



FCC TEST REPORT

Report No:STS2203037W02

Issued for

Star Systems International Limited

Unit 7B, 8/F, Vanta Industrial Centre, 21-33 Tai Lin Pai Road, Kwai
Chung, NT, Hong Kong

Product Name:	RFID Reader
Brand Name:	TitanPro
Model Name:	HRD28000
Series Model:	N/A
FCC ID:	2AA7KTITANPRO28000
IC:	20068-TNPRO28000
Test Standard:	FCC Part 90.353 RSS-137 Issue 2, February 2009

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TEST RESULT CERTIFICATION

Applicant's Name: Star Systems International Limited
Address: Unit 7B, 8/F, Vanta Industrial Centre, 21-33 Tai Lin Pai Road, Kwai Chung, NT, Hong Kong
Manufacturer's Name: Star Systems International Limited
Address: Unit 7B, 8/F, Vanta Industrial Centre, 21-33 Tai Lin Pai Road, Kwai Chung, NT, Hong Kong

Product Description

Product Name: RFID Reader
Brand Name: TitanPro
Model Name: HRD28000
Series Model: N/A

Test Standards: FCC Part 90.353
RSS-137 Issue 2, February 2009

Test Procedure: TIA TIA-603-D

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC/IC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test:
Date of receipt of test item: 03 Mar. 2022
Date of performance of tests...: 03 Mar. 2022 ~ 14 June 2022
Date of Issue: 14 June 2022
Test Result: Pass

Testing Engineer :

(Chris chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Bovey Yang)





Table of Contents	Page
1. SUMMARY OF TEST RESULTS	6
1.1 TEST FACILITY	7
1.2 MEASUREMENT UNCERTAINTY	7
2. GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF EUT	8
2.2 DESCRIPTION OF TEST MODES	11
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	12
2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS	12
2.5 TEST EQUIPMENT	13
3. MAXIMUM TRANSMITTER POWER	14
3.1 LIMITS	14
3.2 TEST PROCEDURE	14
3.3 TEST CONDITIONS	14
3.4 TEST RESULT	14
4. OCCUPIED BANDWIDTH	16
4.1 LIMIT	16
4.2 MEASUREMENT PROCEDURE	16
4.3 TEST RESULT	16
5. FREQUENCY STABILITY	34
5.1 LIMIT	34
5.2 TEST PROCEDURE	34
5.3 TEST SETUP BLOCK DIAGRAM	34
5.4 MEASUREMENT RESULT	34
6. FIELD STRENGTH OF SPURIOUS EMISSIONS	37
6.1 LIMIT	37
6.2 TEST PROCEDURE	37
6.3 TEST SETUP	38
6.4 EUT OPERATION CONDITIONS	38
6.5 FIELD STRENGTH CALCULATION	38
6.6 TEST RESULT	39
7. SPURIOUS EMISSIONS AT ANTENNA TERMINALS	54
7.1 REQUIREMENT	54
7.2 TEST PROCEDURE	54
7.3 TEST SETUP	54
7.4 EUT OPERATION CONDITIONS	54



Table of Contents	Page
7.5 TEST RESULT	55
8. RECEIVER SPURIOUS EMISSIONS	64
8.1 TEST LIMIT	64
8.2 TEST PROCEDURE	64
8.3 TEST SETUP	65
9. PHOTOS OF TEST SETUP	80



**Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	14 June 2022	STS2203037W02	ALL	Initial Issue





1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part 90 RSS-137			
Standard	Item	Result	Remarks
Part 90.205 RSS-137 6.4	ERP Power	PASS	--
Part 90.209 RSS-137 6.1	Occupied Bandwidth	PASS	--
Part 90.210 RSS-137 6.5	Spurious Emissions at Antenna terminals	PASS	--
Part 90.210 RSS-137 6.5	Radiated Spurious emissions	PASS	--
Part 90.213 RSS-137 6.3	Frequency Stability	PASS	--
RSS-137 6.6	Receiver Spurious emissions	PASS	--

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to TIA-603-D.



1.1 TEST FACILITY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.87\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.895\text{dB}$
3	All emissions, radiated 9K-30MHz	$\pm 3.80\text{dB}$
4	All emissions, radiated 30M-1GHz	$\pm 4.09\text{dB}$
5	All emissions, radiated 1G-6GHz	$\pm 4.92\text{dB}$
6	All emissions, radiated >6G	$\pm 5.49\text{dB}$
7	Conducted Emission (9KHz-30MHz)	$\pm 2.73\text{dB}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name:	RFID Reader
Brand Name:	TitanPro
Model Name:	HRD28000
Series Model:	N/A
Model Difference description:	N/A
Modulation type:	Dense reader mode ISO-18000-63 Single reader mode ISO-18000-63 Low data rate ISO-18000-62(40kbps) High data rate ISO-18000-62 (80kbps) Unmodulated ISO-10374 TDM Title 21
Adapter:	Input: AC 90-264V, 50/60Hz Output: DC 56V
Battery:	Rated Voltage: 3 V Capacity: 48 mAh
Temperature Range:	-30℃-50℃
Test frequency list:	See Note 2
Software version number:	R1
Hardware version number:	0.1.1.27687
RFID Protocols	Frequency
Dense reader mode ISO-18000-63	911.25MHz -920.25MHz
Single reader mode ISO-18000-63	911.75MHz -919.25MHz
Low data rate ISO-18000-62(40kbps)	911.75MHz -919.75MHz
High data rate ISO-18000-62 (80kbps)	912.75MHz -918.75MHz
Unmodulated ISO-10374	902.75MHz and 903.25MHz, 910.75MHz -920.75MHz
TDM	915.75MHz
Title 21	913.75MHz – 917.75MHz

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



2. Operation Frequency of channel					
Dense reader mode for EPCglobal Gen2,RAIN,or ISO-18000-63					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
04	911.25	11	914.75	18	918.25
05	911.75	12	915.25	19	918.75
06	912.25	13	915.75	20	919.25
07	912.75	14	916.25	21	919.75
08	913.25	15	916.75	22	920.25
09	913.75	16	917.25		
10	914.25	17	917.75		
Single reader mode for EPCglobal Gen2,RAIN,or ISO-18000-63					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
05	911.75	11	914.75	17	917.75
06	912.25	12	915.25	18	918.25
07	912.75	13	915.75	19	918.75
08	913.25	14	916.25	20	919.25
09	913.75	15	916.75		
10	914.25	16	917.25		
Low data rate ISO-18000-62(40kbps)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
05	911.75	11	914.75	17	917.75
06	912.25	12	915.25	18	918.25
07	912.75	13	915.75	19	918.75
08	913.25	14	916.25	20	919.25
09	913.75	15	916.75	21	919.75
10	914.25	16	917.25		
High data rate ISO-18000-62 (80kbps)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
07	912.75	12	915.25	17	917.75
08	913.25	13	915.75	18	918.25
09	913.75	14	916.25	19	918.75
10	914.25	15	916.75		
11	914.75	16	917.25		
Unmodulated ISO-10374					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	902.75	09	913.75	17	917.75
02	903.25	10	914.25	18	918.25
03	910.75	11	914.75	19	918.75
04	911.25	12	915.25	20	919.25
05	911.75	13	915.75	21	919.75
06	912.25	14	916.25	22	920.25
07	912.75	15	916.75	23	920.75
08	913.25	16	917.25		
TDM					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
13	915.75				



Title 21					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
09	913.75	12	915.25	15	916.75
10	914.25	13	915.75	16	917.25
11	914.75	14	916.25	17	917.75

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Antenna Cable loss (dB)	Antenna combination (dBi)
1	TitanPro	HRD28000	Avior	N/A	15	12	3
2	TitanPro	HRD28000	Cheetah II	N/A	12	12	0
3	TitanPro	HRD28000	Hydra	N/A	12	12	0
4	TitanPro	HRD28000	Kuma	N/A	10	12	-2
5	TitanPro	HRD28000	Bobcat	N/A	8	12	-4

Note:

1. All antennas have been tested for conducted emission and radiated spurious emission, but the report only shows the worst data of the Avior antenna.
2. The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.



2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Mode	Modulation Type	Frenquency
Mode1	Dense reader mode ISO-18000-63	Low channel(911.25MHz)
		High channel(920.25MHz)
Mode2	Single reader mode ISO-18000-63	Low channel(911.75MHz)
		High channel(919.25MHz)
Mode3	Low data rate ISO-18000-62(40kbps)	Low channel(911.75MHz)
		High channel(919.75MHz)
Mode4	High data rate ISO-18000-62 (80kbps)	Low channel(912.75MHz)
		High channel(918.75MHz)
Mode5	Unmodulated ISO-10374	Low channel(902.75MHz)
		High channel(903.25MHz)
		Low channel(910.75MHz)
		High channel(920.75MHz)
Mode6	TDM	915.75MHz
Mode7	Title 21	Low channel(913.75MHz)
		High channel(917.75MHz)



2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
N/A	N/A	N/A	N/A	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
E-2	Notebook	DELL	VOSTRO.3800	N/A	N/A
C-1	USB Cable	N/A	N/A	100cm	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



2.5 TEST EQUIPMENT

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2021.10.11	2023.10.10
Pre-Amplifier(0.1M-3 GHz)	EM	EM330	060665	2021.10.08	2022.10.07
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2021.09.30	2022.09.29
Signal Analyzer	R&S	FSV 40-N	101823	2021.09.30	2022.09.29
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A
AC Power Source	APC	KDF-11010G	F214050035	N.C.R	N.C.R
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Signal Generator	Agilent	N5182A	MY46240556	2021.09.30	2022.09.29
Signal Analyzer	Agilent	N9020A	MY51110105	2022.03.01	2023.02.28
Universal Radio communication tester	R&S	CMU200	111058	2021.09.29	2022.09.28
Audio analyzer	R&S	UPL	N/A	2022.03.07	2023.03.06
Intercom comprehensive tester	HP	8920A	348A05658	2022.03.01	2023.02.28
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Temperature& Humidity test chamber	Safety test	AG80L	171200018	2022.03.01	2023.02.28
Programmable power supply	Agilent	E3642A	MY40002025	2021.10.08	2022.10.07
Attenuator	HP	8494B	DC-18G	2022.03.02	2023.03.01
AC Power Source	APC	KDF-11010G	F214050035	N.C.R	N.C.R
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			



3. MAXIMUM TRANSMITTER POWER

3.1 LIMITS

LMS systems operating pursuant to subpart M of this part in the 902-927.25 MHz band will be authorized a maximum of 30 watts ERP. LMS equipment operating in the 927.25-928 MHz band will be authorized a maximum of 300 watts ERP. ERP must be measured as peak envelope power. Antenna heights will be as specified in FCC Part §90.353(h).

3.2 TEST PROCEDURE

1. Set analyzer center frequency to channel center frequency.
2. Set the RBW to: 1MHz $\geq$ RBW 3. Set the VBW $\geq$ 3 x RBW.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

3.3 TEST CONDITIONS

The EUT is transmitting through a antenna cable with a stated loss of 3dB. All Firmware setting is 33dBm.

3.4 TEST RESULT

Dense reader mode ISO-18000-63								
Channel	Frequency (MHz)	Conducted Power (dBm)	Cable loss (dB)	Antenna gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP Limit (dBm)	Verdict
Low	911.25	28.508	12.000	15	31.508	29.358	44.77	Pass
High	920.25	28.440	12.000	15	31.44	29.29		
Single reader mode ISO-18000-63								
Channel	Frequency (MHz)	Conducted Power (dBm)	Cable loss (dB)	Antenna gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP Limit (dBm)	Verdict
Low	911.75	28.532	12.000	15	31.532	29.382	44.77	Pass
High	919.25	28.488	12.000	15	31.488	29.338		
Low data rate ISO-18000-62(40kbps)								
Channel	Frequency (MHz)	Conducted Power (dBm)	Cable loss (dB)	Antenna gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP Limit (dBm)	Verdict
Low	911.75	28.487	12.000	15	31.487	29.337	44.77	Pass
High	919.75	28.395	12.000	15	31.395	29.245		
High data rate ISO-18000-62 (80kbps)								
Channel	Frequency (MHz)	Conducted Power (dBm)	Cable loss (dB)	Antenna gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP Limit (dBm)	Verdict
Low	912.75	28.477	12.000	15	31.477	29.327	44.77	Pass
High	918.75	28.430	12.000	15	31.43	29.28		



Unmodulated ISO-10374								
Channel	Frequency (MHz)	Conducted Power (dBm)	Cable loss (dB)	Antenna gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP Limit (dBm)	Verdict
Low	902.75	28.956	12.000	15	31.956	29.806	44.77	Pass
High	903.25	29.016	12.000	15	32.016	29.866		
Low	910.75	28.938	12.000	15	31.938	29.788		
High	920.75	28.797	12.000	15	31.797	29.647		
TDM								
Channel	Frequency (MHz)	Conducted Power (dBm)	Cable loss (dB)	Antenna gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP Limit (dBm)	Verdict
Mid	915.75	28.652	12.000	15	31.652	29.502	44.77	Pass
Title 21								
Channel	Frequency (MHz)	Conducted Power (dBm)	Cable loss (dB)	Antenna gain (dBi)	EIRP (dBm)	ERP (dBm)	ERP Limit (dBm)	Verdict
Low	913.75	28.470	12.000	15	31.47	29.32	44.77	Pass
High	917.75	28.577	12.000	15	31.577	29.427		

Note:

1. The EUT is transmitting through a long enough antenna cable with a stated loss of 12dB into the antenna with type N connector 15dBi gain.
2. $EIRP = \text{conducted power} + \text{antenna gain} - \text{cable loss}$; $ERP = EIRP - 2.15$
3. Worst case modulation used by the device.

KDB 594280. Professional installation or authorized service personnel is required to configure radio parameters of the transmitter using the software for adjusting total EIRP (30W) power at local installation to ensure compliance with FCC Rules.



4. OCCUPIED BANDWIDTH

4.1 LIMIT

The maximum authorized bandwidth shall be 12 MHz for non-multilateration LMS operations in the band 909.75-921.75 MHz and 2 MHz in the band 902.00-904.00 MHz. The maximum authorized bandwidth for multilateration LMS operations shall be 5.75 MHz in the 904.00-909.75 MHz band; 2 MHz in the 919.75-921.75 MHz band; 5.75 MHz in the 921.75-927.25 MHz band and its associated 927.25-927.50 MHz narrowband forward link; and 8.00 MHz if the 919.75-921.75 MHz and 921.75-927.25 MHz bands and their associated 927.25-927.50 MHz and 927.50-927.75 MHz narrowband forward links are aggregated.

4.2 MEASUREMENT PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 26 dB Bandwidth :100KHz For 99% Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 26dB Bandwidth : $\geq 3 \times \text{RBW}$ For 99% Bandwidth : approximately $3 \times \text{RBW}$
Trace	Max hold
Sweep	Auto

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB and 99% relative to the maximum level measured in the fundamental emission.

4.3 TEST RESULT

Dense reader mode ISO-18000-63			
Channel	Frequency (MHz)	-26 dB Bandwidth(KHz)	99% Bandwidth(KHz)
Low	911.25	480.6	81.16
High	920.25	476.4	80.87
Single reader mode ISO-18000-63			
Channel	Frequency (MHz)	-26 dB Bandwidth(KHz)	99% Bandwidth(KHz)
Low	911.75	480.6	80.52
High	919.25	476.0	80.80
Low data rate ISO-18000-62(40kbps)			
Channel	Frequency (MHz)	-26 dB Bandwidth(KHz)	99% Bandwidth(KHz)
Low	911.75	461.4	279.75
High	919.75	455.1	279.79
High data rate ISO-18000-62 (80kbps)			
Channel	Frequency (MHz)	-26 dB Bandwidth(KHz)	99% Bandwidth(KHz)
Low	912.75	651.1	561.07
High	918.75	646.1	558.96



Unmodulated ISO-10374			
Channel	Frequency (MHz)	-26 dB Bandwidth(KHz)	99% Bandwidth(KHz)
Low	902.75	355.0	293.17
High	903.25	290.0	296.93
Low	910.75	346.6	296.98
High	920.75	354.4	295.76
TDM			
Channel	Frequency (MHz)	-26 dB Bandwidth(KHz)	99% Bandwidth(KHz)
Mid	915.75	626.0	397.45
Title 21			
Channel	Frequency (MHz)	-26 dB Bandwidth(KHz)	99% Bandwidth(KHz)
Low	913.75	1828	1612.20
High	917.75	1815	1612.00

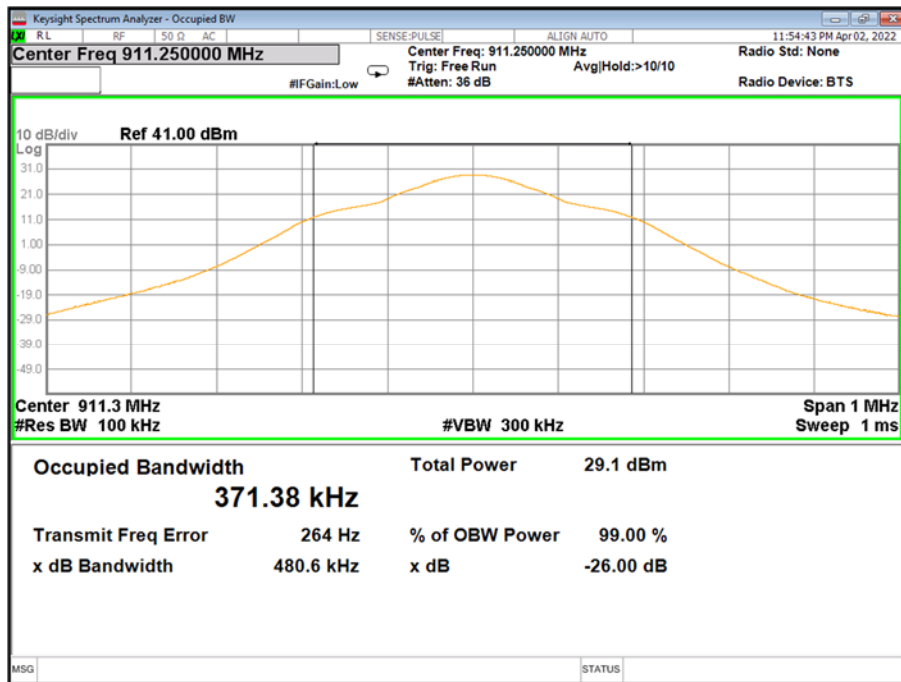
Note: Unmodulated ISO-10374 mode emission type is unmodulation type, which cannot meet the 1%-5% OBW test requirements.



