

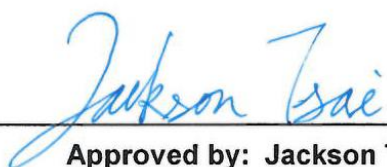
FCC Radio Test Report

FCC ID : TLZ-HM581
Equipment : IEEE 802.11ah Wireless LAN Module
Brand Name : AzureWave
Model Name : AW-HM581
Applicant : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian
Dist., New Taipei City , Taiwan 231
Manufacturer : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian
Dist., New Taipei City , Taiwan 231
Standard : 47 CFR FCC Part 15.247

The product was received on Aug. 28, 2023, and testing was started from Apr. 08, 2024 and completed on Jun. 02, 2024. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



Table of Contents

HISTORY OF THIS TEST REPORT	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Information.....	5
1.2 Testing Applied Standards	7
1.3 Testing Location Information	7
1.4 Measurement Uncertainty	7
2 TEST CONFIGURATION OF EUT.....	8
2.1 Test Condition	8
2.2 Test Channel Mode	8
2.3 The Worst Case Measurement Configuration.....	9
2.4 Accessories	10
2.5 Support Equipment.....	10
2.6 Test Setup Diagram	11
3 TRANSMITTER TEST RESULT	13
3.1 AC Power-line Conducted Emissions	13
3.2 DTS Bandwidth.....	15
3.3 Maximum Conducted Output Power	16
3.4 Power Spectral Density	18
3.5 Emissions in Non-restricted Frequency Bands	19
3.6 Emissions in Restricted Frequency Bands.....	20
4 TEST EQUIPMENT AND CALIBRATION DATA	24
APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APPENDIX B. TEST RESULTS OF DTS BANDWIDTH	
APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APPENDIX D. TEST RESULTS OF POWER SPECTRAL DENSITY	
APPENDIX E. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	
APPENDIX F. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS	
APPENDIX G. TEST PHOTOS	
PHOTOGRAPHS OF EUT V01	

History of this test report

[illegible]

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	FCC 15.203
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	≥500kHz
3.3	15.247(b)	Maximum Conducted Output Power	PASS	Power [dBm]:30
3.4	15.247(e)	Power Spectral Density	PASS	PSD [dBm/3kHz]:8
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	Non-Restricted Bands: > 30 dBc
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

None

Reviewed by: Barry Hsiao

Report Producer: Debby Hung

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Modulation	Ch. Frequency (MHz)	BWch (MHz)	Channel Number
902-928	OFDM	903.5-926.5	1	3-49 [24]
902-928	OFDM	905-925	2	6-46 [11]
902-928	OFDM	906-926	4	8-48 [6]
902-928	OFDM	908-924	8	12-44 [3]

Band	Mode	BWch	Nant
902-928MHz	Halow_1M	1	1TX
902-928MHz	Halow_2M	2	1TX
902-928MHz	Halow_4M	4	1TX
902-928MHz	Halow_8M	8	1TX

Bandwidth							
1 MHz							
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
3	903.5	15	909.5	27	915.5	39	921.5
5	904.5	17	910.5	29	916.5	41	922.5
7	905.5	19	911.5	31	917.5	43	923.5
9	906.5	21	912.5	33	918.5	45	924.5
11	907.5	23	913.5	35	919.5	47	925.5
13	908.5	25	914.5	37	920.5	49	926.5

Bandwidth							
2 MHz				4 MHz		8 MHz	
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
6	905	30	917	8	906	12	908
10	907	34	919	16	910	28	916
14	909	38	921	24	914	44	924
18	911	42	923	32	918	-	-
22	913	46	925	40	922	-	-
26	915	-	-	48	926	-	-

Note:

- ♦ 902-928 MHz Band uses a combination of OFDM modulation.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Cortec	AN0915-5001BSM	Diople	RP-Diople(M)	2

Note 1: The EUT has one antenna.

For SRD function:

For SRD mode (1TX/1RX)

Ant. 1 (port 1) could transmit/receive.

1.1.3 EUT Information

Operational Condition			
EUT Power Type		From Test fixture	
EUT Function		☐ Point-to-multipoint	☒ Point-to-point
Type of EUT			
☒	Stand-alone		
☐	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.:		...
☐	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.:		...
☐	Other:		

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
Halow_1M	0.898	0.47	3.413m	300
Halow_2M	0.805	0.94	1.57m	1k
Halow_4M	0.689	1.62	883.75u	3k
Halow_8M	0.595	2.25	562.5u	3k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- ♦ KDB 558074 D01 v05r02

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		FAX: 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
AC Conduction	CO04-HY	Simon Cheng	21.3~22.6°C / 52~55%	23/Apr/2024
RF Conducted	TH07-HY	Raven Chien	23.2~24.1°C / 57~62%	08/Apr/2024~31/May/2024
Radiated	03CH02-HY	Darren Cho	22.2~23.4°C / 50~52%	09/Apr/2024~02/Jun/2024
☐ Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787		FAX: 886-3-318-0287	

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
AC Power-line Conducted Emissions	4.53 dB	Confidence levels of 95%
Bandwidth	3 MHz	Confidence levels of 95%
Maximum Conducted Output Power	2 dB	Confidence levels of 95%
Power Spectral Density	2 dB	Confidence levels of 95%
Emissions in Non-restricted Frequency Bands	0.14 dB	Confidence levels of 95%
Emissions in Restricted Frequency Bands	4.8 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TX-DTS	Tnom	20°C
-	Vnom	5V

2.2 Test Channel Mode

Test Software Version	rf_tester_v1.12
-----------------------	-----------------

Mode	Power Setting
Halow_1M	-
903.5MHz	15
914.5MHz	15
926.5MHz	15
Halow_2M	-
905MHz	15
915MHz	15
925MHz	15
Halow_4M	-
906MHz	15
914MHz	15
926MHz	4
Halow_8M	-
908MHz	7
916MHz	15
924MHz	5

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	Test Fixture Mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX		
1	Test Fixture Mode		
Operating Mode > 1GHz	CTX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT			V



2.4 Accessories

Accessories				
Antenna	Brand Name	Cortec	Model Name	AN0915-5001BSM

Reminder: Regarding to more detail and other information, please refer to user manual.

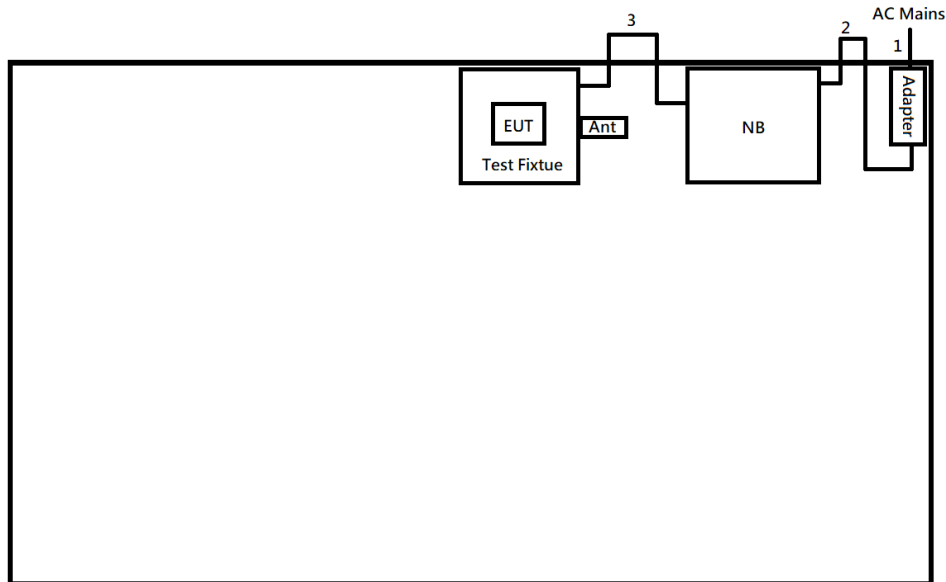
2.5 Support Equipment

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	HP	HSTNN-I42C	-	-
2	Adapter for NB	HP	HSTNN-CA40	-	-
3	Fixture	AzureWave	2581	-	Provided by Customer

Support Equipment – AC Conduction and Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	HP	HSTNN-142C	-	-
2	Adapter for NB	HP	HSTNN-LA40	-	-
3	USB cable	National Instrument	192256A-01	-	-
4	Fixture	AzureWave	2581	-	Provided by Customer

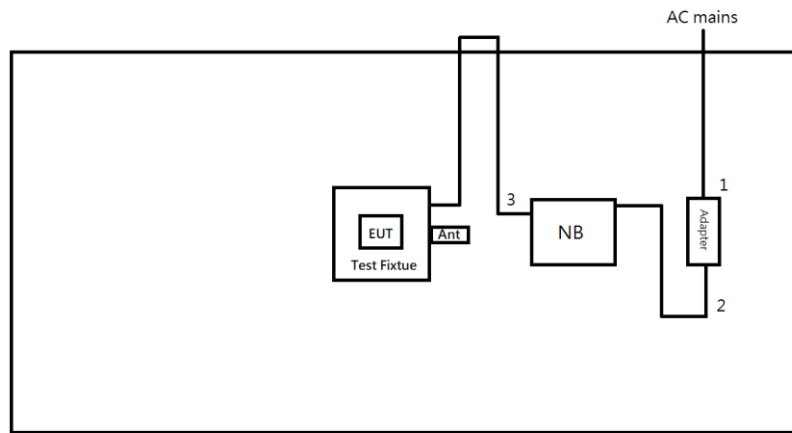
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	DC Power cable	No	1.5	-
3	USB cable	No	1.0	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	DC Power cable	No	1.5	-
3	USB cable	No	1.0	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

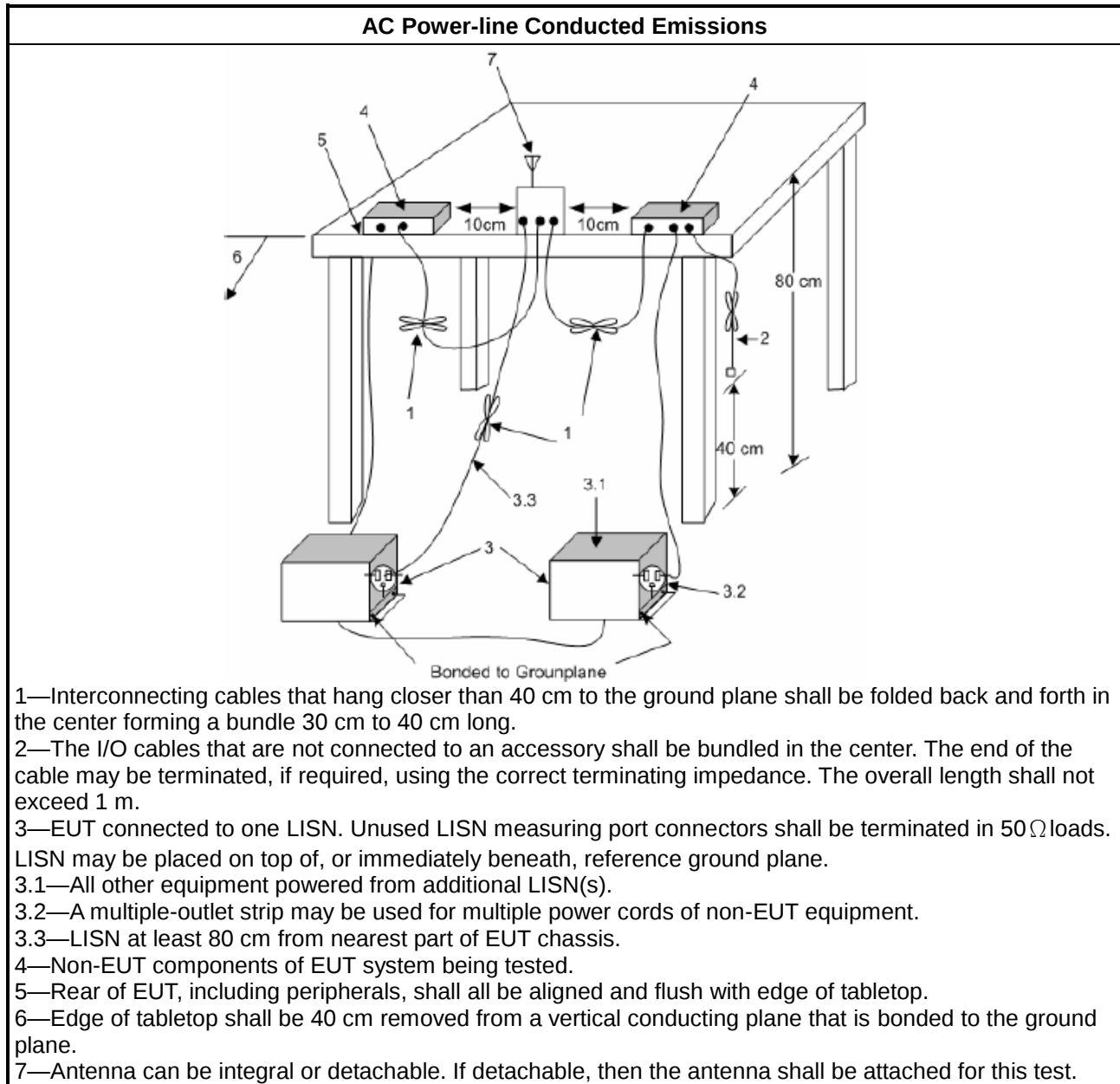
Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

3.1.5 Test Setup



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit	
Systems using digital modulation techniques:	
▪	6 dB bandwidth $\geq$ 500 kHz.

