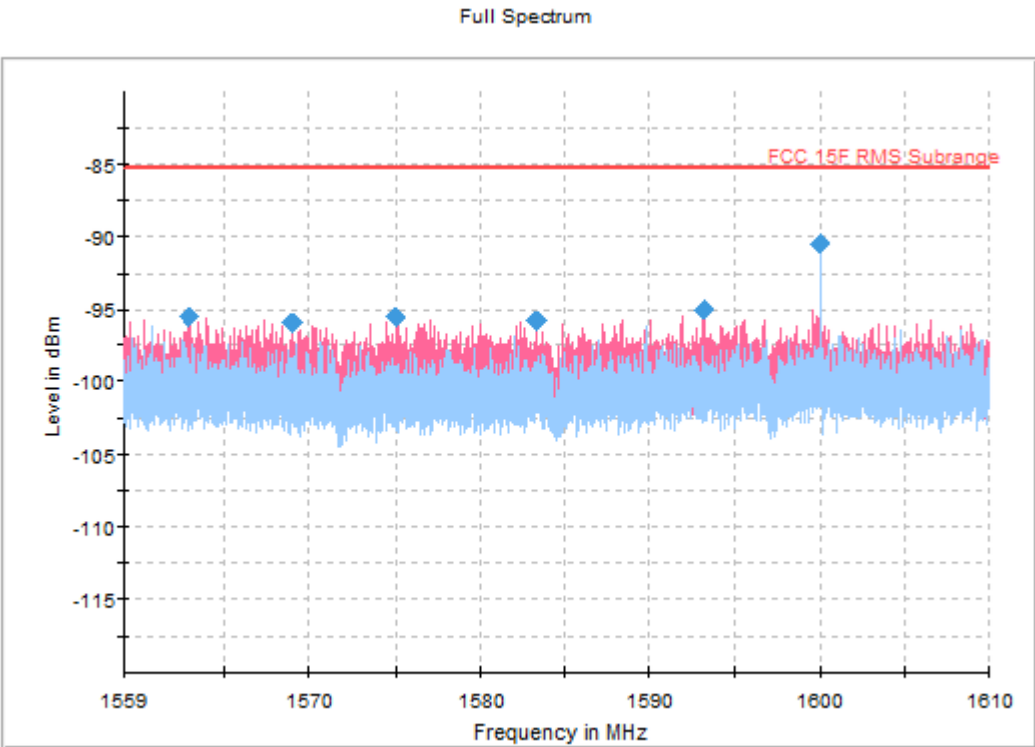
Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1166.677480	-86.87	-85.30	1.57	1.0	10.000	V	107.0	
1179.175680	-93.38	-85.30	8.08	1.0	10.000	V	122.0	
1183.344280	-94.01	-85.30	8.71	1.0	10.000	V	119.0	
1199.060320	-93.98	-85.30	8.68	1.0	10.000	V	306.0	
1200.000440	-85.30	-85.30	0.00	1.0	10.000	H	0.0	
1200.365240	-93.26	-85.30	7.96	1.0	10.000	V	318.0	
1215.967280	-92.21	-85.30	6.91	1.0	10.000	V	262.0	
1221.984200	-93.83	-85.30	8.53	1.0	10.000	V	48.0	
1229.179120	-93.50	-85.30	8.20	1.0	10.000	V	342.0	
1233.345440	-86.56	-85.30	1.26	1.0	10.000	V	354.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,164 GHz - 1,24 GHz	760 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER ON. CH9, Frame Candidate4.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER ON.	1.559-1.610 GHz §15.519 (d) / RSS-220 5.3.1. (e)	P



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Comment
1562.856110	-95.48	-85.30	10.18	1.0	10.000	V	339.0	
1568.947550	-95.91	-85.30	10.61	1.0	10.000	V	342.0	
1575.007370	-95.49	-85.30	10.19	1.0	10.000	V	273.0	
1583.349440	-95.80	-85.30	10.50	1.0	10.000	V	306.0	
1593.183770	-95.03	-85.30	9.73	1.0	10.000	V	314.0	
1599.999920	-90.43	-85.30	5.13	1.0	10.000	V	41.0	

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1,559 GHz - 1,61 GHz	510 Hz	RMS	10 kHz	Coupled	0 dB

UWB TRANSMITTER OFF:

This measurement shows the device's internal electronic noise with the UWB transmitter disabled.

Per 47 CFR § 15.521(c), emissions originating solely from digital circuitry, and not intended for radiation via the antenna, are exempt from Subpart F limits. Instead, these emissions are governed by the general radiated emission limits of § 15.209. This plot demonstrates that the system's background digital noise remains compliant with the applicable general standards independently of the UWB operational mask.

Radiated Emissions	Freq. Range / Requirement	Verdict
UWB TRANSMITTER OFF	960 MHz - 10.6 GHz §15.521 (c) / RSS-220 Annex. Section 4 (m)	N/A

Note: This measurement was not performed because it is not necessary. During the measurements with the UWB transmitter enabled, all observed emissions remained below the applicable limits. Consequently, any emissions originating from the device's internal electronic circuitry are inherently demonstrated to comply with the relevant requirements.