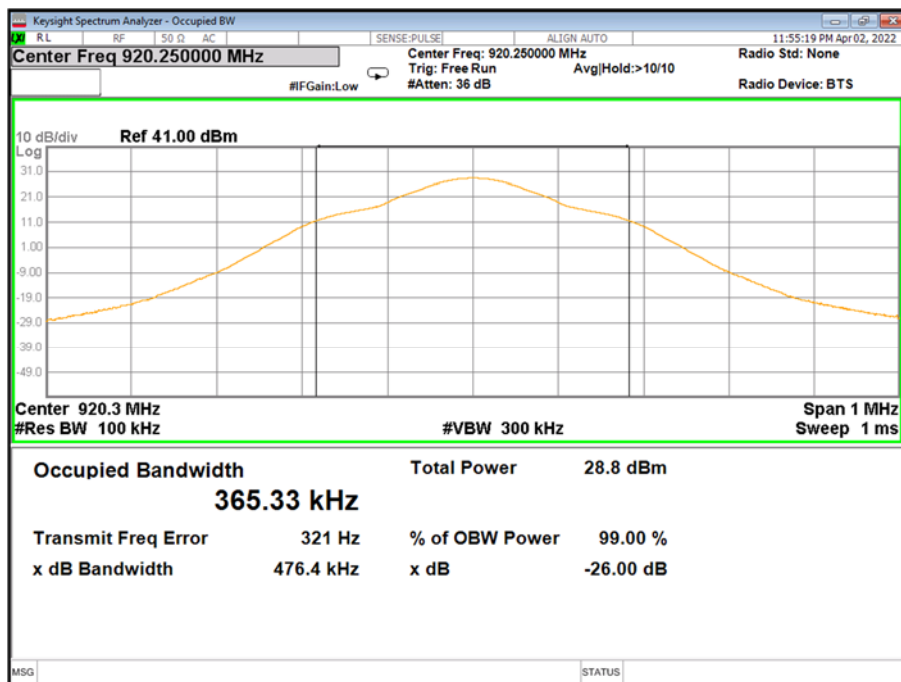
**26 dB Bandwidth**

Dense reader mode ISO-18000-63

Low channel(911.25MHz)



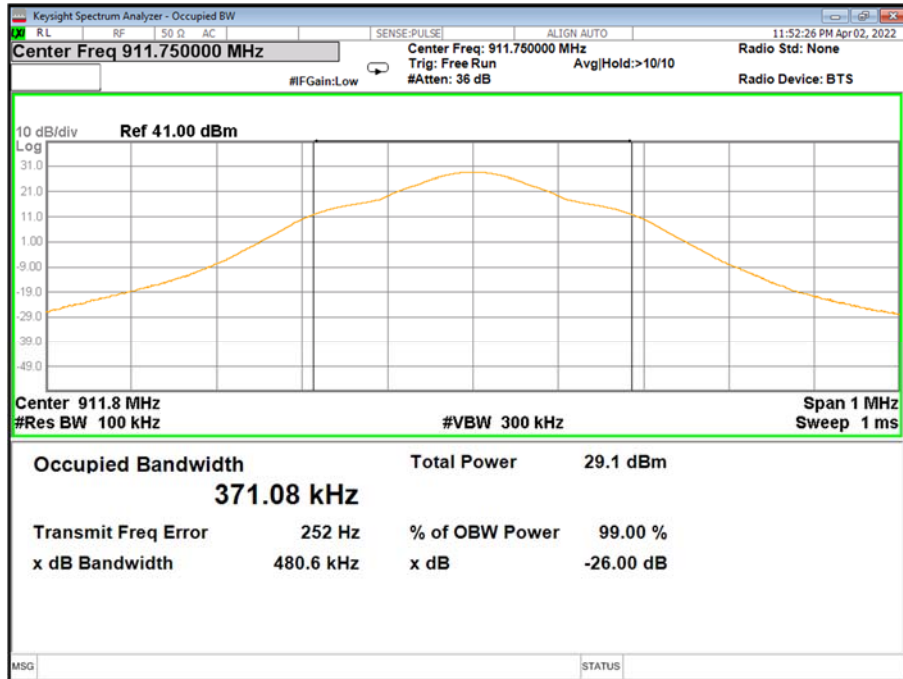
High channel(920.25MHz)



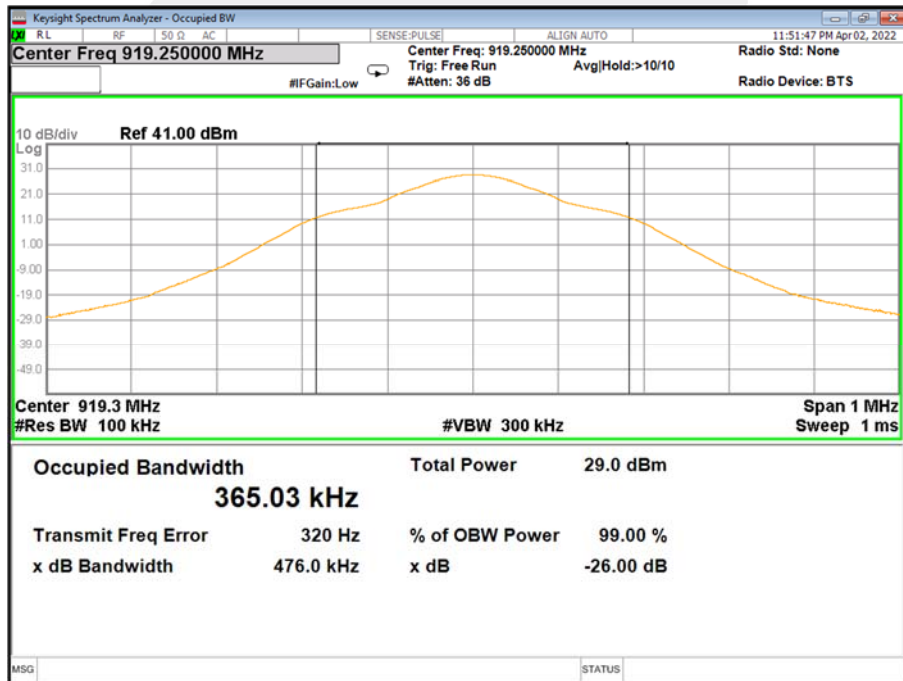


Single reader mode ISO-18000-63

Low channel(911.75MHz)



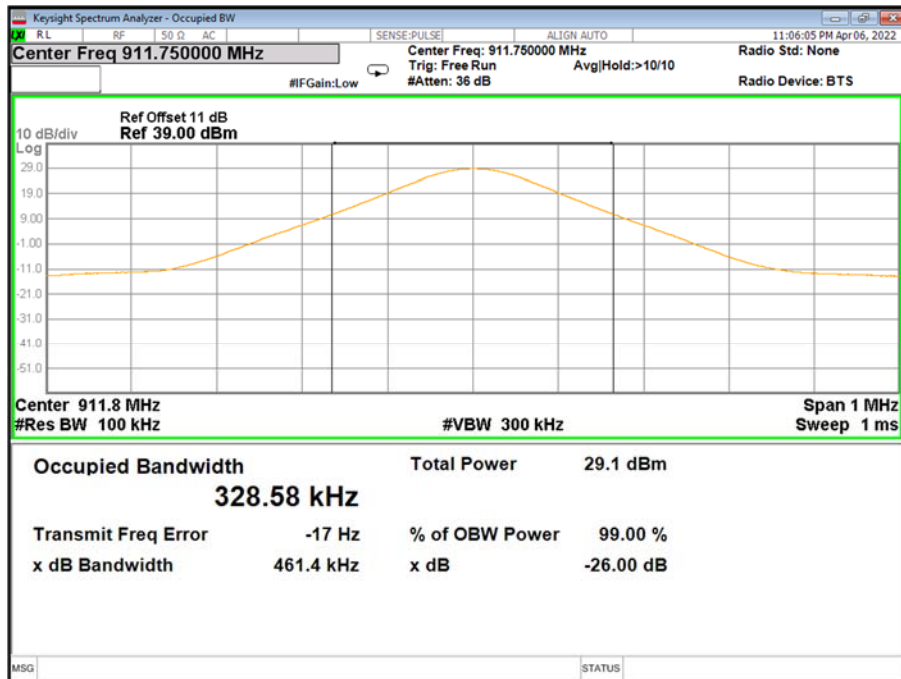
High channel(919.25MHz)



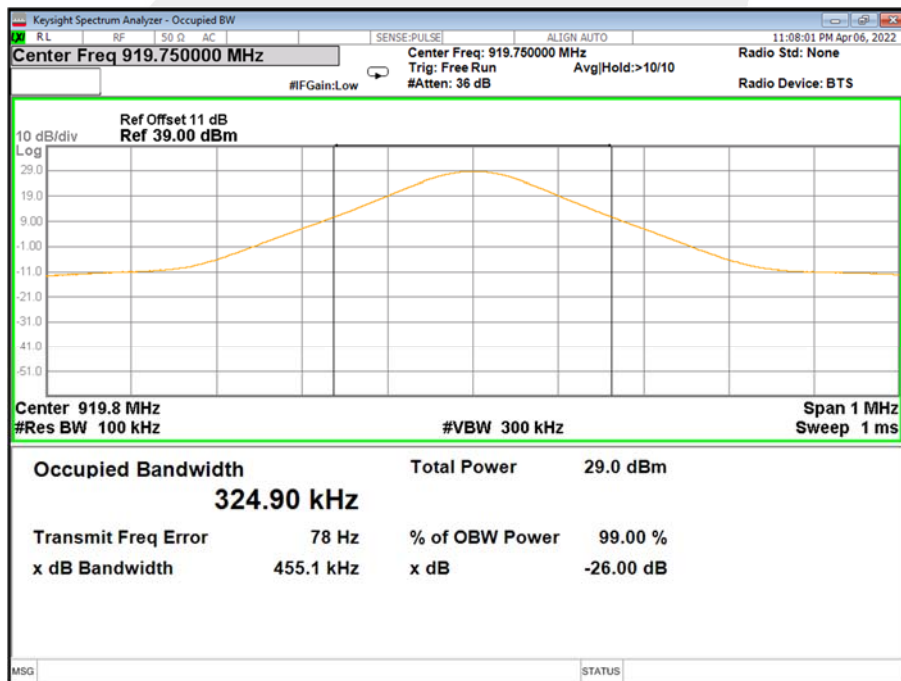


Low data rate ISO-18000-62(40kbps)

Low channel(911.75MHz)



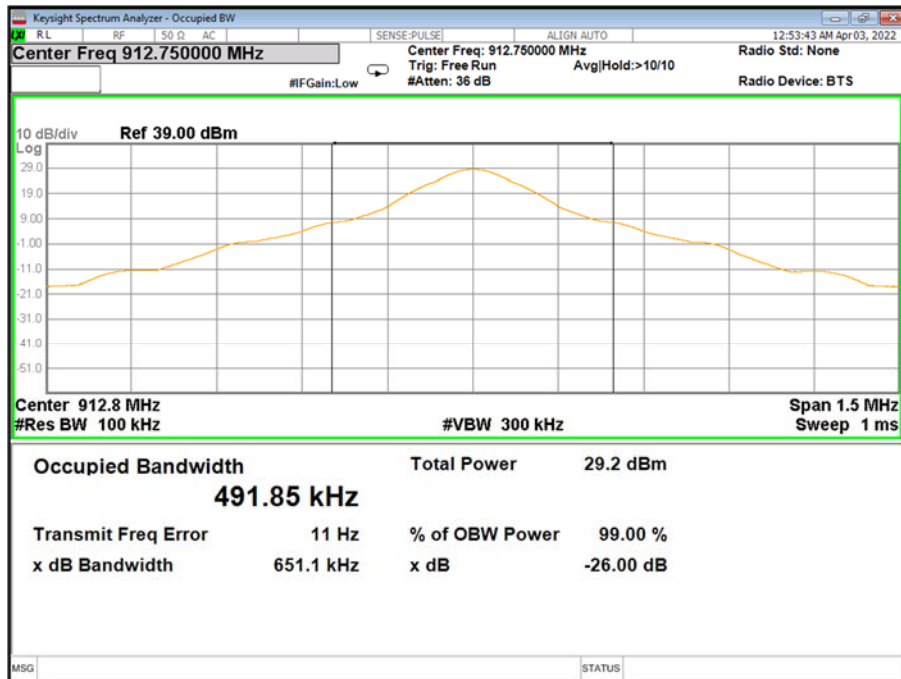
High channel(919.75MHz)



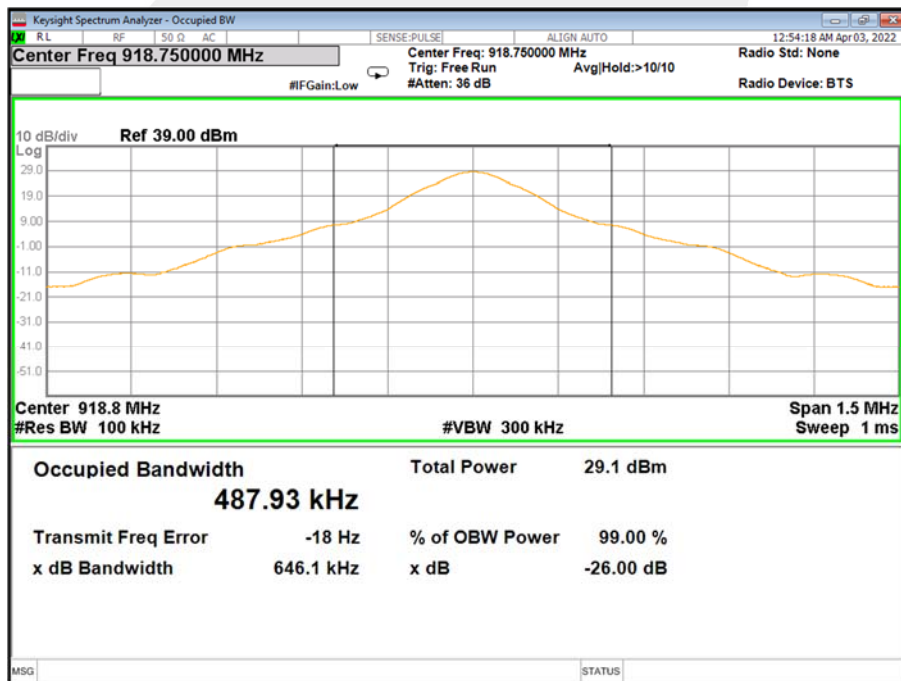


High data rate ISO-18000-62(80kbps)

Low channel(912.25MHz)

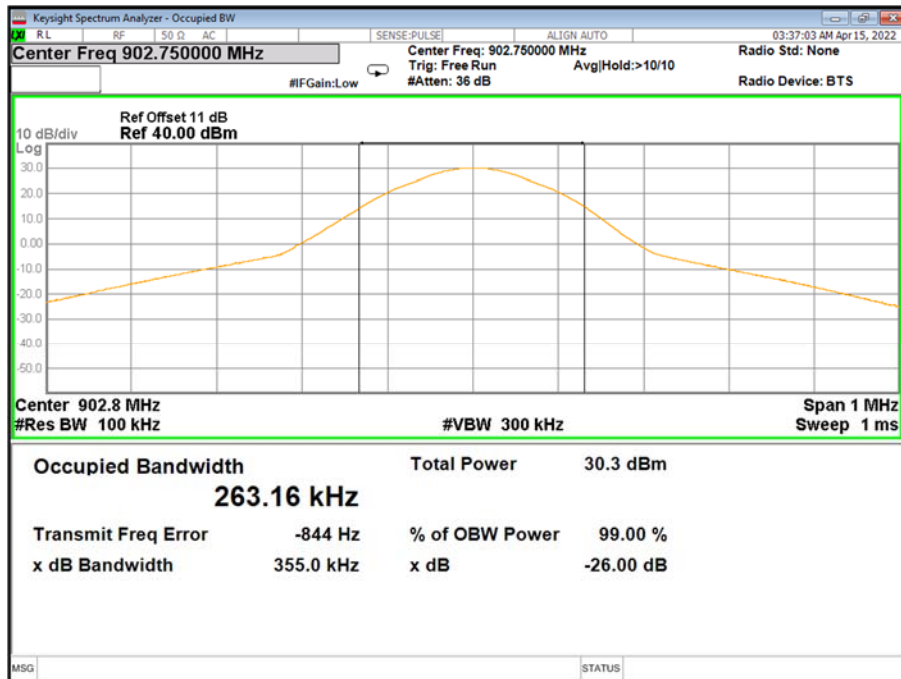


High channel(918.75MHz)

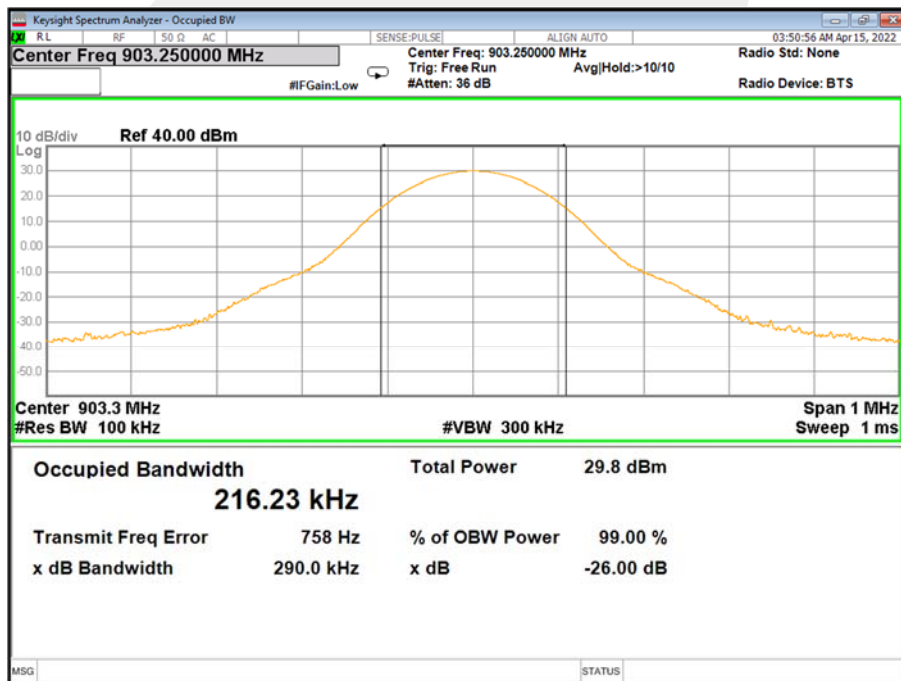




Unmodulated ISO-10374
Low channel(902.75MHz)

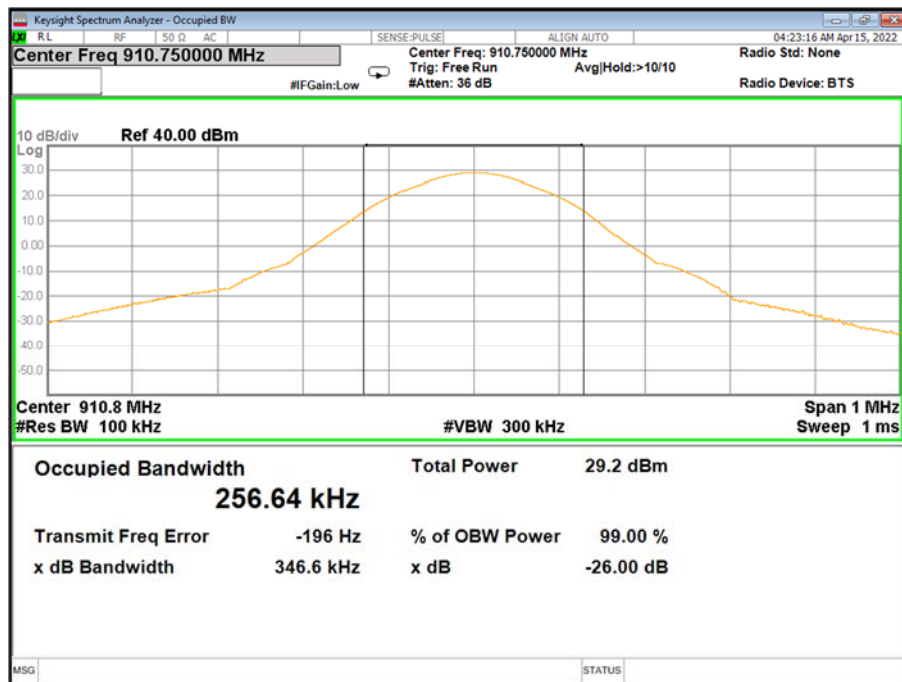


High channel(903.25MHz)