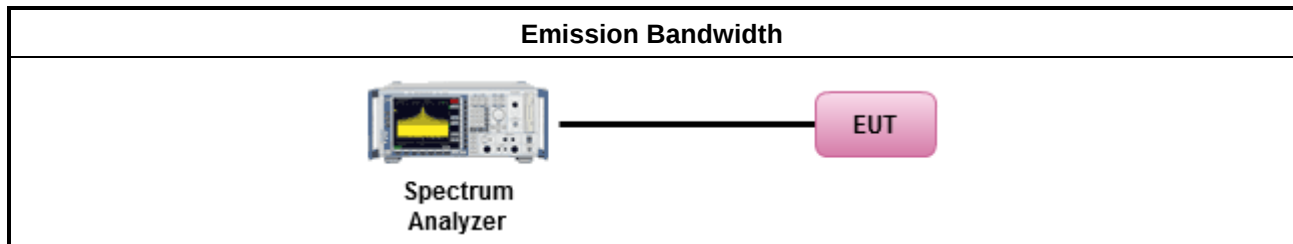
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method	
▪	For the emission bandwidth shall be measured using one of the options below:
☒	Refer as KDB 558074. clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
☐	Refer as RSS-Gen, clause 6.7 for for occupied bandwidth testing.
☐	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit		
	▪	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	▪	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	▪	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	▪	Smart antenna system (SAS):
	-	Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	-	Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	-	Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
e.i.r.p. Power Limit:		
	▪	2400-2483.5 MHz Band
	▪	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	▪	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	▪	Smart antenna system (SAS)
	-	Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	-	Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	-	Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.		

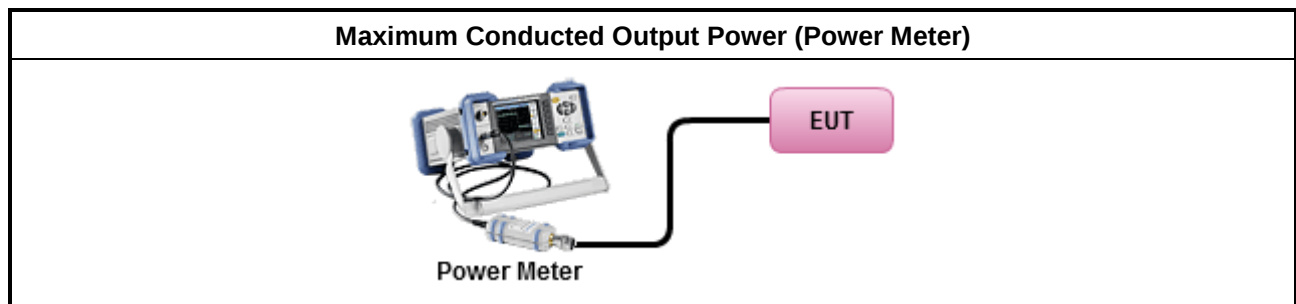
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
☐	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
☒	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
Maximum Average Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
☒	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit	
▪	Power Spectral Density (PSD) ≤ 8 dBm/3kHz

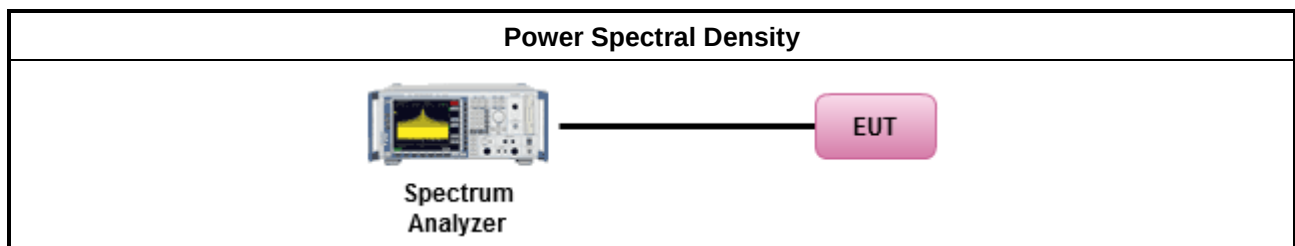
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method	
▪	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒	Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.
▪	For conducted measurement.
▪	If The EUT supports multiple transmit chains using options given below:
▪	Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level. Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.	

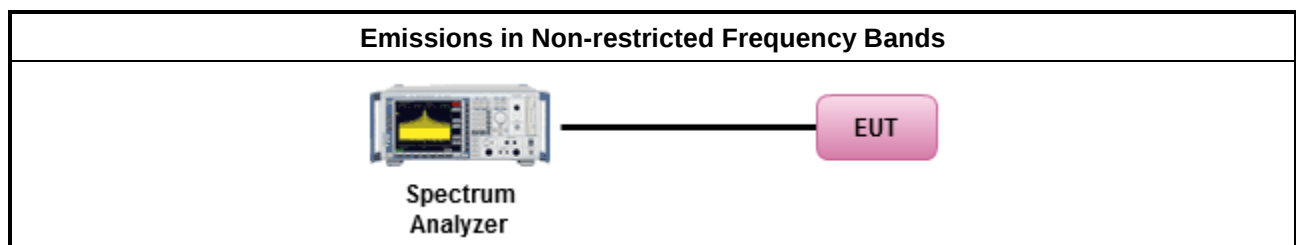
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method
Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

**3.6.3 Test Procedures**

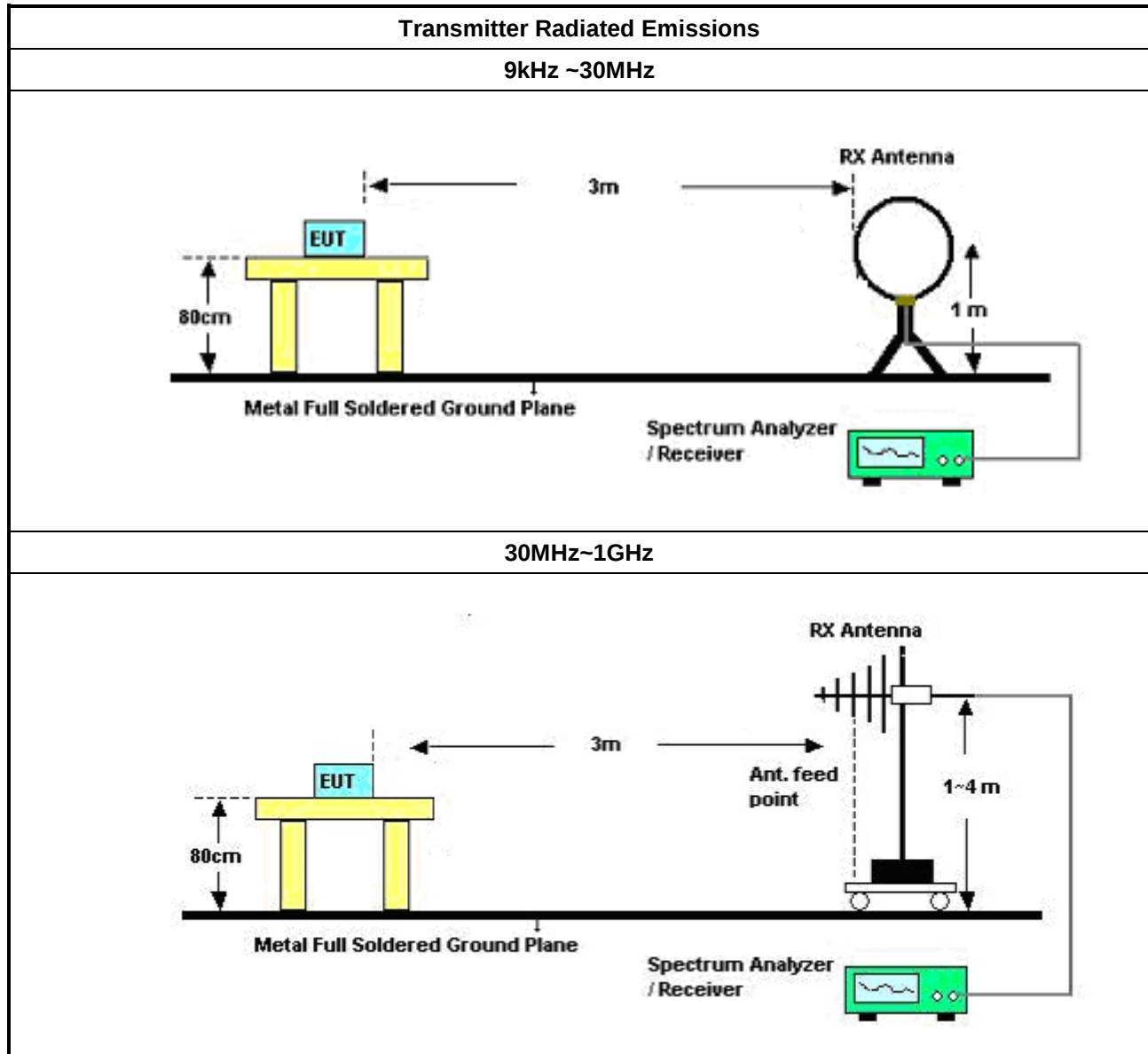
Test Method	
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
▪ Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
▪	Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
▪ For the transmitter band-edge emissions shall be measured using following options below:	
▪	Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
▪	Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
▪	Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).

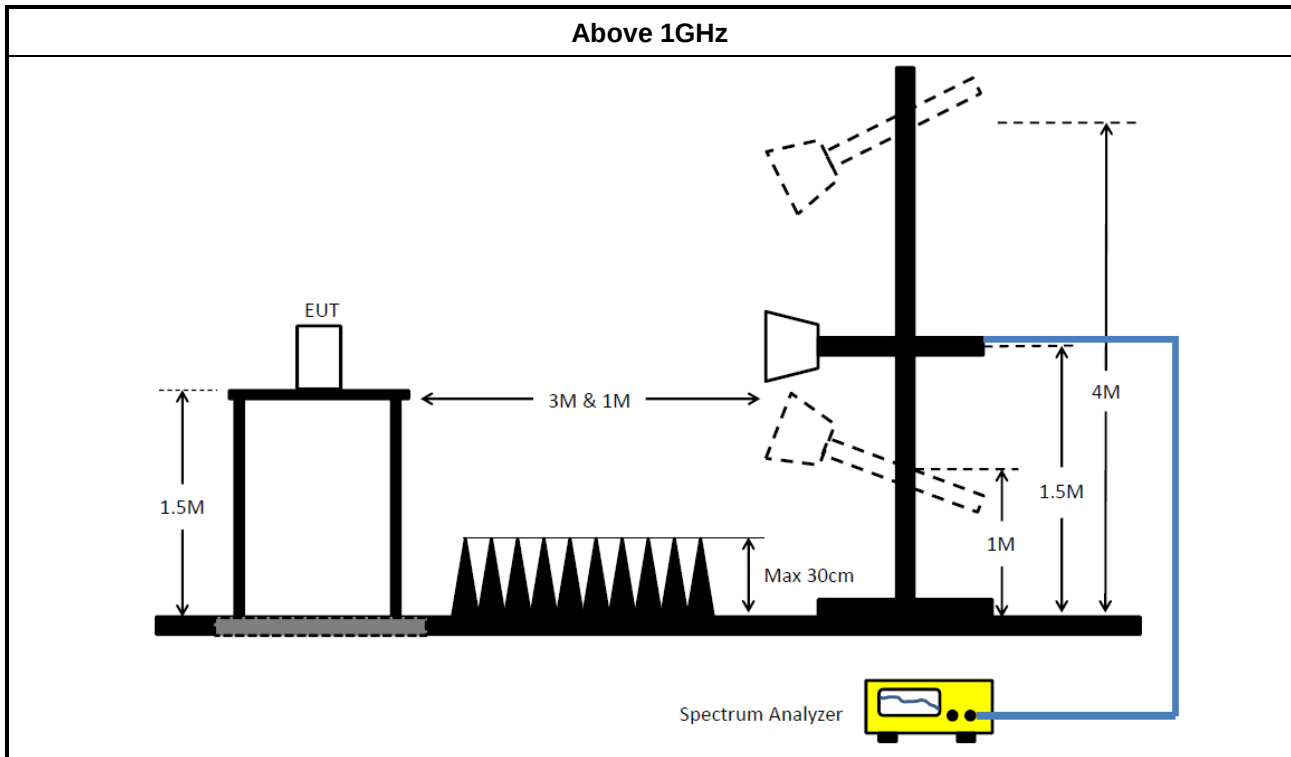
3.6.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

3.6.5 Test Setup





3.6.6 Transmitter Radiated Unwanted Emissions (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.6.7 Test Result of Transmitter Radiated Unwanted Emissions