FCC 15.519 (e) / RSS-220 5.3.1. (g) UWB Peak Level

SPECIFICATION:

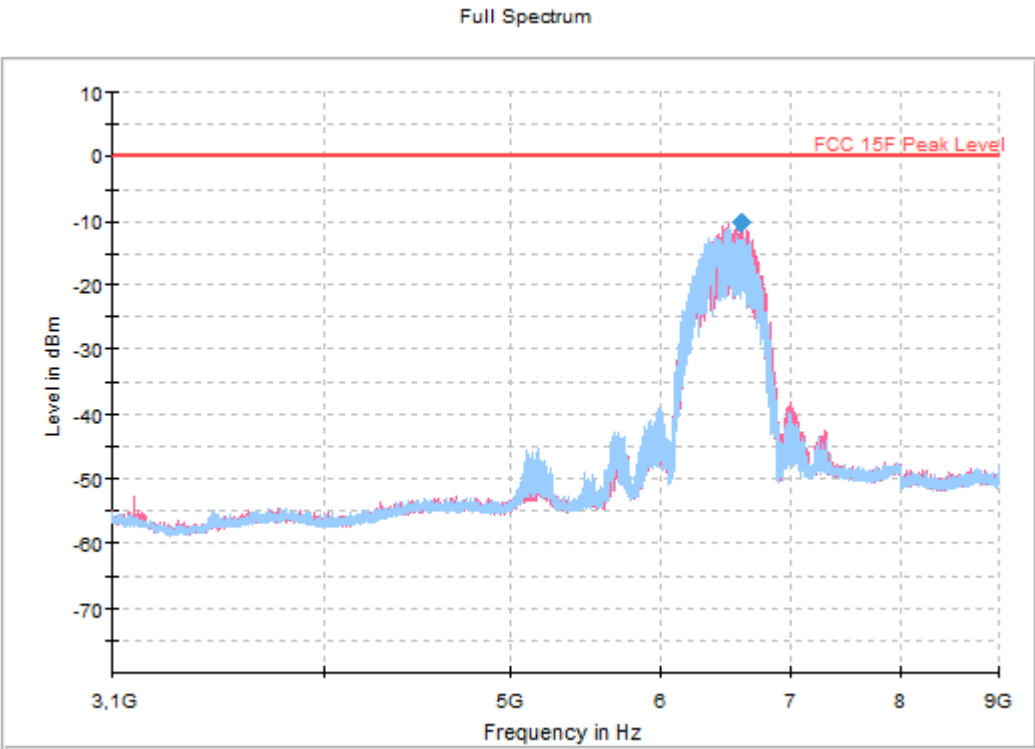
* §15.519 (e): There is a limit on the peak level of the emissions contained within a 50 MHz bandwidth centered on the frequency at which the highest radiated emission occurs, fM. That limit is 0 dBm EIRP. It is acceptable to employ a different resolution bandwidth, and a correspondingly different peak emission limit, following the procedures described in § 15.521.

* RSS-220 5.3.1. (g): The peak level of the transmissions shall not exceed the peak equivalent of the average limit contained within any 50 MHz bandwidth, as defined in section 4 of the Annex.

* Annex, Section 4 (c): Peak measurements shall be made in addition to average measurements. Transmissions shall not exceed 0 dBm e.i.r.p. in any 50 MHz bandwidth when the average limit is -41.3 dBm/MHz.

RESULTS:

· UWB Peak level - CH5, Frame CCC SP3:



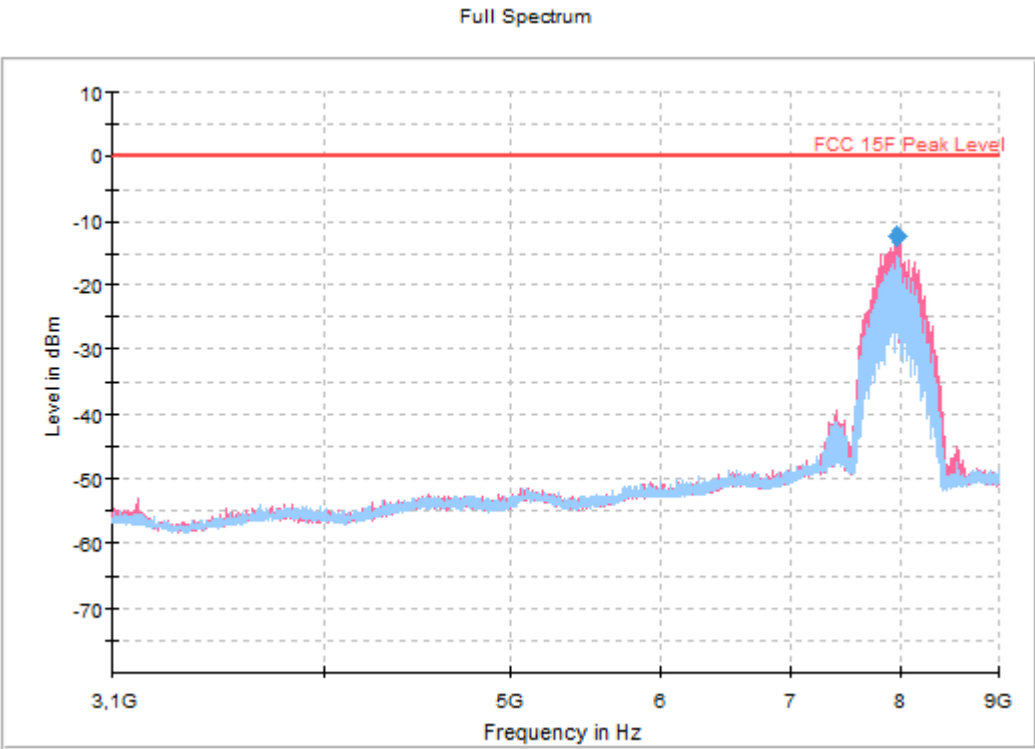
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
6610.500000	-10.52	0.00	10.52	150.0	50000.000	V	224.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 3,1 GHz - 9 GHz	590 kHz	PK+	50 MHz	0,15 s	0 dB

Verdict: PASS.

