

ISED CABid: ES1909

Lab. Company Number: 4621A

Test Report No:

80806RRF.003

Partial Test Report

USA FCC Part 24

CANADA RSS-133

(*) Identification of item tested	Device to track Pet using LTE, BLE, WiFi and GNSS
(*) Trademark	DATAMARS, Kippy
(*) Model and /or type reference	PetLink CAT Rev.6v2 US
Other identification of the product	FCC ID: NDX-PLCAT1 IC: 8521A-PLCAT1
(*) Features	LTE CAT-M1, Bluetooth LE, GNSS, WIFI scan (RX ONLY) HW version: 6V2 US SW version: 10.4.64
Applicant	DATAMARS SA Via Industria 16 6814 Lamone, SWITZERLAND
Test method requested, standard	USA FCC Part 24 (10-1-23 Edition). CANADA RSS-133 Issue 7, July 2024. ANSI C63.26-2015. KDB 971168 D01 Power Meas License Digital Systems v03r01, April. 2018.
Approved by (name / position & signature)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager  Firmado digitalmente por 53680346W JOSE MANUEL GOMEZ (C:A29507456) Fecha: 2026.04.13 09:23:06 +02'00'
	NOTE: This test report was issued on the date 2025-01-28. Now the report is reissued without modifications, representing a true copy of the original.
Date of issue	2026-04-07
Report template No.	FDT08_25 (*) "Data provided by the client"

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Competences and guarantees

DEKRA Testing and Certification 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.

DEKRA Testing and Certification is an FCC-recognized accredited testing laboratory with appropriate scope of accreditation that covers the performed tests in this report.

DEKRA Testing and Certification is an ISED-recognized accredited testing laboratory, CABid: ES1909, Company Number: 4621A, with the appropriate scope of accreditation that covers the performed tests in this report.

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

DEKRA Testing and Certification 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 at the time of performance of the test.

DEKRA Testing and Certification 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. **IMPORTANT:** No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA Testing and Certification.

General conditions

1. This report is only referred to the item that has undergone the test.
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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.

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").
2. The sample consists of a Pet tracker. Device to track Pet using LTE, BLE, WiFi and GNSS.

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 undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date Reception	of	Application
S/01	80806_7.1	Device to track Pet	PetLink CAT Rev.6v2 US	--	2024-11-04		Element Under Test
S/01	80806_25.1	USB charging cable	--	--	2024-11-04		Auxiliary Element
S/02	80806_2.1	Device to track Pet (Conducted)	PetLink CAT Rev.6v2 US	--	2024-11-04		Element Under Test
S/02	80806_25.1	USB charging cable	--	--	2024-11-04		Auxiliary Element

Notes referenced to samples during the project:

Id	Type
S/01	Samples used for radiated testing
S/02	Samples used for conducted testing

Test sample description

Ports..... :	Port name and description		Cable											
			Specified max length [m]	Attached during test	Shielded									
	serial com on USB		1.5m	[X]	[]									
	SMA cable		0.03m	[X]	[]									
Supplementary information to the ports..... :														
Rated power supply	Voltage and Frequency			Reference poles										
				L1	L2	L3	N	PE						
	[]	AC:		[]	[]	[]	[]	[]						
	[X]	DC: Li-ion polymer 4.4 max voltage, 480mAh, Grepow Battery, GRP751538-2C-1S1P												
Rated Power	3W													
Clock frequencies.....	32 MHz, 32.768 kHz, 26 MHz													
Other parameters														
Software version	10.4.64													
Hardware version	6V2 US													
Dimensions in cm (W x H x D)	device with open straps= 15 x 10 x 2 cm													
Mounting position	[]	Table top equipment												
	[]	Wall/Ceiling mounted equipment												
	[]	Floor standing equipment												
	[]	Hand-held equipment												
	[X]	Other:												
Modules/parts..... :	Module/parts of test item			Type		Manufacturer								
	Modem LTE			ME310G1WW0		Telit								
	GNSS receiver			MIA-M10Q		UBLOX								
	BLE			nRf52832		Nordic Semi								
	WiFi scanner			RSP8684H2		Espressif Systems								
Accessories (not part of the test item)	Description			Type		Manufacturer								
	USB charging cable EU - CMA-052001-02A1AF					CFE Electronic Co								
	USB charging cable US - CMA-052002-02A1AF					CFE Electronic Co								
Documents as provided by the applicant..... :	Description			File name		Issue date								
														

Identification of the client

DATAMARS SA
Via Industria 16
6814 Lamone, SWITZERLAND

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2024-12-12
Date (finish)	2024-12-16

Document history

Report number	Date	Description
80806RRF.003	2026-04-07	First release.

