

FCC RF Test Report

(UWB)

Applicant: Arrival LTD

Address of Applicant: Beaumont House, Kensington Village, London, W14 8TS6

Equipment Under Test (EUT)

Product Name: Key Fob

Model No.: KF10

Trade Mark: ARRIVAL

FCC ID: 2A7RQ-KF10

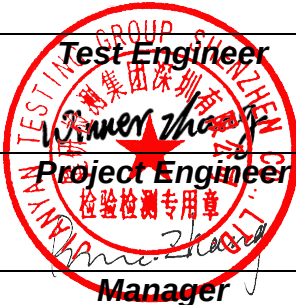
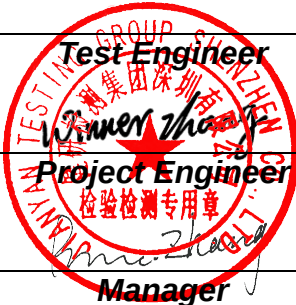
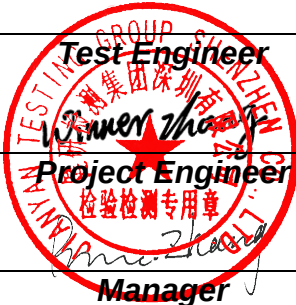
Applicable Standards: FCC CFR Title 47 Part 15F (§15.519)

Date of Sample Receipt: 28 Jun., 2022

Date of Test: 29 Jun., to 22 Jul., 2022

Date of Report Issued: 22 Jul., 2022

Test Result: PASS

Tested by:
_____**Date:**22 Jul., 2022
_____**Reviewed by:**
_____**Date:**22 Jul., 2022
_____**Approved by:**
_____**Date:**22 Jul., 2022

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

2 Version

Version No.	Date	Description
00	22 Jul., 2022	Original

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4 General Information

4.1 Client Information

Applicant:	Arrival LTD
Address:	Beaumont House, Kensington Village, London, W14 8TS6
Manufacturer:	Arrival LTD
Address:	Beaumont House, Kensington Village, London, W14 8TS6

4.2 General Description of E.U.T.

Product Name:	Key Fob
Model No.:	KF10
Operation Frequency:	CH5: 6498.6MHz CH6: 6988.8MHz CH8: 7488.8MHz CH9: 7987.2 MHz
Channel Numbers:	4
Modulation Technology:	UWB
Antenna Type:	Internal Antenna
Antenna Gain:	0 dBi (declare by applicant)
Power Supply:	DC 3V (CR2032 battery)
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

4.3 Test Mode and Environment

Test Mode:	
Transmitting mode:	Keep the EUT in continuous transmitting with modulation
Operating Environment:	
Temperature:	15°C ~ 35°C
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1010 mbar

4.4 Description of Test Auxiliary Equipment

The EUT has been tested as an independent unit.

4.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Radiated Emission (30MHz ~ 1GHz) (3m SAC)	±4.45 dB
Radiated Emission (1GHz ~ 18GHz) (3m SAC)	±5.34 dB
Radiated Emission (18GHz ~ 40GHz) (3m SAC)	±5.34 dB
Note: All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.	

4.6 Additions to, Deviations, or Exclusions from the Method

No

4.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

4.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

4.9 Test Instruments List

Radiated Emission(3m SAC):					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	9m*6m*6m	WXJ001-1	04-14-2021	04-13-2024
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	03-08-2022	03-07-2023
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-2	03-08-2022	03-07-2023
Horn Antenna	Schwarzbeck	BBHA9170	WXJ002-5	04-07-2022	04-06-2023
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXJ001-2	01-20-2022	01-19-2023
Pre-amplifier (1GHz ~ 18GHz)	SKET	LNPA_0118G-50	WXJ001-3	01-20-2022	01-19-2023
Pre-amplifier (18GHz ~ 40GHz)	RF System	TRLA-180400G45B	WXJ002-7	03-30-2022	03-29-2023
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	03-05-2022	03-04-2023
Spectrum Analyzer	Rohde & Schwarz	FSP 30	WXJ004	01-20-2022	01-19-2023
Spectrum Analyzer	KEYSIGHT	N9010B	WXJ004-2	10-27-2021	10-26-2022
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	01-20-2022	01-19-2023
Coaxial Cable (1GHz ~ 18GHz)	JYTSZ	JYT3M-18G-NN-8M	WXG001-5	01-20-2022	01-19-2023
Coaxial Cable (18GHz ~ 40GHz)	JYTSZ	JYT3M-40G-SS-8M	WXG001-7	01-20-2022	01-19-2023
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Test Software	Tonscend	TS+	Version: 3.0.0.1		

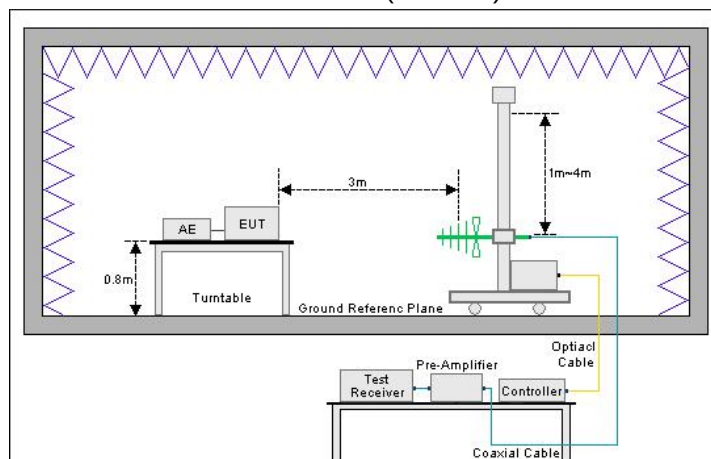
Conducted Method:					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
Spectrum Analyzer	Keysight	N9020B	WXJ081-1	06-29-2022	06-28-2023

5 Measurement Setup and Procedure

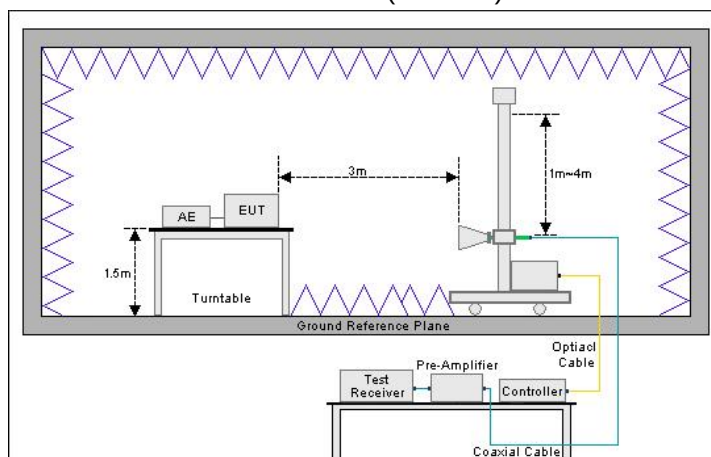
5.1 Test Setup

1) Radiated emission measurement:

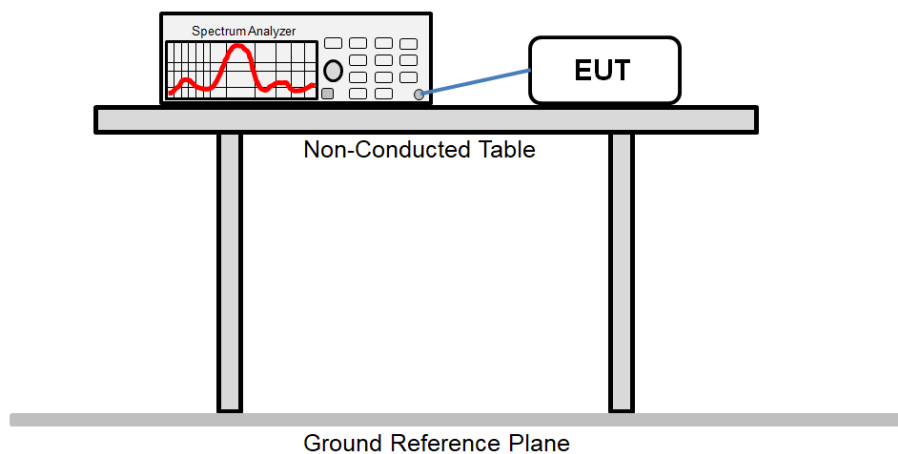
Below 1GHz (3m SAC)



Above 1GHz (3m SAC)



2) Conducted test method



5.2 Test Procedure

Test method	Test step
Radiated emission	For below 1GHz: - The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. - EUT works in each mode of operation that needs to be tested , and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. - Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. For above 1GHz: - The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m. - EUT works in each mode of operation that needs to be tested , and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. - Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
Conducted test method	- The transmit antenna port of EUT was connected to the test port of the test system through an RF cable. - The EUT is keeping in continuous transmission mode and tested in all modulation modes. - Test related items according to the standard and save the test data.

6 Test Results

6.1 Summary

6.1.1 Clause and Data Summary

Test items	Standard clause	Test data	Result
Antenna Requirement	15.203 15.519 (a)(2)	See Section 6.2	Pass
AC Power Line Conducted Emission	15.207	N/A	N/A
Transmission time	15.519 (a)	See Section 6.3	Pass
-10dB Emission Bandwidth 99% Occupied Bandwidth	15.519 (b)	See Section 6.4	Pass
Radiated emissions	15.519 (c) (d)	See Section 6.5	Pass
Peak Power	15.519 (e)	See Section 6.6	Pass
Remark: 1. Pass: The EUT complies with the essential requirements in the standard. 2. N/A: Not Applicable. EUT supports by DC3.0V. 3. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).			
Test Method:	ANSI C63.10-2013 KDB 393764 ULTRA-WIDEBAND (UWB) DEVICES FREQUENTLY ASKED QUESTIONS.		