· UWB Peak level - CH9, Frame CCC SP3:



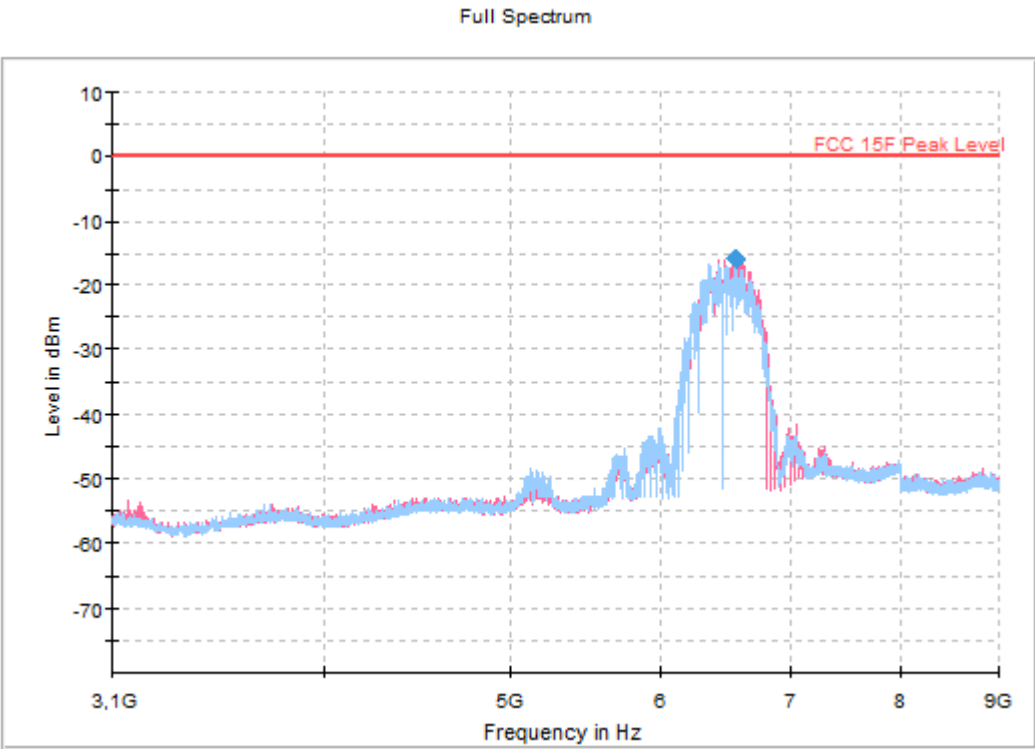
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
7969.270000	-12.46	0.00	12.46	150.0	50000.000	V	245.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 3,1 GHz - 9 GHz	590 kHz	PK+	50 MHz	0,15 s	0 dB

Verdict: PASS.

· UWB Peak level - CH5, Frame KF RAD Ecomini:



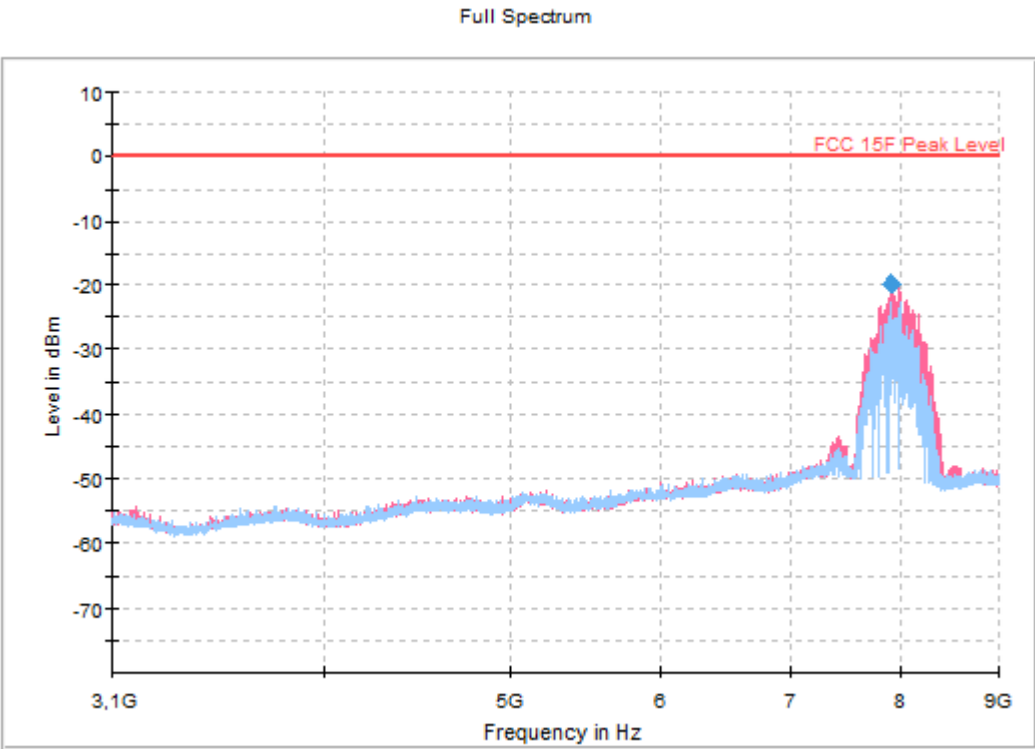
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
6557.990000	-15.82	0.00	15.82	150.0	50000.000	V	228.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 3,1 GHz - 9 GHz	590 kHz	PK+	50 MHz	0,15 s	0 dB

