



Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

7.6 Spurious emissions at RF antenna connector test

7.6.1 General

This test was performed to measure spurious emissions at RF antenna connector. Specification test limits are given in Table 7.6.1.

Table 7.6.1 Spurious emission limits

Frequency, MHz	Conducted power of spurious, dBm/MHz
0.009– below 3530.0	-40.0
3720.0 – 10th harmonic*	-40.0

7.6.2 Test procedure

7.6.2.1 The EUT was set up as shown in Figure 7.6.1, energized and its proper operation was checked.

7.6.2.2 The EUT was adjusted to produce maximum available for end user RF output power.

7.6.2.3 The spurious emission was measured with spectrum analyzer as provided in Table 7.6.2 and associated plots.

Figure 7.6.1 Spurious emission test setup





Test specification: Section 96.41(e)(3), Conducted spurious emissions			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Table 7.6.2 Spurious emission test results

ASSIGNED FREQUENCY RANGE: 3550 - 3700 MHz
 INVESTIGATED FREQUENCY RANGE: 0.009 – 37000 MHz
 DETECTOR USED: Peak
 VIDEO BANDWIDTH: ≥ Resolution bandwidth
 MODULATION: QPSK
 TRANSMITTER OUTPUT POWER SETTINGS: Maximum
 NUMBER ANTENNA PORTS: N = 2

UMBER ANTENNA ORTS.

N = 2

Frequency, GHz	Peak power (VBW=3 MHz)				Average power (RMS)				Verdict
	Measured, dBm	Total, dBm**	Limit, dBm	Margin, dB*	Measured, dBm	Total, dBm**	Limit, dBm	Margin, dB*	
Channel bandwidth 10 MHz									
Low carrier frequency 3555 MHz									
36.718	-46.47	-43.47	-40.00	-3.47	-46.47	-43.47	-40.00	-3.47	Pass
Mid carrier frequency 3625 MHz									
36.835	-47.41	-44.41	-40.00	-4.41	-47.41	-44.41	-40.00	-4.41	Pass
High carrier frequency 3695 MHz									
36.706	-47.01	-44.01	-40.00	-4.01	-47.01	-44.01	-40.00	-4.01	Pass
Channel bandwidth 20 MHz									
Low carrier frequency 3560 MHz									
36.899	-47.11	-44.11	-40.00	-4.11	-47.11	-44.11	-40.00	-4.11	Pass
Mid carrier frequency 3625 MHz									
36.426	-47.16	-44.16	-40.00	-4.16	-47.16	-44.16	-40.00	-4.16	Pass
High carrier frequency 3690 MHz									
36.720	-46.87	-43.87	-40.00	-3.87	-46.87	-43.87	-40.00	-3.87	Pass
Channel bandwidth 40 MHz									
Low carrier frequency 3570 MHz									
36.654	-46.33	-43.66	-40.00	-3.66	-46.33	-43.66	-40.00	-3.66	Pass
Mid carrier frequency 3625 MHz									
36.656	-47.28	-44.28	-40.00	-4.28	-47.28	-44.28	-40.00	-4.28	Pass
High carrier frequency 3680 MHz									
36.517	-47.09	-44.09	-40.00	-4.09	-47.09	-44.09	-40.00	-4.09	Pass

*- Margin = Total spurious emission - specification limit.

** - Total emission = Maximum SA reading per chain (Chains #1&2) + 10*log(N)

Reference numbers of test equipment used

HL 1294	HL 1295	HL 3287	HL 3301	HL 3355	HL 4355	HL 4366	HL 5232
HL 5233	HL 5286	HL 6143					

Full description is given in Appendix A.