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer / Brand Name	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR	102051	9kHz ~ 3.6GHz	16/May/2023	15/May/2024
LISN(Artificial Mains Network)	SCHWARZBEC K	NSLK 8127	8127477	9kHz ~ 30MHz	12/Apr/2024	11/Apr/2025
RF Cable 5m	TITAN	TITAN	CO04-cable-01	9 kHz~200MHz	27/Feb/2024	26/Feb/2025
Impuls Begrenzer Puls e Limiter	SCHWARZBEC K	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	18/Oct/2023	17/Oct/2024
SENSE-EMI	Sporton	V5.11.3	-	-	-	-

Instrument for Radiated Test

Instrument	Manufacturer / Brand Name	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz~1GHz 3m	29/Jul/2023	28/Jul/2024
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz~18GHz 3m	28/Jul/2023	27/Jul/2024
EMI Test Receiver	R&S	ESR	102318	9kHz~3.6GHz	27/Dec/2023	26/Dec/2024
Signal Analyzer	R&S	FSP 40	100593	9kHz~40GHz	11/Mar/2024	10/Mar/2025
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	19/Mar/2024	18/Mar/2025
Bilog Antenna & 6dB Attenuator	SCHAFFNER / EMCI	CBL6112B / N-6-05	22237 / AT-N-0603	30MHz~1GHz	15/Oct/2023	14/Oct/2024
Double Ridged Guide Horn Antenna	SCHWARZBEC K	BBHA 9120 D	02268	1GHz~18GHz	23/Sep/2023	22/Sep/2024
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	9kHz~30MHz	19/Dec/2023	18/Dec/2024
RF Cable	MVE	400LL+SN 200207	03CH02-cable-02	30MHz~1GHz	19/Dec/2023	18/Dec/2024
RF Cable-R03m	HUBER+SUHNER	SUCOFLEX 104	03CH02-cable-01	1GHz~40GHz	15/Feb/2024	14/Feb/2025
Amplifier	Agilent	8447D	2944A11149	100kHz~1.3GHz	27/Jun/2023	26/Jun/2024
Microwave Preamplifier	Agilent	8449B	3008A02373	1GHz~26.5GHz	24/Oct/2023	23/Oct/2024
SENSE-15247-FS	Sporton	V5.11.18	NA	NA	NA	NA

**Instrument for Conducted Test**

Instrument	Manufacturer / Brand Name	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101515	9kHz~40GHz	02/Feb/2024	01/Feb/2025
SMB100A Signal Generator	R&S	SMB100A	181147	100kHz~40GHz	20/Oct/2023	19/Oct/2024
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	15/Dec/2023	14/Dec/2024
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	15/Dec/2023	14/Dec/2024
SENSE-15247_ FS	Sporton	V5.11.18	N/A	N/A	N/A	N/A



Conducted Emissions at Powerline

Appendix A

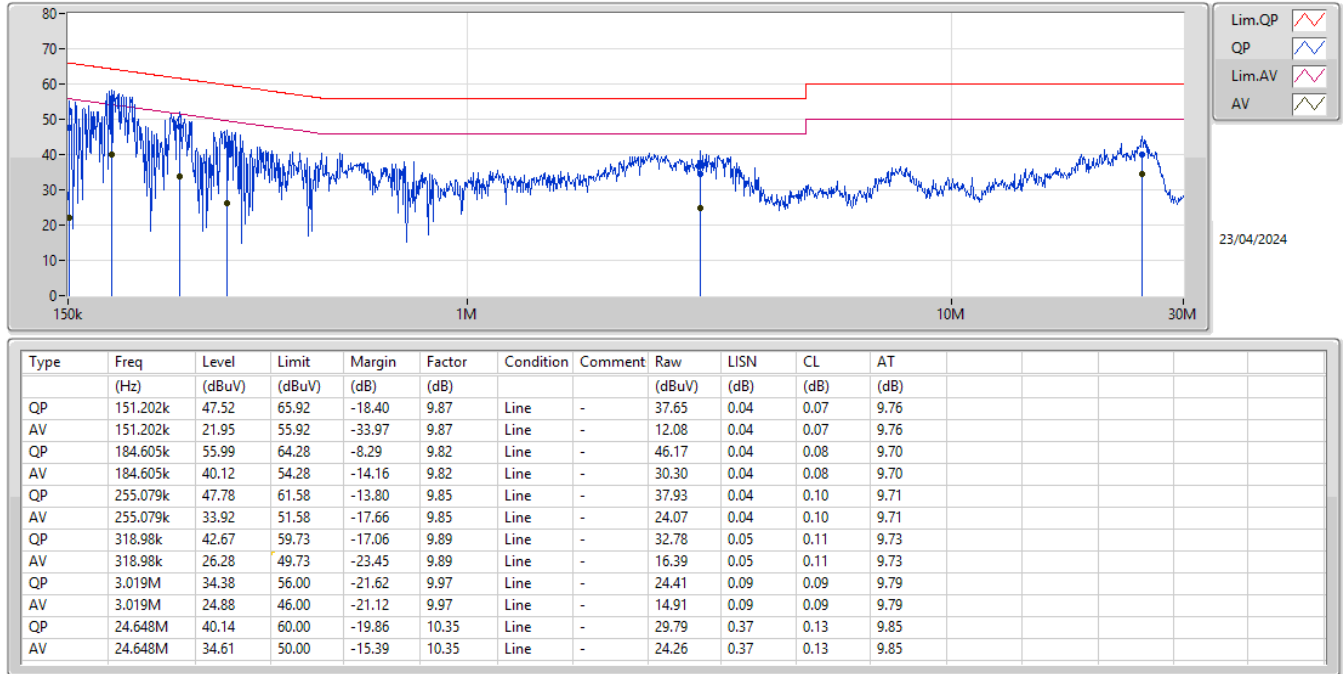
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	184.605k	55.99	64.28	-8.29	Line

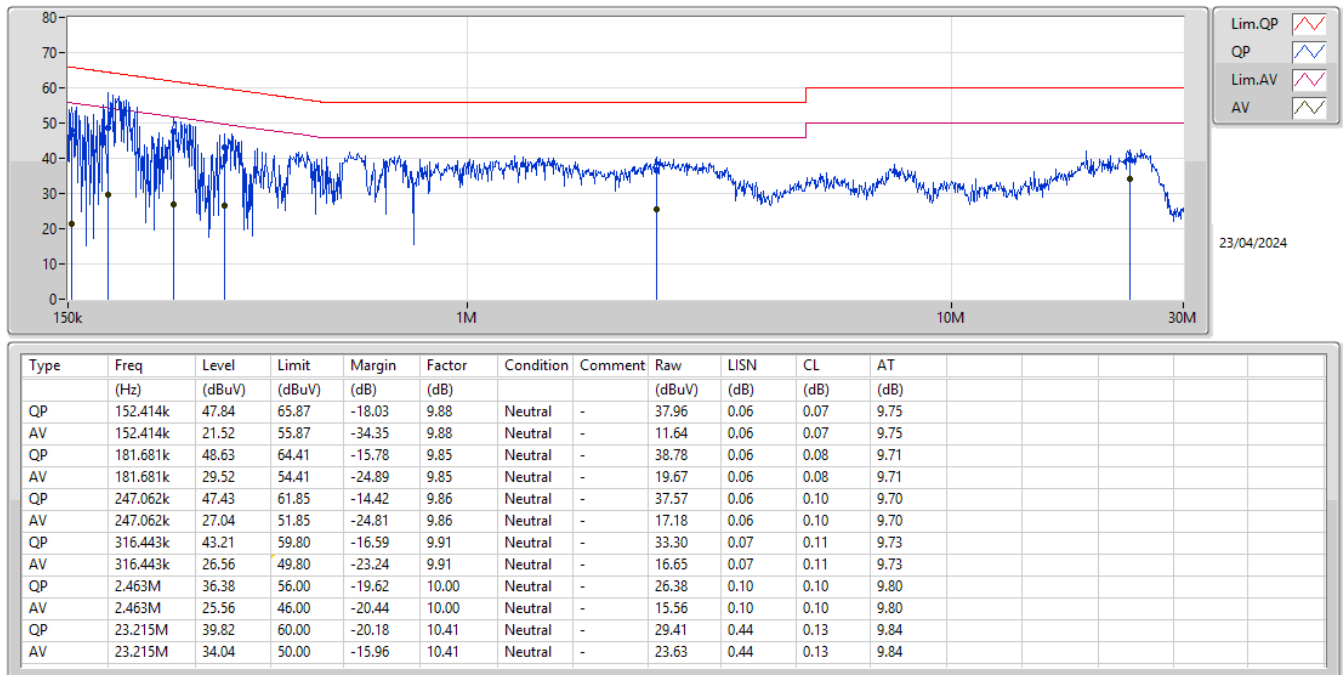
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	151.202k	47.52	65.92	-18.40	Line
Mode 1	Pass	AV	151.202k	21.95	55.92	-33.97	Line
Mode 1	Pass	QP	184.605k	55.99	64.28	-8.29	Line
Mode 1	Pass	AV	184.605k	40.12	54.28	-14.16	Line
Mode 1	Pass	QP	255.079k	47.78	61.58	-13.80	Line
Mode 1	Pass	AV	255.079k	33.92	51.58	-17.66	Line
Mode 1	Pass	QP	318.98k	42.67	59.73	-17.06	Line
Mode 1	Pass	AV	318.98k	26.28	49.73	-23.45	Line
Mode 1	Pass	QP	3.019M	34.38	56.00	-21.62	Line
Mode 1	Pass	AV	3.019M	24.88	46.00	-21.12	Line
Mode 1	Pass	QP	24.648M	40.14	60.00	-19.86	Line
Mode 1	Pass	AV	24.648M	34.61	50.00	-15.39	Line
Mode 1	Pass	QP	152.414k	47.84	65.87	-18.03	Neutral
Mode 1	Pass	AV	152.414k	21.52	55.87	-34.35	Neutral
Mode 1	Pass	QP	181.681k	48.63	64.41	-15.78	Neutral
Mode 1	Pass	AV	181.681k	29.52	54.41	-24.89	Neutral
Mode 1	Pass	QP	247.062k	47.43	61.85	-14.42	Neutral
Mode 1	Pass	AV	247.062k	27.04	51.85	-24.81	Neutral
Mode 1	Pass	QP	316.443k	43.21	59.80	-16.59	Neutral
Mode 1	Pass	AV	316.443k	26.56	49.80	-23.24	Neutral
Mode 1	Pass	QP	2.463M	36.38	56.00	-19.62	Neutral
Mode 1	Pass	AV	2.463M	25.56	46.00	-20.44	Neutral
Mode 1	Pass	QP	23.215M	39.82	60.00	-20.18	Neutral
Mode 1	Pass	AV	23.215M	34.04	50.00	-15.96	Neutral

Conducted Emissions at Powerline_Mode 1



Conducted Emissions at Powerline_Mode 1



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
902-928MHz	-	-	-	-	-
Halow_1M	850k	1.602M	1M60D1D	821.25k	1.524M
Halow_2M	1.71M	3.214M	3M21D1D	1.653M	3.108M
Halow_4M	3.575M	6.662M	6M66D1D	3.48M	4.061M
Halow_8M	7.45M	13.122M	13M1D1D	7.19M	8.655M

Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
Halow_1M	-	-	-	-
903.5MHz	Pass	500k	821.25k	1.554M
914.5MHz	Pass	500k	850k	1.602M
926.5MHz	Pass	500k	841.25k	1.524M
Halow_2M	-	-	-	-
905MHz	Pass	500k	1.71M	3.108M
915MHz	Pass	500k	1.69M	3.214M
925MHz	Pass	500k	1.653M	3.126M
Halow_4M	-	-	-	-
906MHz	Pass	500k	3.545M	6.662M
914MHz	Pass	500k	3.575M	6.657M
926MHz	Pass	500k	3.48M	4.061M
Halow_8M	-	-	-	-
908MHz	Pass	500k	7.43M	10.345M
916MHz	Pass	500k	7.45M	13.122M
924MHz	Pass	500k	7.19M	8.655M

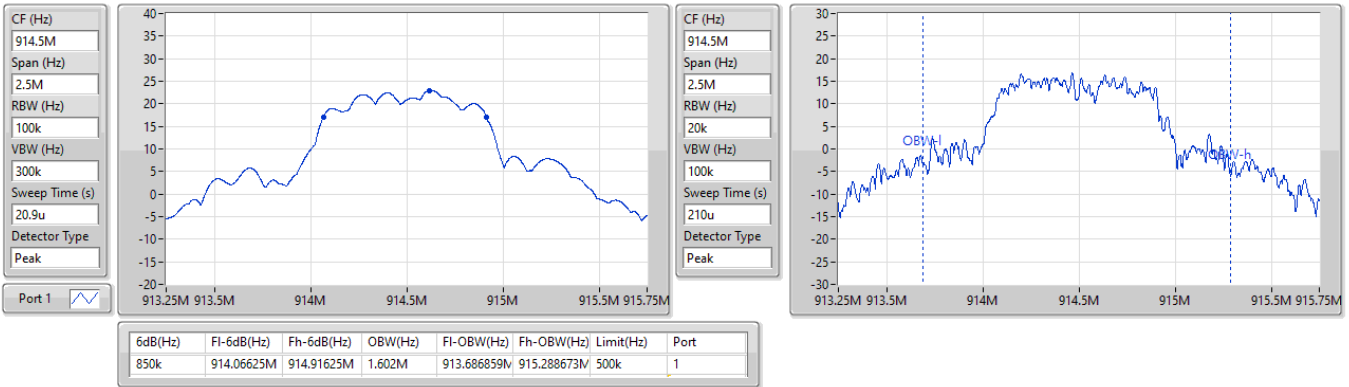
Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