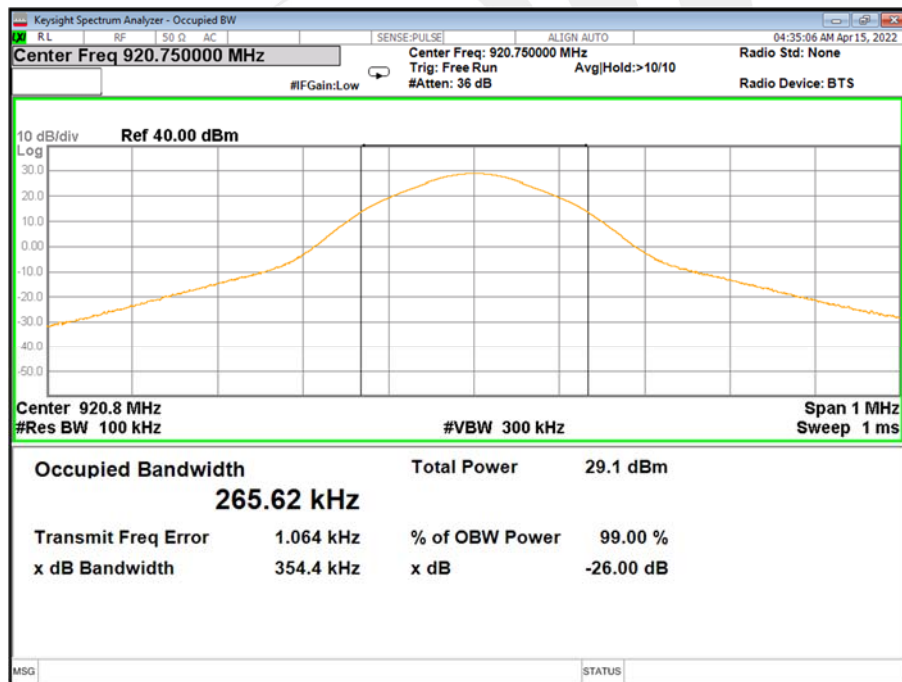




Low channel(910.75MHz)

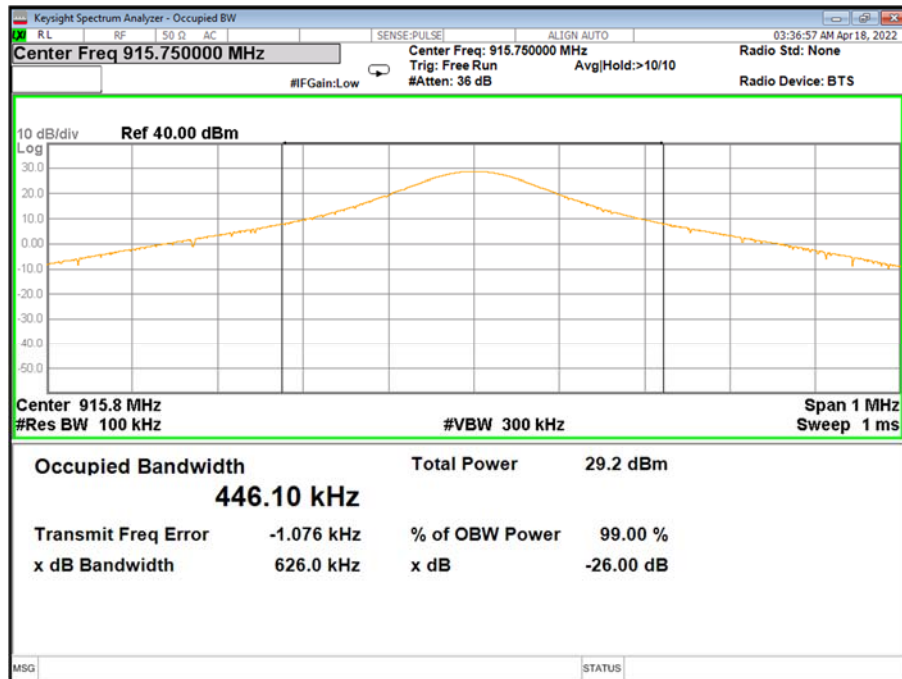


High channel(920.75MHz)





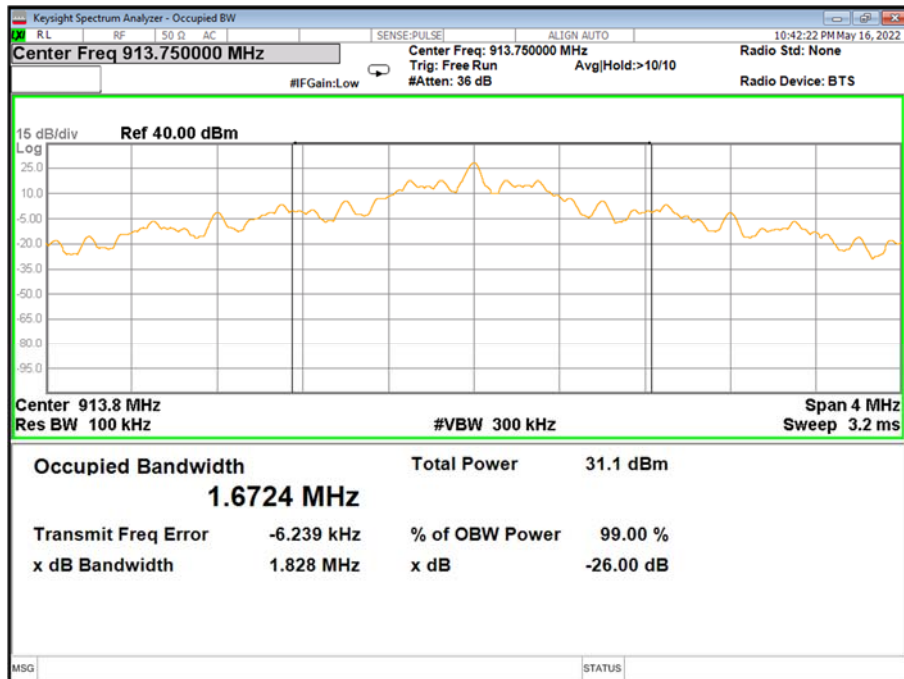
TDM
Mid channel(915.75MHz)



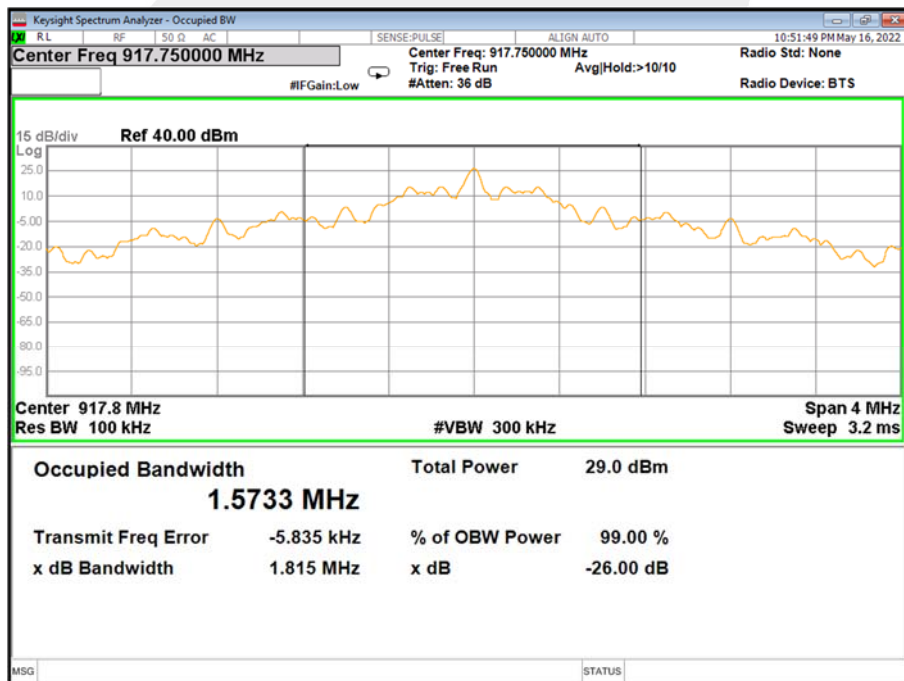


Title 21

Low channel(913.75MHz)



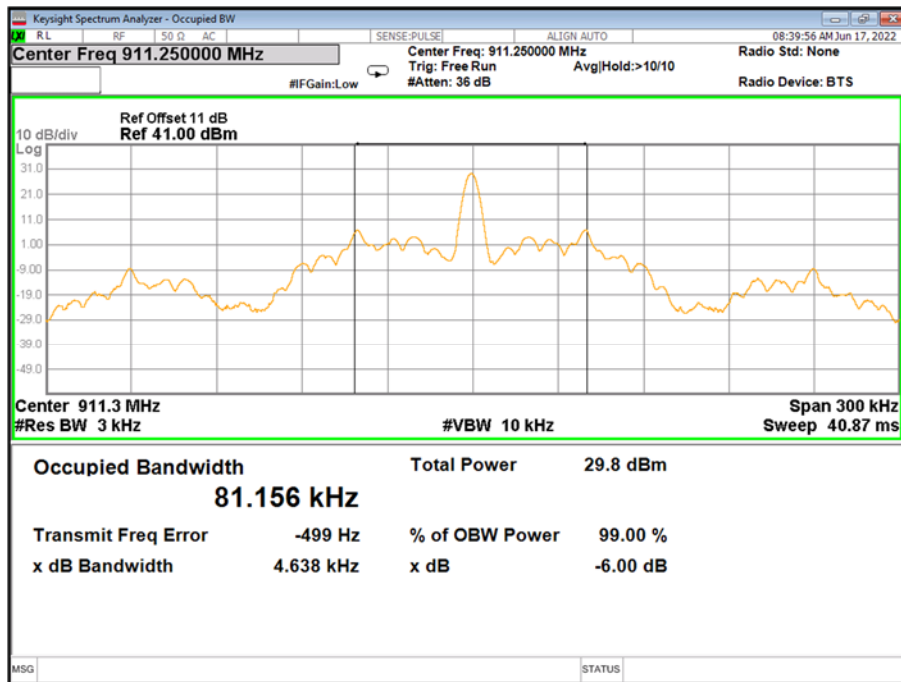
High channel(917.75MHz)



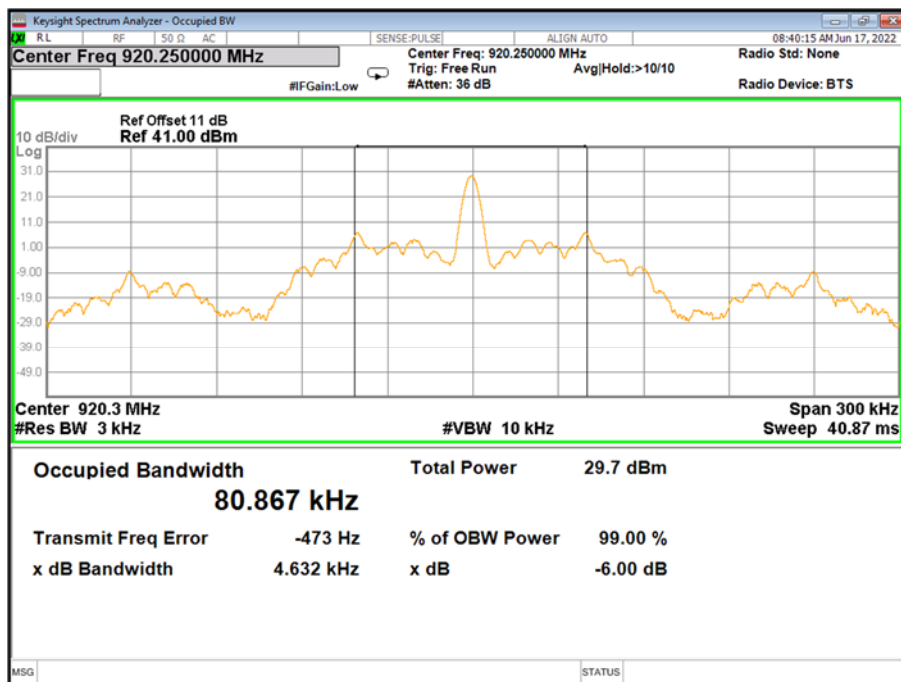
**99% Bandwidth**

Dense reader mode ISO-18000-63

Low channel(911.25MHz)



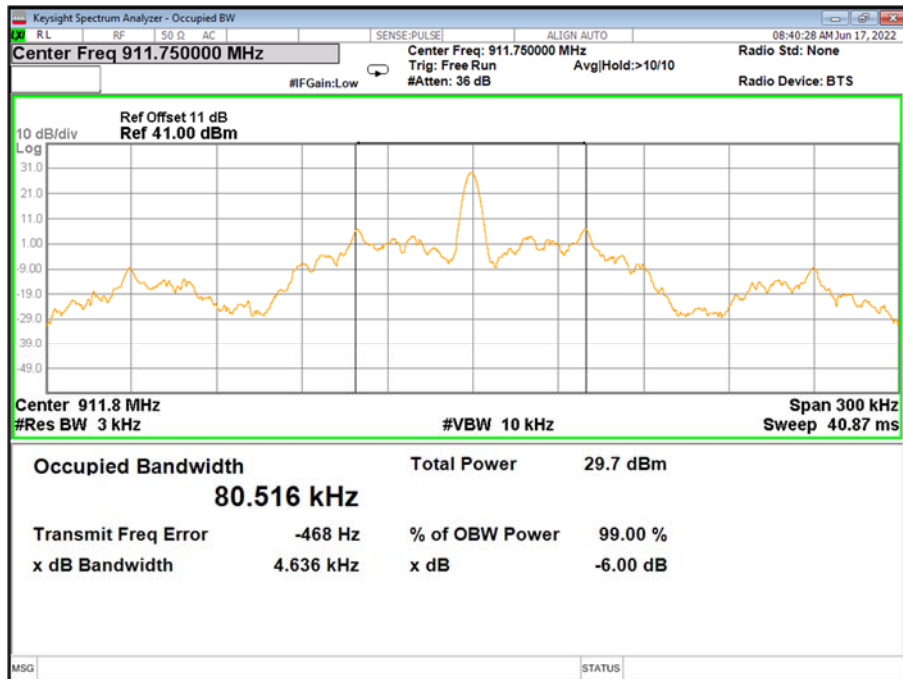
High channel(920.25MHz)



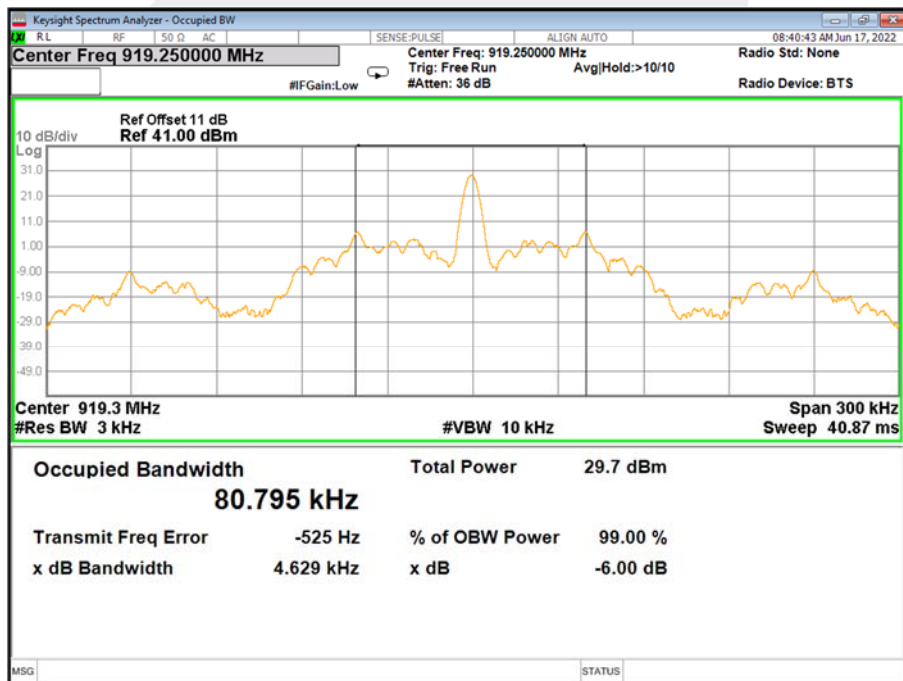


Single reader mode ISO-18000-63

Low channel(911.75MHz)



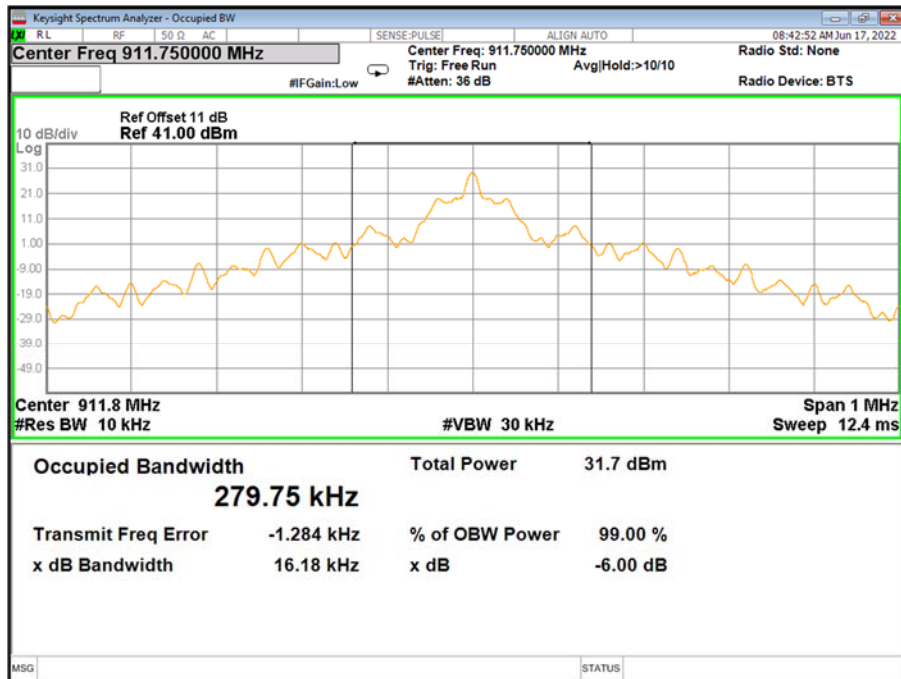
High channel(919.25MHz)