Verdict: PASS.

· UWB Peak level - CH9, Frame KF RAD Ecomini:



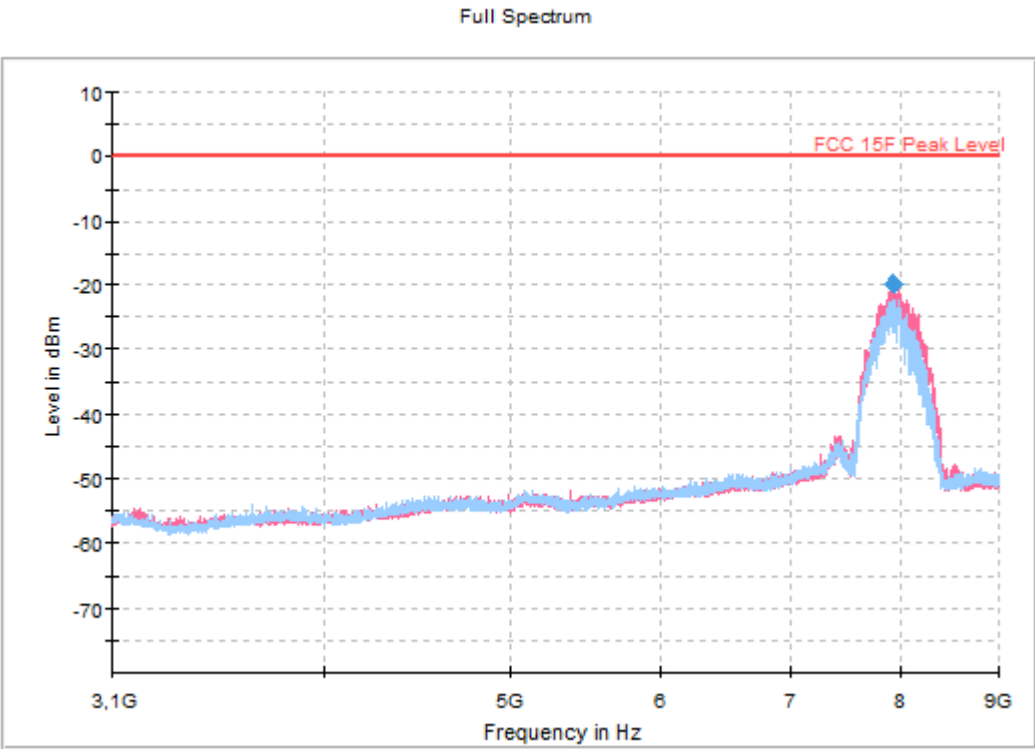
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
7920.890000	-19.60	0.00	19.60	150.0	50000.000	V	241.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 3,1 GHz - 9 GHz	590 kHz	PK+	50 MHz	0,15 s	0 dB

Verdict: PASS.

· UWB Peak level - CH9, Frame Candidate1:



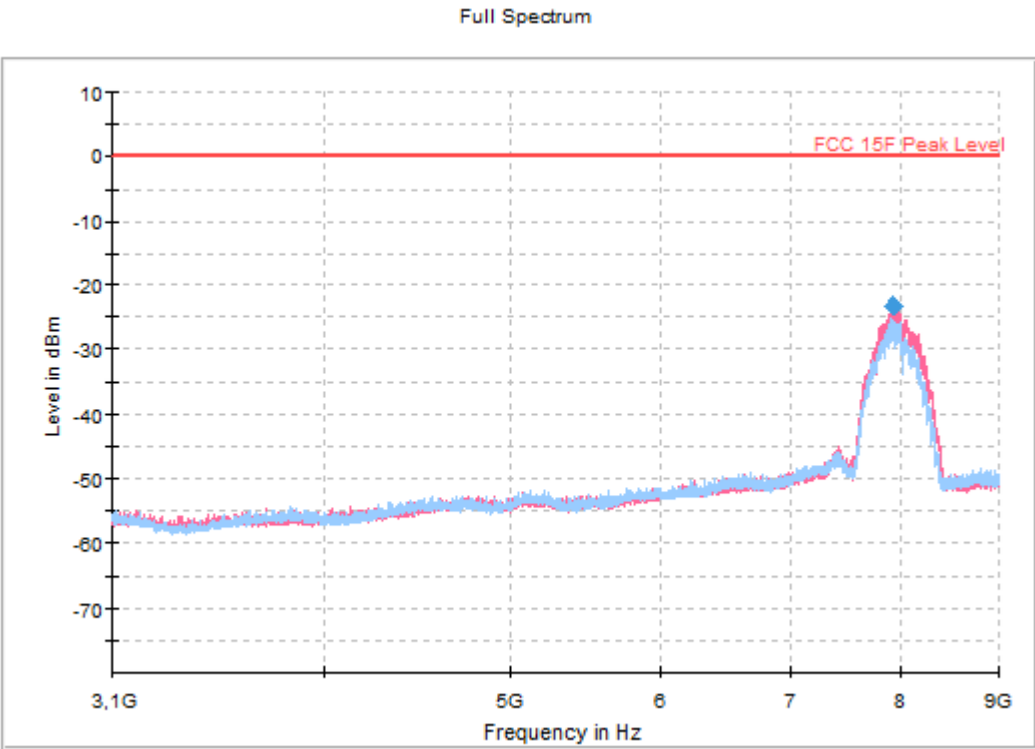
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
7936.820000	-19.74	0.00	19.74	150.0	50000.000	V	243.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 3,1 GHz - 9 GHz	590 kHz	PK+	50 MHz	0,15 s	0 dB