902-928MHz_Halow_1M

EBW-DTS

914.5MHz

08/04/2024

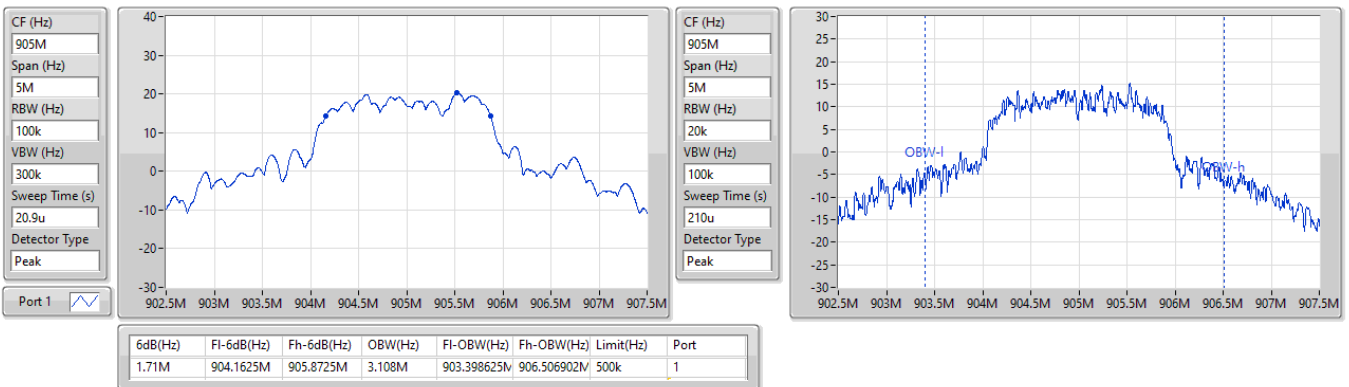


902-928MHz_Halow_2M

EBW-DTS

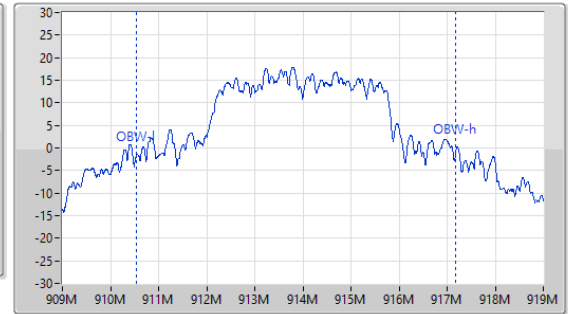
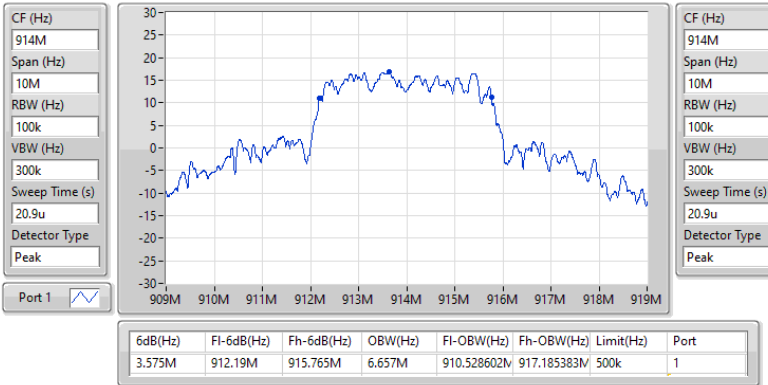
905MHz

08/04/2024

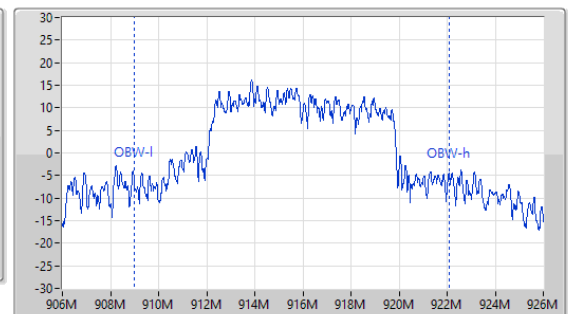
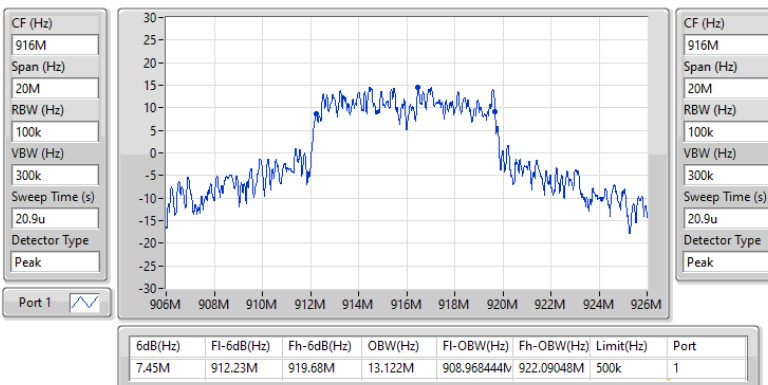


902-928MHz_Halow_4M
EBW-DTS
914MHz

08/04/2024


902-928MHz_Halow_8M
EBW-DTS
916MHz

08/04/2024





Summary

Mode	Total Power (dBm)	Total Power (W)
902-928MHz	-	-
Halow_1M	26.95	0.49545
Halow_2M	26.96	0.49659
Halow_4M	26.84	0.48306
Halow_8M	26.97	0.49774



Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
Halow_1M	-	-	-	-
903.5MHz	Pass	2.00	26.54	30.00
914.5MHz	Pass	2.00	26.76	30.00
926.5MHz	Pass	2.00	26.95	30.00
Halow_2M	-	-	-	-
905MHz	Pass	2.00	26.59	30.00
915MHz	Pass	2.00	26.79	30.00
925MHz	Pass	2.00	26.96	30.00
Halow_4M	-	-	-	-
906MHz	Pass	2.00	26.67	30.00
914MHz	Pass	2.00	26.83	30.00
926MHz	Pass	2.00	26.84	30.00
Halow_8M	-	-	-	-
908MHz	Pass	2.00	26.71	30.00
916MHz	Pass	2.00	26.97	30.00
924MHz	Pass	2.00	26.93	30.00

DG = Directional Gain; Port X = Port X output power



Summary

Mode	Total Power (dBm)	Total Power (W)
902-928MHz	-	-
Halow_1M	26.04	0.40179
Halow_2M	26.16	0.41305
Halow_4M	25.83	0.38282
Halow_8M	25.90	0.38905



Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)
Halow_1M	-	-	-	-
903.5MHz	Pass	2.00	25.75	30.00
914.5MHz	Pass	2.00	26.00	30.00
926.5MHz	Pass	2.00	26.04	30.00
Halow_2M	-	-	-	-
905MHz	Pass	2.00	25.76	30.00
915MHz	Pass	2.00	25.97	30.00
925MHz	Pass	2.00	26.16	30.00
Halow_4M	-	-	-	-
906MHz	Pass	2.00	25.66	30.00
914MHz	Pass	2.00	25.83	30.00
926MHz	Pass	2.00	23.20	30.00
Halow_8M	-	-	-	-
908MHz	Pass	2.00	24.64	30.00
916MHz	Pass	2.00	25.90	30.00
924MHz	Pass	2.00	24.00	30.00

DG = Directional Gain; Port X = Port X output power



Summary

Mode	PD (dBm/RBW)
902-928MHz	-
Halow_1M	6.10
Halow_2M	2.88
Halow_4M	7.12
Halow_8M	3.66

RBW = 3kHz;

Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
Halow_1M	-	-	-	-
903.5MHz	Pass	2.00	5.92	8.00
914.5MHz	Pass	2.00	6.10	8.00
926.5MHz	Pass	2.00	6.05	8.00
Halow_2M	-	-	-	-
905MHz	Pass	2.00	2.43	8.00
915MHz	Pass	2.00	2.78	8.00
925MHz	Pass	2.00	2.88	8.00
Halow_4M	-	-	-	-
906MHz	Pass	2.00	6.91	8.00
914MHz	Pass	2.00	7.12	8.00
926MHz	Pass	2.00	2.58	8.00
Halow_8M	-	-	-	-
908MHz	Pass	2.00	3.66	8.00
916MHz	Pass	2.00	2.33	8.00
924MHz	Pass	2.00	1.39	8.00

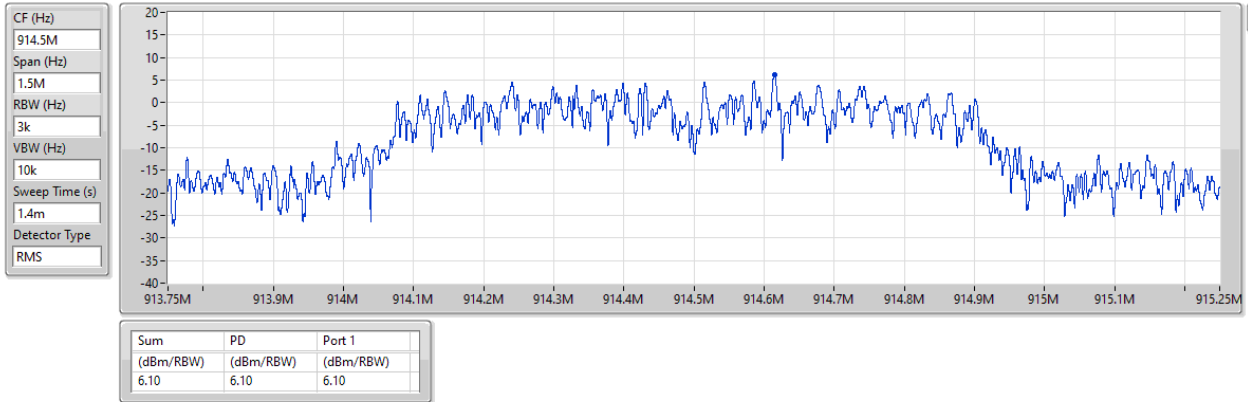
DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