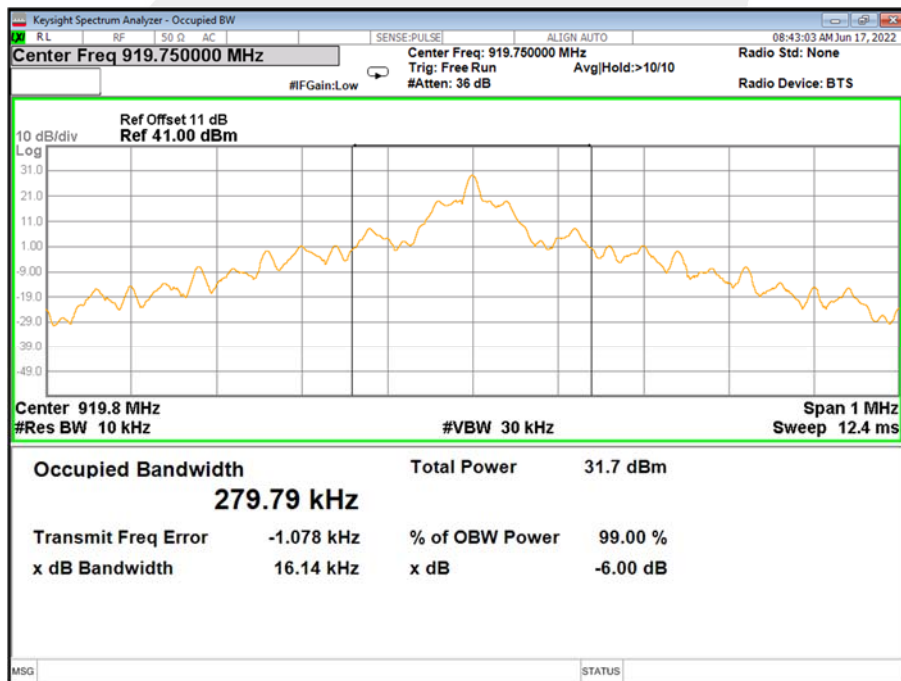


Low data rate ISO-18000-62(40kbps)

Low channel(911.75MHz)



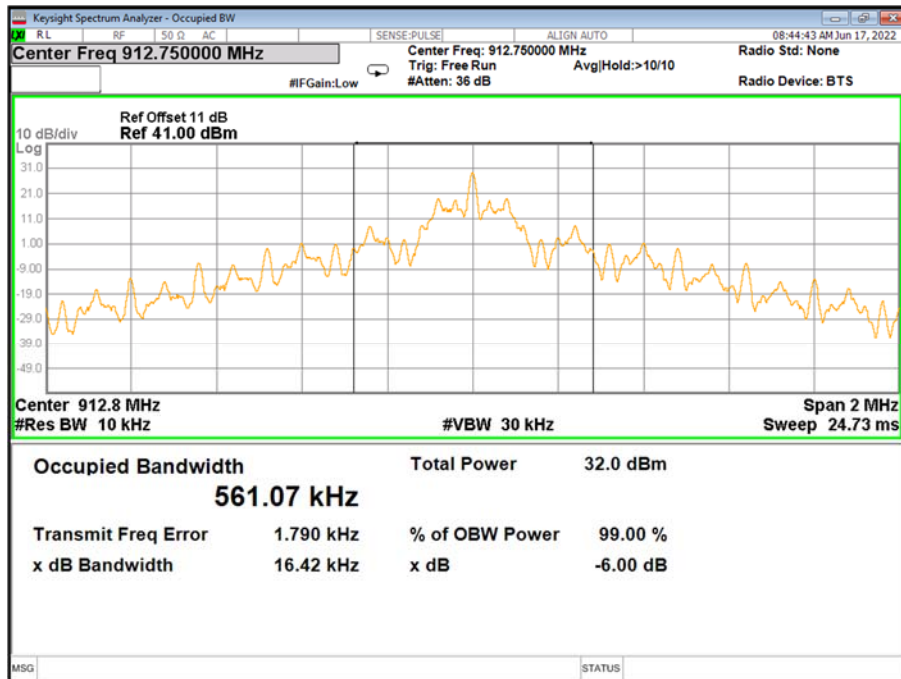
High channel(919.75MHz)



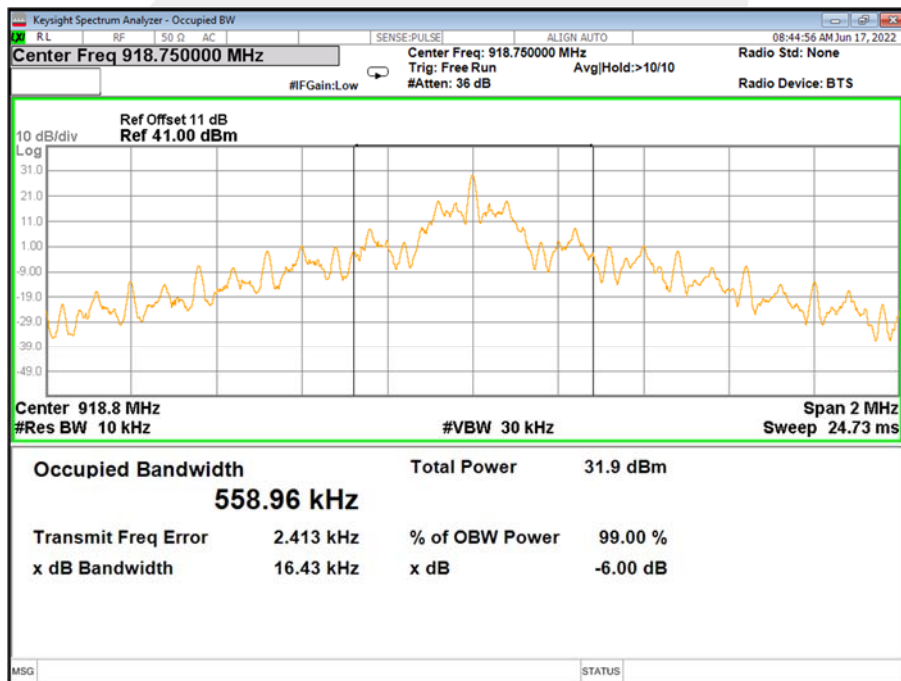


High data rate ISO-18000-62(80kbps)

Low channel(912.25MHz)

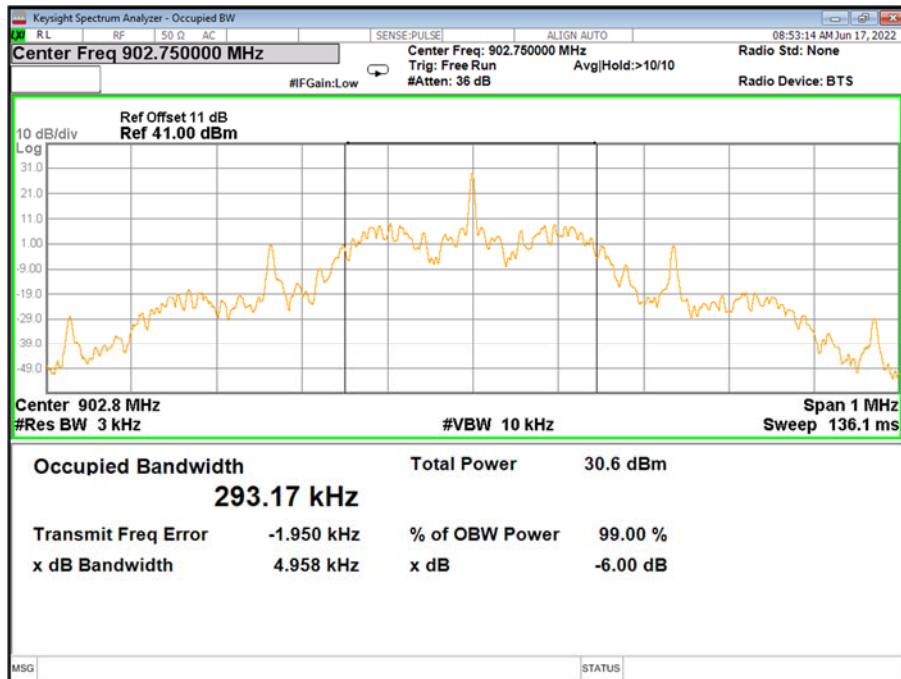


High channel(918.75MHz)

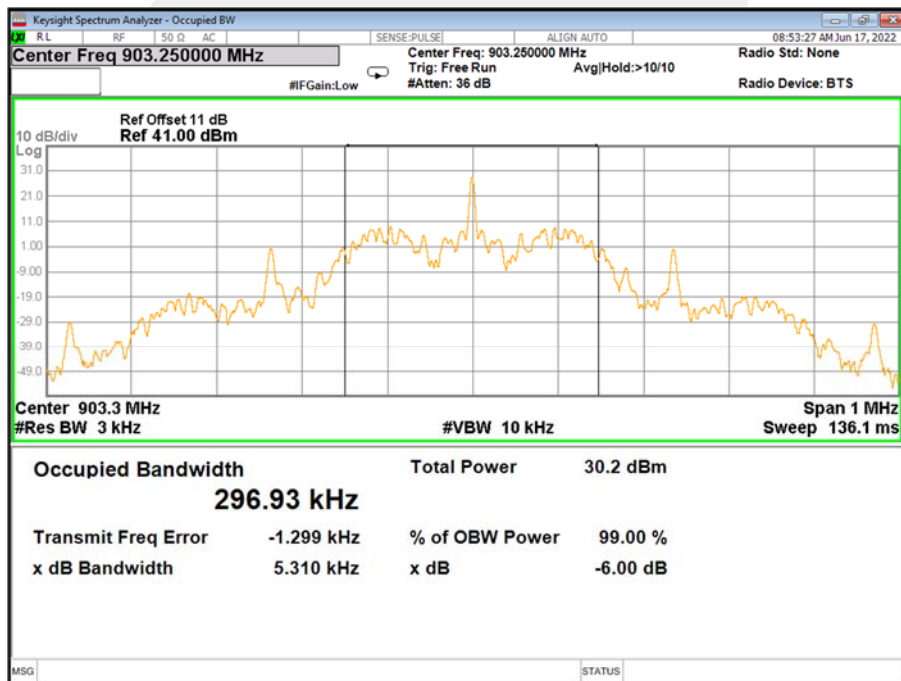




Unmodulated ISO-10374
Low channel(902.75MHz)

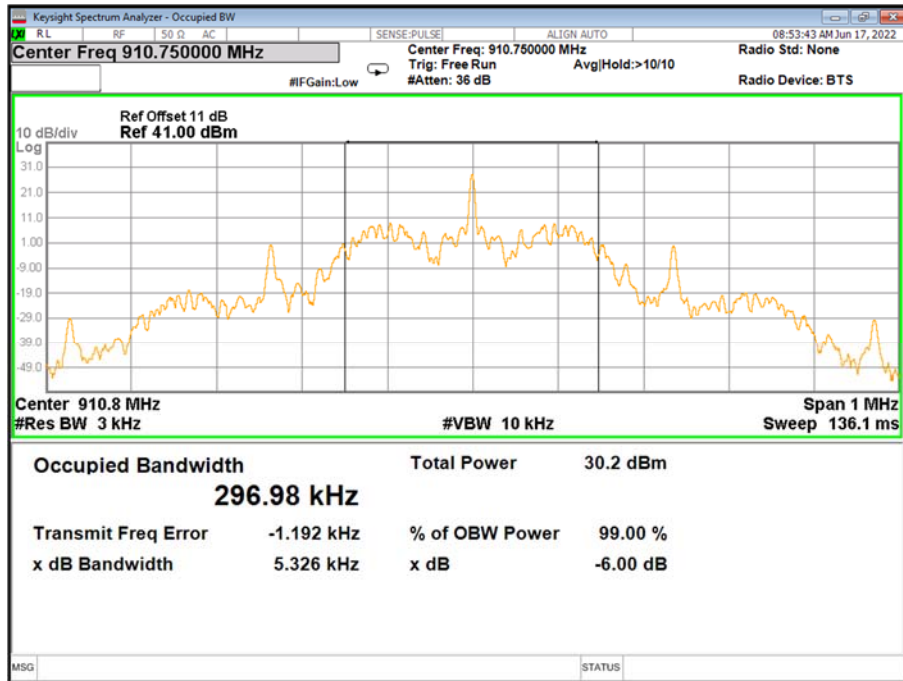


High channel(903.25MHz)

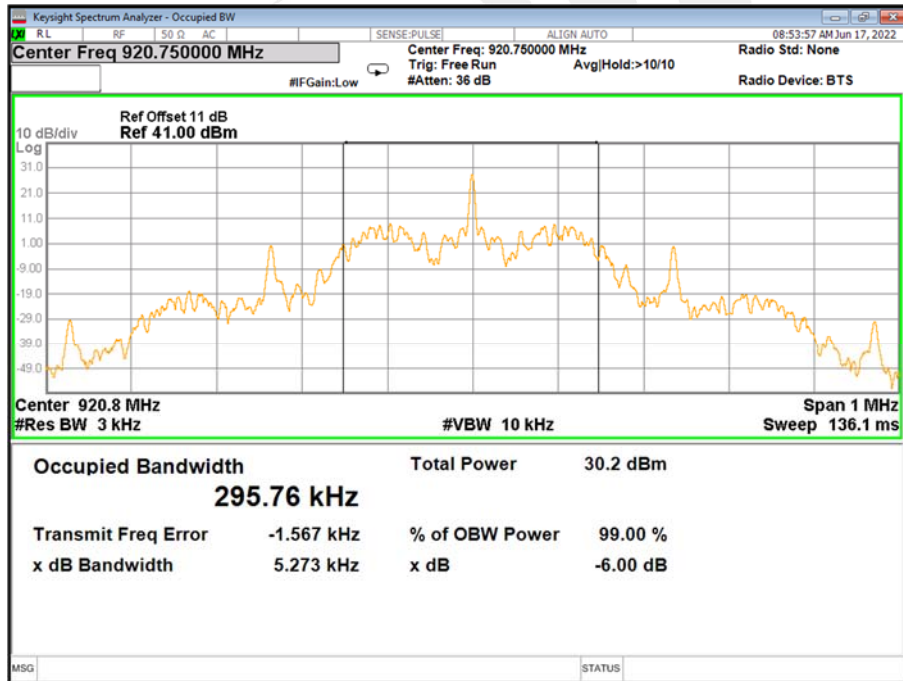




Low channel(910.75MHz)

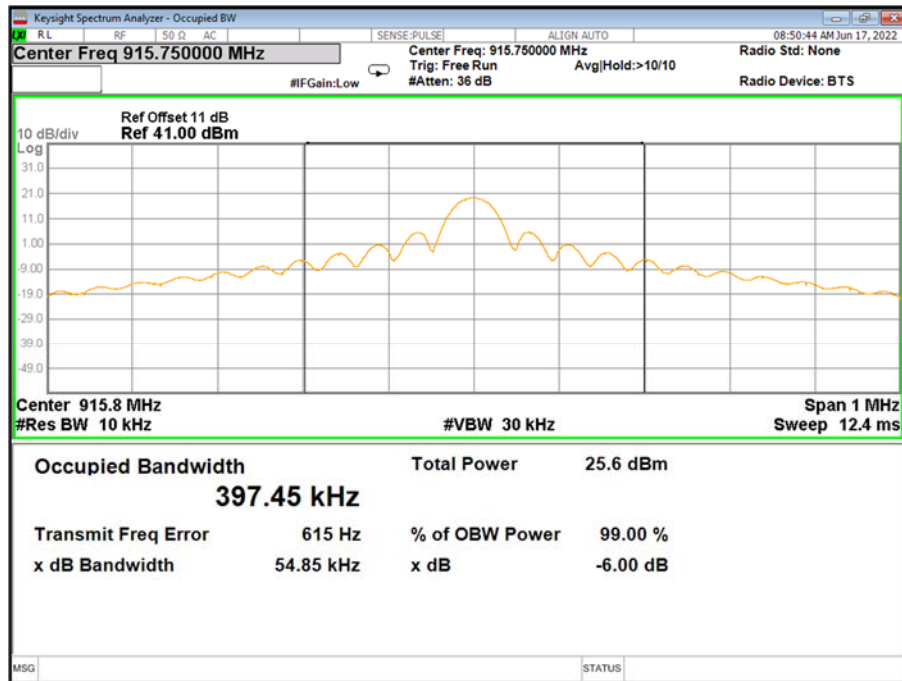


High channel(920.75MHz)



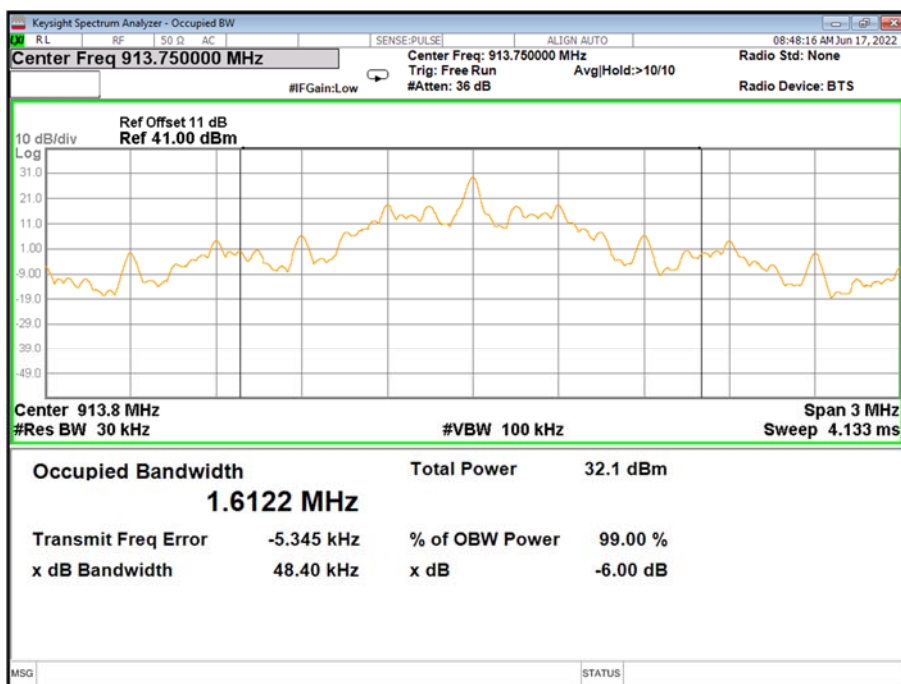


TDM
Mid channel(915.75MHz)

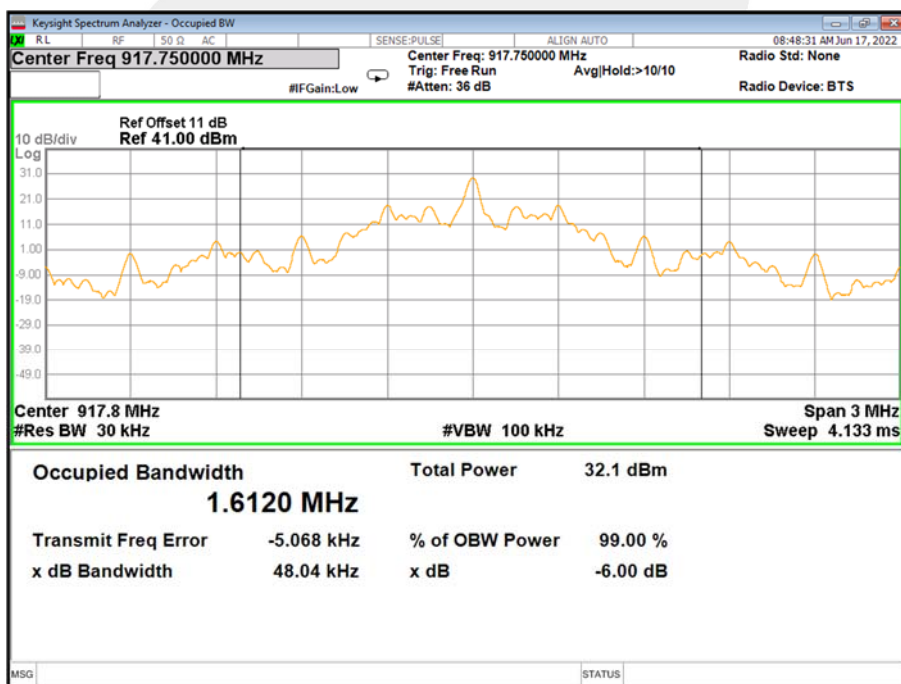




Title 21
Low channel(913.75MHz)



High channel(917.75MHz)



5. FREQUENCY STABILITY

5.1 LIMIT

However, the device meets the following condition:

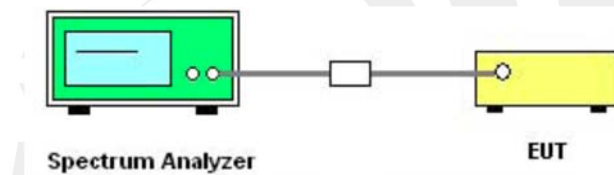
Fixed non-multilateration transmitters with an authorized bandwidth that is more than 40 kHz from the band edge, intermittently operated hand-held readers, and mobile transponders are not subject to frequency tolerance restrictions.