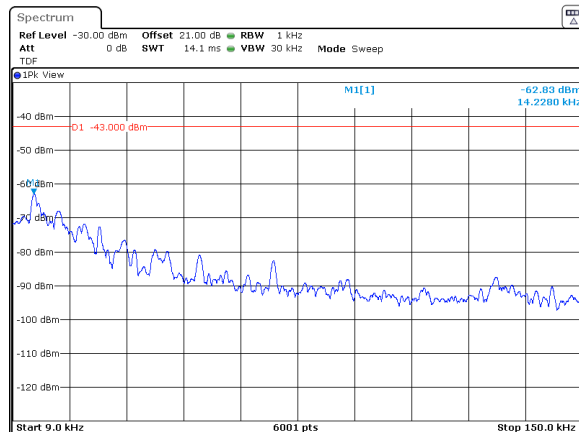


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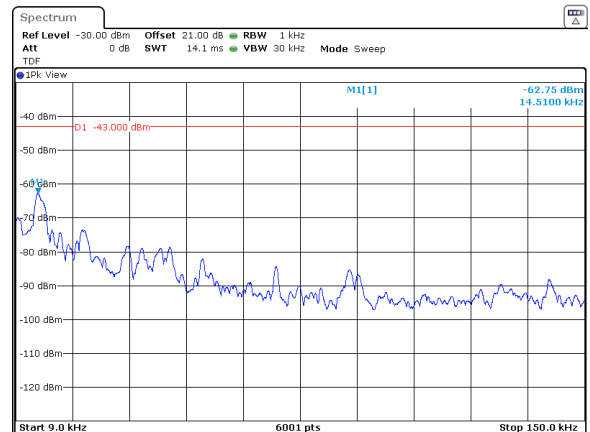
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.1 Spurious emission measurements in 9 - 150 kHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

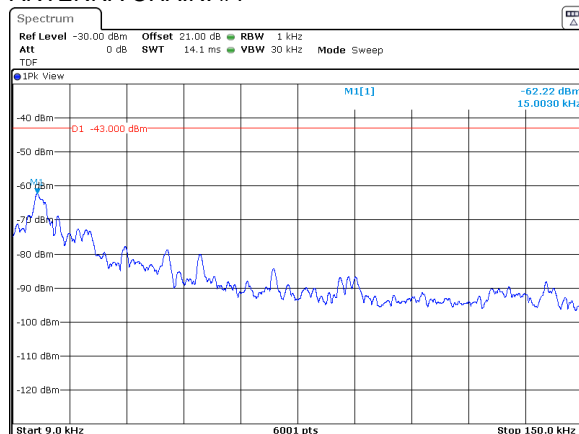


QPSK
10 MHz
ANTENNA CHAIN: #2

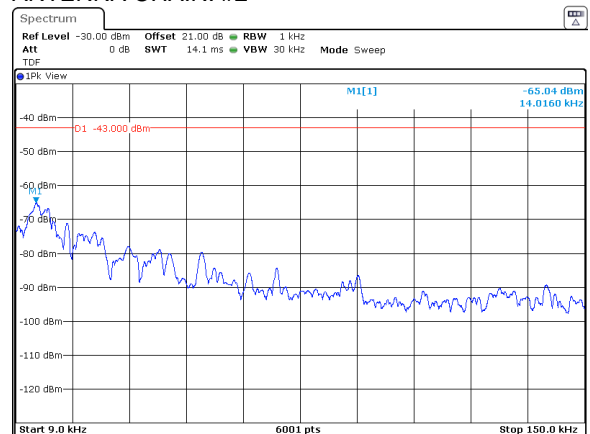


Plot 7.6.2 Spurious emission measurements in 9 - 150 kHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2



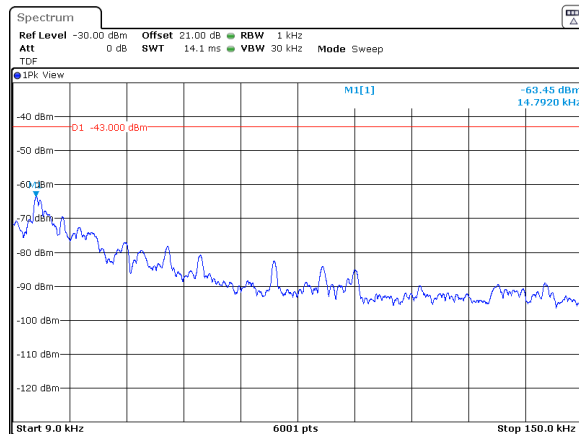


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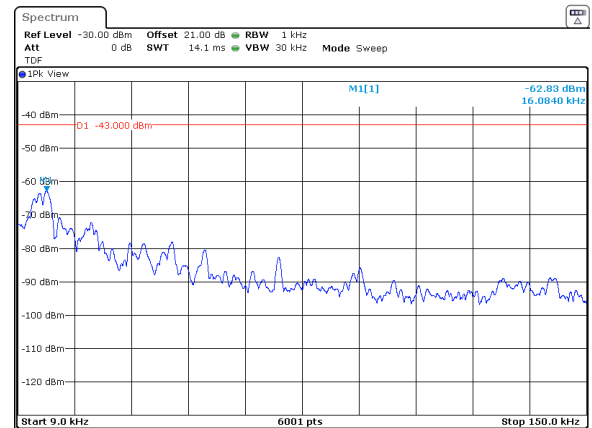
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.3 Spurious emission measurements in 9 - 150 kHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