902-928MHz_Halow_1M

PSD

914.5MHz

08/04/2024

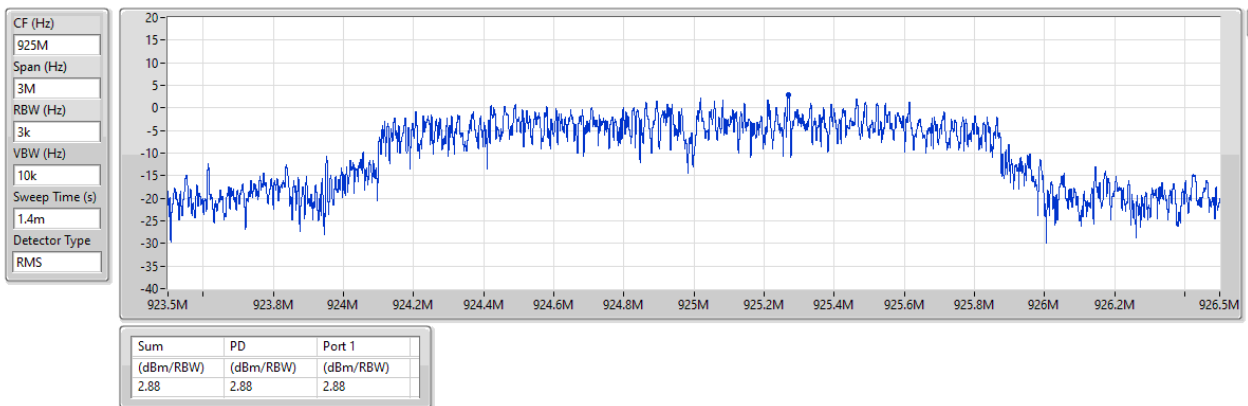


902-928MHz_Halow_2M

PSD

925MHz

08/04/2024

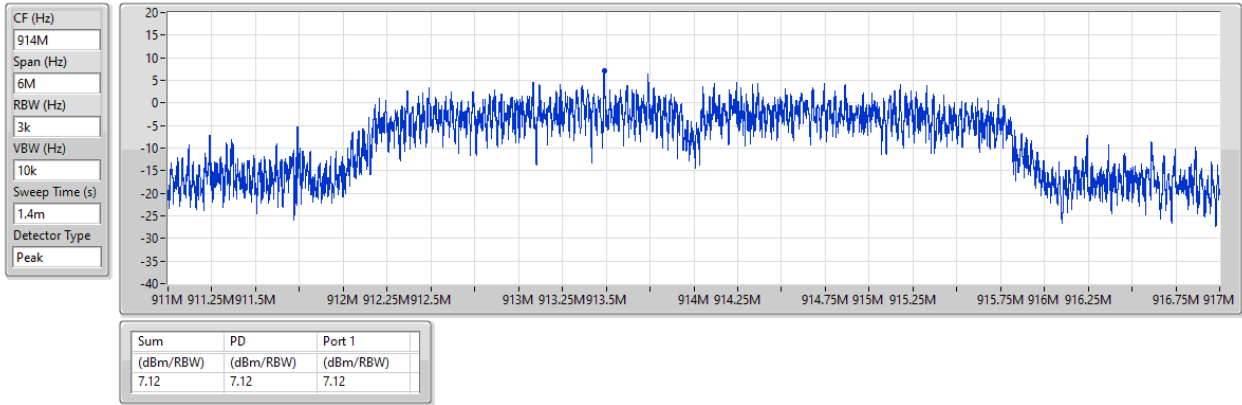


902-928MHz_Halow_4M

PSD

914MHz

08/04/2024

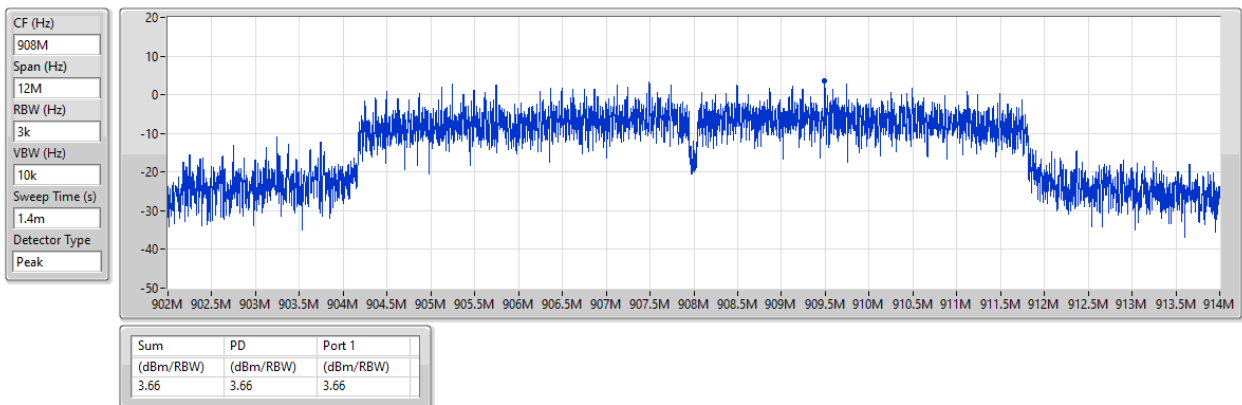


902-928MHz_Halow_8M

PSD

908MHz

31/05/2024



Summary

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
902-928MHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halow_1M	Pass	926.23M	25.57	5.57	450.89M	-44.92	902M	-6.05	902M	-4.02	929.64M	-46.92	1.80568G	-47.36	1
Halow_2M	Pass	925.19M	23.54	3.54	452.17M	-46.02	902M	-7.08	902M	-9.72	928.2M	-46.90	7.00379G	-48.72	1
Halow_4M	Pass	913.34M	20.57	0.57	446.2M	-45.25	901M	-0.65	902M	0.14	928.72M	-40.48	6.92006G	-48.15	1
Halow_8M	Pass	914.01M	18.17	-1.83	451.74M	-41.42	901.88M	-2.90	902M	-3.40	929.16M	-31.41	6.42107G	-48.37	1

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
Halow_1M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
903.5MHz	Pass	926.23M	25.57	5.57	450.89M	-44.92	902M	-6.05	902M	-4.02	929.64M	-46.92	1.80568G	-47.36	1
914.5MHz	Pass	926.23M	25.57	5.57	450.04M	-45.58	900.72M	-42.17	928M	-41.76	928.4M	-41.78	6.9144G	-47.87	1
926.5MHz	Pass	926.23M	25.57	5.57	447.91M	-47.25	894.8M	-44.68	928M	-9.16	928.28M	-7.43	6.98908G	-48.00	1
Halow_2M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
905MHz	Pass	925.19M	23.54	3.54	452.17M	-46.02	902M	-7.08	902M	-9.72	928.2M	-46.90	7.00379G	-48.72	1
915MHz	Pass	925.19M	23.54	3.54	447.91M	-45.38	900.84M	-40.90	928M	-41.14	928.2M	-39.42	7.21198G	-48.36	1
925MHz	Pass	925.19M	23.54	3.54	453.87M	-46.88	896.2M	-45.00	928M	-8.07	928.28M	-9.43	6.49461G	-48.78	1
Halow_4M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
906MHz	Pass	913.34M	20.57	0.57	446.2M	-45.25	901M	-0.65	902M	0.14	928.72M	-40.48	6.92006G	-48.15	1
914MHz	Pass	913.34M	20.57	0.57	454.72M	-44.54	899.8M	-28.53	928M	-29.40	928.76M	-29.13	6.997G	-47.12	1
926MHz	Pass	913.34M	20.57	0.57	447.91M	-41.41	899.64M	-43.33	928M	-0.24	928.6M	-2.37	6.47085G	-48.43	1
Halow_8M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
908MHz	Pass	914.01M	18.17	-1.83	451.74M	-41.42	901.88M	-2.90	902M	-3.40	929.16M	-31.41	6.42107G	-48.37	1
916MHz	Pass	914.01M	18.17	-1.83	880.3M	-44.40	901.4M	-16.93	928M	-14.33	928M	-16.28	949.13M	-46.13	1
924MHz	Pass	914.01M	18.17	-1.83	458.56M	-42.30	899.84M	-37.63	928M	-3.33	928.32M	-2.95	948M	-47.72	1

902-928MHz_Halow_1M

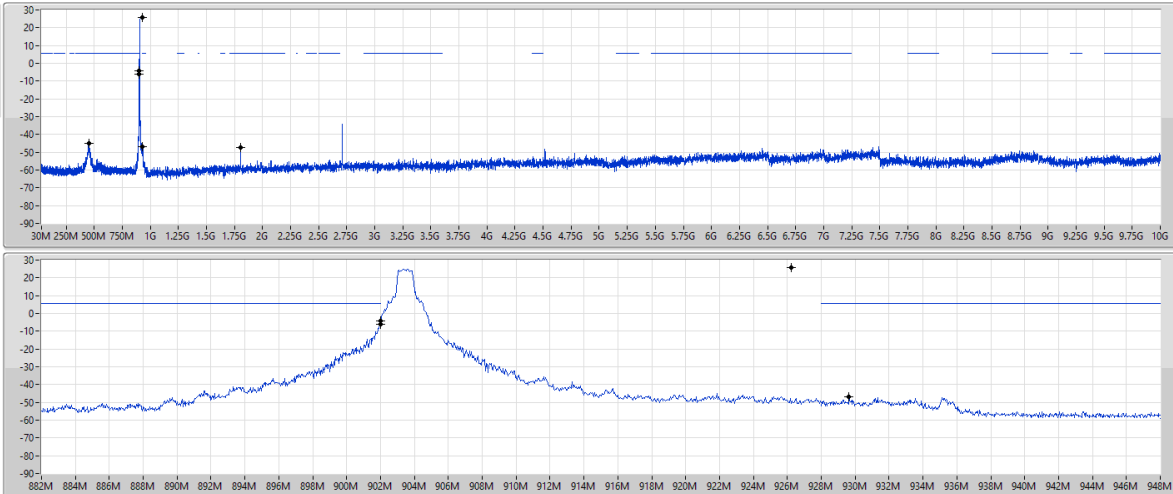
CSNdB-DTS

903.5MHz

31/05/2024

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
926.23M	25.57	5.57	450.89M	-44.92	902M	-6.05	902M	-4.02	929.64M	-46.92	1.80568G	-47.36	1

902-928MHz_Halow_2M

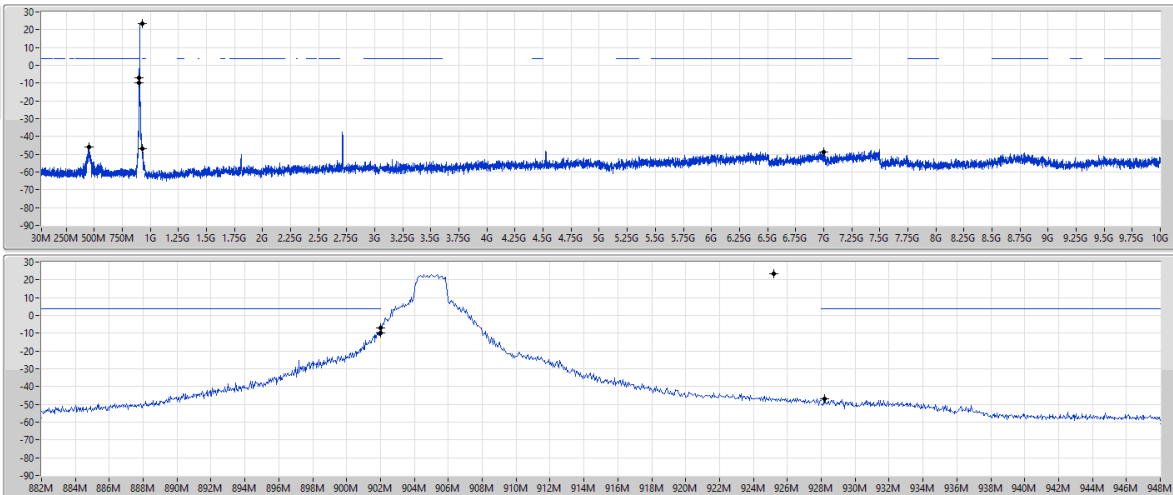
CSNdB-DTS

905MHz

31/05/2024

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
925.19M	23.54	3.54	452.17M	-46.02	902M	-7.08	902M	-9.72	928.2M	-46.90	7.00379G	-48.72	1

902-928MHz_Halow_4M

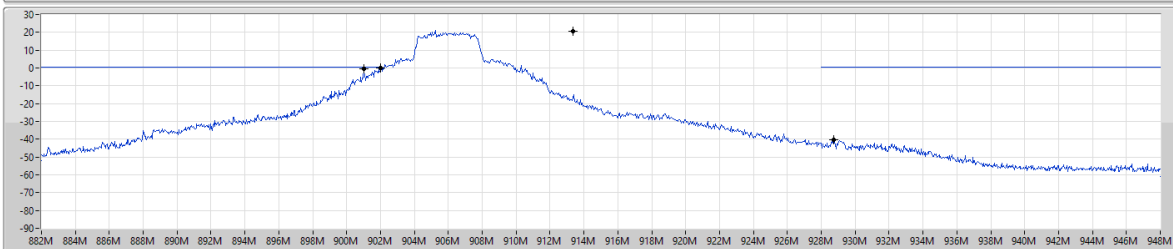
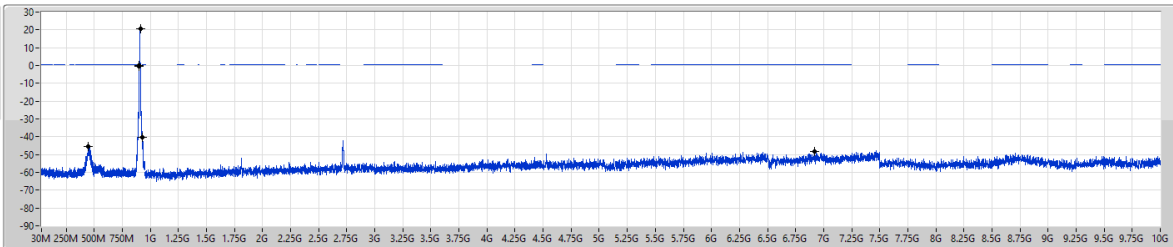
CSEndB-DTS

906MHz

31/05/2024

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
913.34M	20.57	0.57	446.2M	-45.25	901M	-0.65	902M	0.14	928.72M	-40.48	6.92006G	-48.15	1

902-928MHz_Halow_8M

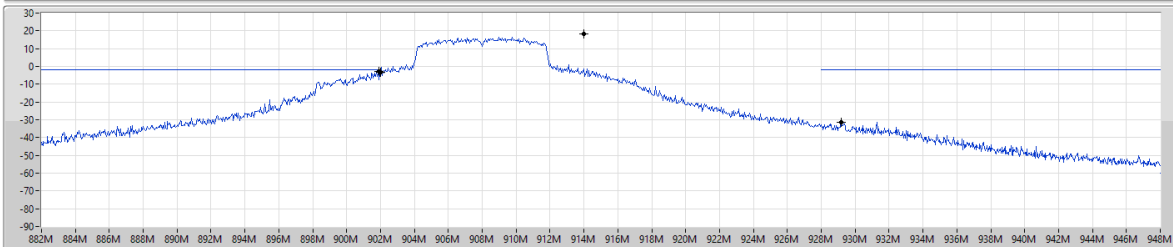
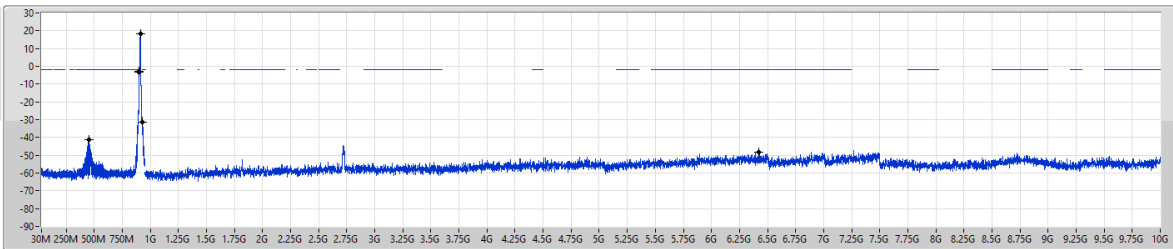
CSEndB-DTS