Frequency tolerances measurements are taken for information purpose. Frequency must be maintained from -30°C to +50°C. The EUT is monitored at each 10 °C increment. At each temperature, the device is checked after a stabilization period required for the device to reach the temperature.

5.2 TEST PROCEDURE

1. Set analyzer center frequency to channel center frequency.
2. Set the RBW to: 30KHz= RBW
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

5.3 TEST SETUP BLOCK DIAGRAM



5.4 MEASUREMENT RESULT

The worst case results are presented, with the frequency shown. The device was checked at each 10 °C increment of temperature.

Dense reader mode ISO-18000-63					
Channel	Test Condition	Nominal Frequency (MHz)	Measured Frequency (MHz)	Result (ppm)	Limit (ppm)
911.25MHz	+22°C, Nominal	911.25	911.2500	0.000	±2.5
	-30°C, Nominal	911.25	911.2499	-0.108	
	+50°C, Nominal	911.25	911.2498	-0.168	
920.25MHz	+22°C, Nominal	920.25	920.2500	0.000	
	-30°C, Nominal	920.25	920.2502	0.219	
	+50°C, Nominal	920.25	920.2504	0.455	



Single reader mode ISO-18000-63					
Channel	Test Condition	Nominal Frequency (MHz)	Measured Frequency (MHz)	Result (ppm)	Limit (ppm)
911.75MHz	+22℃, Nominal	911.75	911.75	0.000	±2.5
	-30℃, Nominal	911.75	911.7495	-0.530	
	+50℃, Nominal	911.75	911.7498	-0.197	
919.25MHz	+22℃, Nominal	919.25	919.25	0.000	
	-30℃, Nominal	919.25	919.2509	0.997	
	+50℃, Nominal	919.25	919.2501	0.153	

Low data rate ISO-18000-62 (40kbps)					
Channel	Test Condition	Nominal Frequency (MHz)	Measured Frequency (MHz)	Result (ppm)	Limit (ppm)
911.75MHz	+22℃, Nominal	911.75	911.75	0.000	±2.5
	-30℃, Nominal	911.75	911.7492	-0.835	
	+50℃, Nominal	911.75	911.7499	-0.092	
919.75MHz	+22℃, Nominal	919.75	919.75	0.000	
	-30℃, Nominal	919.75	919.7498	-0.206	
	+50℃, Nominal	919.75	919.7506	0.697	

High data rate ISO-18000-62 (80kbps)					
Channel	Test Condition	Nominal Frequency (MHz)	Measured Frequency (MHz)	Result (ppm)	Limit (ppm)
912.75MHz	+22℃, Nominal	912.75	912.75	0.000	±2.5
	-30℃, Nominal	912.75	912.7491	-0.955	
	+50℃, Nominal	912.75	912.7509	1.033	
918.75MHz	+22℃, Nominal	918.75	918.75	0.000	
	-30℃, Nominal	918.75	918.7498	-0.193	
	+50℃, Nominal	918.75	918.7504	0.458	



Unmodulated ISO-10374					
Channel	Test Condition	Nominal Frequency (MHz)	Measured Frequency (MHz)	Result (ppm)	Limit (ppm)
902.75MHz	+22°C, Nominal	902.75	902.75	0.000	±2.5
	-30°C, Nominal	902.75	902.7503	0.372	
	+50°C, Nominal	902.75	902.7494	-0.681	
903.25MHz	+22°C, Nominal	903.25	903.25	0.000	
	-30°C, Nominal	903.25	903.2497	-0.314	
	+50°C, Nominal	903.25	903.2498	-0.241	
910.75MHz	+22°C, Nominal	910.75	910.75	0.000	
	-30°C, Nominal	910.75	910.7501	0.098	
	+50°C, Nominal	910.75	910.7501	0.105	
920.75MHz	+22°C, Nominal	920.75	920.75	0.000	
	-30°C, Nominal	920.75	920.7502	0.218	
	+50°C, Nominal	920.75	920.7501	0.143	

TDM					
Channel	Test Condition	Nominal Frequency (MHz)	Measured Frequency (MHz)	Result (ppm)	Limit (ppm)
915.75MHz	+22°C, Nominal	915.75	915.75	0.000	±2.5
	-30°C, Nominal	915.75	915.7505	0.528	
	+50°C, Nominal	915.75	915.7497	-0.329	

Title 21					
Channel	Test Condition	Nominal Frequency (MHz)	Measured Frequency (MHz)	Result (ppm)	Limit (ppm)
913.75MHz	+22°C, Nominal	913.75	913.75	0.000	±2.5
	-30°C, Nominal	913.75	913.7499	-0.111	
	+50°C, Nominal	913.75	913.7495	-0.510	
917.75MHz	+22°C, Nominal	917.75	917.75	0.000	
	-30°C, Nominal	917.75	917.7503	0.379	
	+50°C, Nominal	917.75	917.7501	0.121	



6. FIELD STRENGTH OF SPURIOUS EMISSIONS

6.1 LIMIT

For all other transmitters authorized under subpart M that operate in the 902-928 MHz band, the peak power of any emission shall be attenuated below the power of the highest emission contained within the licensee's sub-band in accordance with the following schedule:

- (i) On any frequency within the authorized bandwidth: Zero dB.
- (ii) On any frequency outside the licensee's sub-band edges: $55 + 10 \log(P)$ dB, where (P) is the highest emission (watts) of the transmitter inside the licensee's sub-band.

6.2 TEST PROCEDURE

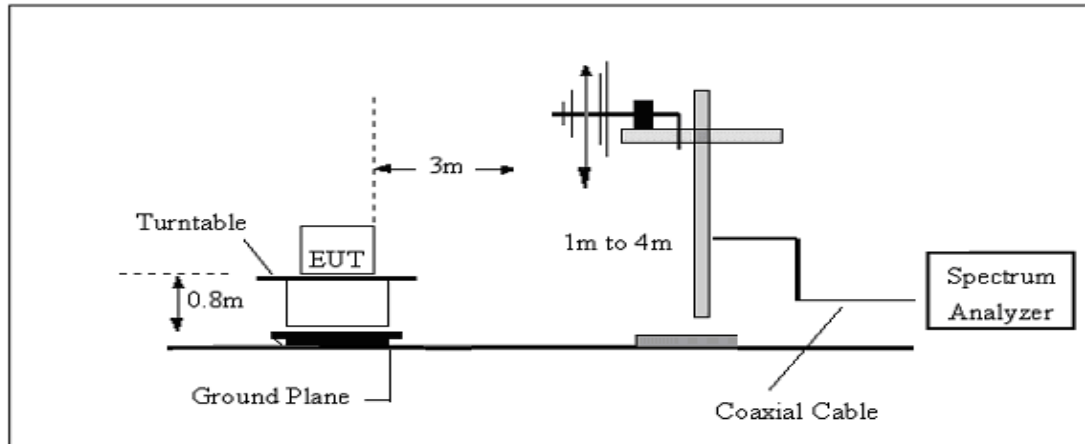
- a. The measuring distance at 3 m shall be used for measurements at frequency 30MHz up to 1GHz, and above 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber. The table was rotated 360 degree to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and Quasi Peak detector mode will be re-measured.
- e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

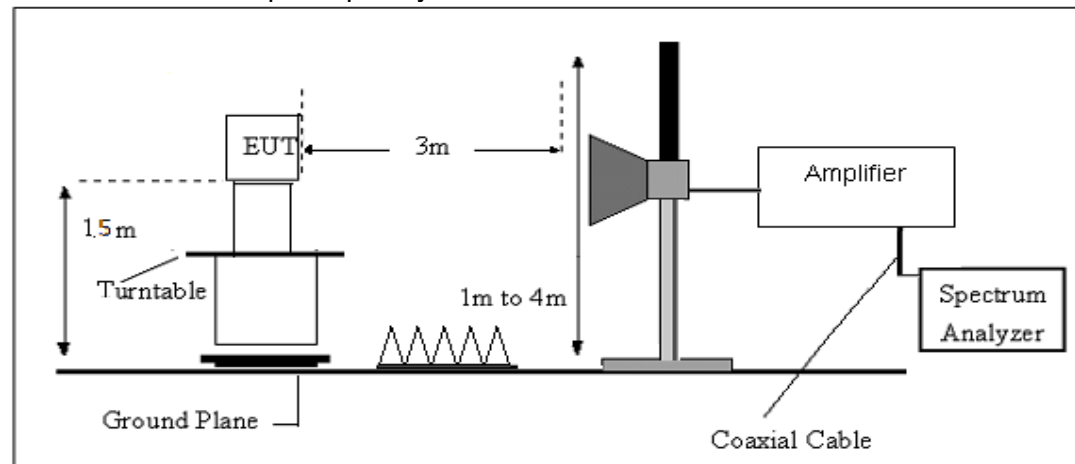
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

6.3 TEST SETUP

(A) Radiated Emission Test-Up Frequency 30MHz~1GHz



(B) Radiated Emission Test-Up Frequency Above 1GHz



6.4 EUT OPERATION CONDITIONS

Please refer to section 2.4 of this report.

6.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

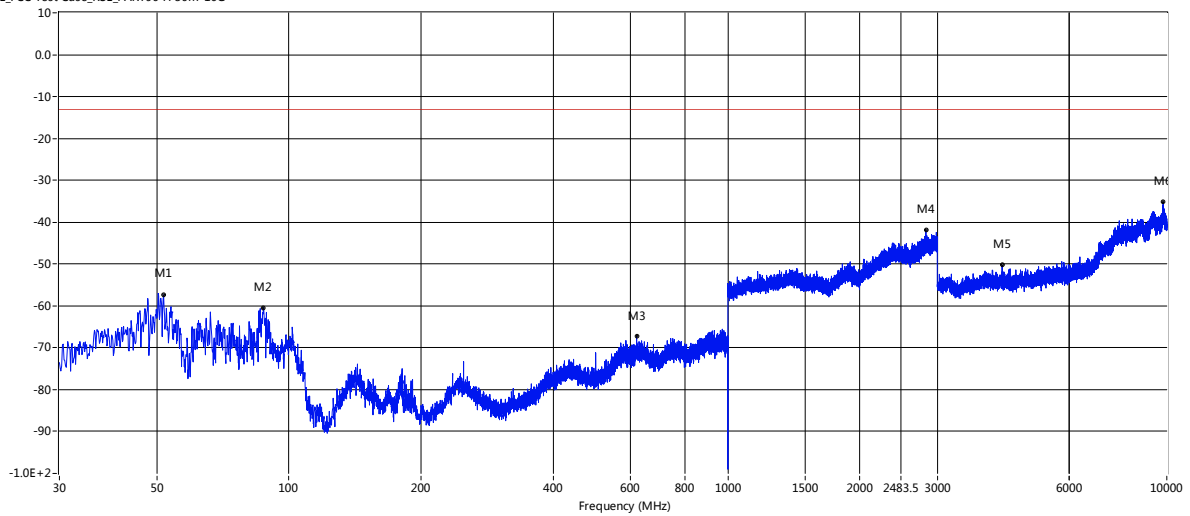
$$\text{Factor} = AF + CL - AG$$



6.6 TEST RESULT

Dense reader mode ISO-18000-63
Low channel
Horizontal

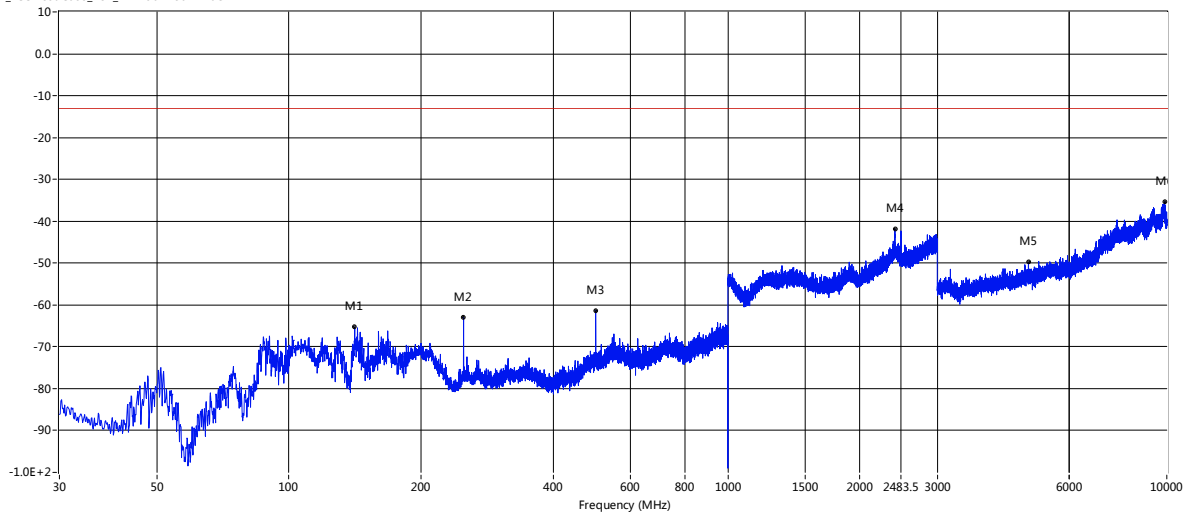
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
51.825	-57.38	-13.09	-13.0	-44.38	4.00	Horizontal	Vertical	Pass
87.594	-60.41	-14.97	-13.0	-47.41	4.00	Horizontal	Vertical	Pass
619.760	-67.24	7.26	-13.0	-54.24	9.00	Horizontal	Vertical	Pass
2826.250	-41.89	20.55	-13.0	-28.89	8.00	Horizontal	Vertical	Pass
4216.250	-50.27	4.37	-13.0	-37.27	5.00	Horizontal	Vertical	Pass
9809.250	-35.19	18.65	-13.0	-22.19	1.00	Horizontal	Vertical	Pass

Vertical

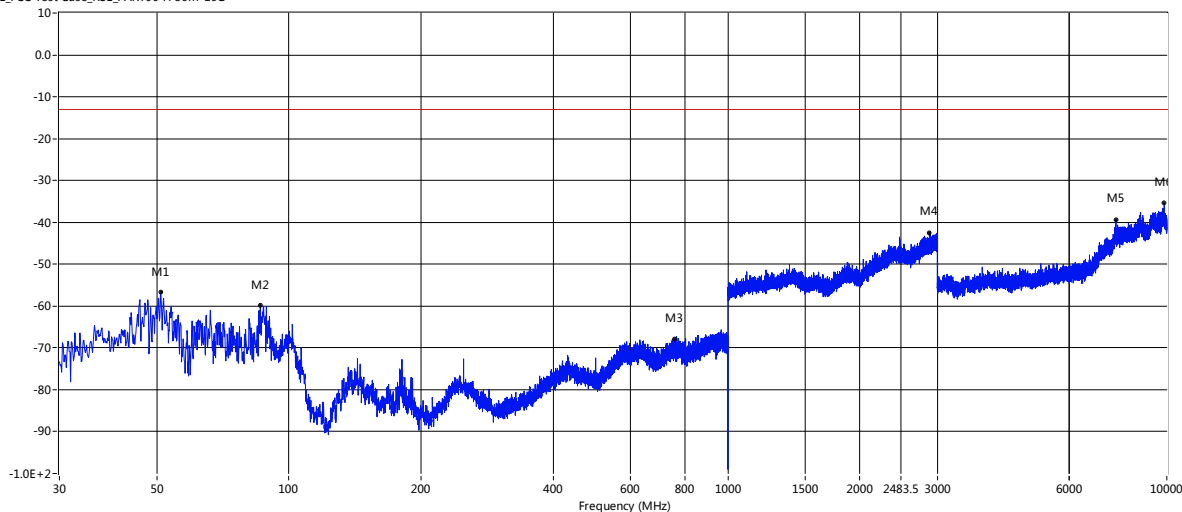
RSE_FCC Test Case_RSE_PART90 V 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
141.186	-65.26	-3.00	-13.0	-52.26	4.00	Vertical	Vertical	Pass
249.947	-63.02	-5.29	-13.0	-50.02	3.00	Vertical	Vertical	Pass
499.965	-61.32	4.61	-13.0	-48.32	2.00	Vertical	Vertical	Pass
2402.250	-41.81	19.87	-13.0	-28.81	9.00	Vertical	Vertical	Pass
4841.000	-49.82	5.56	-13.0	-36.82	5.00	Vertical	Vertical	Pass
9895.875	-35.30	19.13	-13.0	-22.30	7.00	Vertical	Vertical	Pass

High channel
Horizontal

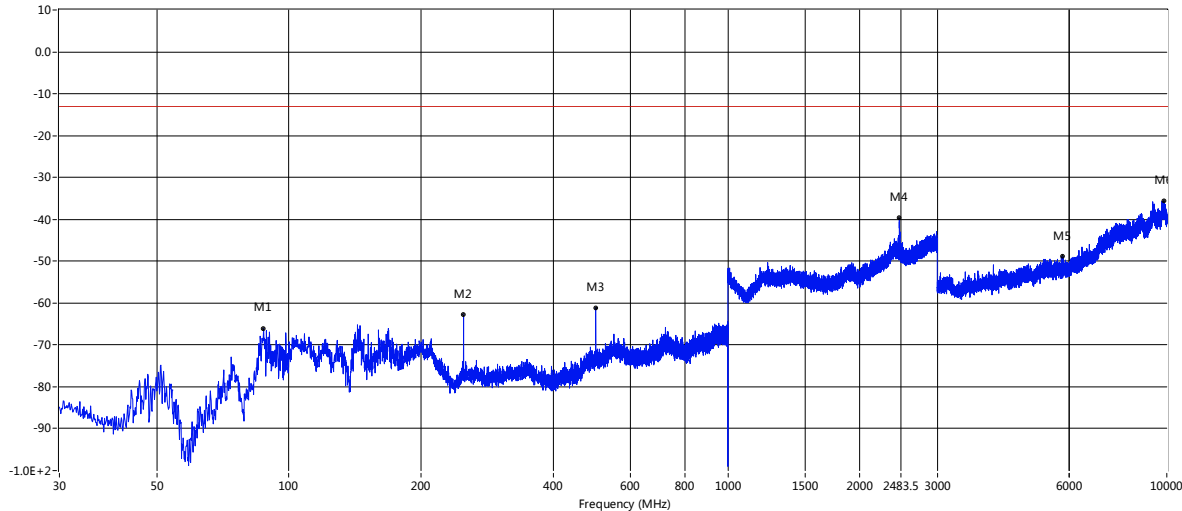
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
51.097	-56.72	-12.54	-13.0	-43.72	8.00	Horizontal	Vertical	Pass
86.018	-59.86	-15.14	-13.0	-46.86	9.00	Horizontal	Vertical	Pass
754.833	-67.83	7.22	-13.0	-54.83	7.00	Horizontal	Vertical	Pass
2878.750	-42.47	20.67	-13.0	-29.47	5.00	Horizontal	Vertical	Pass
7660.250	-39.29	14.32	-13.0	-26.29	9.00	Horizontal	Vertical	Pass
9866.125	-35.35	18.36	-13.0	-22.35	2.00	Horizontal	Vertical	Pass