6.1.2 Test Limit

Test items	Limit																		
AC Power Line Conducted Emission	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Limit (dBμV)</th></tr><tr><th>Quasi-Peak</th><th>Average</th></tr><tr><td>0.15 – 0.5</td><td>66 to 56 Note 1</td><td>56 to 46 Note 1</td></tr><tr><td>0.5 – 5</td><td>56</td><td>46</td></tr><tr><td>5 – 30</td><td>60</td><td>50</td></tr></table> Note 1: The limit level in dBμV decreases linearly with the logarithm of frequency. Note 2: The more stringent limit applies at transition frequencies.	Frequency (MHz)	Limit (dBμV)		Quasi-Peak	Average	0.15 – 0.5	66 to 56 Note 1	56 to 46 Note 1	0.5 – 5	56	46	5 – 30	60	50				
Frequency (MHz)	Limit (dBμV)																		
	Quasi-Peak	Average																	
0.15 – 0.5	66 to 56 Note 1	56 to 46 Note 1																	
0.5 – 5	56	46																	
5 – 30	60	50																	
Transmission time	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.																		
-10dB Emission Bandwidth	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.																		
99% Occupied Bandwidth	N/A																		
Radiated emissions	(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: <table><tr><th>Frequency (MHz)</th><th>EIRP (dBm)</th></tr><tr><td>960-1610</td><td>-75.3</td></tr><tr><td>1610-1990</td><td>-63.3</td></tr><tr><td>1990-3100</td><td>-61.3</td></tr><tr><td>3100-10600</td><td>-41.3</td></tr><tr><td>Above 10600</td><td>-61.3</td></tr></table> (d) In addition to the radiated emission limits specified in the table in paragraph (c) of this section, UWB transmitters operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of no less than 1kHz: <table><tr><th>Frequency (MHz)</th><th>EIRP (dBm)</th></tr><tr><td>1164-1240</td><td>-85.3</td></tr><tr><td>1559-1610</td><td>-85.3</td></tr></table>	Frequency (MHz)	EIRP (dBm)	960-1610	-75.3	1610-1990	-63.3	1990-3100	-61.3	3100-10600	-41.3	Above 10600	-61.3	Frequency (MHz)	EIRP (dBm)	1164-1240	-85.3	1559-1610	-85.3
Frequency (MHz)	EIRP (dBm)																		
960-1610	-75.3																		
1610-1990	-63.3																		
1990-3100	-61.3																		
3100-10600	-41.3																		
Above 10600	-61.3																		
Frequency (MHz)	EIRP (dBm)																		
1164-1240	-85.3																		
1559-1610	-85.3																		
Peak Power	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, f_M . 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.																		

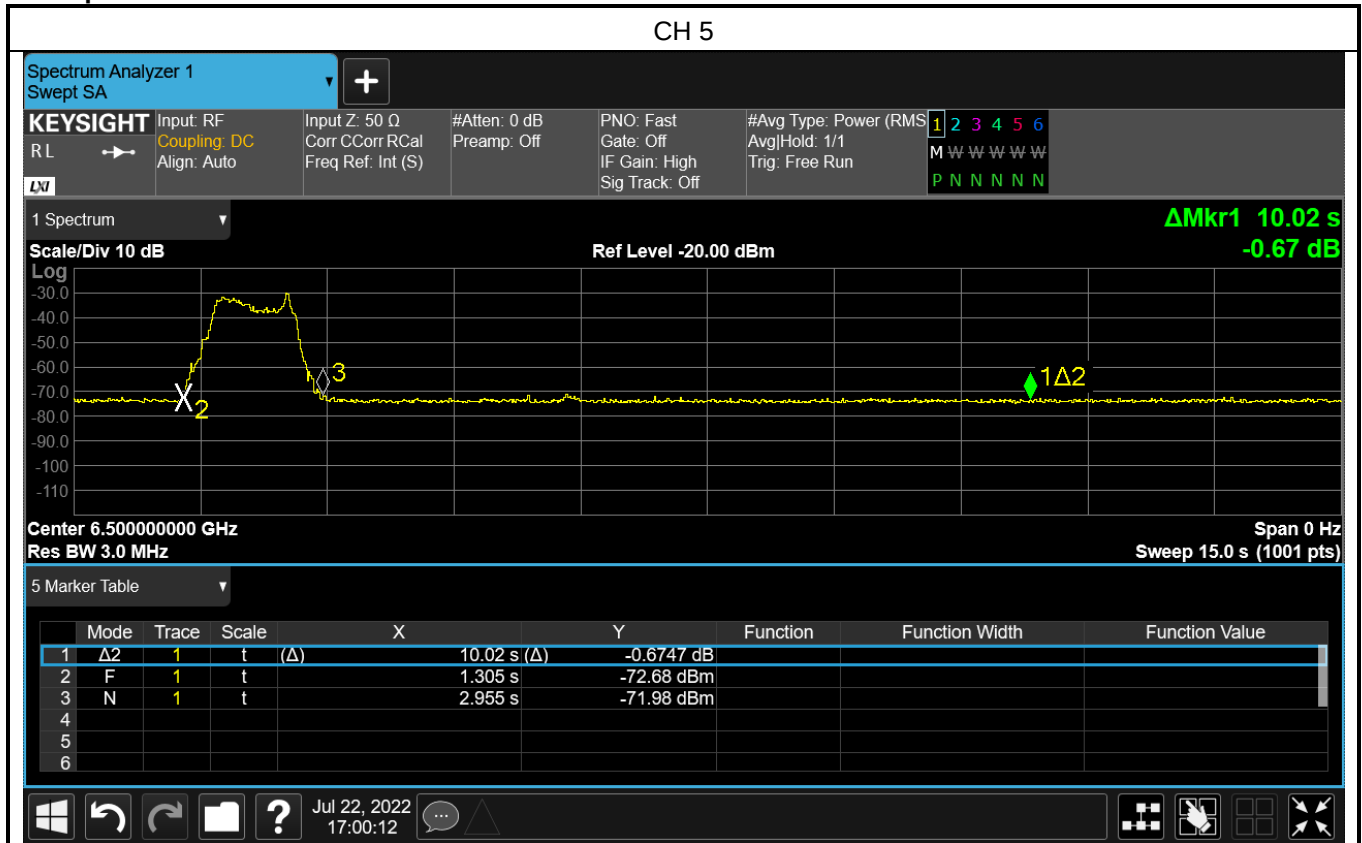
6.2 Antenna Requirement

Standard Requirement:	FCC Part 15 C Section 15.203/15.519 (a)(2)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.519 (a)(2) requirement: The use of antennas mounted on outdoor structures, e.g., antennas mounted on the outside of a building or on a telephone pole, or any fixed outdoors infrastructure is prohibited. Antennas may be mounted only on the hand held UWB device.	
E.U.T Antenna:	
The EUT antenna is an internal antenna which cannot replace by end-user, the best case gain of the antenna is -0 dBi. See product internal photos for details.	

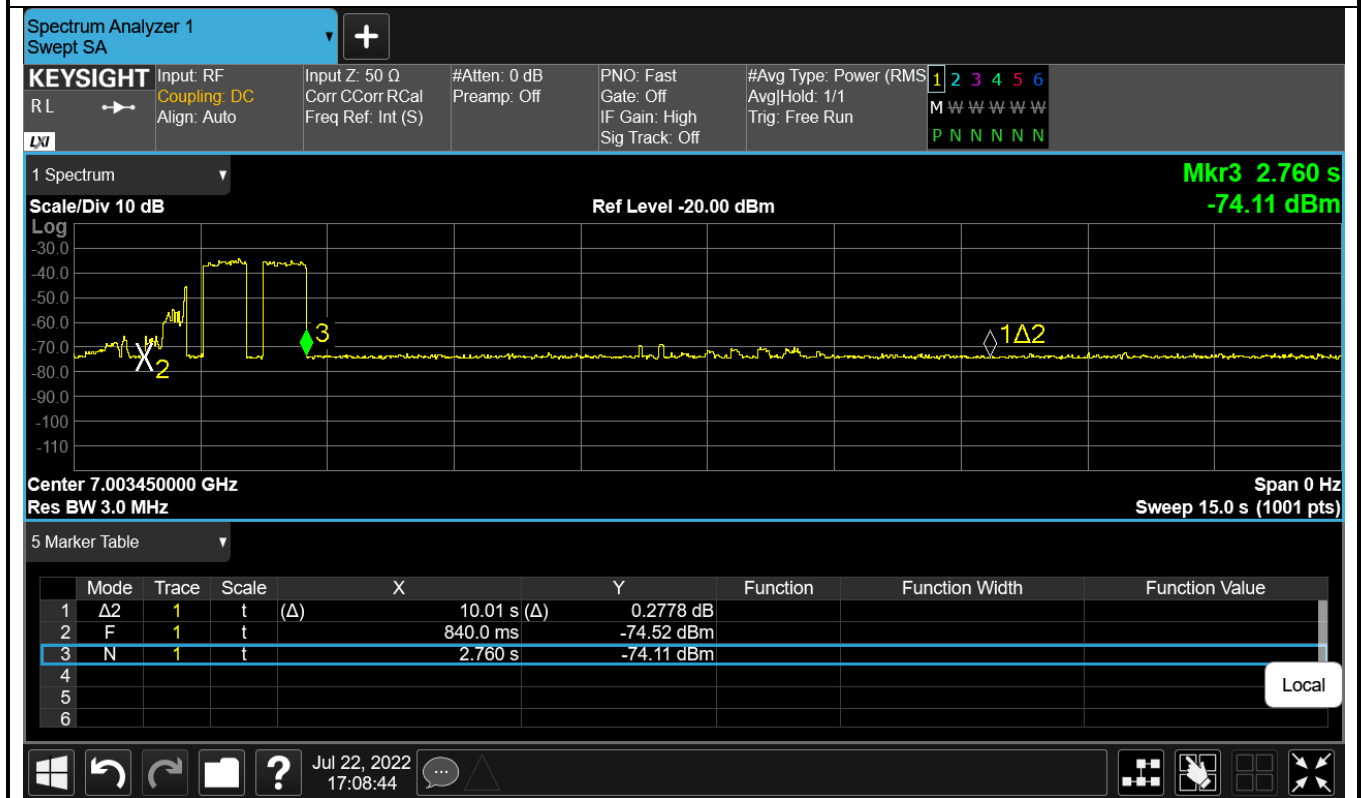
6.3 Transmission time

Measurement monitoring	Result
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.	Pass