908MHz

31/05/2024

RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
914.01M	18.17	-1.83	451.74M	-41.42	901.88M	-2.90	902M	-3.40	929.16M	-31.41	6.42107G	-48.37	1



Summary

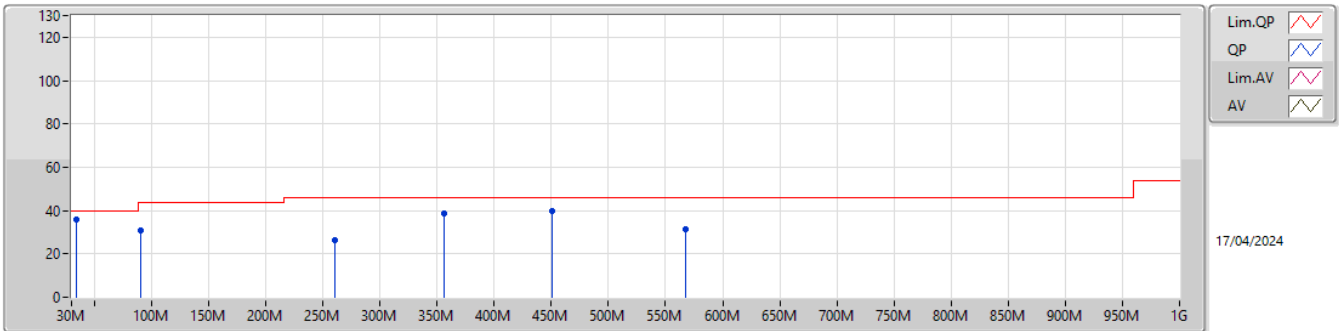
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
902-928MHz	-	-	-	-	-	-	-	-	-	-
Halow_8MHz_Nss1_1TX	Pass	PK	33.88M	35.68	40.00	-4.32	3	Vertical	0	3.00

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Halow_8MHz_Nss1_1TX	-	-	-	-	-	-	-	-	-	-
924MHz	Pass	PK	33.88M	35.68	40.00	-4.32	3	Vertical	0	3.00
924MHz	Pass	PK	90.14M	31.04	43.50	-12.46	3	Vertical	0	3.00
924MHz	Pass	PK	260.86M	26.59	46.00	-19.41	3	Vertical	0	3.00
924MHz	Pass	PK	355.92M	38.47	46.00	-7.53	3	Vertical	0	3.00
924MHz	Pass	PK	450.98M	39.96	46.00	-6.04	3	Vertical	0	3.00
924MHz	Pass	PK	567.38M	31.34	46.00	-14.66	3	Vertical	0	3.00
924MHz	Pass	PK	187.14M	28.81	43.50	-14.69	3	Horizontal	360	3.00
924MHz	Pass	PK	291.9M	28.49	46.00	-17.51	3	Horizontal	360	3.00
924MHz	Pass	PK	567.38M	38.88	46.00	-7.12	3	Horizontal	360	3.00
924MHz	Pass	QP	453.6M	40.94	46.00	-5.06	3	Horizontal	360	2.25
924MHz	Pass	QP	356.48M	39.50	46.00	-6.50	3	Horizontal	11	1.00
924MHz	Pass	QP	42.13M	28.93	40.00	-11.07	3	Horizontal	164	2.41

902-928MHz_Halow_8MHz

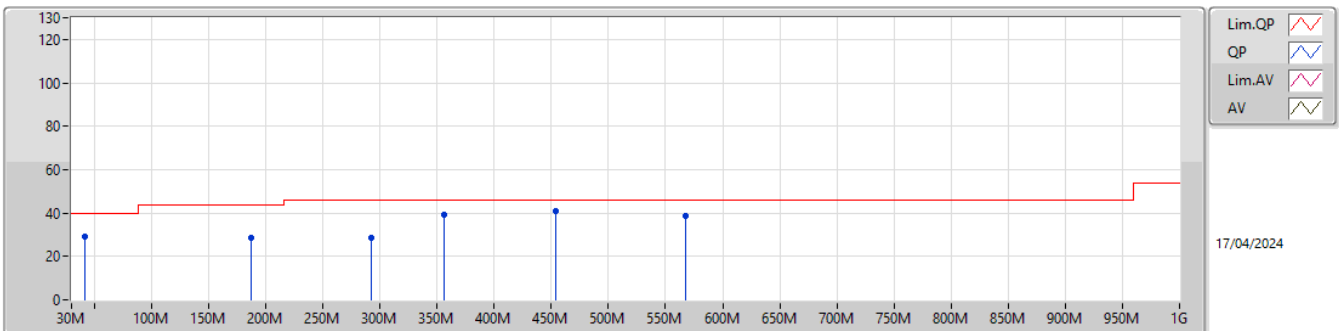
924MHz_Test Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	33.88M	35.68	40.00	-4.32	-4.30	3	Vertical	0	3.00	39.98	21.50	1.28	27.08
PK	90.14M	31.04	43.50	-12.46	-11.60	3	Vertical	0	3.00	42.64	14.35	1.88	27.83
PK	260.86M	26.59	46.00	-19.41	-5.31	3	Vertical	0	3.00	31.90	18.60	3.32	27.23
PK	355.92M	38.47	46.00	-7.53	-4.01	3	Vertical	0	3.00	42.48	19.72	3.90	27.63
PK	450.98M	39.96	46.00	-6.04	-1.44	3	Vertical	0	3.00	41.40	22.29	4.60	28.33
PK	567.38M	31.34	46.00	-14.66	0.84	3	Vertical	0	3.00	30.50	24.11	5.36	28.63

902-928MHz_Halow_8MHz

924MHz_Test Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	187.14M	28.81	43.50	-14.69	-10.48	3	Horizontal	360	3.00	39.29	14.29	2.76	27.53
PK	291.9M	28.49	46.00	-17.51	-5.53	3	Horizontal	360	3.00	34.02	18.15	3.59	27.27
PK	567.38M	38.88	46.00	-7.12	0.84	3	Horizontal	360	3.00	38.04	24.11	5.36	28.63
QP	453.6M	40.94	46.00	-5.06	-1.36	3	Horizontal	360	2.25	42.30	22.37	4.61	28.34
QP	356.48M	39.50	46.00	-6.50	-3.98	3	Horizontal	11	1.00	43.48	19.74	3.91	27.63
QP	42.13M	28.93	40.00	-11.07	-8.33	3	Horizontal	164	2.41	37.26	16.94	1.41	26.68



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
902-928MHz	-	-	-	-	-	-	-	-	-	-
Halow_1MHz_Nss1_1TX	Pass	AV	2.77946G	50.14	54.00	-3.86	3	Vertical	277	3.00
Halow_2MHz_Nss1_1TX	Pass	AV	8.32486G	47.25	54.00	-6.75	3	Vertical	269	3.00
Halow_4MHz_Nss1_1TX	Pass	AV	8.33322G	53.50	54.00	-0.50	3	Vertical	89	2.60
Halow_8MHz_Nss1_1TX	Pass	AV	2.74533G	46.29	54.00	-7.71	3	Horizontal	49	1.09

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
Halow_1MHz_Nss1_1TX	-	-	-	-	-	-	-	-	-	-
903.5MHz	Pass	AV	2.71048G	35.14	54.00	-18.86	3	Vertical	216	1.36
903.5MHz	Pass	AV	8.13131G	44.31	54.00	-9.69	3	Vertical	81	2.69
903.5MHz	Pass	AV	9.03488G	45.09	54.00	-8.91	3	Vertical	75	3.00
903.5MHz	Pass	PK	2.71046G	44.27	74.00	-29.73	3	Vertical	216	1.36
903.5MHz	Pass	PK	8.13147G	58.46	74.00	-15.54	3	Vertical	81	2.69
903.5MHz	Pass	PK	9.03482G	57.93	74.00	-16.07	3	Vertical	75	3.00
903.5MHz	Pass	AV	2.71031G	39.62	54.00	-14.38	3	Horizontal	131	1.48
903.5MHz	Pass	AV	8.13104G	37.70	54.00	-16.30	3	Horizontal	5	2.70
903.5MHz	Pass	AV	9.085G	35.95	54.00	-18.05	3	Horizontal	118	1.50
903.5MHz	Pass	PK	2.71054G	49.36	74.00	-24.64	3	Horizontal	131	1.48
903.5MHz	Pass	PK	8.13104G	49.90	74.00	-24.10	3	Horizontal	5	2.70
903.5MHz	Pass	PK	9.08424G	49.14	74.00	-24.86	3	Horizontal	118	1.50
914.5MHz	Pass	AV	2.74339G	48.59	54.00	-5.41	3	Vertical	232	2.04
914.5MHz	Pass	AV	8.23024G	48.52	54.00	-5.48	3	Vertical	278	2.94
914.5MHz	Pass	AV	9.145G	43.66	54.00	-10.34	3	Vertical	100	1.10
914.5MHz	Pass	PK	2.74407G	55.94	74.00	-18.06	3	Vertical	232	2.04
914.5MHz	Pass	PK	8.23032G	62.19	74.00	-11.81	3	Vertical	278	2.94
914.5MHz	Pass	PK	9.14464G	56.85	74.00	-17.15	3	Vertical	100	1.10
914.5MHz	Pass	AV	2.74344G	34.18	54.00	-19.82	3	Horizontal	286	2.92
914.5MHz	Pass	AV	8.23018G	37.84	54.00	-16.16	3	Horizontal	8	3.00
914.5MHz	Pass	AV	9.1444G	38.11	54.00	-15.89	3	Horizontal	333	1.05
914.5MHz	Pass	PK	2.74404G	43.17	74.00	-30.83	3	Horizontal	286	2.92
914.5MHz	Pass	PK	8.2304G	51.19	74.00	-22.81	3	Horizontal	8	3.00
914.5MHz	Pass	PK	9.14429G	50.72	74.00	-23.28	3	Horizontal	333	1.05
926.5MHz	Pass	AV	2.77946G	50.14	54.00	-3.86	3	Vertical	277	3.00
926.5MHz	Pass	AV	8.33824G	46.54	54.00	-7.46	3	Vertical	283	3.00
926.5MHz	Pass	PK	2.7795G	53.54	74.00	-20.46	3	Vertical	277	3.00
926.5MHz	Pass	PK	8.33842G	58.44	74.00	-15.56	3	Vertical	283	3.00
926.5MHz	Pass	AV	2.77938G	34.83	54.00	-19.17	3	Horizontal	309	1.28
926.5MHz	Pass	AV	8.25686G	33.73	54.00	-20.27	3	Horizontal	135	2.04
926.5MHz	Pass	PK	2.77954G	44.37	74.00	-29.63	3	Horizontal	309	1.28
926.5MHz	Pass	PK	8.25388G	46.79	74.00	-27.21	3	Horizontal	135	2.04
Halow_2MHz_Nss1_1TX	-	-	-	-	-	-	-	-	-	-
905MHz	Pass	AV	2.71544G	33.16	54.00	-20.84	3	Vertical	233	1.50
905MHz	Pass	AV	8.14504G	43.28	54.00	-10.72	3	Vertical	79	3.00
905MHz	Pass	AV	9.05028G	42.48	54.00	-11.52	3	Vertical	79	2.88
905MHz	Pass	PK	2.71512G	43.30	74.00	-30.70	3	Vertical	233	1.50
905MHz	Pass	PK	8.14492G	57.12	74.00	-16.88	3	Vertical	79	3.00
905MHz	Pass	PK	9.0498G	55.64	74.00	-18.36	3	Vertical	79	2.88
905MHz	Pass	AV	2.715G	40.19	54.00	-13.81	3	Horizontal	44	1.11
905MHz	Pass	AV	8.1448G	37.69	54.00	-16.31	3	Horizontal	5	2.98
905MHz	Pass	AV	9.38554G	36.57	54.00	-17.43	3	Horizontal	310	2.38
905MHz	Pass	PK	2.71492G	48.55	74.00	-25.45	3	Horizontal	44	1.11
905MHz	Pass	PK	8.14464G	50.84	74.00	-23.16	3	Horizontal	5	2.98
905MHz	Pass	PK	9.38936G	48.83	74.00	-25.17	3	Horizontal	310	2.38
915MHz	Pass	AV	2.74473G	37.17	54.00	-16.83	3	Vertical	99	2.92
915MHz	Pass	AV	8.23533G	47.04	54.00	-6.96	3	Vertical	269	2.95
915MHz	Pass	AV	9.14986G	42.51	54.00	-11.49	3	Vertical	85	3.00
915MHz	Pass	PK	2.74478G	46.26	74.00	-27.74	3	Vertical	99	2.92
915MHz	Pass	PK	8.23479G	61.05	74.00	-12.95	3	Vertical	269	2.95
915MHz	Pass	PK	9.14974G	55.47	74.00	-18.53	3	Vertical	85	3.00
915MHz	Pass	AV	2.74494G	38.15	54.00	-15.85	3	Horizontal	42	1.09
915MHz	Pass	AV	8.23453G	37.61	54.00	-16.39	3	Horizontal	63	1.00
915MHz	Pass	AV	9.14848G	36.71	54.00	-17.29	3	Horizontal	79	2.73
915MHz	Pass	PK	2.74494G	47.41	74.00	-26.59	3	Horizontal	42	1.09
915MHz	Pass	PK	8.23491G	50.94	74.00	-23.06	3	Horizontal	63	1.00
915MHz	Pass	PK	9.15744G	48.93	74.00	-25.07	3	Horizontal	79	2.73
925MHz	Pass	AV	2.77512G	37.50	54.00	-16.50	3	Vertical	96	2.84
925MHz	Pass	AV	8.32486G	47.25	54.00	-6.75	3	Vertical	269	3.00
925MHz	Pass	PK	2.77506G	46.59	74.00	-27.41	3	Vertical	96	2.84