Verdict: PASS.

UWB Peak level - CH9, Frame Candidate2:



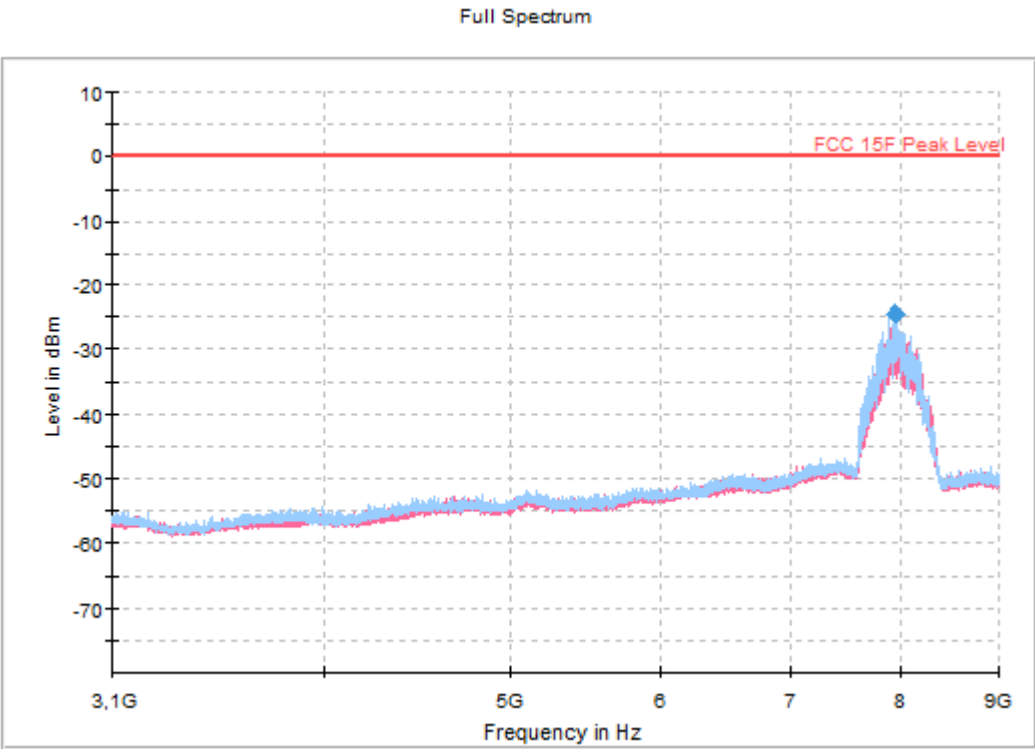
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
7928.560000	-23.15	0.00	23.15	150.0	50000.000	V	244.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 3,1 GHz - 9 GHz	590 kHz	PK+	50 MHz	0,15 s	0 dB

Verdict: PASS.

· UWB Peak level - CH9, Frame Candidate3:



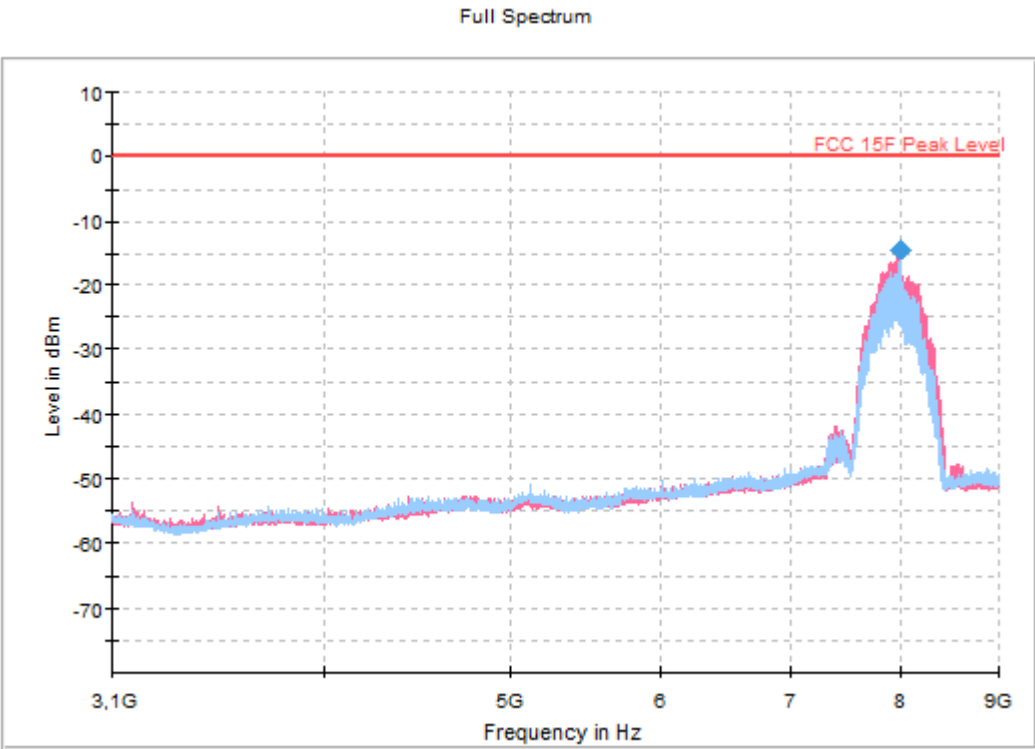
Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
7942.130000	-24.32	0.00	24.32	150.0	50000.000	H	293.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 3,1 GHz - 9 GHz	590 kHz	PK+	50 MHz	0,15 s	0 dB

Verdict: PASS.

· UWB Peak level - CH9, Frame Candidate4:



Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)
7998.180000	-14.44	0.00	14.44	150.0	50000.000	V	243.0

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 3,1 GHz - 9 GHz	590 kHz	PK+	50 MHz	0,15 s	0 dB

Verdict: PASS.

RSS-Gen Section 6.7. 99% Occupied bandwidth

SPECIFICATION:

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

RESULTS:

CCC CH5	Measurement (MHz)
99% Occupied Bandwidth	636.912
Lower Frequency	6179.586
Upper Frequency	6816.498
Measurement uncertainty (kHz)	<± 130

CCC CH9	Measurement (MHz)
99% Occupied Bandwidth	676.366
Lower Frequency	7642.814
Upper Frequency	8319.180
Measurement uncertainty (kHz)	<± 130

KF CH5	Measurement (MHz)
99% Occupied Bandwidth	626.806
Lower Frequency	6181.769
Upper Frequency	6808.575
Measurement uncertainty (kHz)	<± 130

KF CH9	Measurement (MHz)
99% Occupied Bandwidth	667.124
Lower Frequency	7646.186
Upper Frequency	8313.310
Measurement uncertainty (kHz)	<± 130

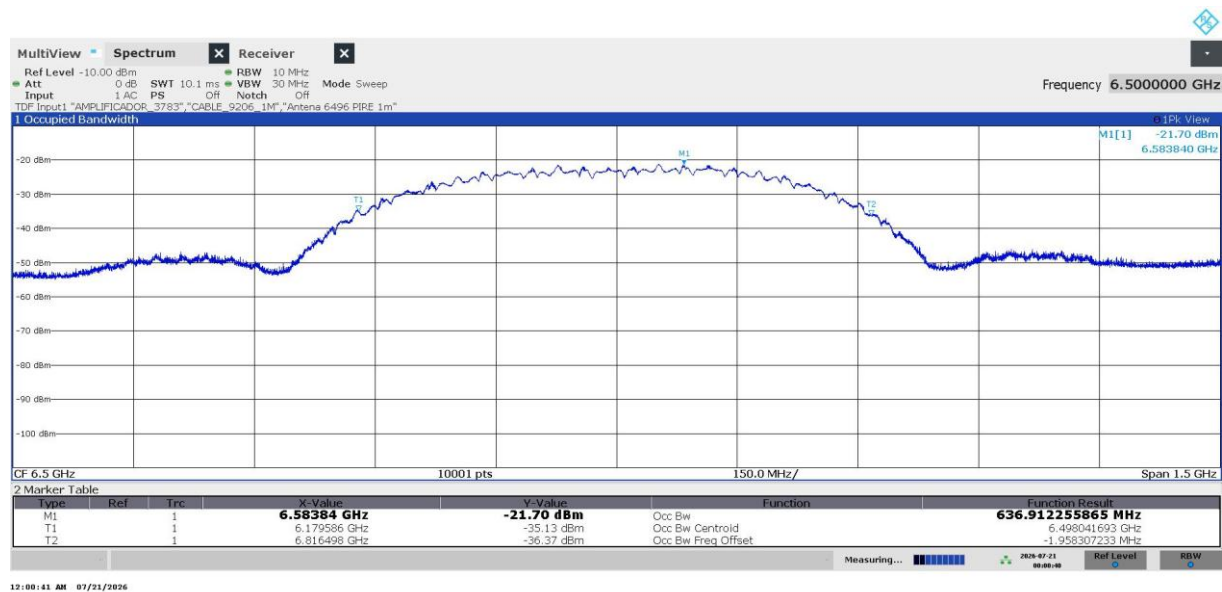
Candidate 1	Measurement (MHz)
99% Occupied Bandwidth	699.923
Lower Frequency	7619.641
Upper Frequency	8319.564
Measurement uncertainty (kHz)	<± 130