Vertical

RSE_FCC Test Case_RSE_PART90 V 30M-10G

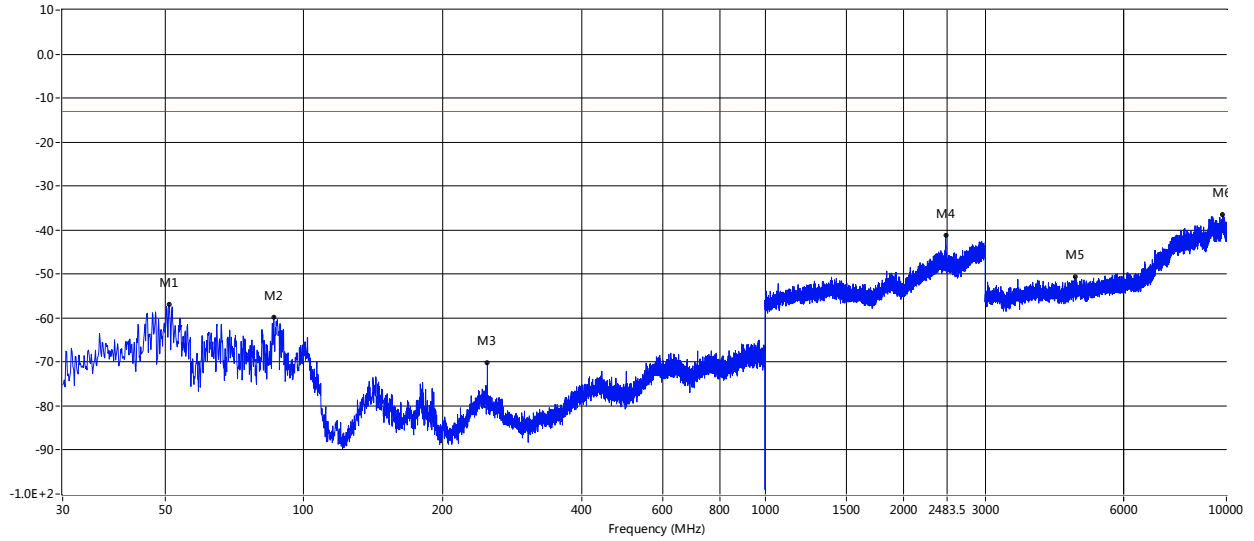


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
87.594	-66.03	-11.13	-13.0	-53.03	7.00	Vertical	Vertical	Pass
249.947	-62.77	-5.29	-13.0	-49.77	5.00	Vertical	Vertical	Pass
499.965	-61.13	4.61	-13.0	-48.13	6.00	Vertical	Vertical	Pass
2457.750	-39.68	18.83	-13.0	-26.68	7.00	Vertical	Vertical	Pass
5779.875	-48.86	7.28	-13.0	-35.86	2.00	Vertical	Vertical	Pass
9831.999	-35.55	19.63	-13.0	-22.55	1.00	Vertical	Vertical	Pass



Single reader mode ISO-18000-63
Low channel
Horizontal

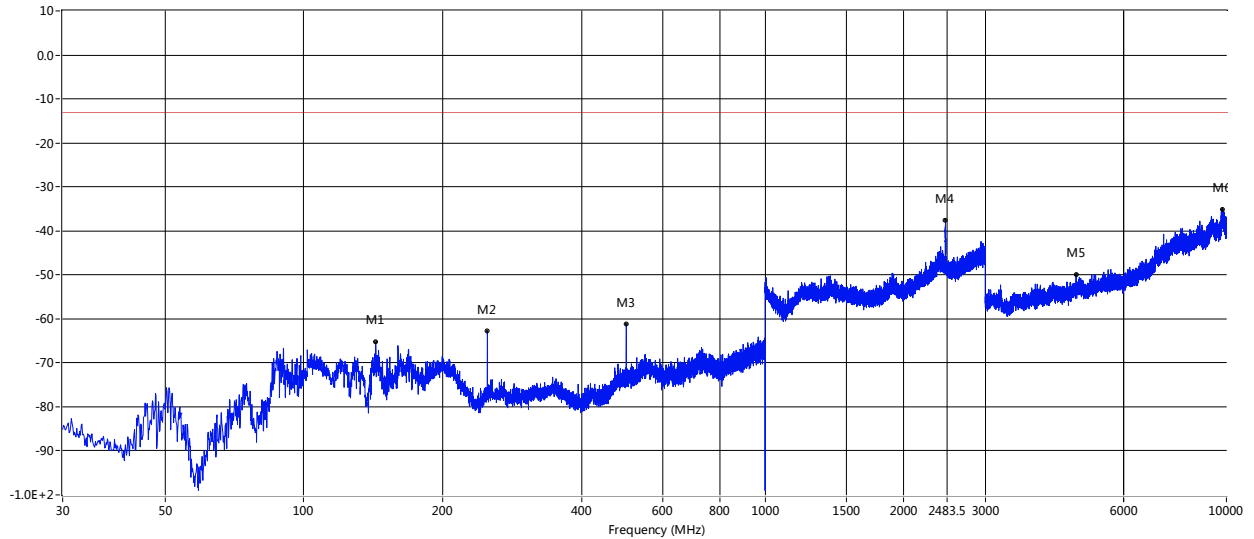
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
50.976	-56.95	-12.45	-13.0	-43.95	6.00	Horizontal	Vertical	Pass
86.018	-59.75	-15.14	-13.0	-46.75	2.00	Horizontal	Vertical	Pass
249.947	-70.23	-2.29	-13.0	-57.23	0.00	Horizontal	Vertical	Pass
2463.250	-41.18	19.20	-13.0	-28.18	5.00	Horizontal	Vertical	Pass
4694.000	-50.61	4.63	-13.0	-37.61	5.00	Horizontal	Vertical	Pass
9819.750	-36.57	18.60	-13.0	-23.57	8.00	Horizontal	Vertical	Pass

Vertical

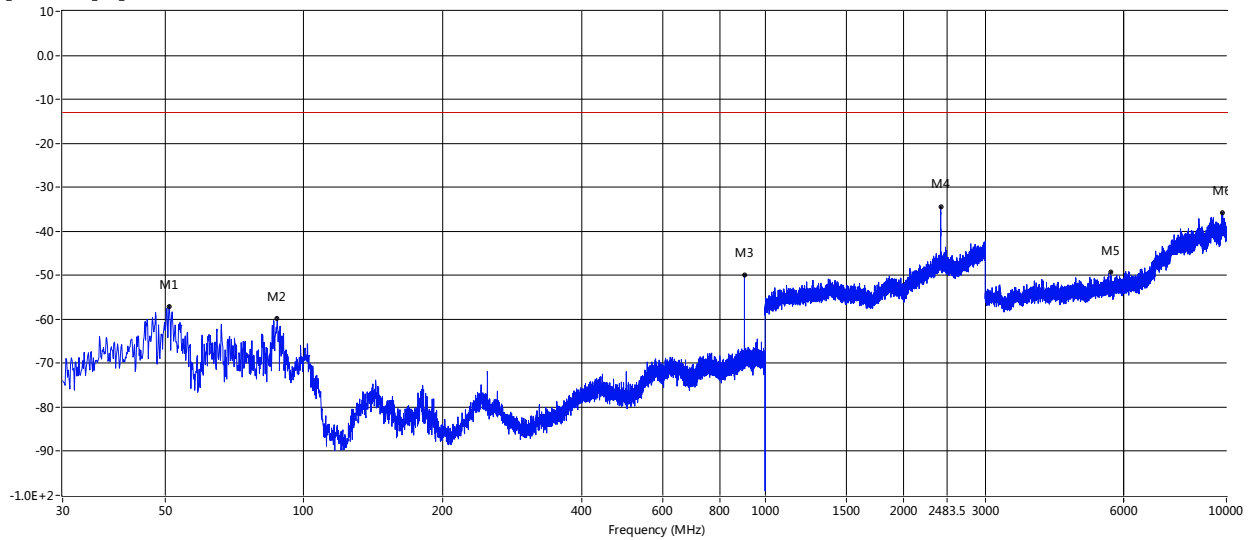
RSE_FCC Test Case_RSE_PART90 V 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
143.126	-65.26	-3.07	-13.0	-52.26	2.00	Vertical	Vertical	Pass
249.947	-62.83	-5.29	-13.0	-49.83	1.00	Vertical	Vertical	Pass
499.965	-61.19	4.61	-13.0	-48.19	2.00	Vertical	Vertical	Pass
2460.500	-37.49	18.77	-13.0	-24.49	4.00	Vertical	Vertical	Pass
4723.750	-49.95	5.20	-13.0	-36.95	10.00	Vertical	Vertical	Pass
9815.375	-35.19	19.76	-13.0	-22.19	6.00	Vertical	Vertical	Pass

High channel
Horizontal

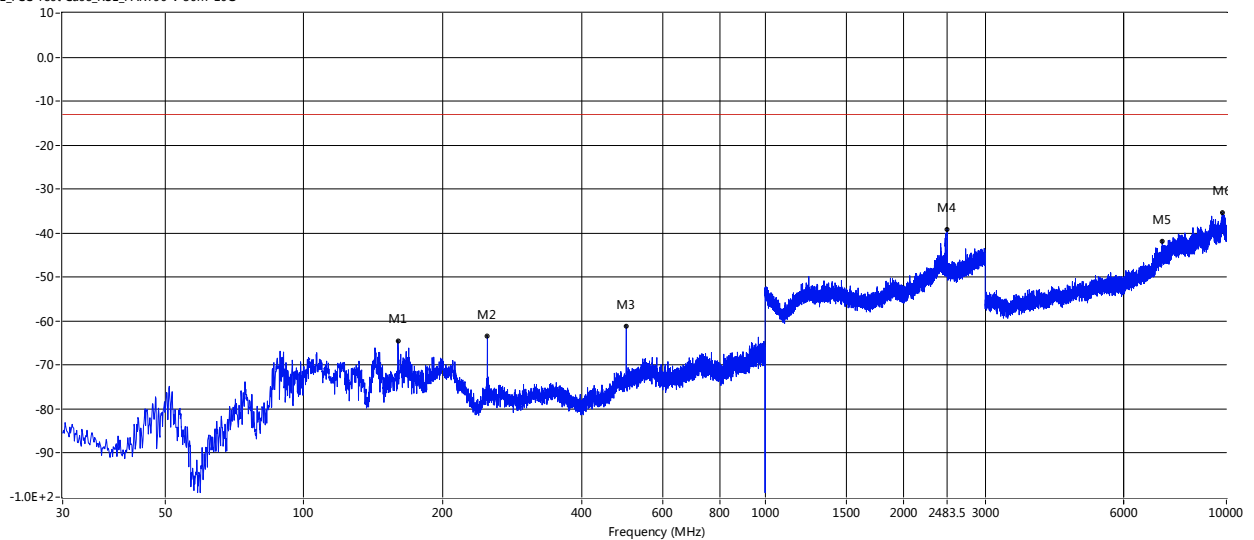
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
50.976	-57.08	-12.45	-13.0	-44.08	6.00	Horizontal	Vertical	Pass
87.594	-59.89	-14.97	-13.0	-46.89	5.00	Horizontal	Vertical	Pass
901.909	-49.85	8.89	-13.0	-36.85	1.00	Horizontal	Vertical	Pass
2402.000	-34.41	19.75	-13.0	-21.41	10.00	Horizontal	Vertical	Pass
5609.250	-49.37	6.22	-13.0	-36.37	6.00	Horizontal	Vertical	Pass
9810.125	-35.79	18.65	-13.0	-22.79	10.00	Horizontal	Vertical	Pass

Vertical

RSE_FCC Test Case_RSE_PART90 V 30M-10G

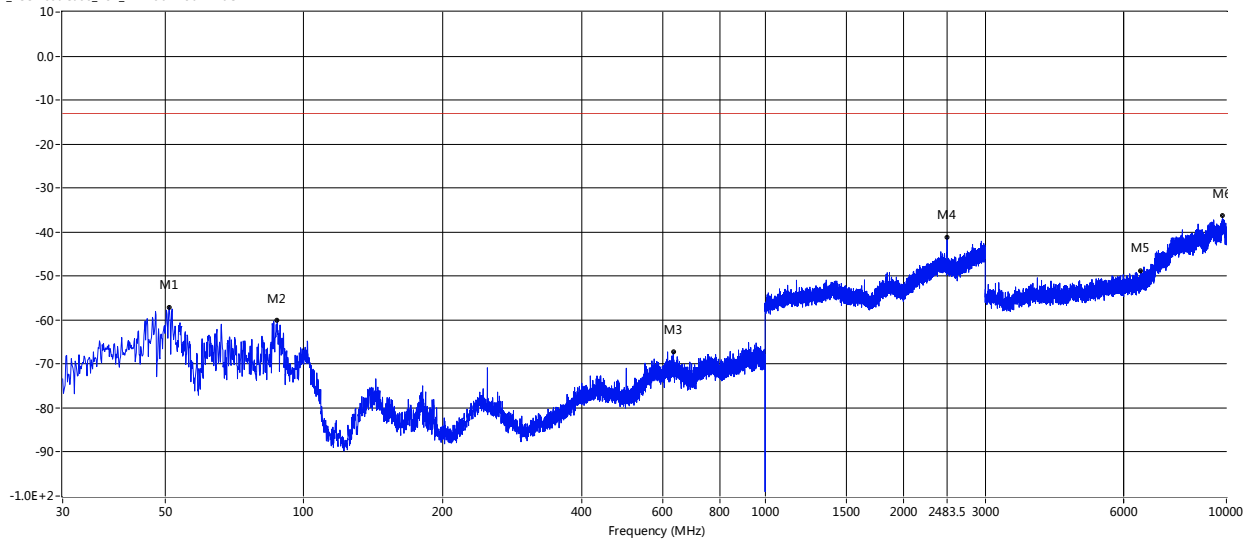


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
159.980	-64.45	-3.73	-13.0	-51.45	7.00	Vertical	Vertical	Pass
249.947	-63.51	-5.29	-13.0	-50.51	1.00	Vertical	Vertical	Pass
499.965	-61.25	4.61	-13.0	-48.25	1.00	Vertical	Vertical	Pass
2480.250	-39.10	18.31	-13.0	-26.10	2.00	Vertical	Vertical	Pass
7263.000	-41.94	12.55	-13.0	-28.94	3.00	Vertical	Vertical	Pass
9813.625	-35.41	19.77	-13.0	-22.41	9.00	Vertical	Vertical	Pass



Low data rate ISO-18000-62 (40kbps)
Low channel
Horizontal

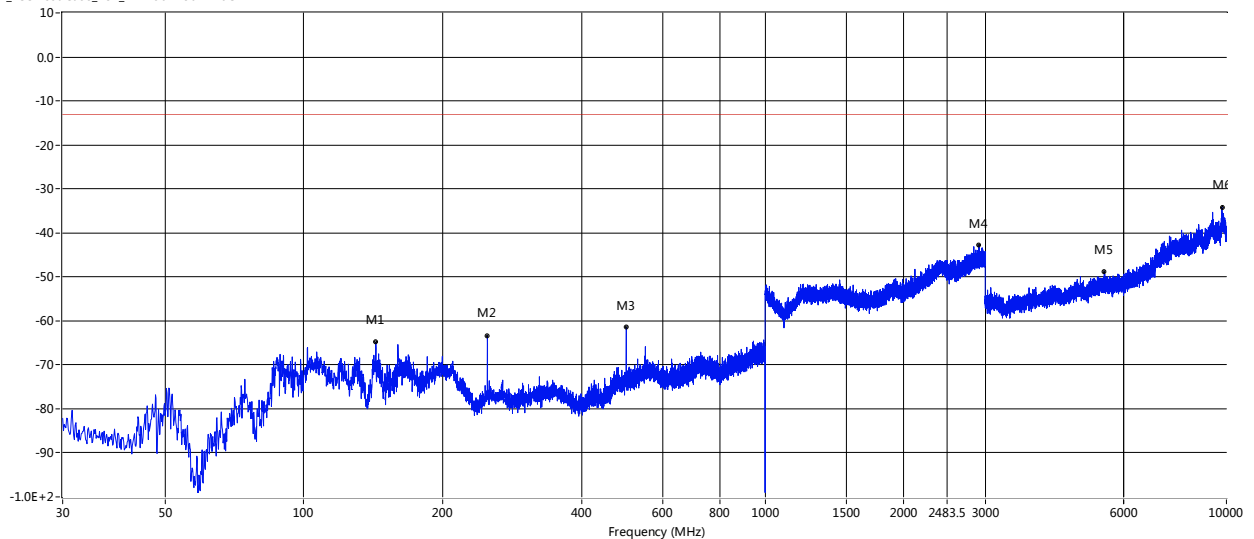
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
51.097	-57.06	-12.54	-13.0	-44.06	4.00	Horizontal	Vertical	Pass
87.594	-60.06	-14.97	-13.0	-47.06	5.00	Horizontal	Vertical	Pass
632.249	-67.20	7.26	-13.0	-54.20	10.00	Horizontal	Vertical	Pass
2480.000	-41.24	18.98	-13.0	-28.24	8.00	Horizontal	Vertical	Pass
6522.750	-48.75	8.15	-13.0	-35.75	5.00	Horizontal	Vertical	Pass
9807.500	-36.33	18.66	-13.0	-23.33	9.00	Horizontal	Vertical	Pass

Vertical

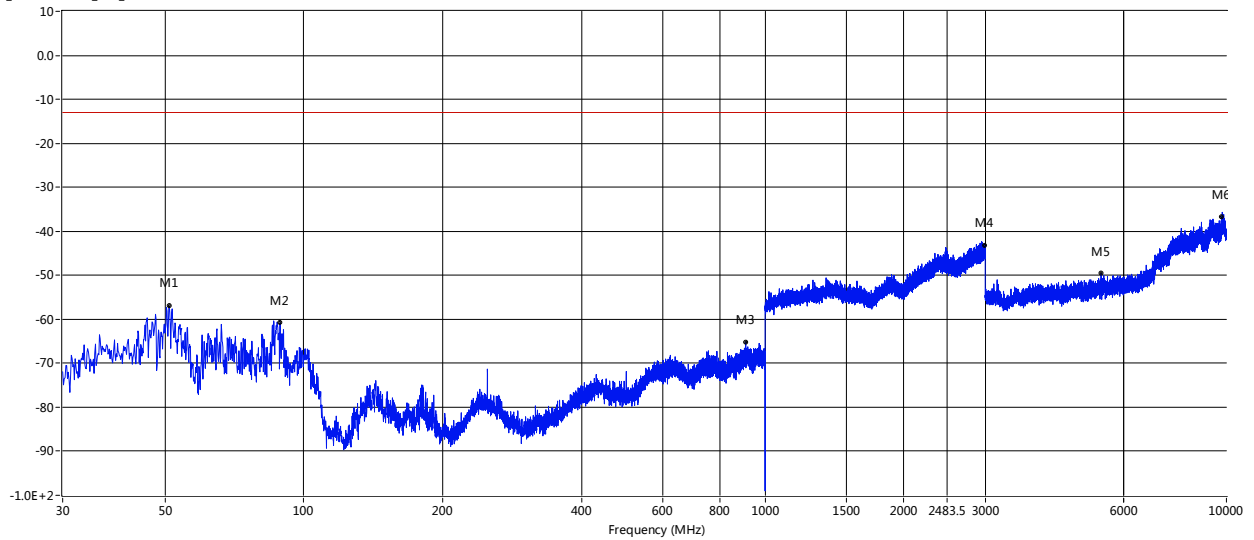
RSE_FCC Test Case_RSE_PART90 V 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
143.248	-64.83	-3.08	-13.0	-51.83	6.00	Vertical	Vertical	Pass
249.947	-63.30	-5.29	-13.0	-50.30	9.00	Vertical	Vertical	Pass
499.965	-61.42	4.61	-13.0	-48.42	4.00	Vertical	Vertical	Pass
2905.000	-42.72	20.25	-13.0	-29.72	7.00	Vertical	Vertical	Pass
5438.625	-48.76	6.72	-13.0	-35.76	9.00	Vertical	Vertical	Pass
9783.875	-34.18	19.43	-13.0	-21.18	2.00	Vertical	Vertical	Pass