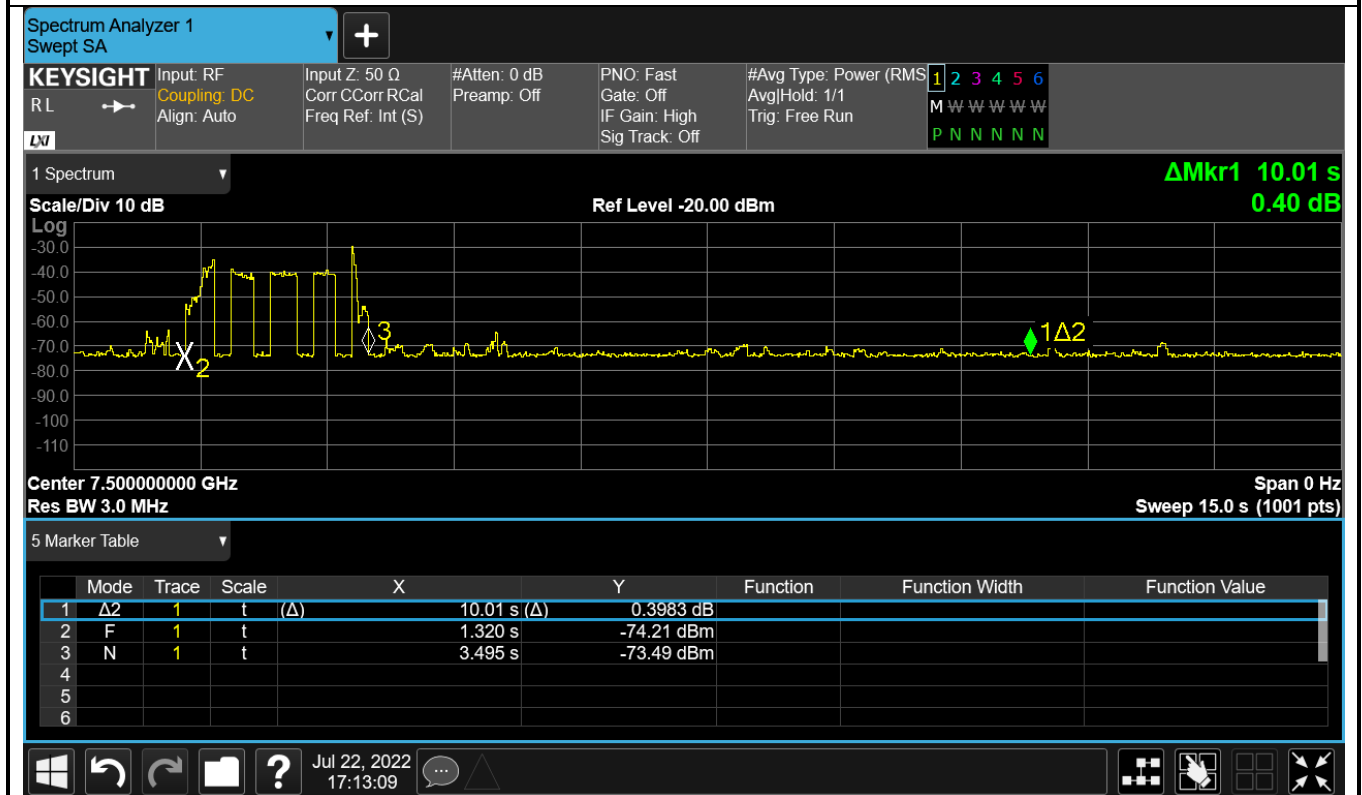
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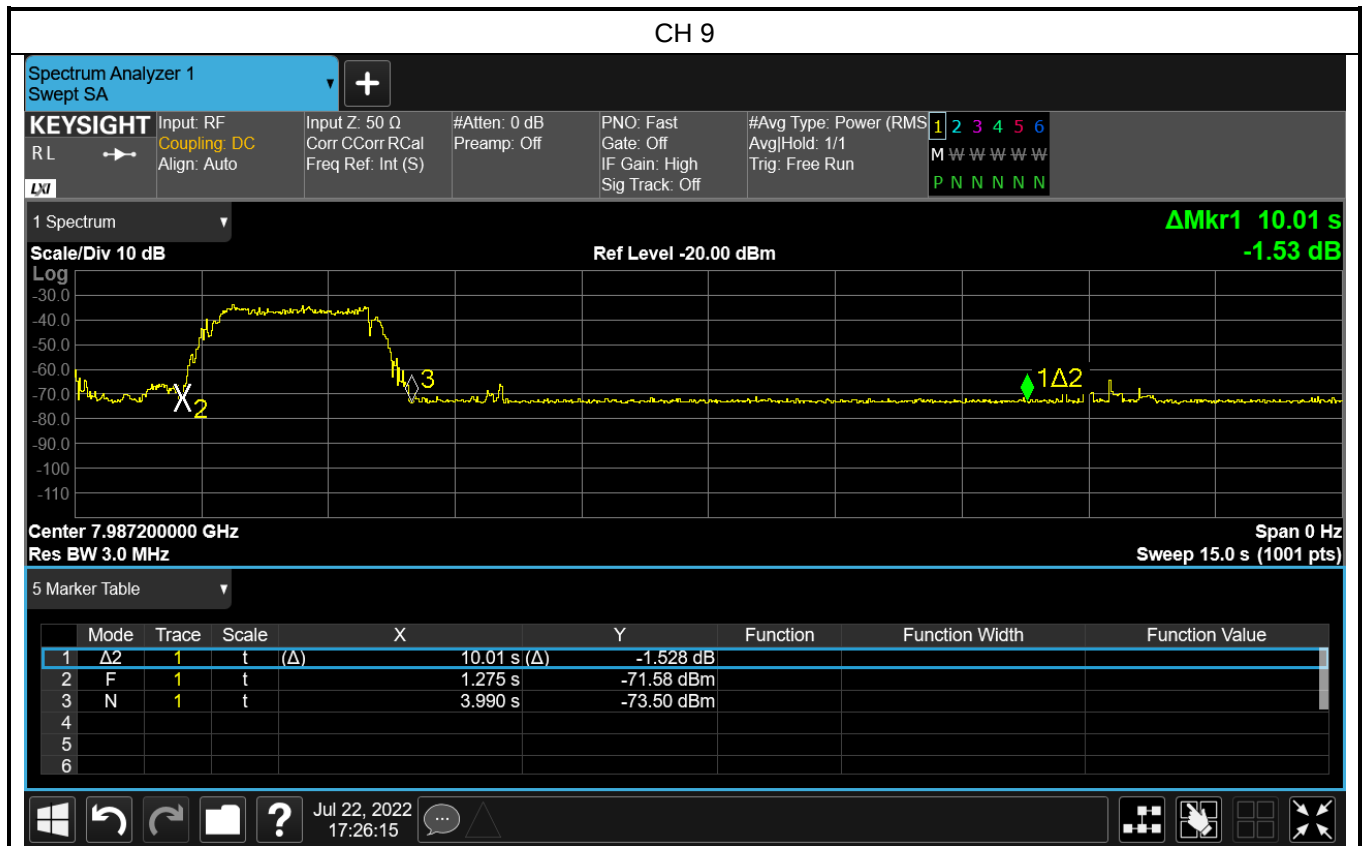


CH 6



CH 8





6.4 Emission Bandwidth

Mode	Channel	Measurement (MHz)	Limit (MHz)	Results
-10dB bandwidth	CH 5	522.6	500	Pass
	CH 6	550.4		
	CH 8	516.1		
	CH 9	588.5		
99% Occupied Bandwidth	CH 5	594.62	N/A	
	CH 6	595.45		
	CH 8	608.89		
	CH 9	624.05		

Channel	f_L (MHz)	f_H (MHz)	Limit (MHz)	Results
CH 5	6203.00	6726.00	3100MHz < f < 10600MHz	Pass
CH 6	6688.00	7237.00		
CH 8	7196.00	7769.00		
CH 9	7689.20	8278.20		