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
925MHz	Pass	PK	8.3247G	61.33	74.00	-12.67	3	Vertical	269	3.00
925MHz	Pass	AV	2.77493G	40.70	54.00	-13.30	3	Horizontal	36	1.21
925MHz	Pass	AV	8.32501G	37.48	54.00	-16.52	3	Horizontal	330	2.97
925MHz	Pass	PK	2.77489G	49.46	74.00	-24.54	3	Horizontal	36	1.21
925MHz	Pass	PK	8.3247G	51.02	74.00	-22.98	3	Horizontal	330	2.97
Halow_4MHz_Nss1_1TX	-	-	-	-	-	-	-	-	-	-
906MHz	Pass	AV	2.71856G	40.50	54.00	-13.50	3	Vertical	92	3.00
906MHz	Pass	AV	8.1547G	45.23	54.00	-8.77	3	Vertical	82	2.95
906MHz	Pass	AV	9.05982G	42.31	54.00	-11.69	3	Vertical	62	2.98
906MHz	Pass	PK	2.71784G	49.06	74.00	-24.94	3	Vertical	92	3.00
906MHz	Pass	PK	8.15394G	57.91	74.00	-16.09	3	Vertical	82	2.95
906MHz	Pass	PK	9.05892G	54.06	74.00	-19.94	3	Vertical	62	2.98
906MHz	Pass	AV	2.71858G	30.37	54.00	-23.63	3	Horizontal	359	1.50
906MHz	Pass	AV	8.1548G	37.99	54.00	-16.01	3	Horizontal	8	2.55
906MHz	Pass	AV	9.06008G	37.34	54.00	-16.66	3	Horizontal	87	1.02
906MHz	Pass	PK	2.71805G	40.89	74.00	-33.11	3	Horizontal	359	1.50
906MHz	Pass	PK	8.15516G	48.67	74.00	-25.33	3	Horizontal	8	2.55
906MHz	Pass	PK	9.0534G	49.48	74.00	-24.52	3	Horizontal	87	1.02
914MHz	Pass	AV	2.7419G	28.52	54.00	-25.48	3	Vertical	338	2.73
914MHz	Pass	AV	8.22724G	47.49	54.00	-6.51	3	Vertical	283	2.62
914MHz	Pass	AV	9.13992G	44.25	54.00	-9.75	3	Vertical	87	3.00
914MHz	Pass	PK	2.74424G	38.96	74.00	-35.04	3	Vertical	338	2.73
914MHz	Pass	PK	8.22604G	60.62	74.00	-13.38	3	Vertical	283	2.62
914MHz	Pass	PK	9.13998G	56.22	74.00	-17.78	3	Vertical	87	3.00
914MHz	Pass	AV	2.74132G	29.91	54.00	-24.09	3	Horizontal	263	2.98
914MHz	Pass	AV	8.22668G	38.66	54.00	-15.34	3	Horizontal	302	1.14
914MHz	Pass	AV	9.1397G	37.68	54.00	-16.32	3	Horizontal	15	2.36
914MHz	Pass	PK	2.74086G	40.22	74.00	-33.78	3	Horizontal	263	2.98
914MHz	Pass	PK	8.22682G	49.71	74.00	-24.29	3	Horizontal	302	1.14
914MHz	Pass	PK	9.13812G	48.88	74.00	-25.12	3	Horizontal	15	2.36
926MHz	Pass	AV	1.4926G	39.28	54.00	-14.72	3	Vertical	281	2.19
926MHz	Pass	AV	2.77746G	28.92	54.00	-25.08	3	Vertical	146	1.76
926MHz	Pass	AV	8.33322G	53.50	54.00	-0.50	3	Vertical	89	2.60
926MHz	Pass	PK	1.4926G	67.73	74.00	-6.27	3	Vertical	281	2.19
926MHz	Pass	PK	2.7777G	39.08	74.00	-34.92	3	Vertical	146	1.76
926MHz	Pass	PK	8.33382G	63.83	74.00	-10.17	3	Vertical	89	2.60
926MHz	Pass	AV	1.4951G	43.95	54.00	-10.05	3	Horizontal	13	1.50
926MHz	Pass	AV	2.77734G	36.03	54.00	-17.97	3	Horizontal	47	1.64
926MHz	Pass	AV	8.33322G	46.99	54.00	-7.01	3	Horizontal	293	2.56
926MHz	Pass	PK	1.495G	72.98	74.00	-1.02	3	Horizontal	13	1.50
926MHz	Pass	PK	2.778G	45.47	74.00	-28.53	3	Horizontal	47	1.64
926MHz	Pass	PK	8.33412G	58.27	74.00	-15.73	3	Horizontal	293	2.56
Halow_8MHz_Nss1_1TX	-	-	-	-	-	-	-	-	-	-
908MHz	Pass	AV	2.72612G	27.74	54.00	-26.26	3	Vertical	325	2.95
908MHz	Pass	AV	8.17099G	36.42	54.00	-17.58	3	Vertical	216	1.47
908MHz	Pass	AV	9.08422G	37.75	54.00	-16.25	3	Vertical	267	2.49
908MHz	Pass	PK	2.72531G	40.87	74.00	-33.13	3	Vertical	325	2.95
908MHz	Pass	PK	8.16957G	47.73	74.00	-26.27	3	Vertical	216	1.47
908MHz	Pass	PK	9.0833G	50.79	74.00	-23.21	3	Vertical	267	2.49
908MHz	Pass	AV	2.72427G	44.83	54.00	-9.17	3	Horizontal	31	1.50
908MHz	Pass	AV	8.17231G	35.12	54.00	-18.88	3	Horizontal	314	2.45
908MHz	Pass	AV	9.08159G	37.65	54.00	-16.35	3	Horizontal	226	2.10
908MHz	Pass	PK	2.72418G	54.32	74.00	-19.68	3	Horizontal	31	1.50
908MHz	Pass	PK	8.17161G	46.54	74.00	-27.46	3	Horizontal	314	2.45
908MHz	Pass	PK	9.0815G	49.07	74.00	-24.93	3	Horizontal	226	2.10
916MHz	Pass	AV	2.74552G	29.81	54.00	-24.19	3	Vertical	329	2.88
916MHz	Pass	AV	8.24518G	43.60	54.00	-10.40	3	Vertical	87	3.00
916MHz	Pass	AV	9.158G	40.82	54.00	-13.18	3	Vertical	82	3.00
916MHz	Pass	PK	2.7449G	41.63	74.00	-32.37	3	Vertical	329	2.88
916MHz	Pass	PK	8.2453G	54.80	74.00	-19.20	3	Vertical	87	3.00
916MHz	Pass	PK	9.1594G	51.73	74.00	-22.27	3	Vertical	82	3.00
916MHz	Pass	AV	2.74533G	46.29	54.00	-7.71	3	Horizontal	49	1.09



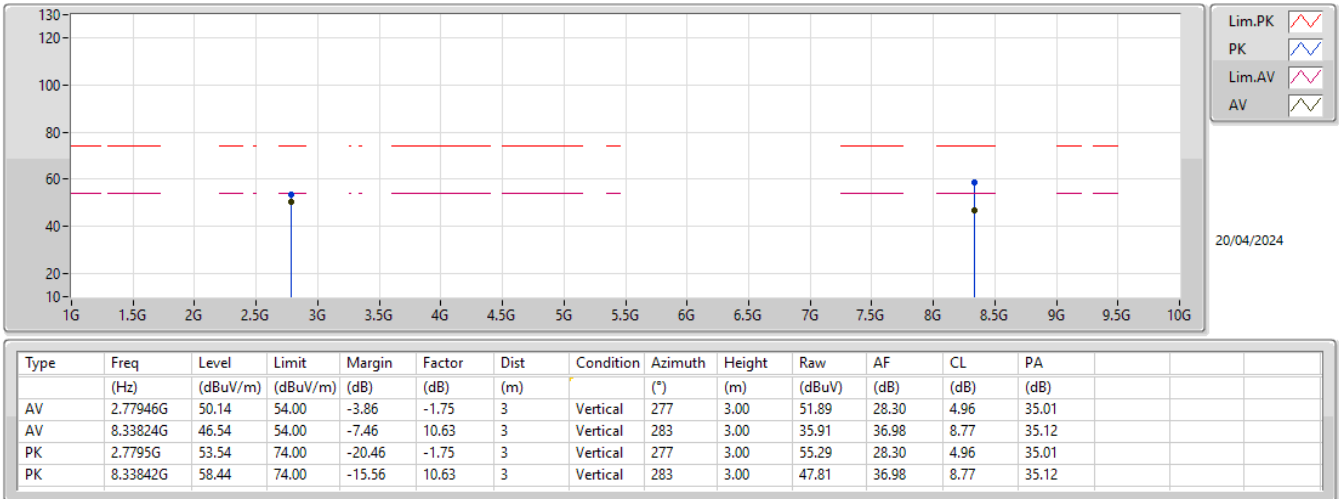
RSE TX above 1GHz

Appendix F.2

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)
916MHz	Pass	AV	8.24528G	37.26	54.00	-16.74	3	Horizontal	295	1.04
916MHz	Pass	AV	9.1552G	37.36	54.00	-16.64	3	Horizontal	38	1.50
916MHz	Pass	PK	2.7428G	57.54	74.00	-16.46	3	Horizontal	49	1.09
916MHz	Pass	PK	8.24468G	48.34	74.00	-25.66	3	Horizontal	295	1.04
916MHz	Pass	PK	9.15704G	48.58	74.00	-25.42	3	Horizontal	38	1.50
924MHz	Pass	AV	2.77216G	37.93	54.00	-16.07	3	Vertical	262	2.41
924MHz	Pass	AV	8.31328G	36.18	54.00	-17.82	3	Vertical	303	1.50
924MHz	Pass	PK	2.76972G	50.71	74.00	-23.29	3	Vertical	262	2.41
924MHz	Pass	PK	8.30916G	47.27	74.00	-26.73	3	Vertical	303	1.50
924MHz	Pass	AV	2.77136G	35.32	54.00	-18.68	3	Horizontal	132	2.16
924MHz	Pass	AV	8.32332G	36.57	54.00	-17.43	3	Horizontal	123	1.50
924MHz	Pass	PK	2.77404G	50.63	74.00	-23.37	3	Horizontal	132	2.16
924MHz	Pass	PK	8.32336G	47.57	74.00	-26.43	3	Horizontal	123	1.50