High channel
Horizontal

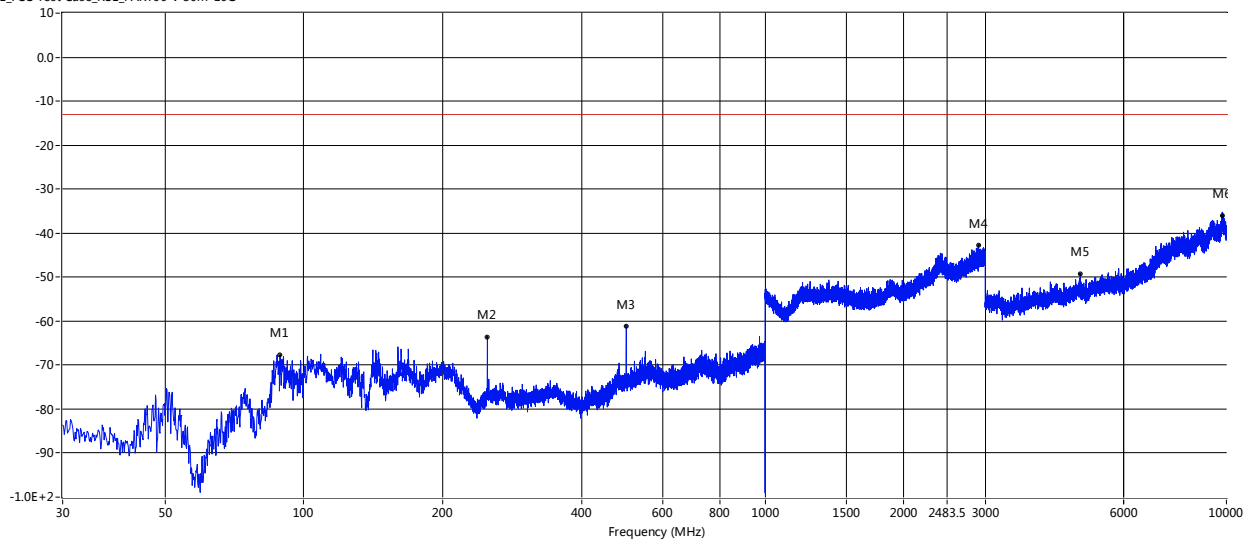
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
50.976	-56.94	-12.45	-13.0	-43.94	1.00	Horizontal	Vertical	Pass
88.806	-60.77	-14.85	-13.0	-47.77	2.00	Horizontal	Vertical	Pass
907.850	-65.21	9.13	-13.0	-52.21	9.00	Horizontal	Vertical	Pass
2995.750	-43.10	21.23	-13.0	-30.10	8.00	Horizontal	Vertical	Pass
5350.250	-49.56	5.86	-13.0	-36.56	4.00	Horizontal	Vertical	Pass
9774.250	-36.70	18.17	-13.0	-23.70	2.00	Horizontal	Vertical	Pass

Vertical

RSE_FCC Test Case_RSE_PART90 V 30M-10G

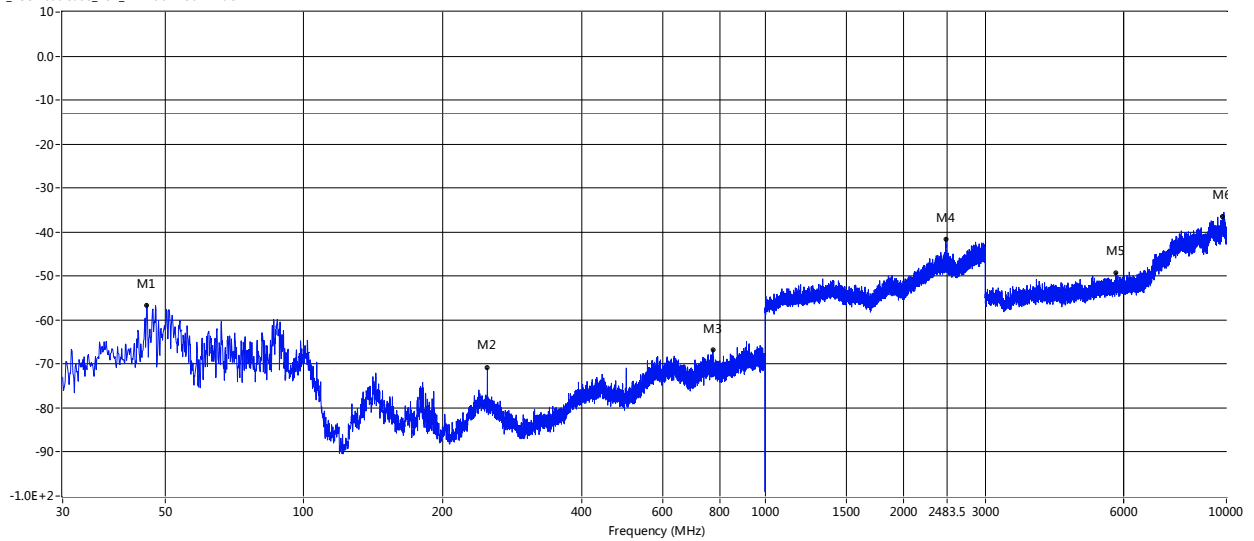


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
88.806	-67.75	-10.52	-13.0	-54.75	5.00	Vertical	Vertical	Pass
249.947	-63.56	-5.29	-13.0	-50.56	4.00	Vertical	Vertical	Pass
499.965	-61.27	4.61	-13.0	-48.27	6.00	Vertical	Vertical	Pass
2899.250	-42.77	20.24	-13.0	-29.77	7.00	Vertical	Vertical	Pass
4825.250	-49.23	5.53	-13.0	-36.23	2.00	Vertical	Vertical	Pass
9783.000	-36.09	19.41	-13.0	-23.09	10.00	Vertical	Vertical	Pass



High data rate ISO-18000-62 (80kbps)
Low channel
Horizontal

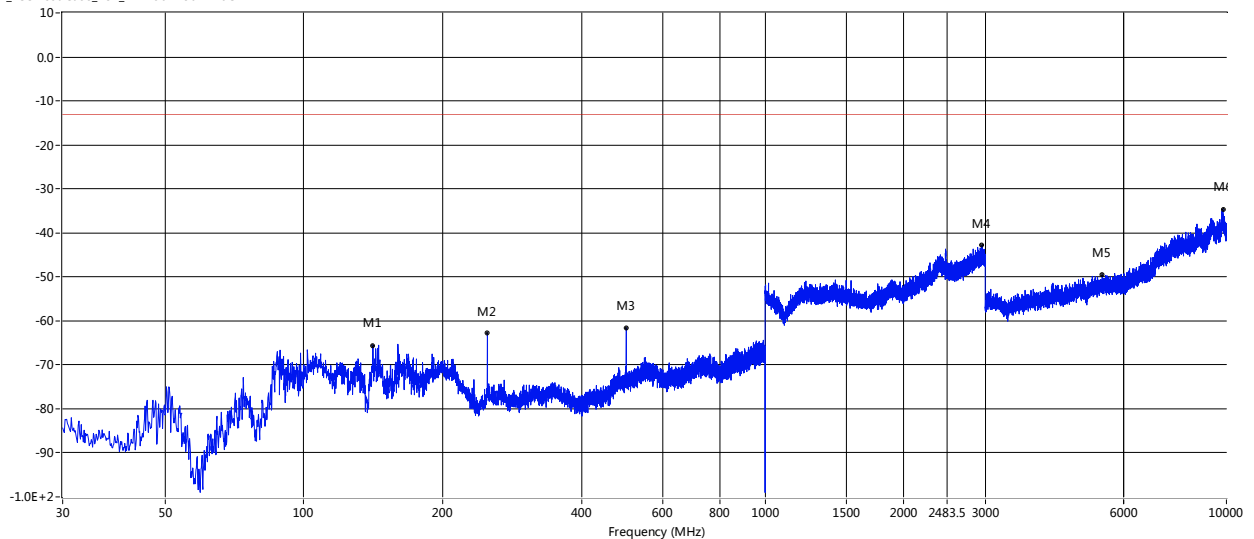
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
45.641	-56.69	-8.46	-13.0	-43.69	8.00	Horizontal	Vertical	Pass
249.947	-70.90	-2.29	-13.0	-57.90	3.00	Horizontal	Vertical	Pass
770.595	-66.77	7.12	-13.0	-53.77	5.00	Horizontal	Vertical	Pass
2463.750	-41.73	19.19	-13.0	-28.73	6.00	Horizontal	Vertical	Pass
5761.500	-49.35	6.43	-13.0	-36.35	1.00	Horizontal	Vertical	Pass
9818.000	-36.58	18.61	-13.0	-23.58	4.00	Horizontal	Vertical	Pass

Vertical

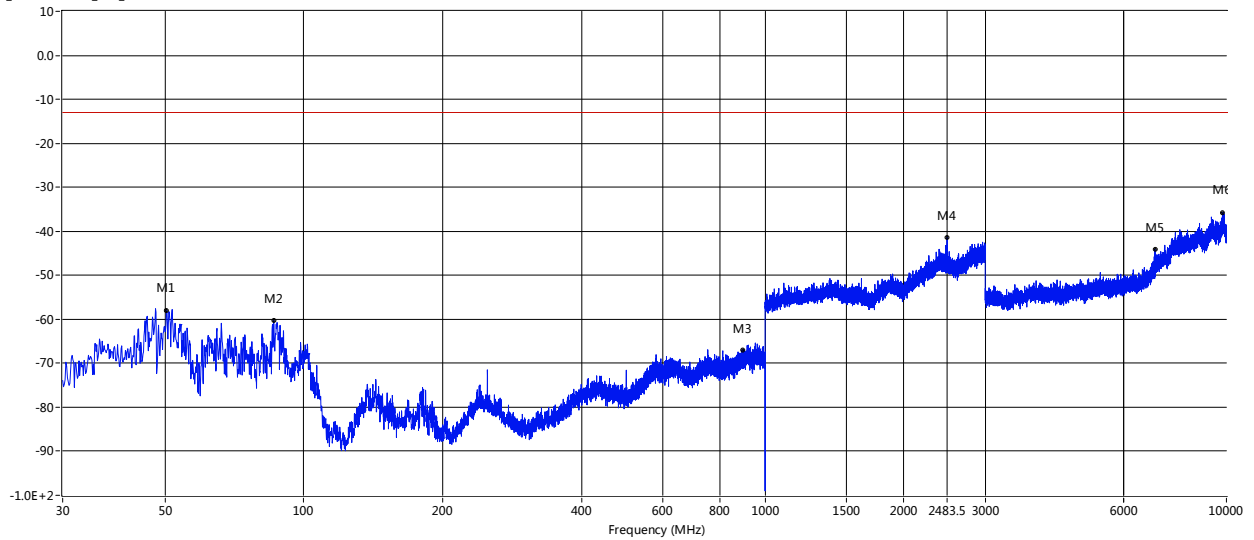
RSE_FCC Test Case_RSE_PART90 V 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
141.186	-65.55	-3.00	-13.0	-52.55	8.00	Vertical	Vertical	Pass
249.947	-62.70	-5.29	-13.0	-49.70	10.00	Vertical	Vertical	Pass
499.965	-61.54	4.61	-13.0	-48.54	1.00	Vertical	Vertical	Pass
2945.750	-42.83	20.34	-13.0	-29.83	3.00	Vertical	Vertical	Pass
5382.625	-49.52	6.75	-13.0	-36.52	1.00	Vertical	Vertical	Pass
9829.375	-34.57	19.65	-13.0	-21.57	4.00	Vertical	Vertical	Pass

High channel
Horizontal

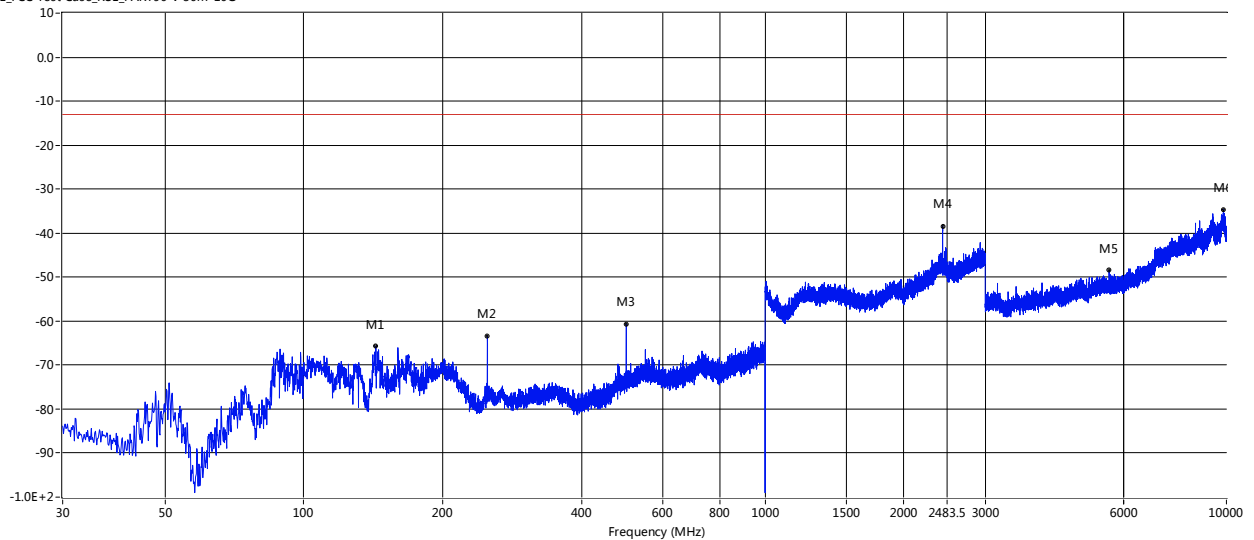
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
50.370	-57.92	-12.00	-13.0	-44.92	6.00	Horizontal	Vertical	Pass
86.018	-60.24	-15.14	-13.0	-47.24	1.00	Horizontal	Vertical	Pass
894.270	-66.96	8.61	-13.0	-53.96	9.00	Horizontal	Vertical	Pass
2480.250	-41.37	18.97	-13.0	-28.37	2.00	Horizontal	Vertical	Pass
7002.250	-44.12	10.37	-13.0	-31.12	2.00	Horizontal	Vertical	Pass
9818.000	-35.74	18.61	-13.0	-22.74	5.00	Horizontal	Vertical	Pass

Vertical

RSE_FCC Test Case_RSE_PART90 V 30M-10G

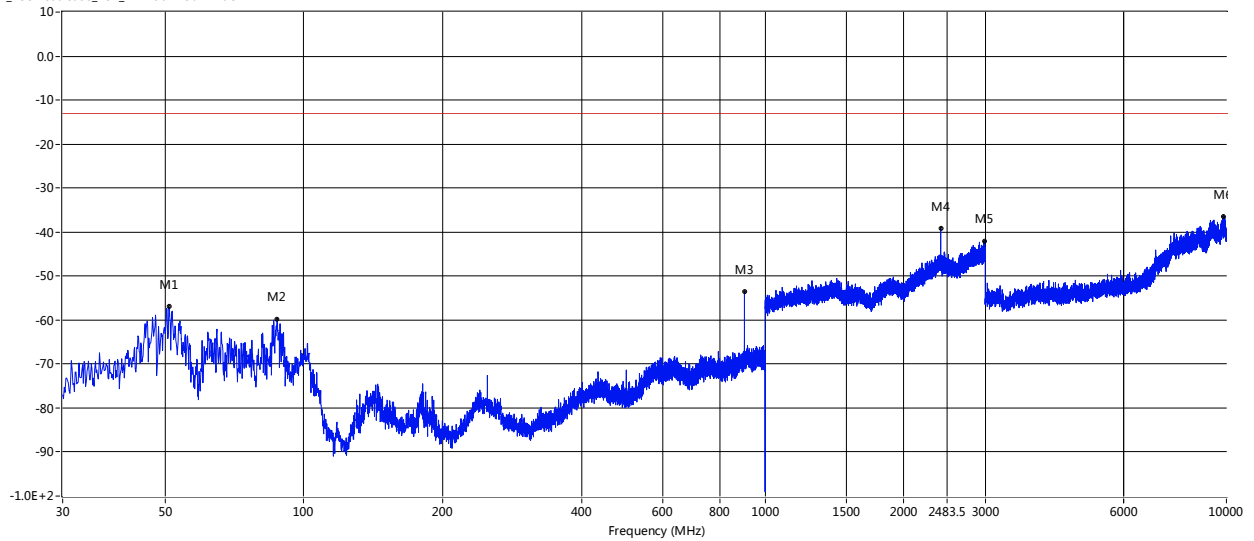


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
143.248	-65.67	-3.08	-13.0	-52.67	1.00	Vertical	Vertical	Pass
249.947	-63.34	-5.29	-13.0	-50.34	2.00	Vertical	Vertical	Pass
499.965	-60.72	4.61	-13.0	-47.72	4.00	Vertical	Vertical	Pass
2426.500	-38.40	19.44	-13.0	-25.40	7.00	Vertical	Vertical	Pass
5569.875	-48.45	6.99	-13.0	-35.45	6.00	Vertical	Vertical	Pass
9857.375	-34.68	19.43	-13.0	-21.68	6.00	Vertical	Vertical	Pass