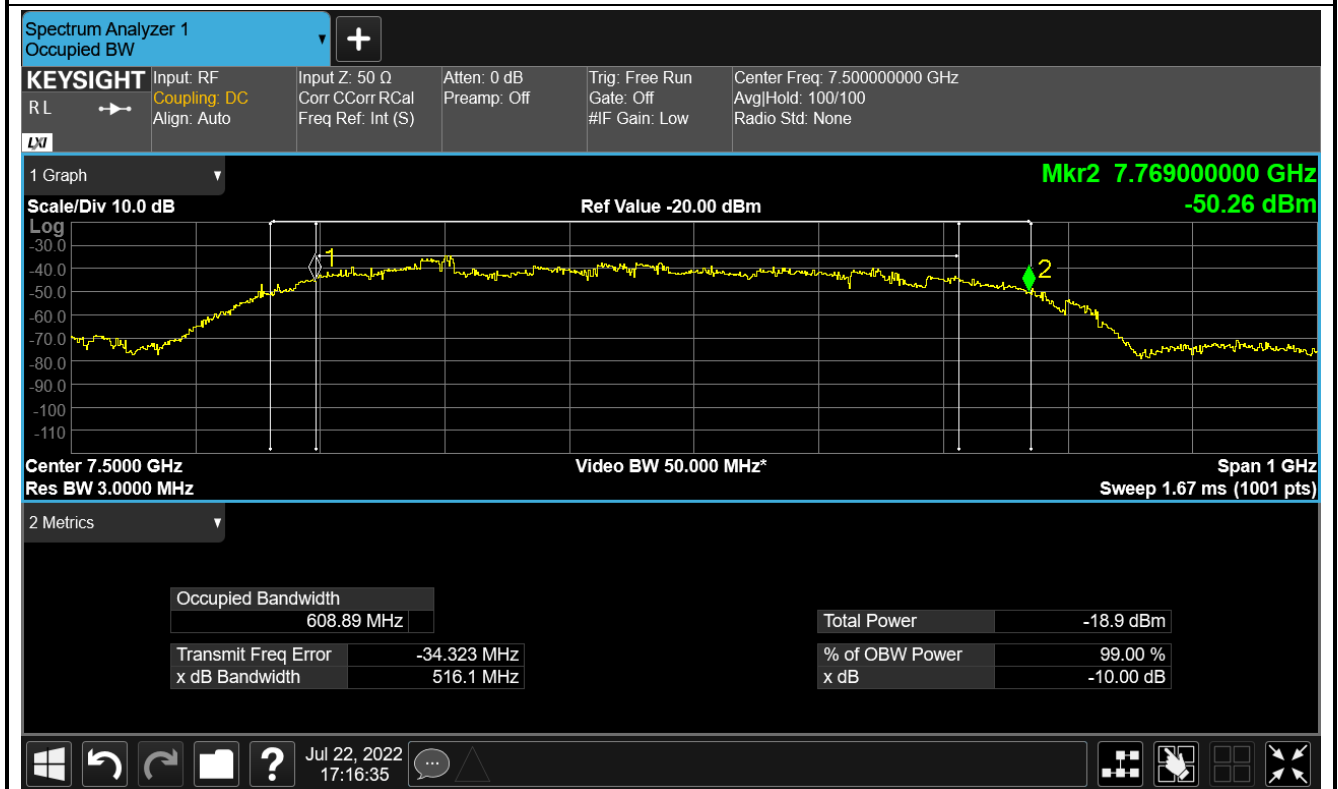
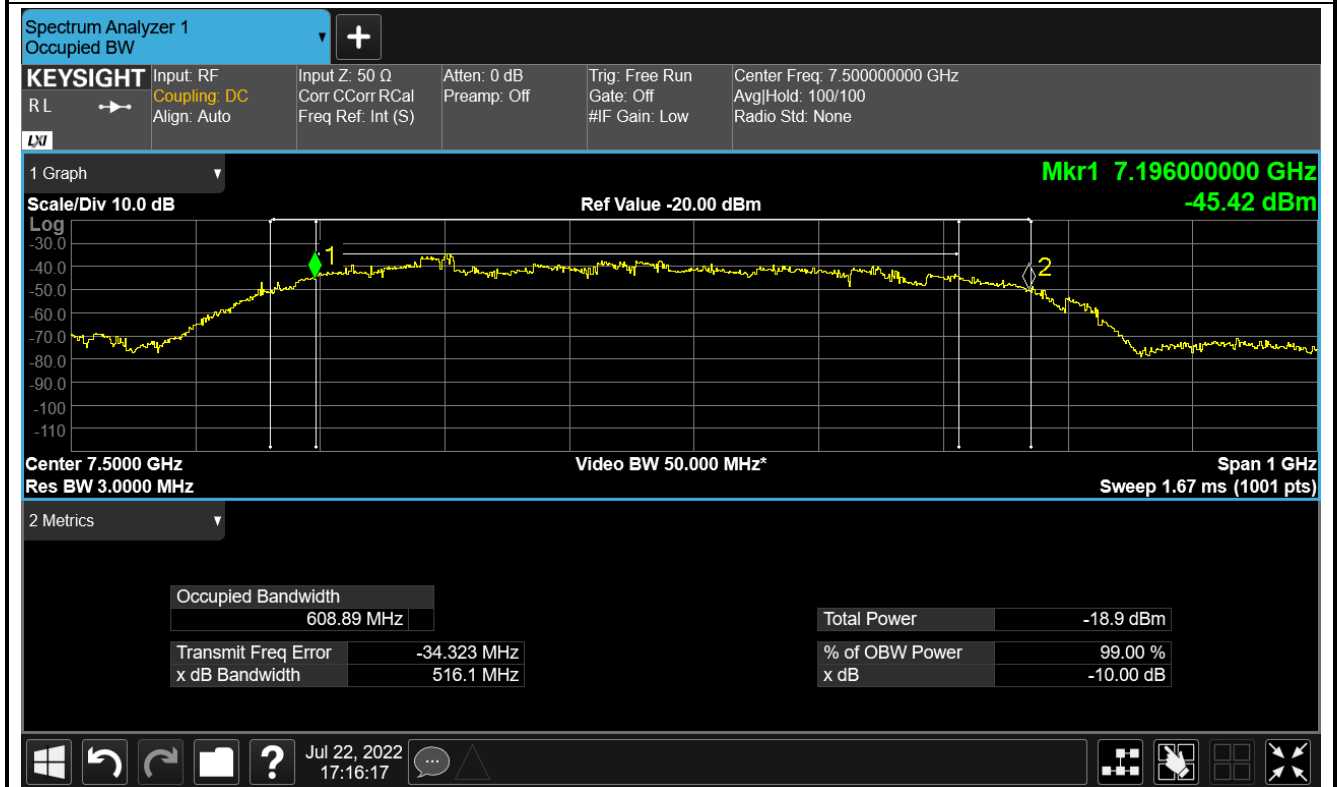
Test plot as follows:



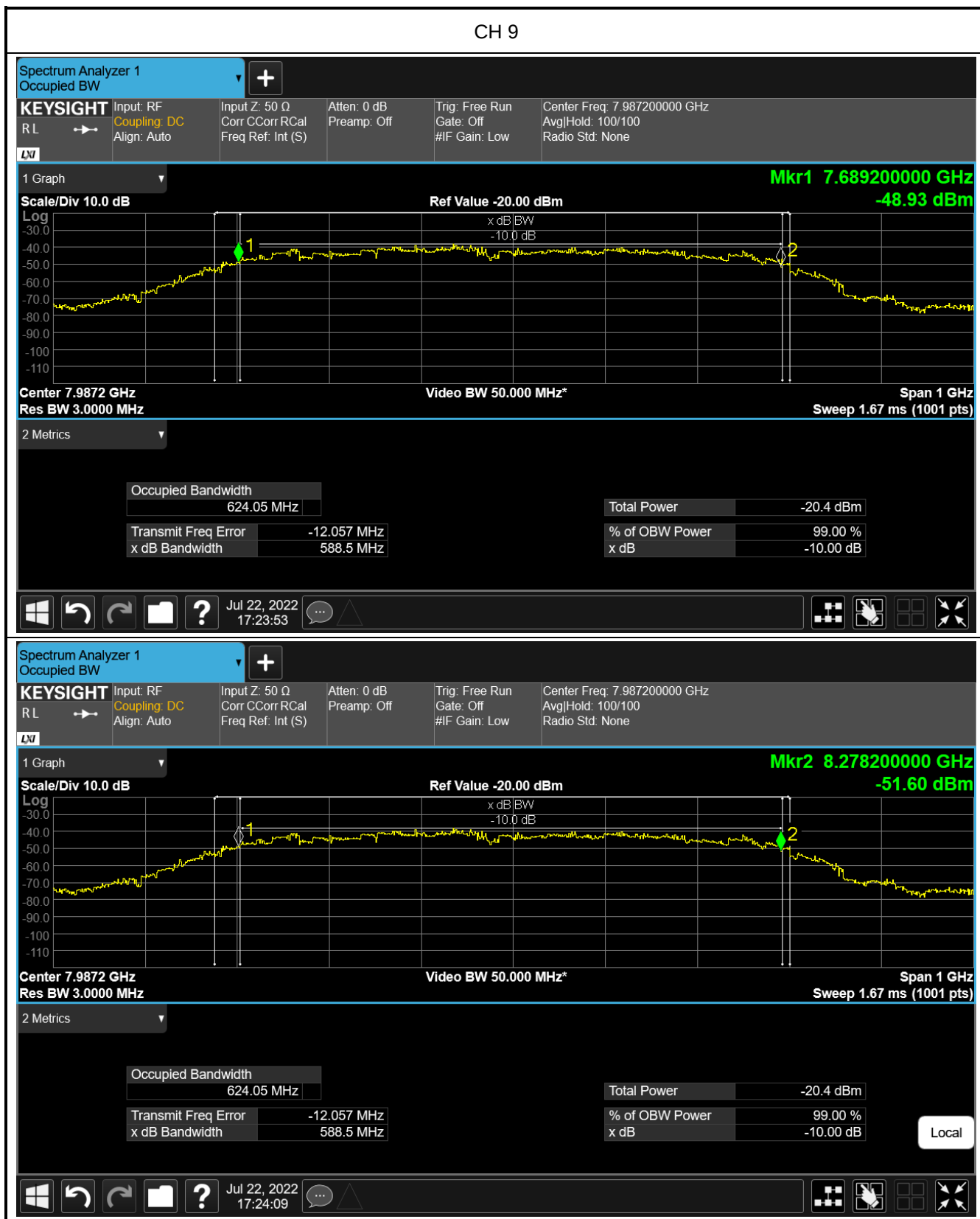
CH 6



CH 8



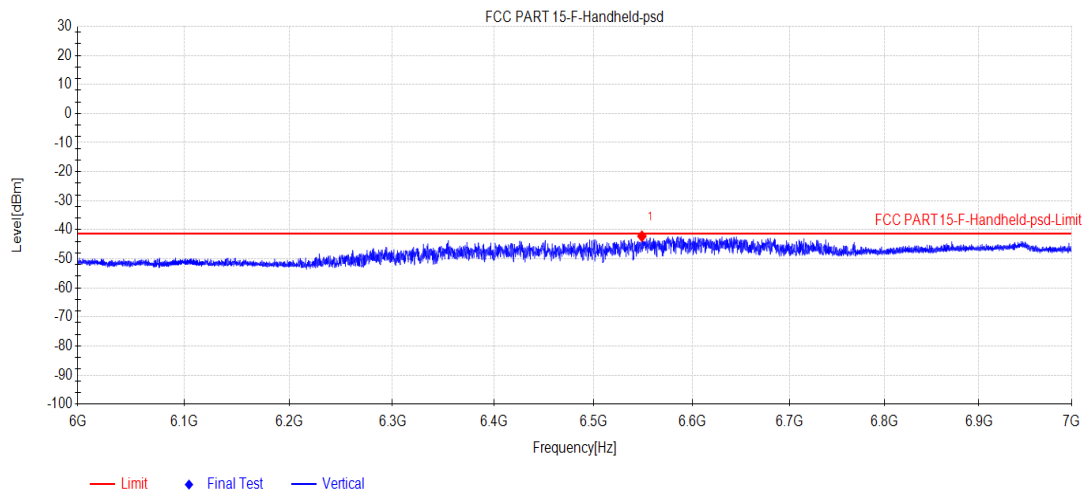
CH 9



6.5 Radiated emissions

6.5.1 Emissions of UWB

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 5	Polarization:	Vertical
Test Voltage:	DC 3.0		