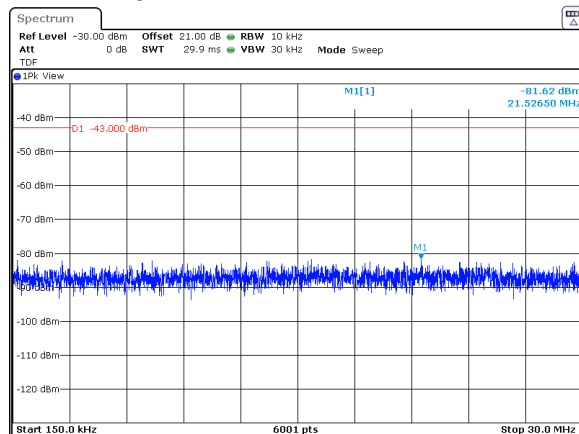


QPSK
10 MHz
ANTENNA CHAIN: #2

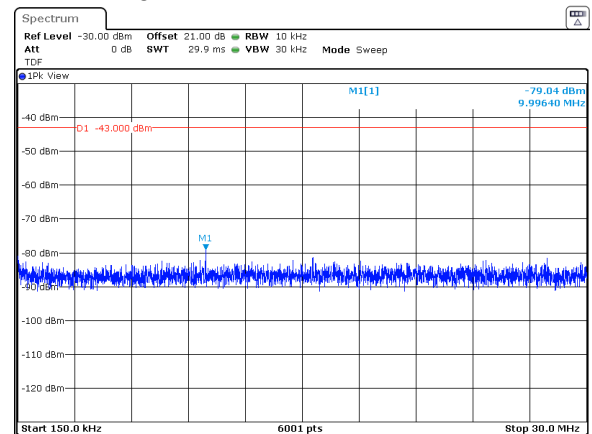


Plot 7.6.4 Spurious emission measurements in 150 kHz - 30 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2



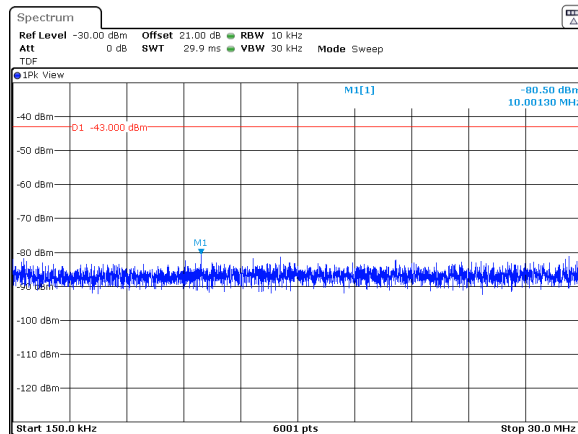


HERMON LABORATORIES

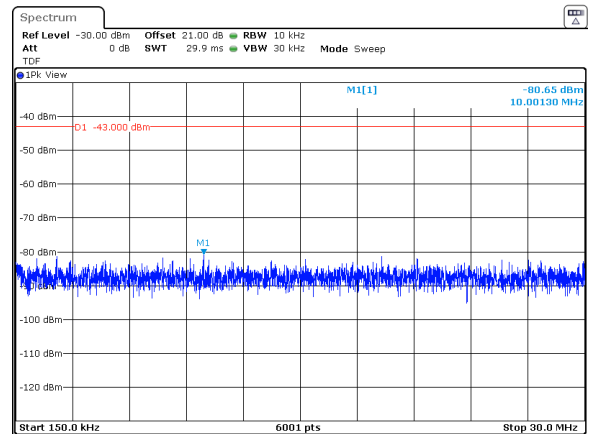
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.5 Spurious emission measurements in 150 kHz - 30 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