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. = 20 % Max. = 75 %

In the semi-anechoic chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

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. = 20 % Max. = 75 %

Remarks and comments

The tests have been performed by the technical personnel: Sergio Carrasco and Jose Manuel Jimenez.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
04825	SEMIANECHOIC ABSORBER LINED CHAMBER	FACT 3 200 STP	ETS LINDGREN	N/A
04826	SHIELDED ROOM	S101	ETS LINDGREN	N/A
07547	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2025-04-04
07548	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2025-04-09
06165	EMI TEST RECEIVER 9kHz-7GHz	ESR7	ROHDE AND SCHWARZ	2025-12-27
04578	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2026-06-01
07611	PREAMPLIFIER BOX	--	INTERNAL	2025-01-23
04611	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2026-01-16
05705	PRE-AMPLIFIER G>40dB 1-18 GHz	BLMA 0118-1M	BONN ELEKTRONIK	2025-07-18
04716	SIGNAL AND SPECTRUM ANALYZER 2Hz-50GHz	FSW50	ROHDE AND SCHWARZ	2026-08-02
09555	TWO-CHANNEL POWER SUPPLY, 32V, 10/5A, 188W	HMP2020	ROHDE AND SCHWARZ	N/A
05850	DIGITAL MULTIMETER	179	FLUKE	2025-11-04
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	N/A
06793	SHIELDED ROOM	S101	ETS LINDGREN	N/A
06611	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2025-04-04
04164	POWER SENSOR 50MHz-18GHz	NRP-Z81	ROHDE AND SCHWARZ	2025-04-10
08849	WIDEBAND RADIO COMMUNICATION TESTER	CMW500	ROHDE AND SCHWARZ	2025-10-11

Testing verdicts

Not applicable:	N/A
Pass:	P
Fail:	F
Not measured:	N/M

Summary

Appendix A: LTE Cat-M1 Band 2.

FCC 24 / RSS-133		
Requirement – Test case	Verdict	Remark
FCC 24.232 / RSS-133 5.5: RF Output Power	P	--
FCC 2.1047 / RSS-133 5.3: Modulation characteristics	N/M	(1)
FCC 24.235 / RSS-133 5.4: Frequency stability	N/M	(1)
FCC 2.1049: Occupied Bandwidth	N/M	(1)
FCC 24.238 / RSS-133 5.6: Spurious emissions at antenna terminals	N/M	(1)
FCC 24.238 / RSS-133 5.6: Spurious emissions at antenna terminals at Block Edges	N/M	(1)
FCC 24.238 / RSS-133 5.6: Radiated Emissions	P	--
<u>Supplementary information and remarks:</u> (1) Test not requested by the client.		

Appendix A: Test results for FCC 24 / RSS-133: LTE Cat-M1 Band 2

TEST CONDITIONS

(*): Declared by the Applicant.

POWER SUPPLY (*):

Vnominal: 3.85 Vdc
Type of Power Supply: Battery (Li-ion polymer).

ANTENNA (*):

Technologies	Antenna Gain (dBi)	Type of Antenna
LTE Cat-M1 Band 2	0.54	Monopole on Flex PCB

TEST FREQUENCIES:

LTE Cat-M1 Band 2. QPSK and 16QAM:

Channel per BW=(Frequency, MHz)						
	BW = 1.4 MHz	BW = 3 MHz	BW = 5 MHz	BW = 10 MHz	BW = 15 MHz	BW = 20 MHz
Low	18607 (1850.7)	18615 (1851.5)	18625 (1852.5)	18650 (1855)	18675 (1857.5)	18700 (1860)
Middle	18900 (1880)	18900 (1880)	18900 (1880)	18900 (1880)	18900 (1880)	18900 (1880)
High	19193 (1909.3)	19185 (1908.5)	19175 (1907.5)	19150 (1905)	19125 (1902.5)	19100 (1900)

RF Output Power

Limits

* FCC § 2.1046 and § 24.232:

Mobile/portable stations are limited to 2 Watts (33 dBm) Effective Isotropic Radiated Power (E.I.R.P.).

* RSS-133 Clause 5.5:

Mobile stations and hand-held portables are limited to 2 watts maximum e.i.r.p.

Method

The conducted RF output power measurements were made at the RF output terminals of the EUT using the power meter of the Universal Radio Communication tester CMW500, selecting maximum transmission power of the EUT and different modes of modulation.

The maximum equivalent isotropically radiated power (e.i.r.p.) is calculated by adding the declared maximum antenna gain (dBi).

The maximum effective radiated power e.r.p. is calculated from the maximum equivalent isotropically radiated power (e.i.r.p.) by subtracting 2.15 dB:

$$\text{E.R.P.} = \text{E.I.R.P.} - 2.15 \text{ dB}$$

Test Setup

CONDUCTED AVERAGE POWER:



Results

CONDUCTED AVERAGE POWER:

LTE Cat-M1 Band 2:

A preliminary scan determined the BW=20 MHz, QPSK, Low Channel, RB Size=1, RB Offset=0, Narrowband=15 as the worst case.