Unmodulated ISO-10374
Low channel
Horizontal

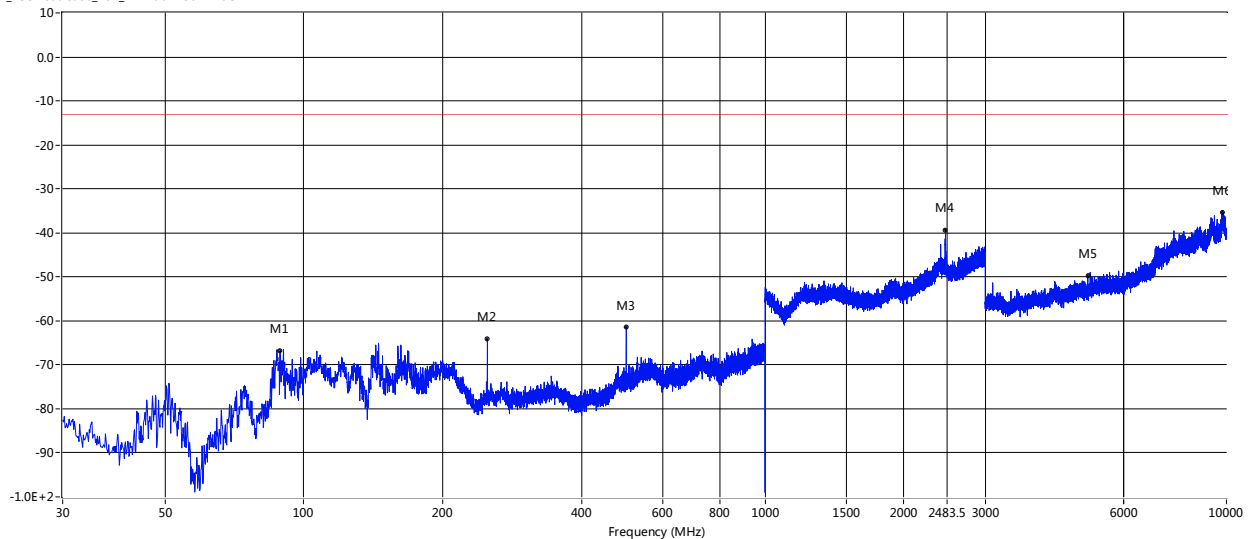
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
50.976	-57.01	-12.45	-13.0	-44.01	4.00	Horizontal	Vertical	Pass
87.594	-59.74	-14.97	-13.0	-46.74	3.00	Horizontal	Vertical	Pass
901.909	-53.57	8.89	-13.0	-40.57	10.00	Horizontal	Vertical	Pass
2402.000	-39.23	19.75	-13.0	-26.23	1.00	Horizontal	Vertical	Pass
2993.250	-42.03	21.21	-13.0	-29.03	6.00	Horizontal	Vertical	Pass
9856.500	-36.47	18.41	-13.0	-23.47	5.00	Horizontal	Vertical	Pass

Vertical

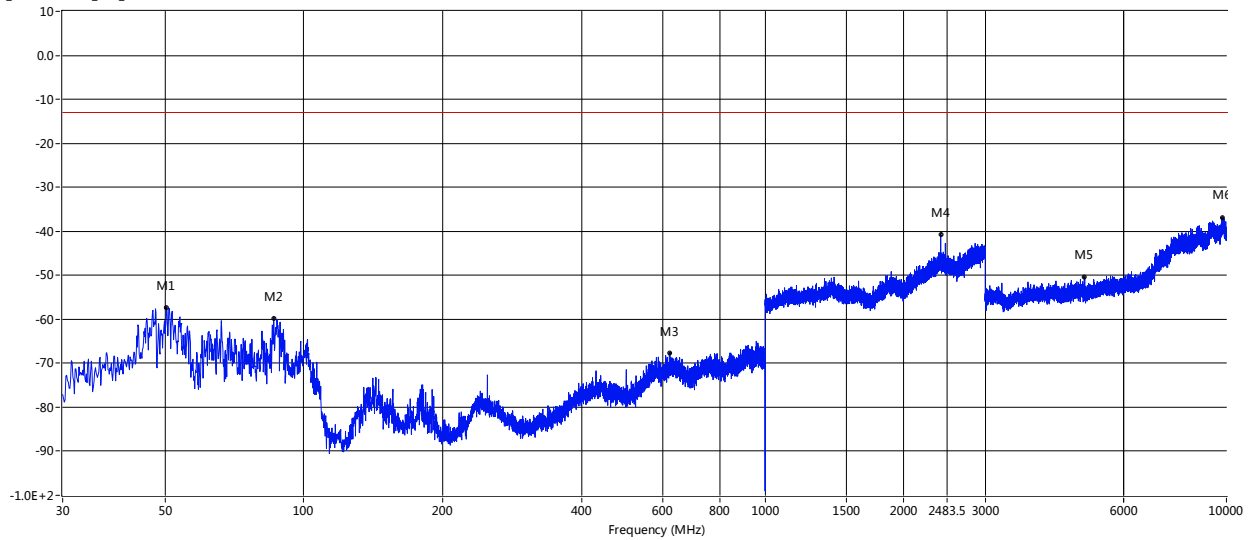
RSE_FCC Test Case_RSE_PART90 V 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
88.806	-66.78	-10.52	-13.0	-53.78	8.00	Vertical	Vertical	Pass
249.947	-64.12	-5.29	-13.0	-51.12	1.00	Vertical	Vertical	Pass
499.965	-61.39	4.61	-13.0	-48.39	4.00	Vertical	Vertical	Pass
2460.250	-39.30	18.78	-13.0	-26.30	9.00	Vertical	Vertical	Pass
5007.250	-49.67	5.13	-13.0	-36.67	2.00	Vertical	Vertical	Pass
9815.375	-35.44	19.76	-13.0	-22.44	6.00	Vertical	Vertical	Pass

High channel
Horizontal

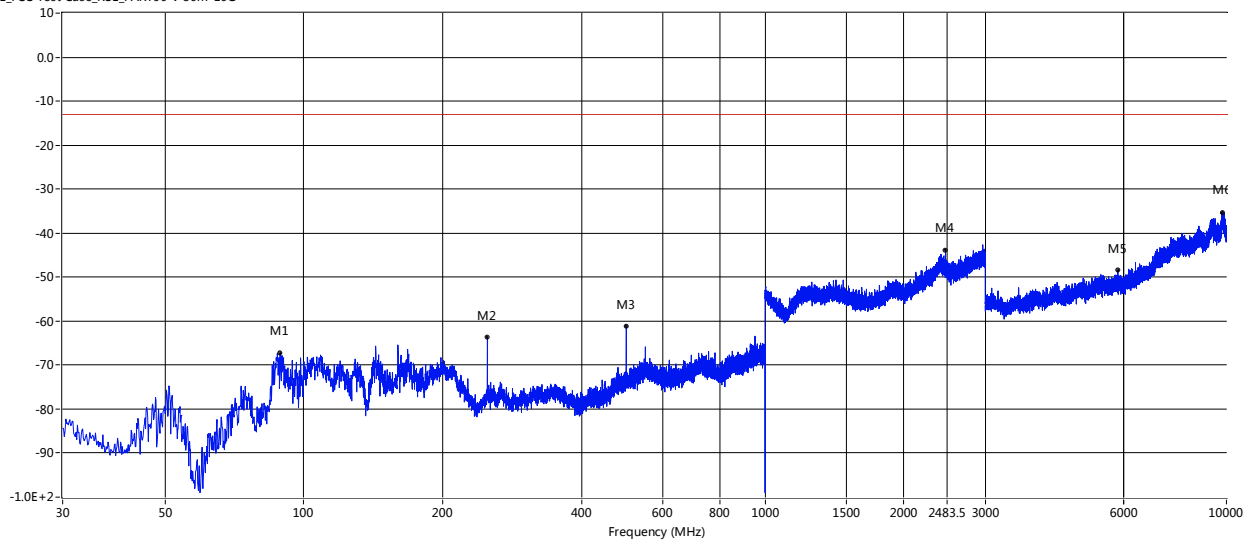
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
50.370	-57.32	-12.00	-13.0	-44.32	1.00	Horizontal	Vertical	Pass
86.018	-59.80	-15.14	-13.0	-46.80	10.00	Horizontal	Vertical	Pass
621.700	-67.64	7.28	-13.0	-54.64	2.00	Horizontal	Vertical	Pass
2402.250	-40.78	19.75	-13.0	-27.78	8.00	Horizontal	Vertical	Pass
4921.500	-50.41	4.81	-13.0	-37.41	5.00	Horizontal	Vertical	Pass
9817.125	-36.83	18.61	-13.0	-23.83	5.00	Horizontal	Vertical	Pass

Vertical

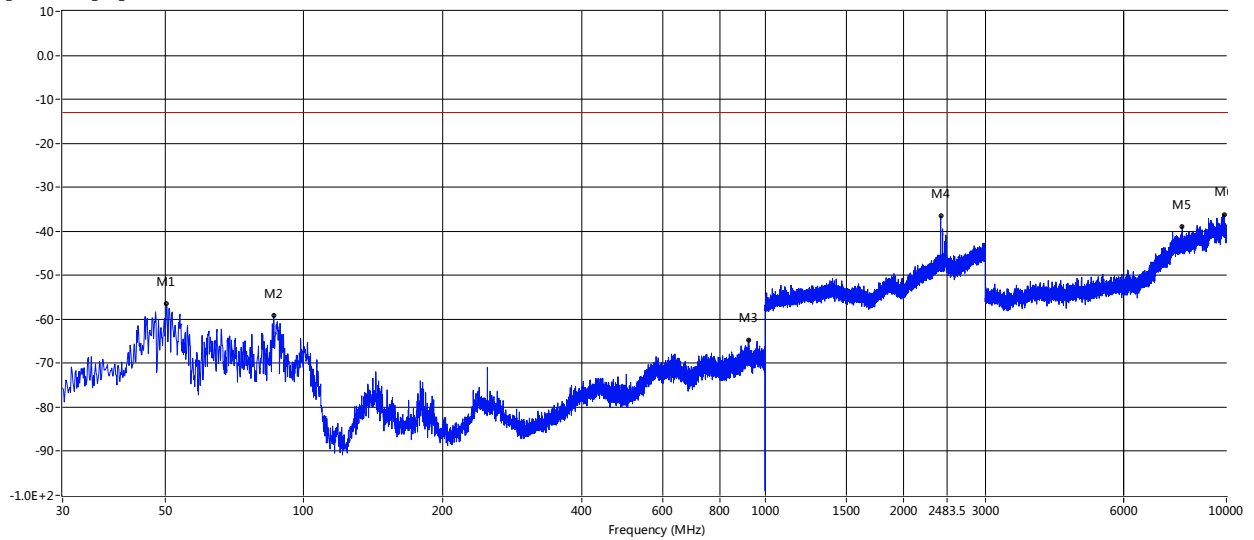
RSE_FCC Test Case_RSE_PART90 V 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
88.806	-67.21	-10.52	-13.0	-54.21	8.00	Vertical	Vertical	Pass
249.947	-63.60	-5.29	-13.0	-50.60	8.00	Vertical	Vertical	Pass
499.965	-61.14	4.61	-13.0	-48.14	10.00	Vertical	Vertical	Pass
2460.750	-43.77	18.76	-13.0	-30.77	10.00	Vertical	Vertical	Pass
5817.500	-48.38	7.32	-13.0	-35.38	1.00	Vertical	Vertical	Pass
9801.375	-35.24	19.87	-13.0	-22.24	6.00	Vertical	Vertical	Pass

Low channel
Horizontal

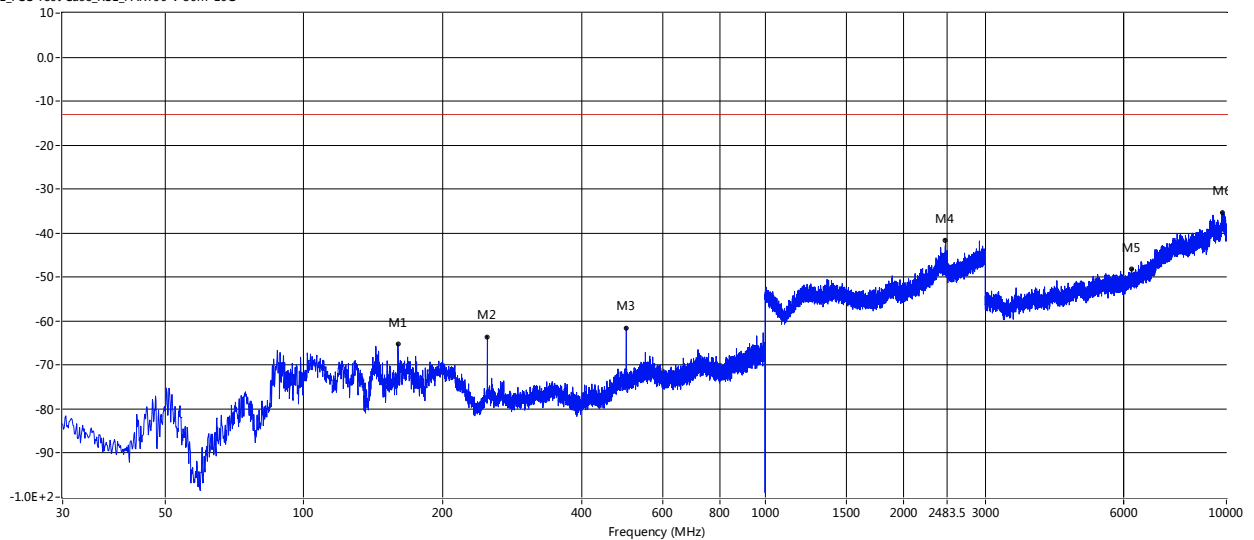
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
50.370	-56.55	-12.00	-13.0	-43.55	6.00	Horizontal	Vertical	Pass
86.018	-59.25	-15.14	-13.0	-46.25	9.00	Horizontal	Vertical	Pass
922.036	-64.67	9.46	-13.0	-51.67	9.00	Horizontal	Vertical	Pass
2401.750	-36.57	19.76	-13.0	-23.57	3.00	Horizontal	Vertical	Pass
8024.250	-38.94	15.24	-13.0	-25.94	5.00	Horizontal	Vertical	Pass
9888.874	-36.18	18.25	-13.0	-23.18	4.00	Horizontal	Vertical	Pass

Vertical

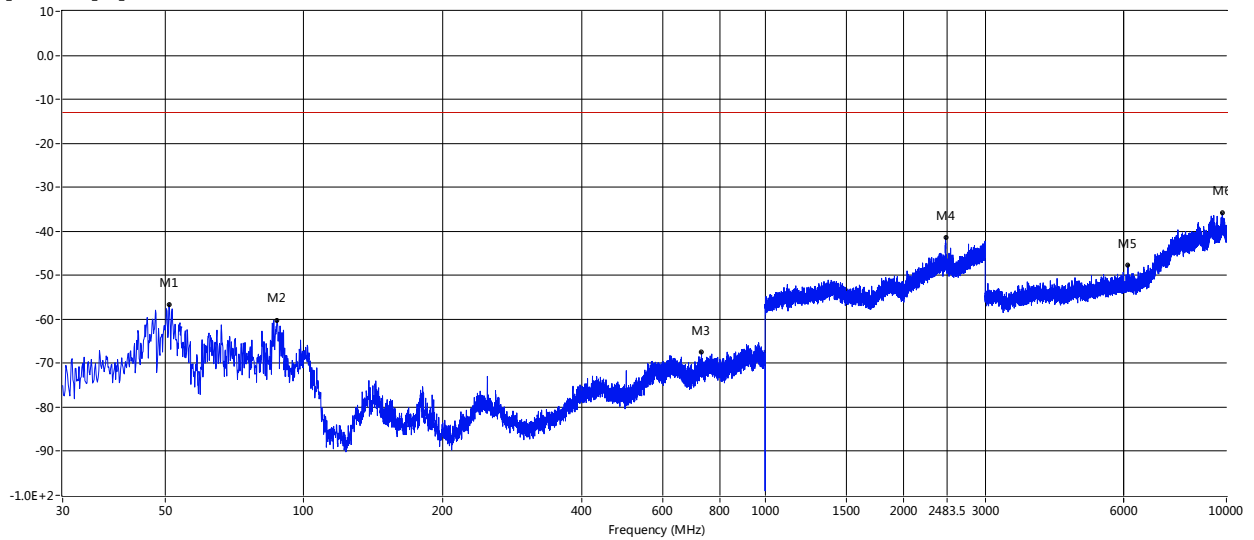
RSE_FCC Test Case_RSE_PART90 V 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
159.980	-65.16	-3.73	-13.0	-52.16	6.00	Vertical	Vertical	Pass
249.947	-63.55	-5.29	-13.0	-50.55	8.00	Vertical	Vertical	Pass
499.965	-61.51	4.61	-13.0	-48.51	4.00	Vertical	Vertical	Pass
2460.000	-41.73	18.78	-13.0	-28.73	8.00	Vertical	Vertical	Pass
6232.250	-48.12	8.61	-13.0	-35.12	1.00	Vertical	Vertical	Pass
9815.375	-35.30	19.76	-13.0	-22.30	9.00	Vertical	Vertical	Pass

High channel
Horizontal

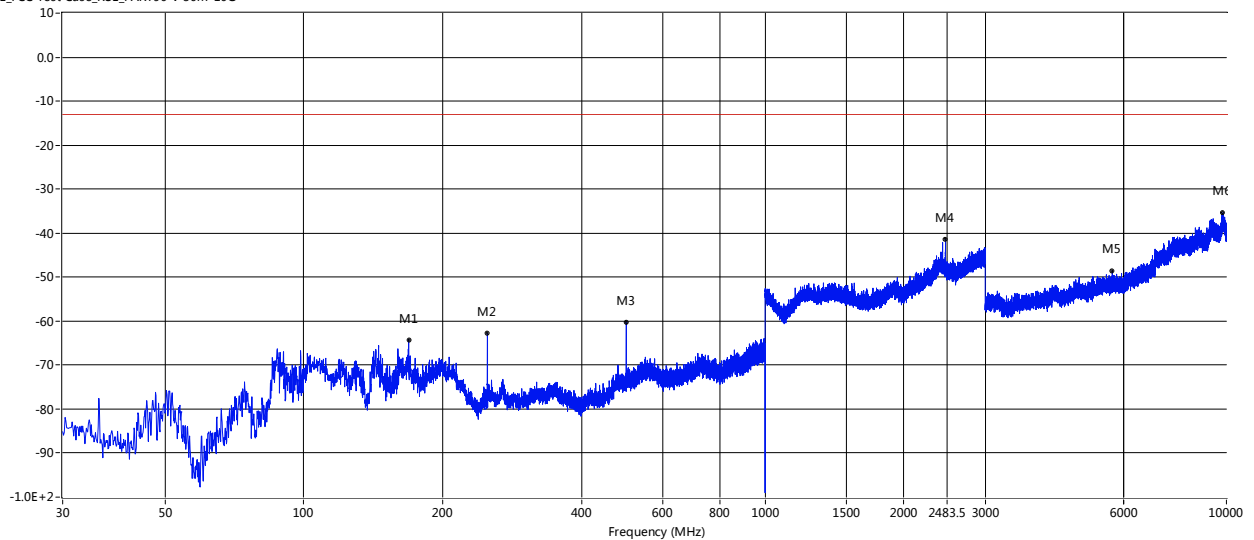
RSE_FCC Test Case_RSE_PART90 H 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
51.097	-56.66	-12.54	-13.0	-43.66	9.00	Horizontal	Vertical	Pass
87.473	-60.18	-14.99	-13.0	-47.18	3.00	Horizontal	Vertical	Pass
728.157	-67.53	6.57	-13.0	-54.53	9.00	Horizontal	Vertical	Pass
2462.000	-41.46	19.22	-13.0	-28.46	5.00	Horizontal	Vertical	Pass
6117.625	-47.64	7.18	-13.0	-34.64	1.00	Horizontal	Vertical	Pass
9796.125	-35.85	18.62	-13.0	-22.85	6.00	Horizontal	Vertical	Pass

Vertical

RSE_FCC Test Case_RSE_PART90 V 30M-10G



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
168.710	-64.28	-5.74	-13.0	-51.28	6.00	Vertical	Vertical	Pass
249.947	-62.79	-5.29	-13.0	-49.79	4.00	Vertical	Vertical	Pass
499.965	-60.24	4.61	-13.0	-47.24	6.00	Vertical	Vertical	Pass
2461.250	-41.47	18.75	-13.0	-28.47	1.00	Vertical	Vertical	Pass
5659.125	-48.48	7.14	-13.0	-35.48	2.00	Vertical	Vertical	Pass
9824.125	-35.41	19.69	-13.0	-22.41	0.00	Vertical	Vertical	Pass