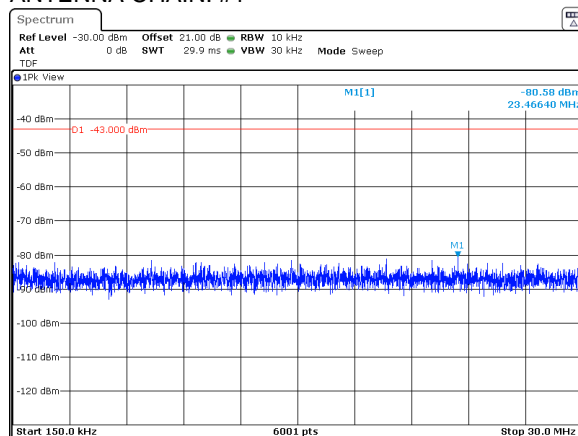


QPSK
10 MHz
ANTENNA CHAIN: #2

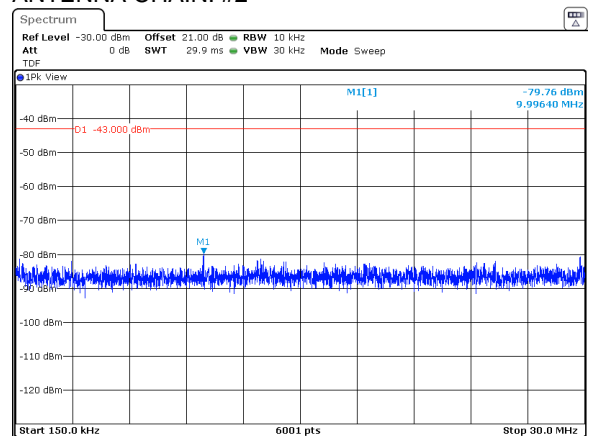


Plot 7.6.6 Spurious emission measurements in 150 kHz - 30 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2



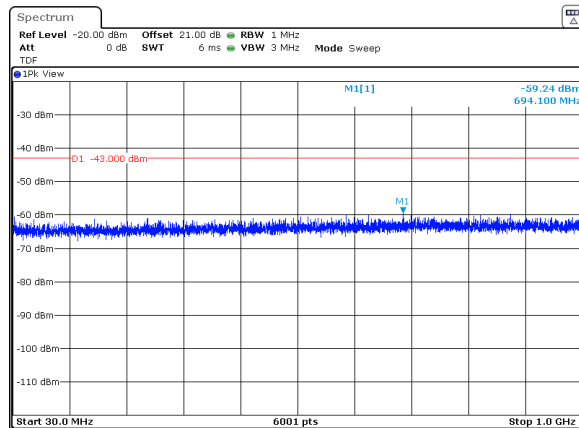


HERMON LABORATORIES

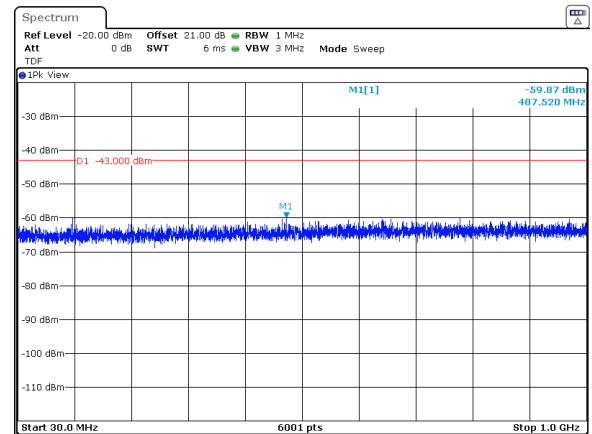
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.7 Spurious emission measurements in 30 - 1000 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