BANDWIDTH (MHz)	CHANNEL	FREQUENCY (MHz)	MODULATION	RB SIZE	RB OFFSET	AVERAGE POWER (dBm)
20	Low 18700	1860	QPSK	1	0	21.41
				1	5	21.15
				3	3	21.49
				6	0	21.47
			16-QAM	1	0	21.70
				1	5	21.57
				3	3	21.57
				6	0	21.51
	Middle 18900	1880	QPSK	1	0	21.81
				1	5	21.48
				3	3	21.63
				6	0	21.66
			16-QAM	1	0	21.77
				1	5	21.52
				3	3	21.76
				6	0	21.57
	High 19100	1900	QPSK	1	0	22.69
				1	5	22.43
				3	3	21.47
				6	0	21.51
			16-QAM	1	0	22.46
				1	5	22.18
				3	3	21.48
				6	0	21.70

Measurement uncertainty (dB) <±0.941

Verdict

Pass

Radiated Emissions

Limits

1. LTE Cat-M1 Band 2. FCC §2.1051, §24.238 (a) (b) / RSS-133:

FCC §24.238 (a) (b):

(a) The power of emissions shall be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. P in watts.

(b) Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

RSS-133:

5.6. Unwanted emission limits

Unwanted emissions shall be measured in terms of average values while the transmitter is operating at the manufacturer's rated power and modulated as specified in RSS-Gen.

Equipment shall meet the unwanted emission limits, specified in table 3, outside each frequency block group. For each channel bandwidth supported by the equipment under test, the unwanted emissions shall be measured and reported for two channel frequencies: one located as close as possible to the low end and one located as close as possible to the high end of the equipment's operating frequency range.

For the unwanted emission limits, in the 1 MHz bands immediately outside and adjacent to the frequency block group, the power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth (OBW). Beyond these 1 MHz bands, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth may be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% of the OBW, as applicable.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors), where applicable, of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in the table 3.

Table 3: Unwanted emission limits for all equipment

Offset frequency from the edge of the frequency block group (MHz)	Unwanted emission limit
≤ 1	-13 dBm/(1% of OBW)
> 1	-13 dBm/MHz

Method

The measurement was performed with the EUT inside an anechoic chamber. The spectrum was scanned from 30 MHz to at least the 10th harmonic of the High frequency generated within the equipment.

The EUT was placed on a non-conductive stand at 3-meter distance from the measuring antenna for measurements up to 17 GHz. Measurements above 17 GHz require the distance to be reduced to 1.5 meters.

Detected emissions were maximized at each frequency by rotating the EUT and adjusting the height and polarization of the measuring antenna. The maximum meter reading was recorded.

Measurement Limit:

At P_o transmitting power, the specified minimum attenuation becomes $43+10\log(P_o)$ and the level in dBm relative P_o becomes:

$$P_o \text{ (dBm)} - [43 + 10 \log(P_o \text{ in mwatts}) - 30] = -13 \text{ dBm}$$

The maximum field strength (dB μ V/m) of each detected emission at less than 20 dB respect to the limit is converted to an equivalent EIRP level (dBm) according to ANSI C63.26 with the formula:

$$\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20 \log(D) - 104.8;$$

where D is the measurement distance (in the far field region) in m.

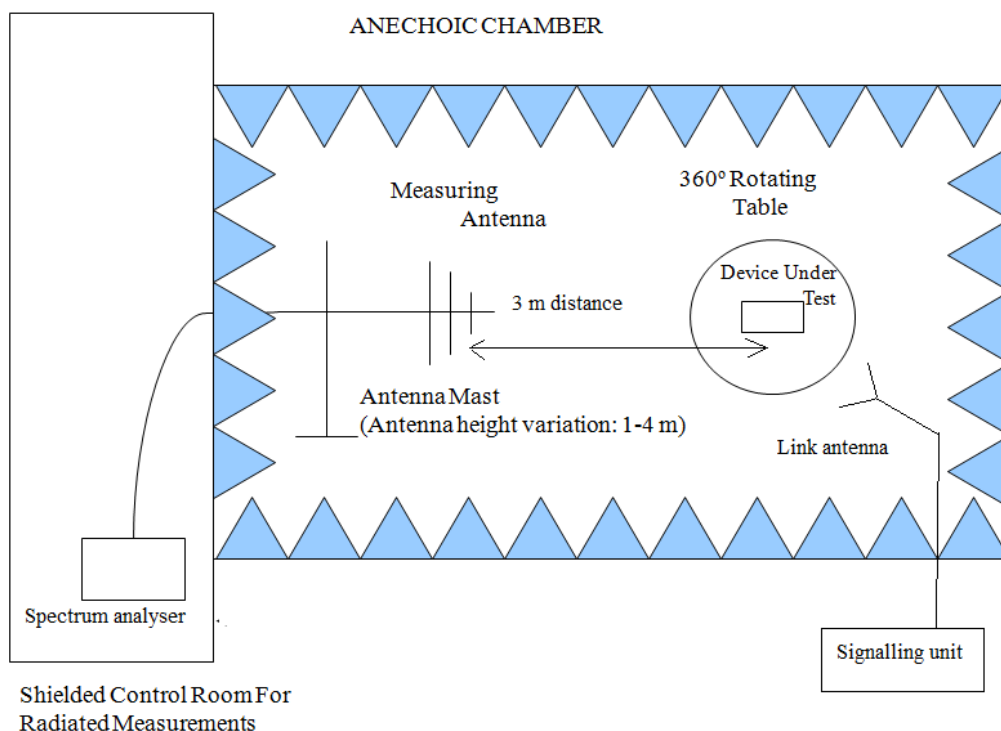
Frequency range tested for Radiated emissions:

Start frequency: no radiofrequency signal generated in the device found below 10th sub-harmonic, no further investigation required.

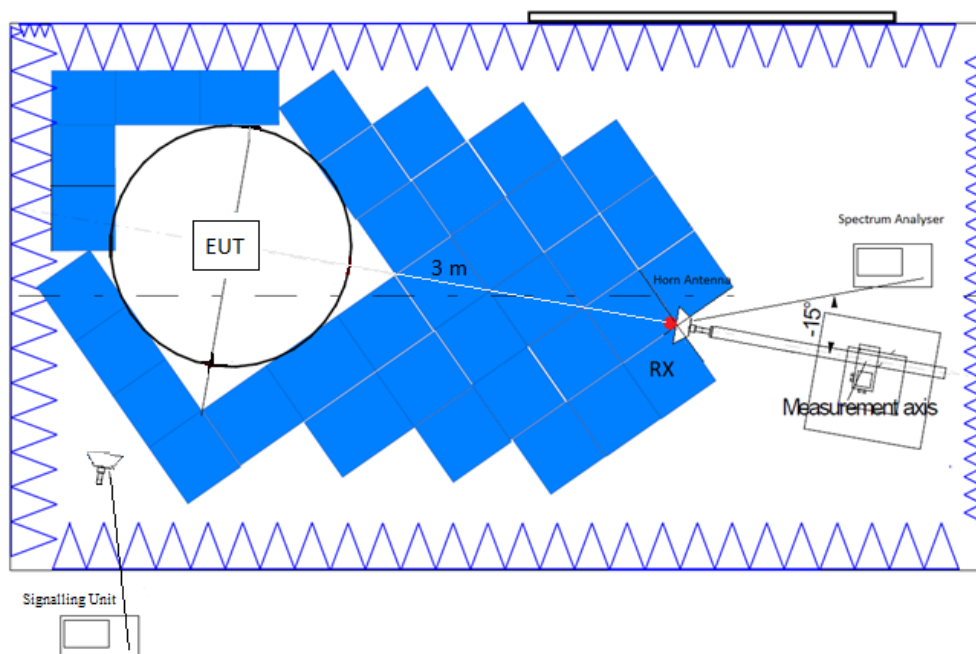
Stop frequency: it has been performed the radiated spurious emissions until 10th harmonic.

Test Setup

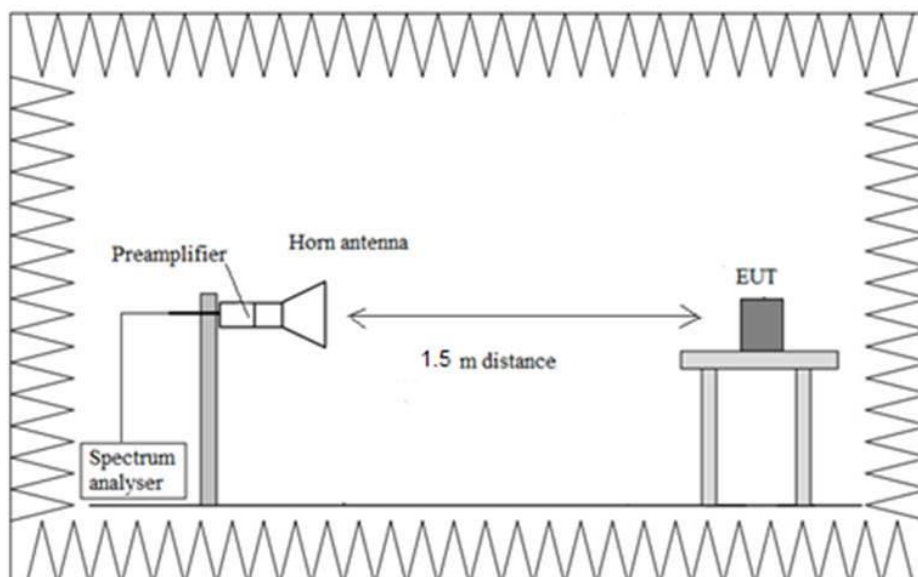
Radiated measurements below 1 GHz:



Radiated measurements above 1 GHz up to 17 GHz:



Radiated measurements above 17 GHz:



Results

LTE Cat-M1 Band 2:

A preliminary scan determined the BW=5 MHz, 16QAM, RB Size=1, RB Offset=0, Narrowband=0 as the worst case. The following results are for this worst-case configuration.

Frequency Range 30 MHz - 1 GHz:

- Low Channel:

No spurious signals were found at less than 20 dB below the limit.

- Middle Channel:

No spurious signals were found at less than 20 dB below the limit.

- High Channel:

No spurious signals were found at less than 20 dB below the limit.

Frequency Range 1 - 20 GHz:

- Low Channel:

No spurious signals were found at less than 20 dB below the limit.

- Middle Channel:

Spurious signals were found at less than 20 dB below the limit:

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Polarization
3742.2800	-42.50	-13	H

- High Channel:

Spurious signals were found at less than 20 dB below the limit:

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Polarization
2401.625000	-18.49	-13.00	H

Measurement uncertainty (dB) $\leq \pm 5.03$ for $f < 1$ GHz
 $\leq \pm 4.32$ for $f \geq 1$ GHz up to 17 GHz
 $\leq \pm 4.58$ for $f \geq 17$ GHz up to 20 GHz

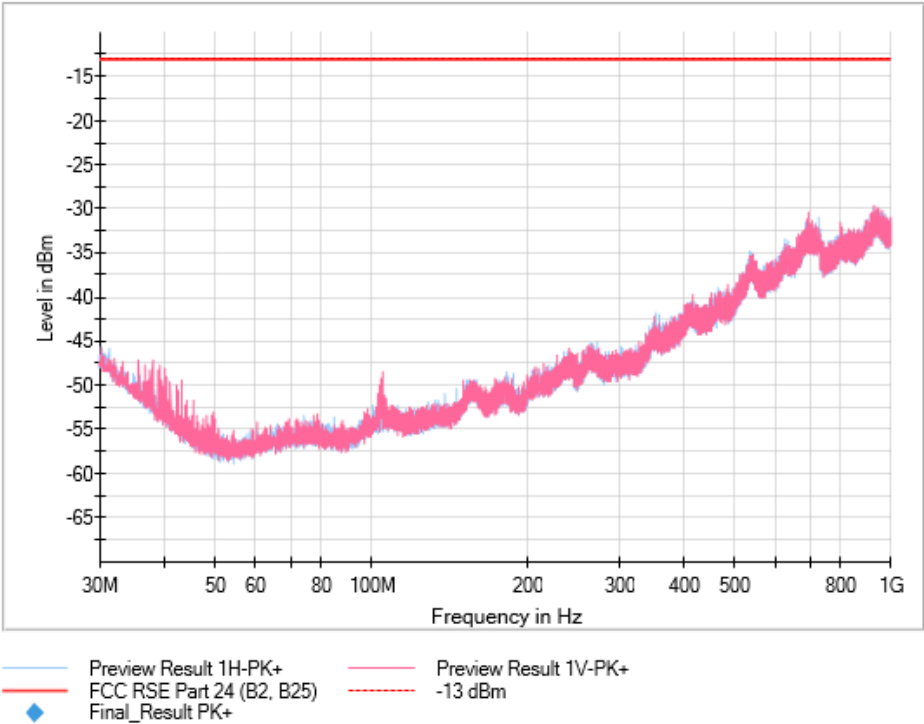
Verdict

Pass

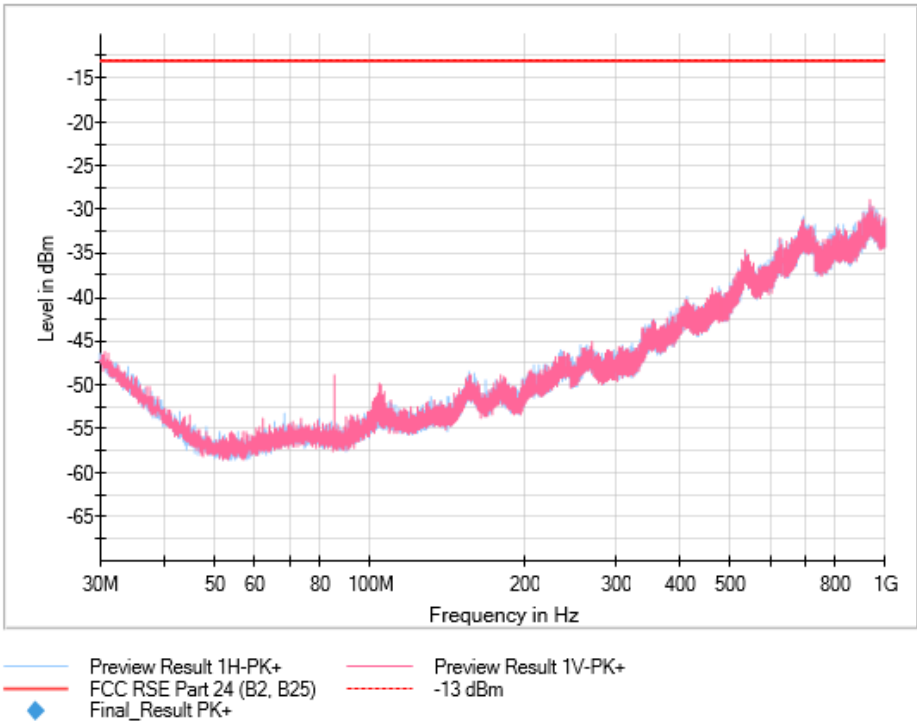
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	30.312 kHz	PK+	100 kHz	Coupled	0 dB
1 GHz - 3 GHz	62.5 kHz	PK+	1 MHz	1 s	0 dB
3 GHz - 17 GHz	437.5 kHz	PK+	1 MHz	1 s	0 dB
17 GHz - 20 GHz	93.75 kHz	PK+	1 MHz	1 s	0 dB

FREQUENCY RANGE 30 MHz - 1 GHz:

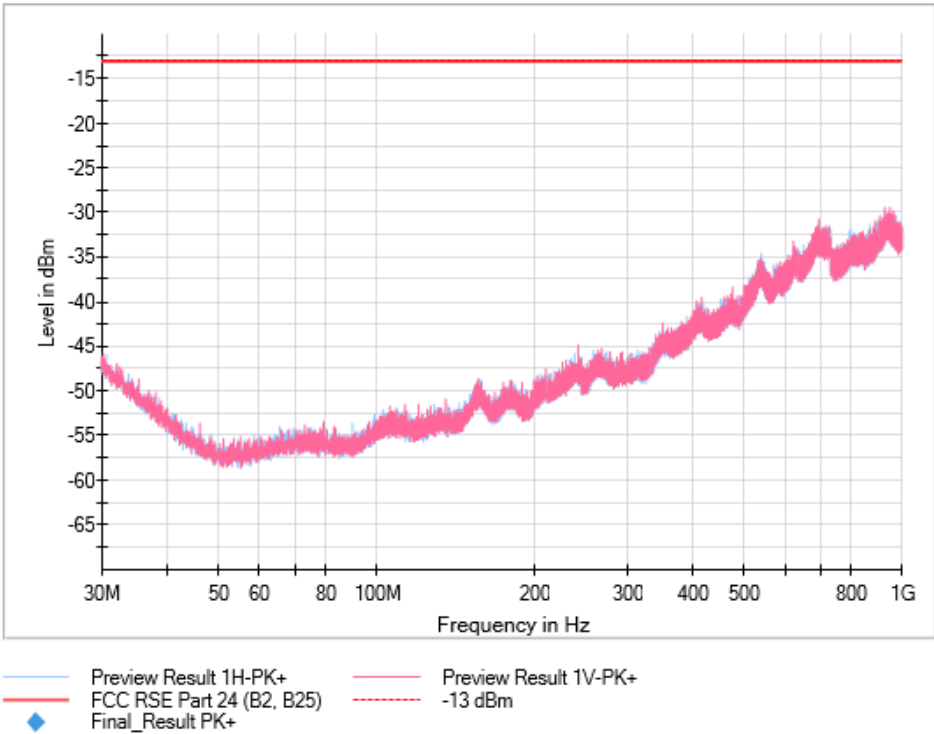
- Low Channel:



- Middle Channel:

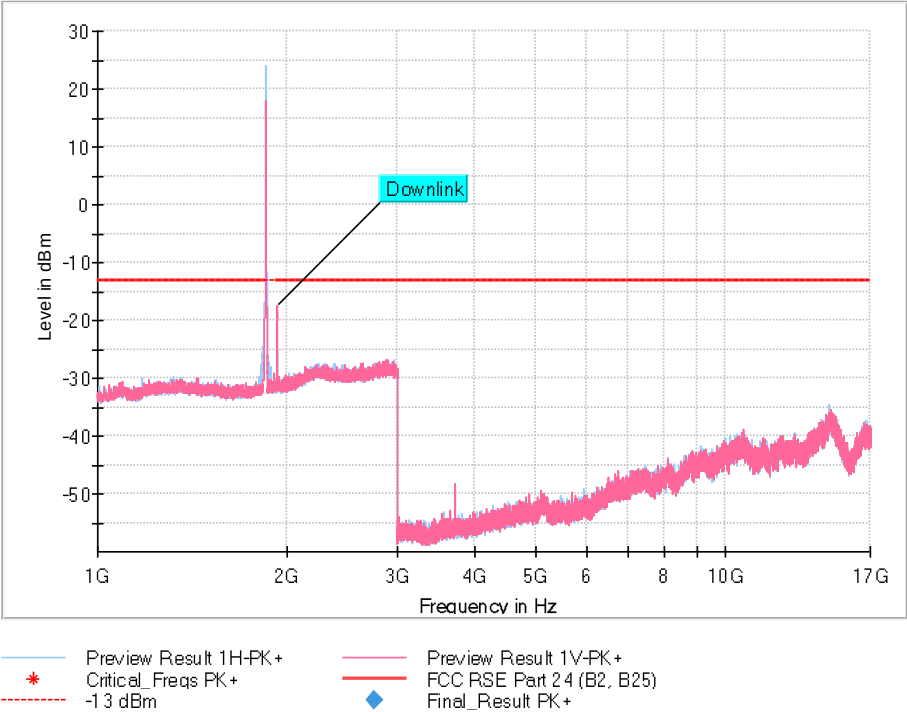


- High Channel:



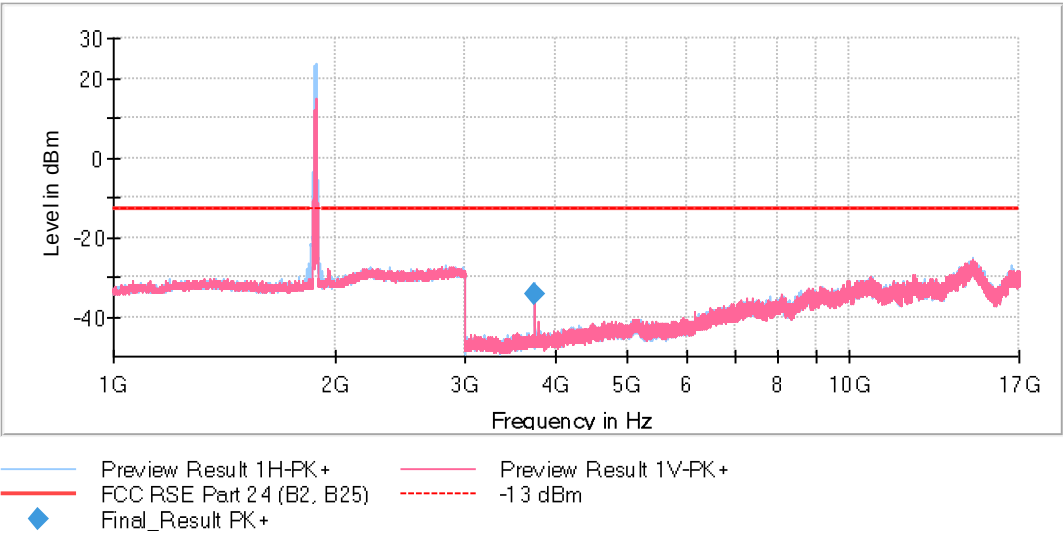
FREQUENCY RANGE 1 GHz - 17 GHz:

- Low Channel:

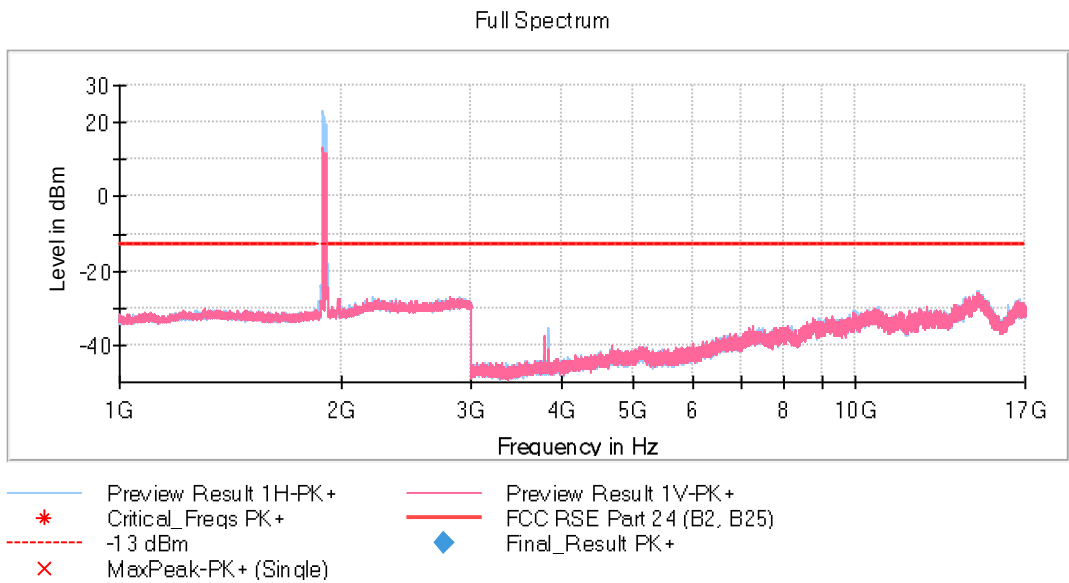


- Mid Channel:

Full Spectrum



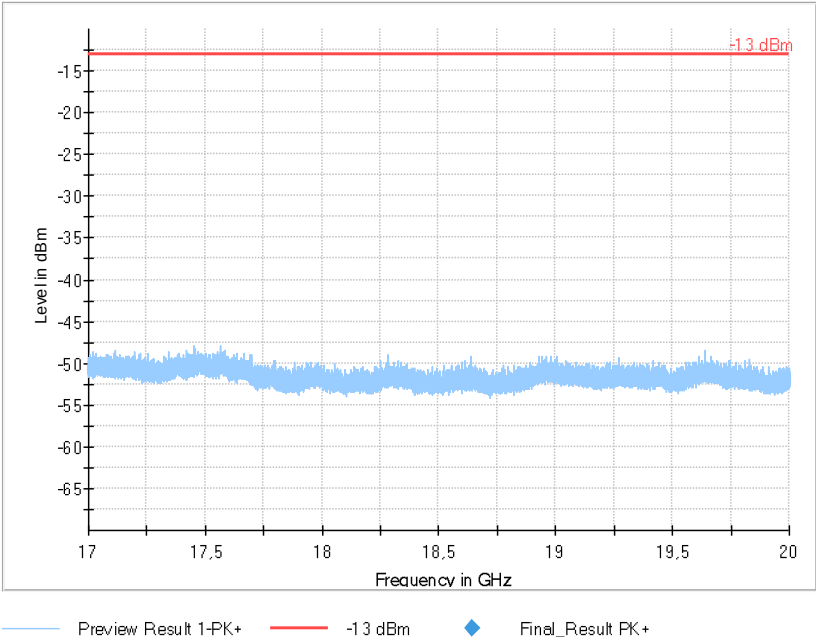
- High Channel:



FREQUENCY RANGE 17 - 20 GHz:

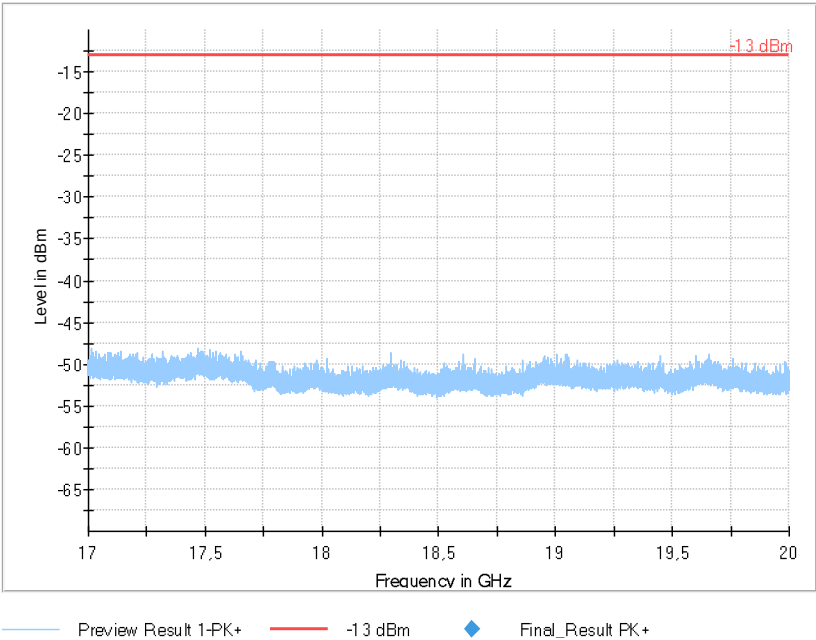
- Low Channel:

The peak above the limit is the carrier frequency.



- Middle Channel:

The peak above the limit is the carrier frequency.



- High Channel:

The peak above the limit is the carrier frequency.