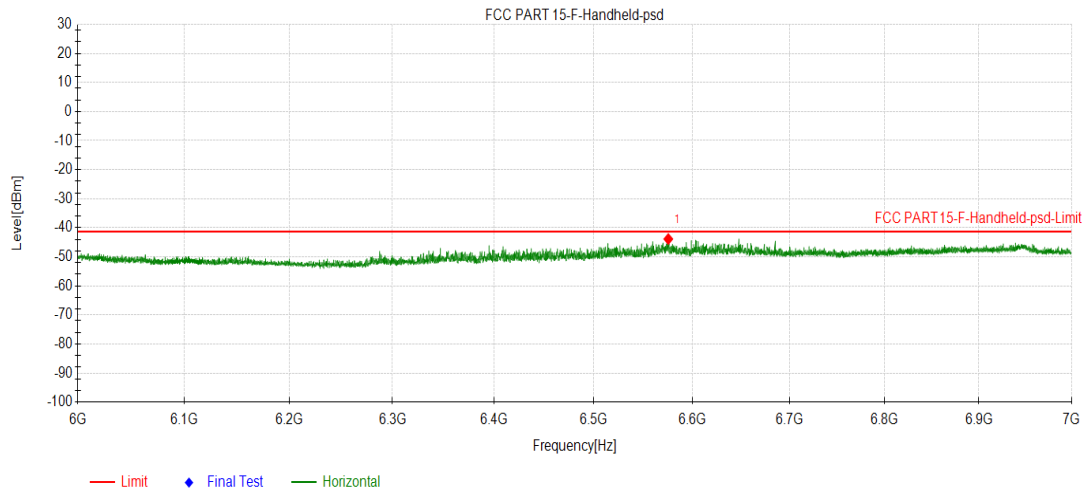


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	6548.625	-49.93	-42.20	-41.30	0.90	7.73	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 5	Polarization:	Horizontal
Test Voltage:	DC 3.0		

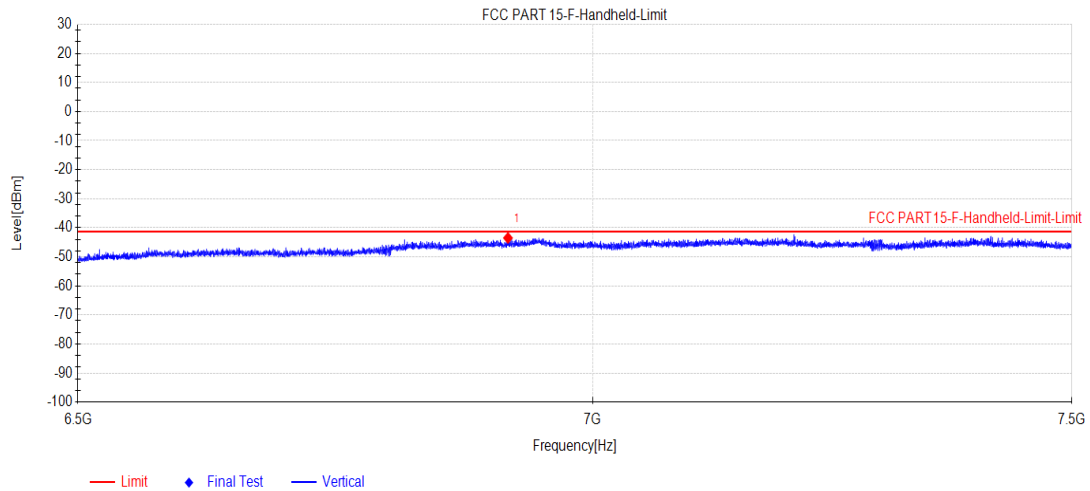


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	6575.500	-52.15	-43.86	-41.30	2.56	8.29	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 6	Polarization:	Vertical
Test Voltage:	DC 3.0		

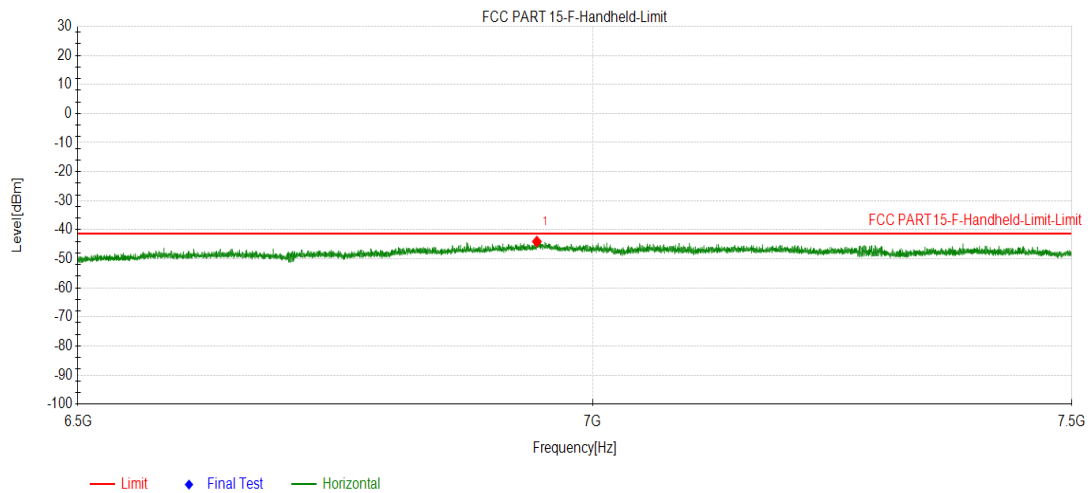


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	6915.250	-54.07	-43.49	-41.30	2.19	10.58	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 6	Polarization:	Horizontal
Test Voltage:	DC 3.0		

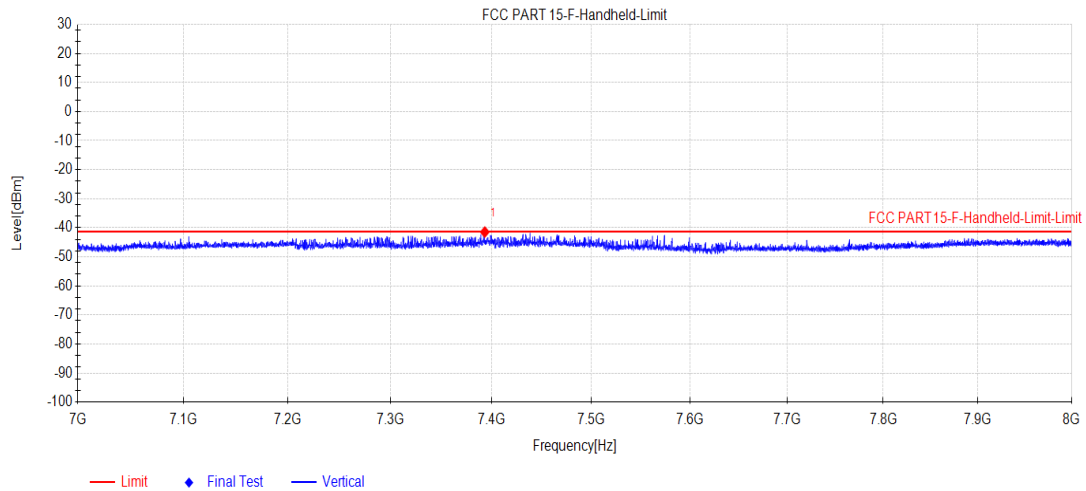


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	6944.125	-53.14	-44.05	-41.30	2.75	9.09	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 8	Polarization:	Vertical
Test Voltage:	DC 3.0		