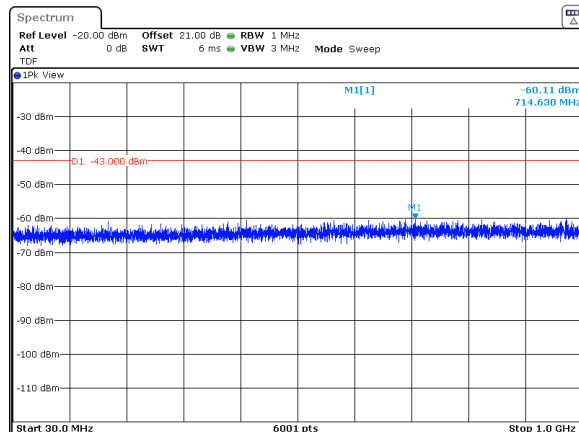


QPSK
10 MHz
ANTENNA CHAIN: #2

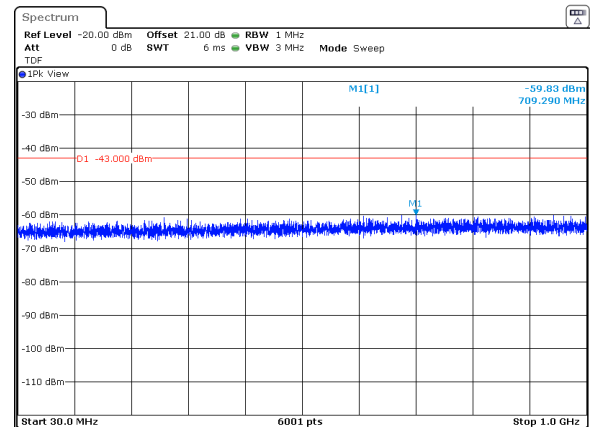


Plot 7.6.8 Spurious emission measurements in 30 - 1000 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2



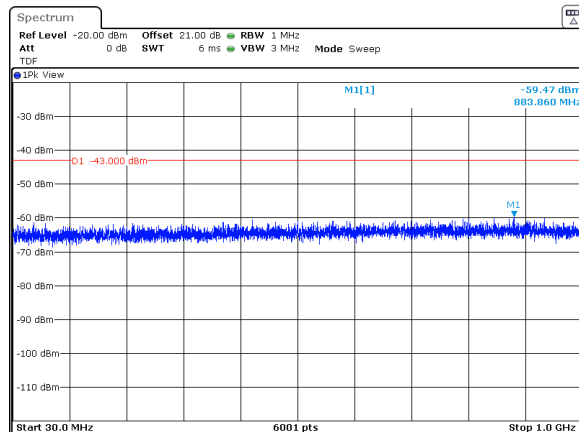


HERMON LABORATORIES

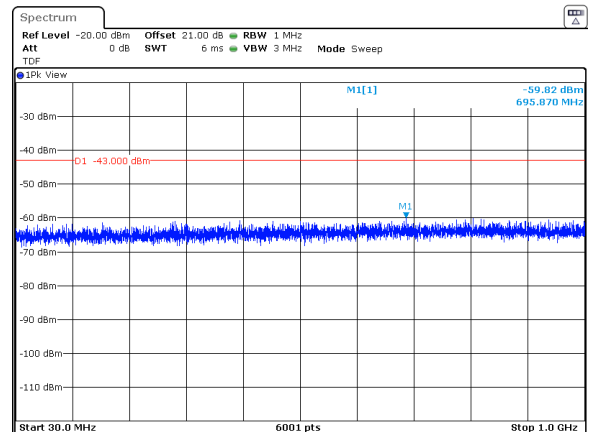
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.9 Spurious emission measurements in 30 - 1000 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

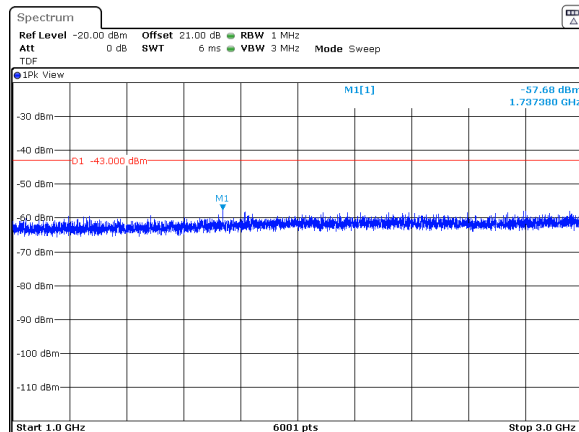


QPSK
10 MHz
ANTENNA CHAIN: #2

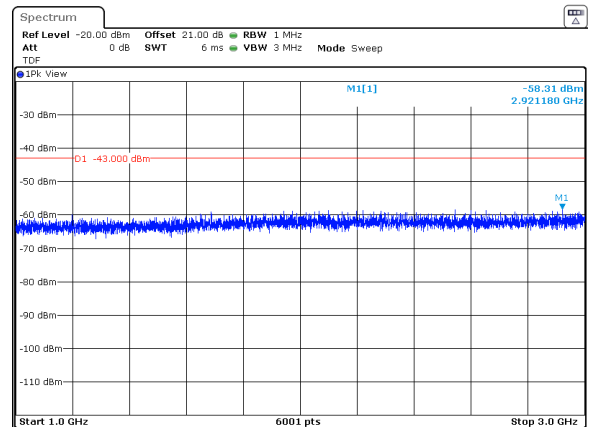


Plot 7.6.10 Spurious emission measurements in 1000 - 3000 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2