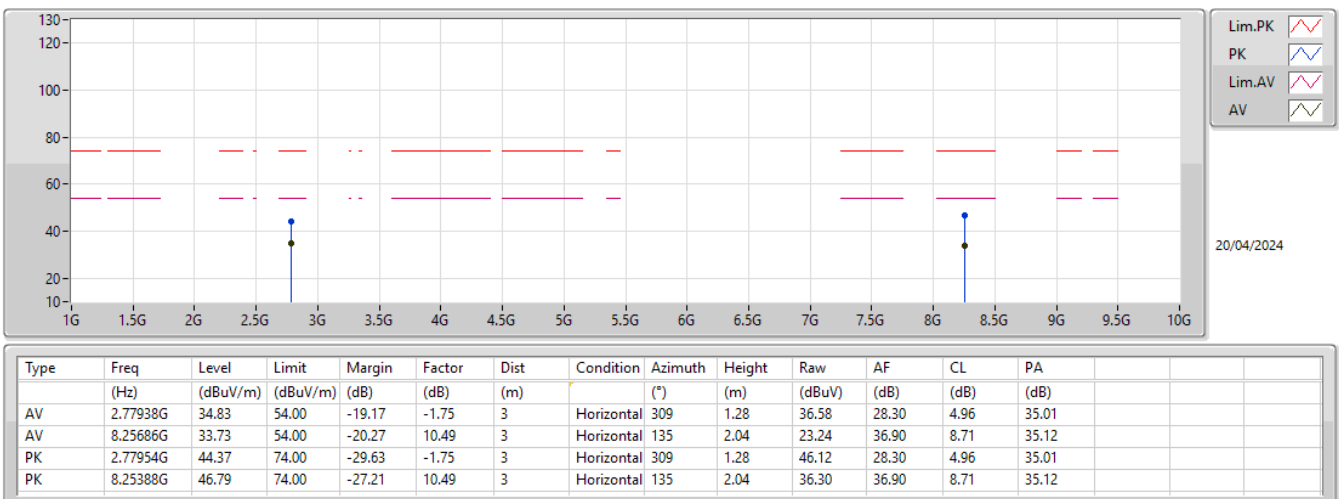
902-928MHz_Halow_1MHz

926.5MHz_TX



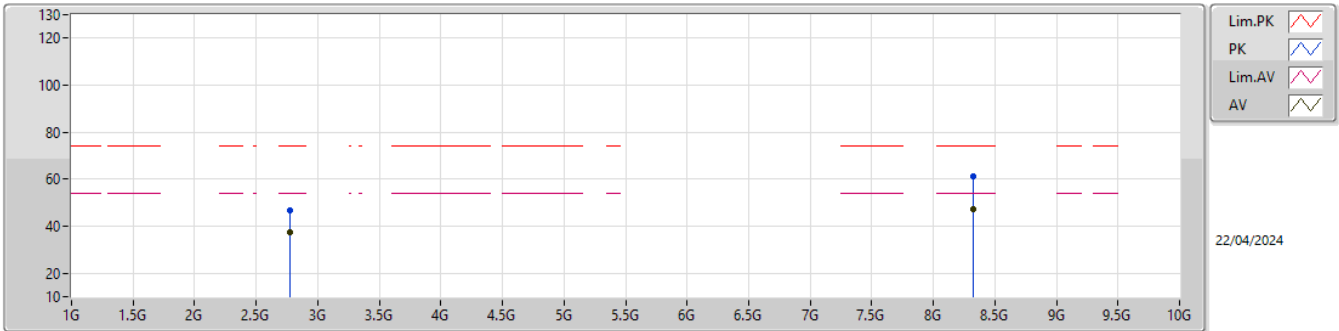
902-928MHz_Halow_1MHz

926.5MHz_TX



902-928MHz_Halow_2MHz

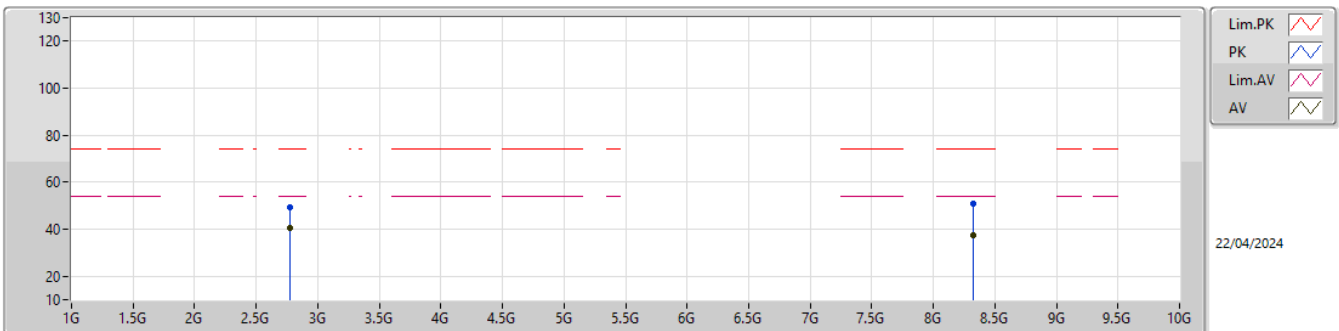
925MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.77512G	37.50	54.00	-16.50	-1.76	3	Vertical	96	2.84	39.26	28.30	4.95	35.01
AV	8.32486G	47.25	54.00	-6.75	10.59	3	Vertical	269	3.00	36.66	36.95	8.76	35.12
PK	2.77506G	46.59	74.00	-27.41	-1.76	3	Vertical	96	2.84	48.35	28.30	4.95	35.01
PK	8.3247G	61.33	74.00	-12.67	10.59	3	Vertical	269	3.00	50.74	36.95	8.76	35.12

902-928MHz_Halow_2MHz

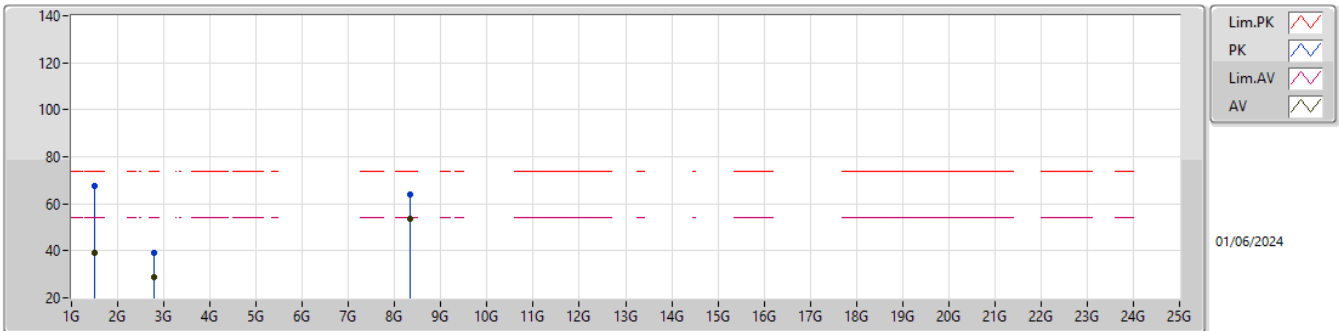
925MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	(dBuV)	(dB)	(dB)	(dB)
AV	2.77493G	40.70	54.00	-13.30	-1.76	3	Horizontal	36	1.21	42.46	28.30	4.95	35.01
AV	8.32501G	37.48	54.00	-16.52	10.59	3	Horizontal	330	2.97	26.89	36.95	8.76	35.12
PK	2.77489G	49.46	74.00	-24.54	-1.76	3	Horizontal	36	1.21	51.22	28.30	4.95	35.01
PK	8.3247G	51.02	74.00	-22.98	10.59	3	Horizontal	330	2.97	40.43	36.95	8.76	35.12

902-928MHz_Halow_4MHz

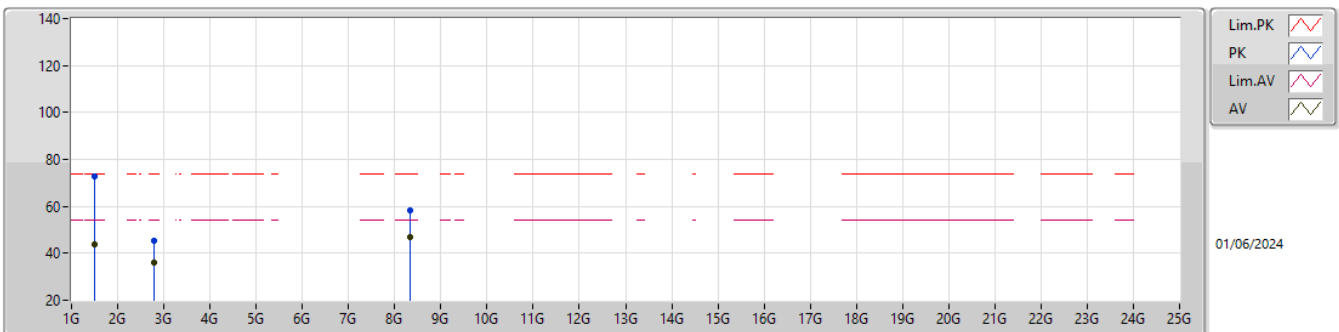
926MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	1.4926G	39.28	54.00	-14.72	-6.18	3	Vertical	281	2.19	45.46	25.27	3.53	34.98
AV	2.7774G	28.92	54.00	-25.08	-1.75	3	Vertical	146	1.76	30.67	28.30	4.96	35.01
AV	8.3332G	53.50	54.00	-0.50	10.62	3	Vertical	89	2.60	42.88	36.97	8.77	35.12
PK	1.4926G	67.73	74.00	-6.27	-6.18	3	Vertical	281	2.19	73.91	25.27	3.53	34.98
PK	2.7777G	39.08	74.00	-34.92	-1.75	3	Vertical	146	1.76	40.83	28.30	4.96	35.01
PK	8.33382G	63.83	74.00	-10.17	10.62	3	Vertical	89	2.60	53.21	36.97	8.77	35.12

902-928MHz_Halow_4MHz

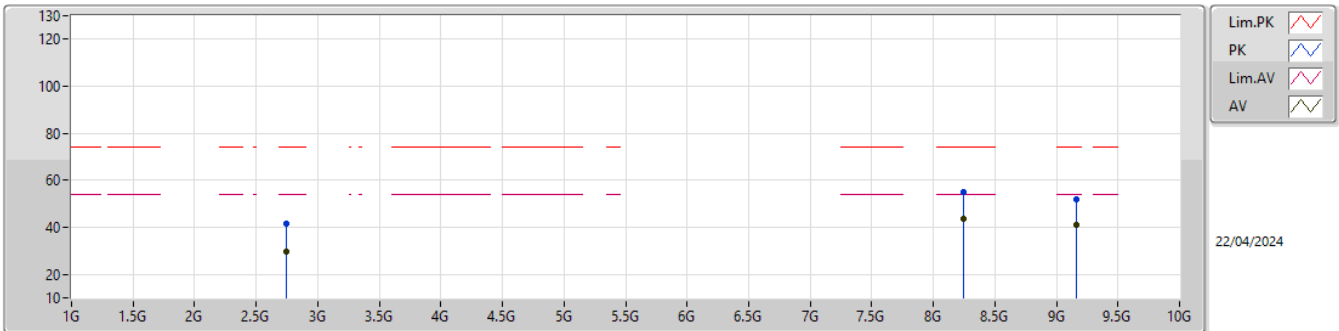
926MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	1.4951G	43.95	54.00	-10.05	-6.20	3	Horizontal	13	1.50	50.15	25.25	3.53	34.98
AV	2.77734G	36.03	54.00	-17.97	-1.75	3	Horizontal	47	1.64	37.78	28.30	4.96	35.01
AV	8.3332G	46.99	54.00	-7.01	10.62	3	Horizontal	293	2.56	36.37	36.97	8.77	35.12
PK	1.495G	72.98	74.00	-1.02	-6.20	3	Horizontal	13	1.50	79.18	25.25	3.53	34.98
PK	2.778G	45.47	74.00	-28.53	-1.75	3	Horizontal	47	1.64	47.22	28.30	4.96	35.01
PK	8.33412G	58.27	74.00	-15.73	10.62	3	Horizontal	293	2.56	47.65	36.97	8.77	35.12

902-928MHz_Halow_8MHz

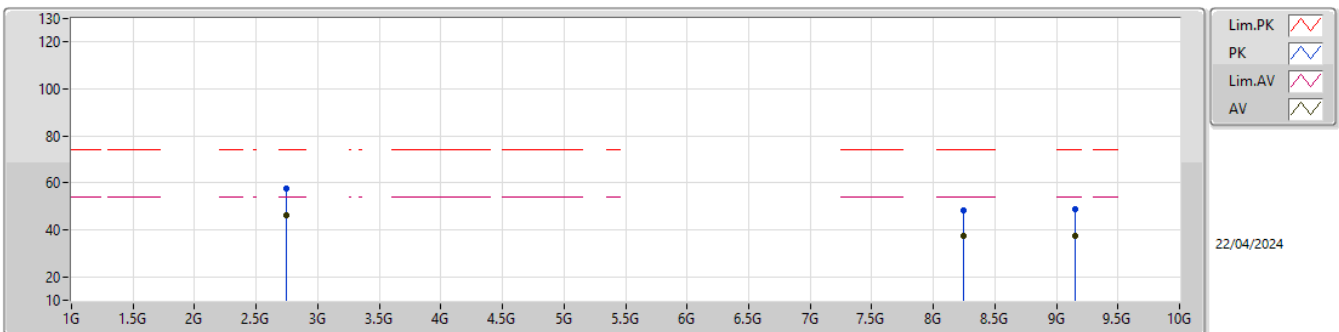
916MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.74532G	29.81	54.00	-24.19	-1.93	3	Vertical	329	2.88	31.74	28.16	4.92	35.01
AV	8.24518G	43.60	54.00	-10.40	10.48	3	Vertical	87	3.00	33.12	36.89	8.70	35.11
AV	9.158G	40.82	54.00	-13.18	12.03	3	Vertical	82	3.00	28.79	38.02	9.20	35.19
PK	2.7449G	41.63	74.00	-32.37	-1.94	3	Vertical	329	2.88	43.57	28.15	4.92	35.01
PK	8.2453G	54.80	74.00	-19.20	10.48	3	Vertical	87	3.00	44.32	36.89	8.70	35.11
PK	9.1594G	51.73	74.00	-22.27	12.03	3	Vertical	82	3.00	39.70	38.02	9.20	35.19

902-928MHz_Halow_8MHz

916MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.74533G	46.29	54.00	-7.71	-1.94	3	Horizontal	49	1.09	48.23	28.15	4.92	35.01
AV	8.24528G	37.26	54.00	-16.74	10.48	3	Horizontal	295	1.04	26.78	36.89	8.70	35.11
AV	9.1552G	37.36	54.00	-16.64	12.02	3	Horizontal	38	1.50	25.34	38.01	9.20	35.19
PK	2.7428G	57.54	74.00	-16.46	-1.96	3	Horizontal	49	1.09	59.50	28.13	4.92	35.01
PK	8.24468G	48.34	74.00	-25.66	10.48	3	Horizontal	295	1.04	37.86	36.89	8.70	35.11
PK	9.15704G	48.58	74.00	-25.42	12.02	3	Horizontal	38	1.50	36.56	38.01	9.20	35.19