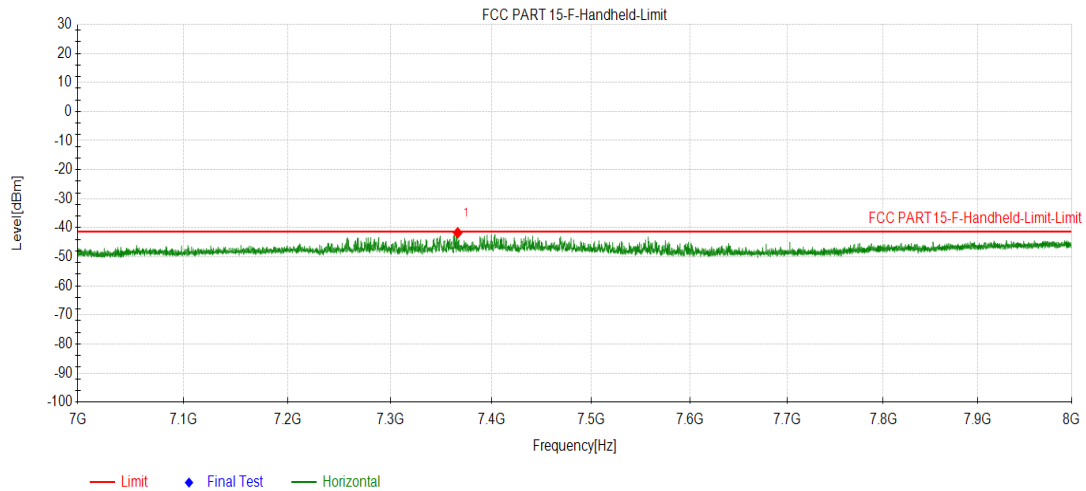


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	7393.375	-53.41	-41.47	-41.30	0.17	11.94	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 8	Polarization:	Horizontal
Test Voltage:	DC 3.0		

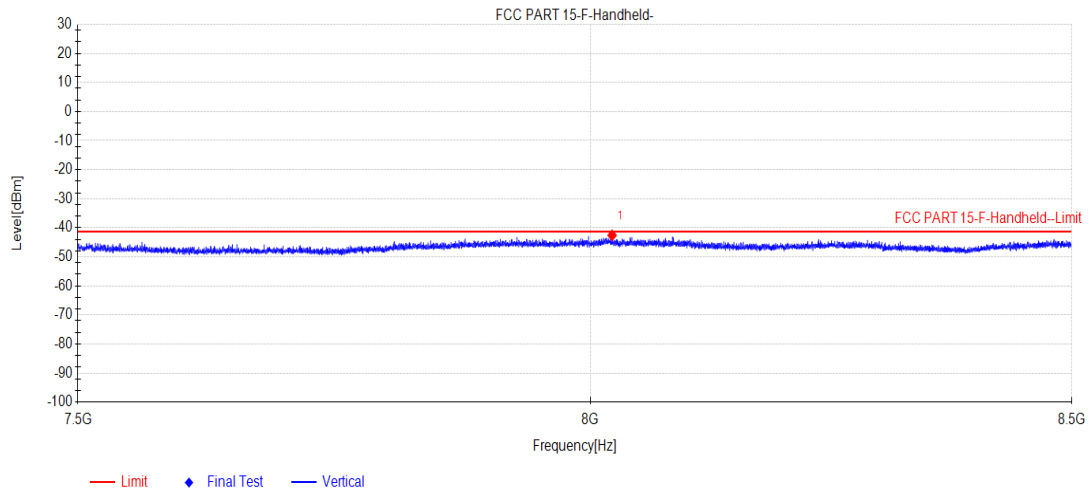


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	7366.500	-51.86	-41.71	-41.30	0.41	10.15	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 9	Polarization:	Vertical
Test Voltage:	DC 3.0		

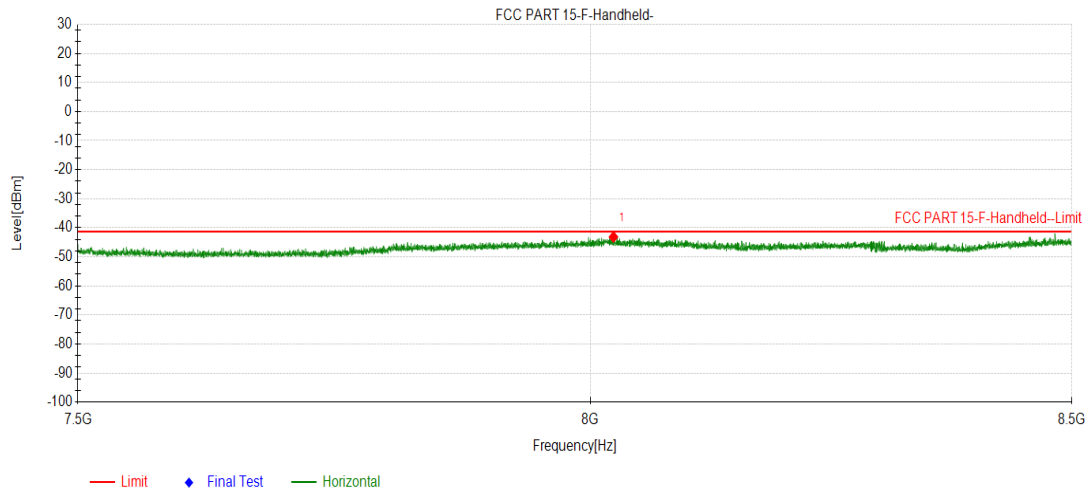


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	8022.000	-54.28	-42.58	-41.30	1.28	11.70	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 9	Polarization:	Horizontal
Test Voltage:	DC 3.0		



Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	8023.375	-54.70	-43.15	-41.30	1.85	11.55	Horizontal

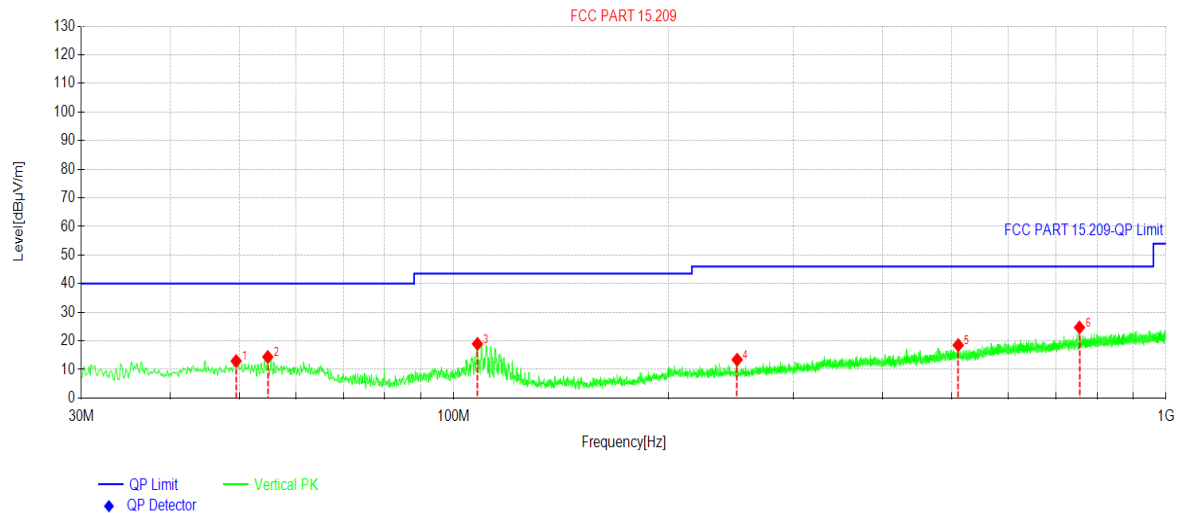
Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

6.5.2 Other radiated emission

Below 960MHz

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	30MHz – 960MHz	Polarization:	Vertical
Test Voltage:	DC 3.0V		

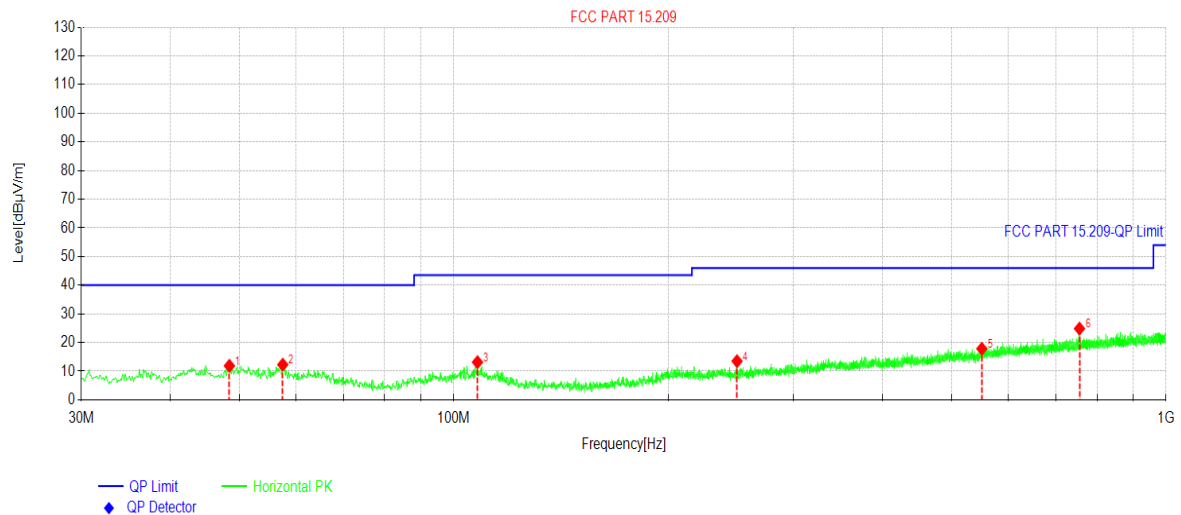


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	49.4990	25.71	12.94	-12.77	40.00	27.06	PK	Vertical
2	54.8345	27.59	14.41	-13.18	40.00	25.59	PK	Vertical
3	107.995	33.69	18.96	-14.73	43.50	24.54	PK	Vertical
4	250.018	27.42	13.42	-14.00	46.00	32.58	PK	Vertical
5	510.877	27.24	18.53	-8.71	46.00	27.47	PK	Vertical
6	756.020	28.99	24.71	-4.28	46.00	21.29	PK	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	30MHz – 960MHz	Polarization:	Horizontal
Test Voltage:	DC 3.0V		