Candidate 2	Measurement (MHz)
99% Occupied Bandwidth	686.555
Lower Frequency	7636.941
Upper Frequency	8323.496
Measurement uncertainty (kHz)	<± 130

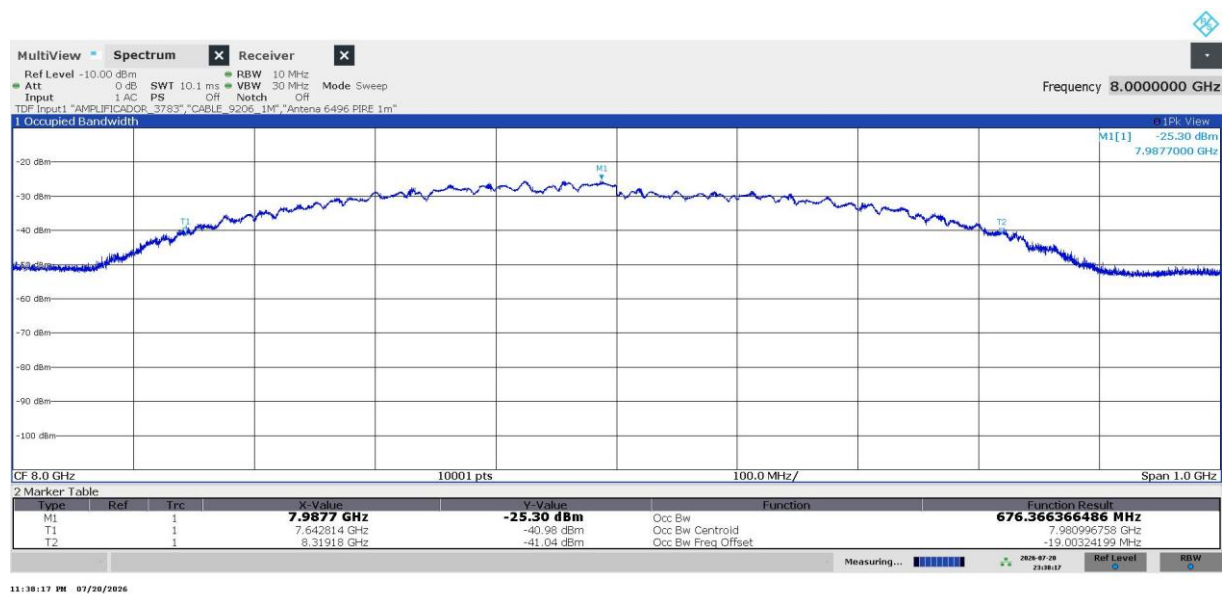
Candidate 3	Measurement (MHz)
99% Occupied Bandwidth	734.5759
Lower Frequency	7618.8536
Upper Frequency	8353.4295
Measurement uncertainty (kHz)	<± 130

Candidate 4	Measurement (MHz)
99% Occupied Bandwidth	695.073
Lower Frequency	7625.934
Upper Frequency	8321.007
Measurement uncertainty (kHz)	<± 130