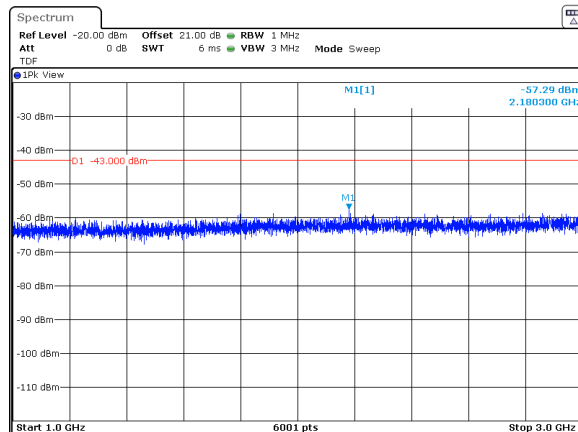


HERMON LABORATORIES

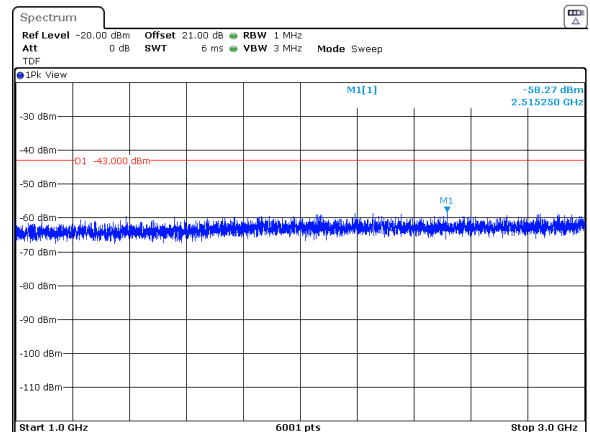
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.11 Spurious emission measurements in 1000 - 3000 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

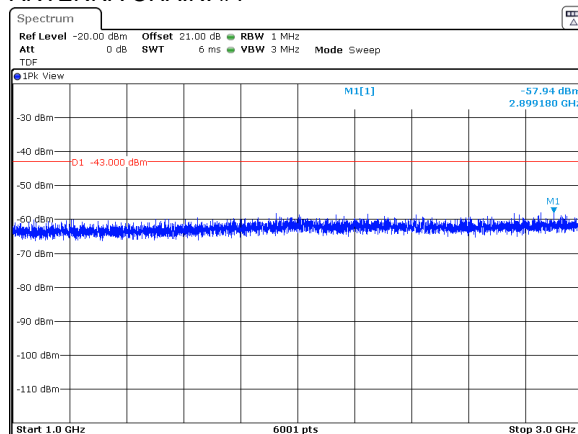


QPSK
10 MHz
ANTENNA CHAIN: #2

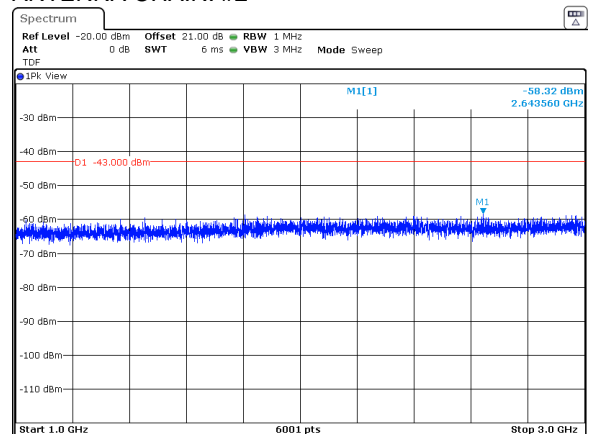


Plot 7.6.12 Spurious emission measurements in 1000 - 3000 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2