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBuV/m]	Level [dBuV/m]	Factor [dB]	Limit [dBuV/m]	Margin [dB]	Trace	Polarity
1	48.4318	24.65	11.87	-12.78	40.00	28.13	PK	Horizontal
2	57.5508	26.08	12.28	-13.80	40.00	27.72	PK	Horizontal
3	107.995	27.88	13.15	-14.73	43.50	30.35	PK	Horizontal
4	249.921	27.50	13.50	-14.00	46.00	32.50	PK	Horizontal
5	551.427	25.83	17.83	-8.00	46.00	28.17	PK	Horizontal
6	756.020	29.14	24.86	-4.28	46.00	21.14	PK	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Above 960MHz

CH 5				
Detector: Average Value				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	Polarization	Level(dBm)		
991.348	Vertical	-80.16	-75.3	PASS
1563.010	V	-78.85	-75.3	
1867.418	V	-75.42	-63.3	
3054.509	V	-69.19	-61.3	
6548.625	V	-42.20	-41.3	
16118.426	V	-63.88	-61.3	
990.408	Horizontal	-81.41	-75.3	
1597.562	H	-78.49	-75.3	
1950.113	H	-75.20	-63.3	
3018.718	H	-70.67	-61.3	
6575.500	H	-43.86	-41.3	
15946.304	H	-64.05	-61.3	

CH 6				
Detector: Average Value				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	Polarization	Level(dBm)		
995.459	Vertical	-80.63	-75.3	PASS
1588.915	V	-79.33	-75.3	
1895.804	V	-75.81	-63.3	
3064.733	V	-69.39	-61.3	
6915.250	V	-43.49	-41.3	
16159.521	V	-63.45	-61.3	
993.947	Horizontal	-81.27	-75.3	
1586.462	H	-78.02	-75.3	
1962.856	H	-74.88	-63.3	
3034.195	H	-70.37	-61.3	
6944.125	H	-44.05	-41.3	
16084.339	H	-64.16	-61.3	

CH 8				
Detector: Average Value				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	Polarization	Level(dBm)		
996.490	Vertical	-80.03	-75.3	PASS
1591.347	V	-78.77	-75.3	
1890.605	V	-75.49	-63.3	
3043.881	V	-69.55	-61.3	
7393.375	V	-41.47	-41.3	
16508.715	V	-63.6	-61.3	
997.102	Horizontal	-81.56	-75.3	
1573.445	H	-78.65	-75.3	
1970.502	H	-75.37	-63.3	
3046.198	H	-70.77	-61.3	
7366.500	H	-41.71	-41.3	
16168.142	H	-64.49	-61.3	

CH 9				
Detector: Average Value				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	Polarization	Level(dBm)		
992.168	Vertical	-80.28	-75.3	PASS
1585.461	V	-78.43	-75.3	
1901.268	V	-75.18	-63.3	
3054.631	V	-68.72	-61.3	
8022.000	V	-42.58	-41.3	
16456.207	V	-63.64	-61.3	
991.396	Horizontal	-81.46	-75.3	
1556.459	H	-78.17	-75.3	
1968.443	H	-75.08	-63.3	
3051.551	H	-71.16	-61.3	
8023.375	H	-43.15	-41.3	
16237.915	H	-80.28	-61.3	

Additional:

CH 5				
Detector: Average Value				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	Polarization	Level(dBm)		
1189.618	Vertical	-114.49	-85.3	PASS
1579.942	V	-108.06		
1175.784	Horizontal	-116.50	-85.3	
1593.316	H	-109.74		

CH 6				
Detector: Average Value				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	Polarization	Level(dBm)		
1196.785	Vertical	-114.96	-85.3	PASS
1585.347	V	-107.75		
1180.651	Horizontal	-116.24	-85.3	
1596.488	H	-110.16		

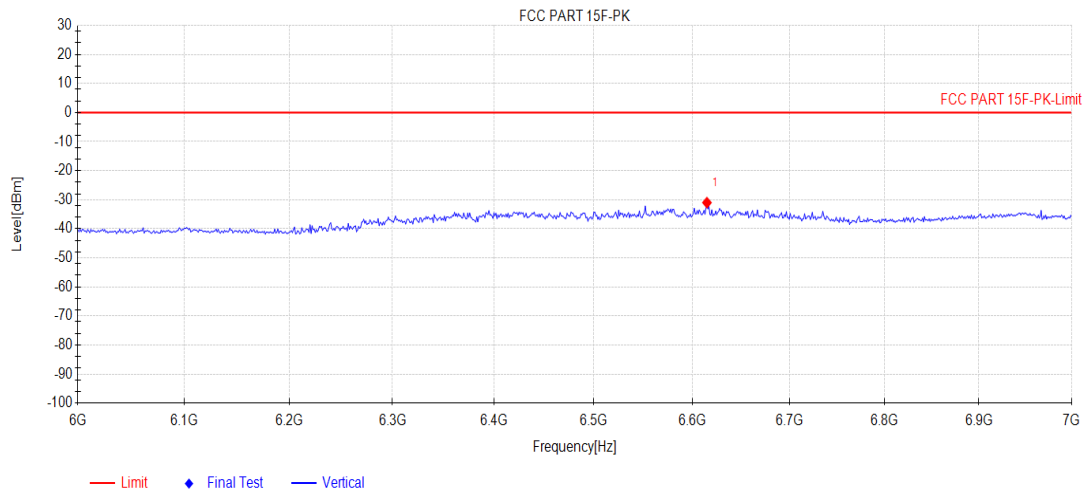
CH 8				
Detector: Average Value				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	Polarization	Level(dBm)		
1210.332	Vertical	-114.21	-85.3	PASS
1596.574	V	-107.94		
1199.671	Horizontal	-116.40	-85.3	
1585.340	H	-109.26		

CH 9				
Detector: Average Value				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	Polarization	Level(dBm)		
1205.302	Vertical	-114.61	-85.3	PASS
1593.117	V	-108.43		
1183.482	Horizontal	-116.42	-85.3	
1591.318	H	-109.48		

6.6 Peak Power

Test Mode	Measured Peak Power (dBm/5MHz)	Peak EIRP limit (dBm/5MHz)	Results
CH 5	-31.00	-24.44	Pass
CH 6	-34.29	-24.44	
CH 8	-33.14	-24.44	
CH 9	-32.81	-24.44	
Remark: 1. Peak EIRP limit of 3MHz RBW = $20 \log (RBW/50) \text{ dBm} = -24.44\text{dBm}$.			

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 5	Polarization:	Vertical
Test Voltage:	DC 3.0V		

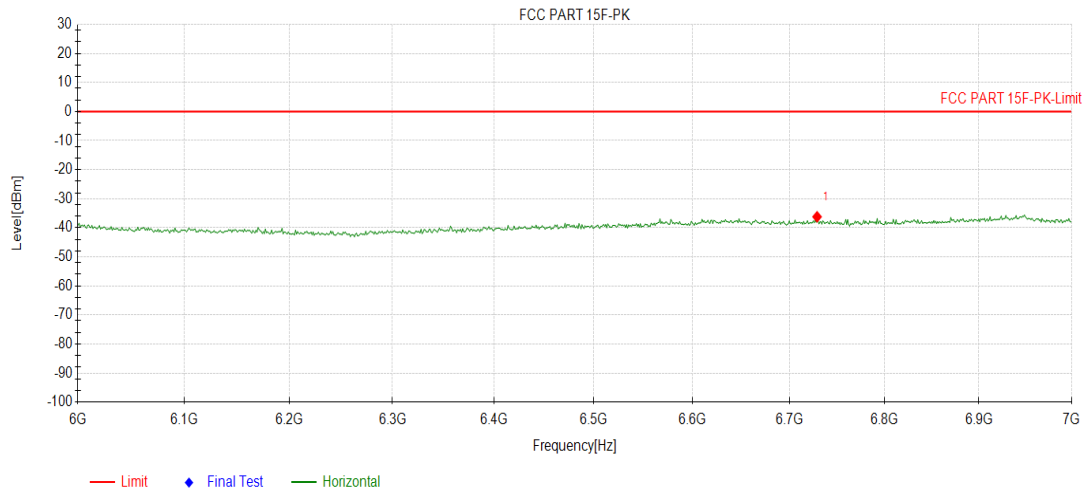


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	6615.000	-39.53	-31.00	0.00	31.00	8.53	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 5	Polarization:	Horizontal
Test Voltage:	DC 3.0V		

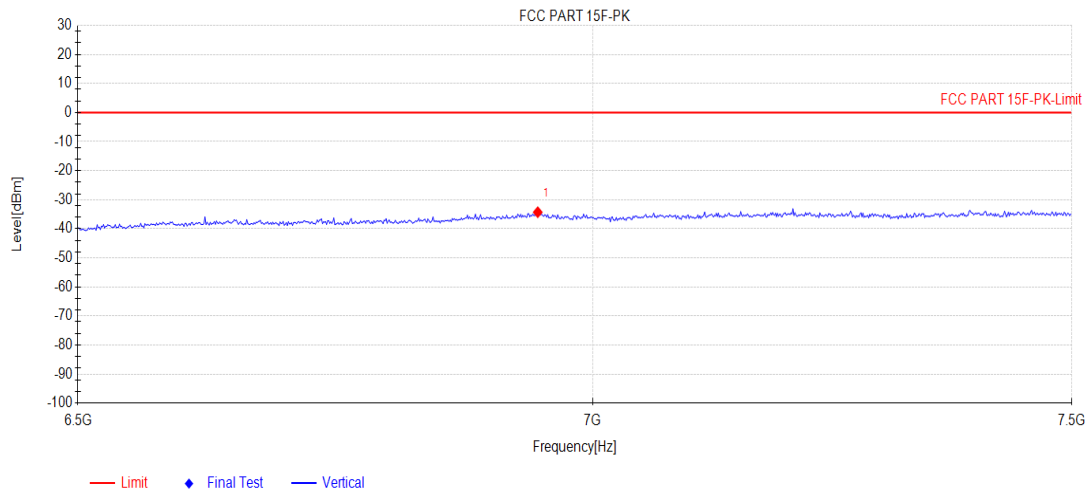


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	6729.000	-44.86	-36.22	0.00	36.22	8.64	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 6	Polarization:	Vertical
Test Voltage:	DC 3.0V		