Frame: CCC Channel: CH5
Test: 99% OBW

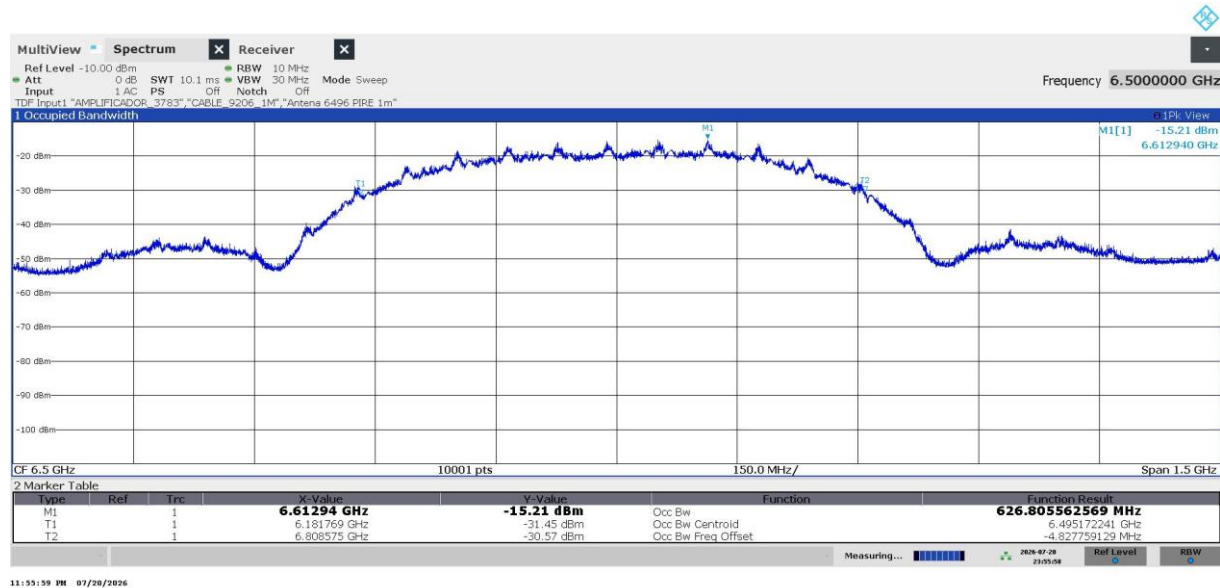


Frame: CCC Channel: CH9
Test: 99% OBW



Frame: KF Channel: CH5

Test: 99% OBW



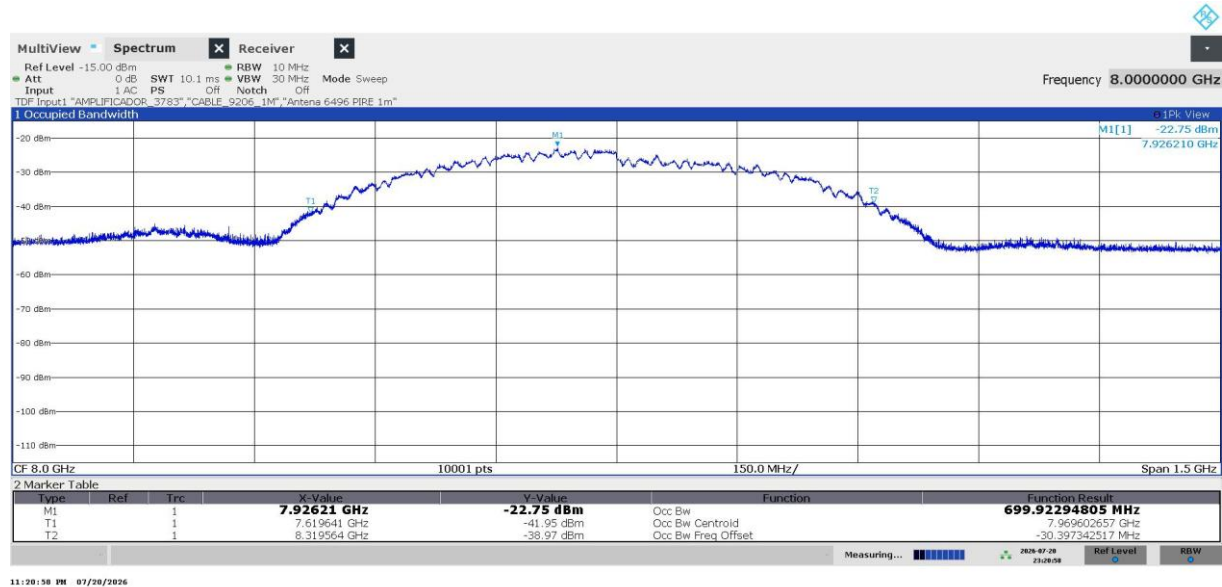
Frame: KF Channel: CH9

Test: 99% OBW



Frame: Candidate1 Channel: CH9

Test: 99% OBW



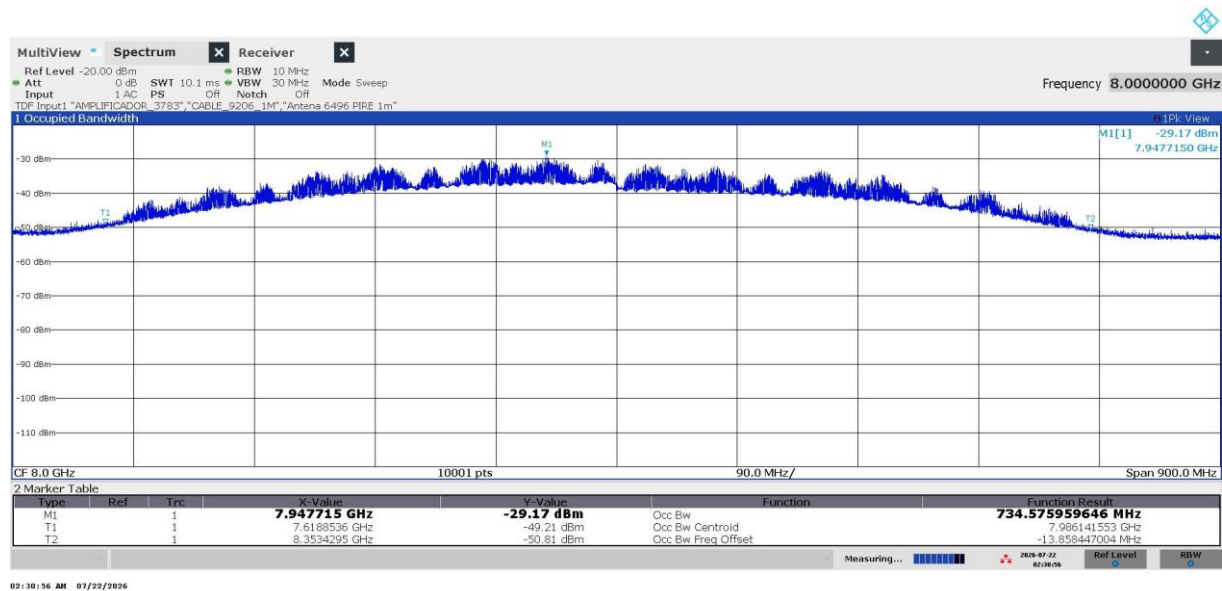
Frame: Candidate2 Channel: CH9

Test: 99% OBW



Frame: Candidate3 Channel: CH9

Test: 99% OBW



Frame: Candidate4 Channel: CH9

Test: 99% OBW