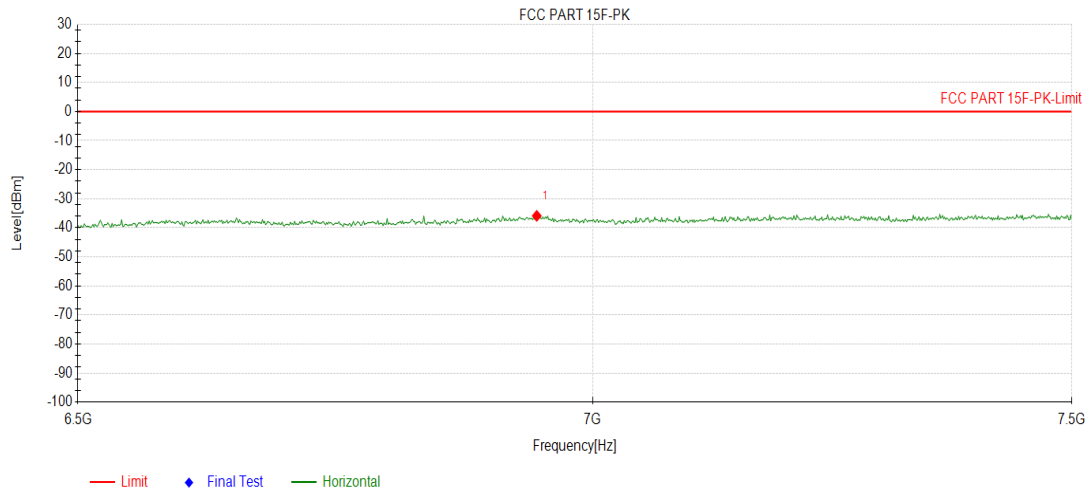


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	6945.000	-44.73	-34.29	0.00	34.29	10.44	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 6	Polarization:	Horizontal
Test Voltage:	DC 3.0V		

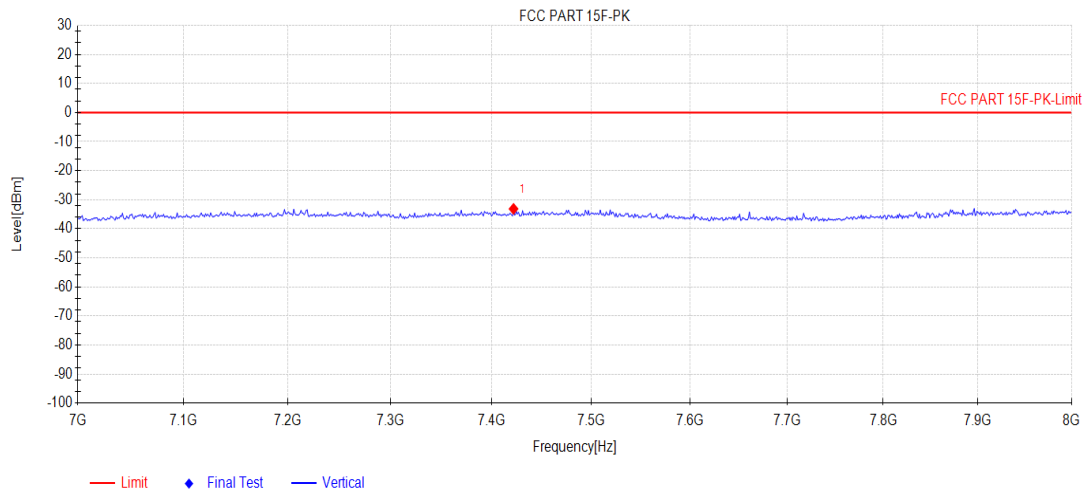


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	6944.000	-44.97	-35.88	0.00	35.88	9.09	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 8	Polarization:	Vertical
Test Voltage:	DC 3.0V		

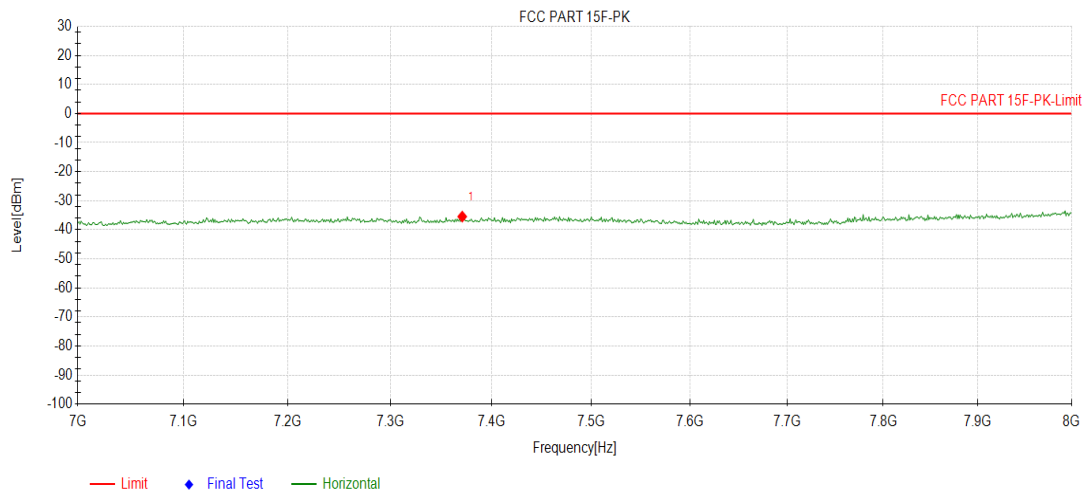


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	7422.000	-44.90	-33.14	0.00	33.14	11.76	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 8	Polarization:	Horizontal
Test Voltage:	DC 3.0V		

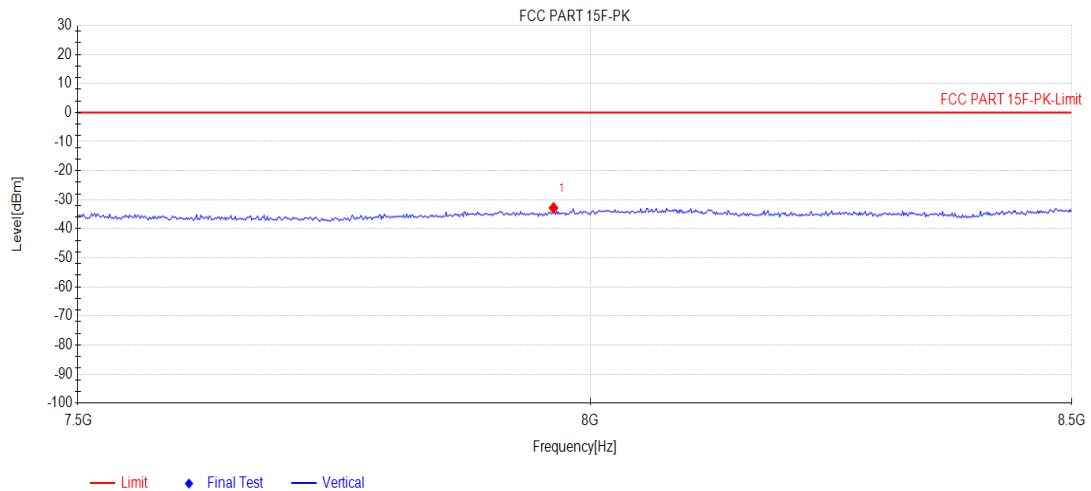


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	7371.000	-45.62	-35.46	0.00	35.46	10.16	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 9	Polarization:	Vertical
Test Voltage:	DC 3.0V		

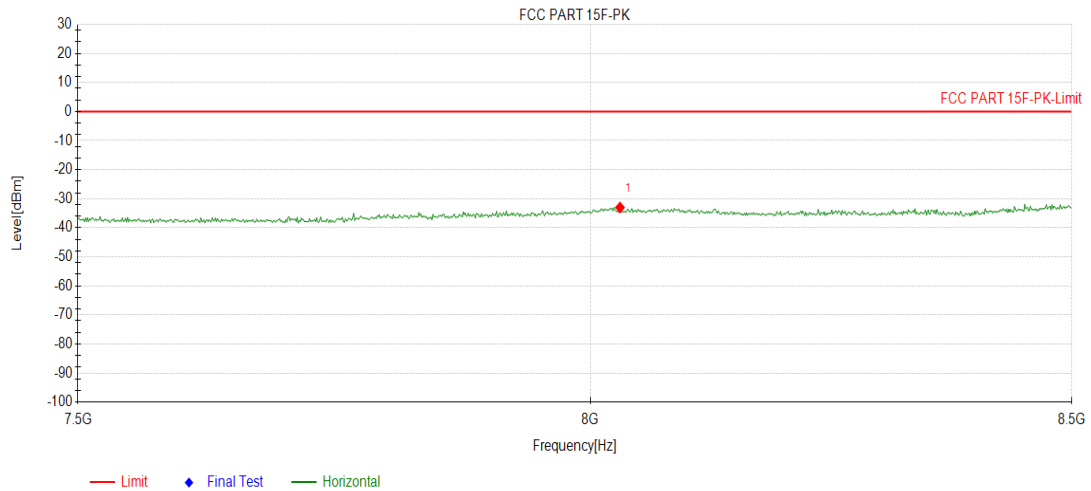


Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	7963.000	-44.51	-32.81	0.00	32.81	11.70	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

Product Name:	Key Fob	Product Model:	KF10
Test By:	Janet	Test mode:	UWB Tx mode
Test Channel:	CH 9	Polarization:	Horizontal
Test Voltage:	DC 3.0V		



Suspected Data List							
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Polarity
1	8030.000	-44.56	-32.99	0.00	32.99	11.57	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor)

-----End of report-----