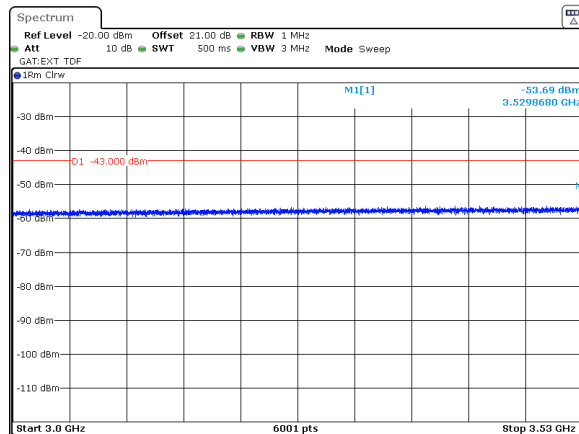


HERMON LABORATORIES

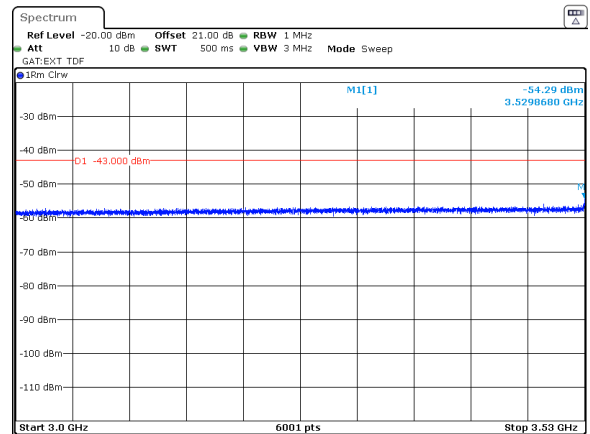
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.13 Spurious emission measurements in 3000 - 3530 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

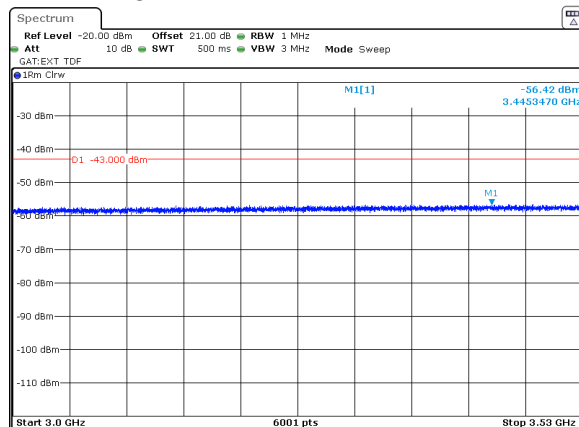


QPSK
10 MHz
ANTENNA CHAIN: #2

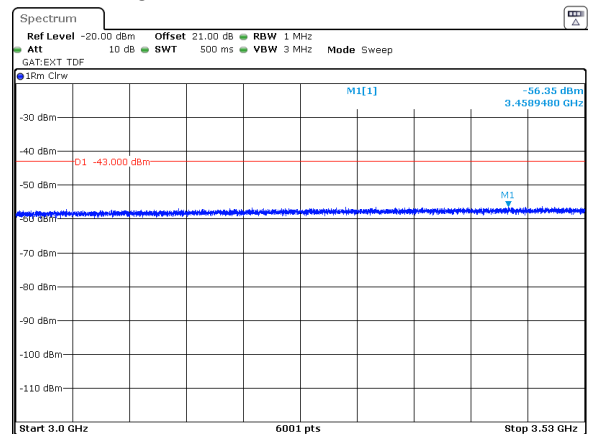


Plot 7.6.14 Spurious emission measurements in 3000 - 3530 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2



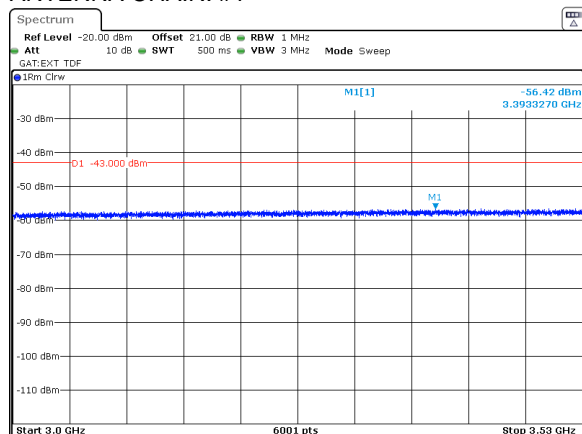


HERMON LABORATORIES

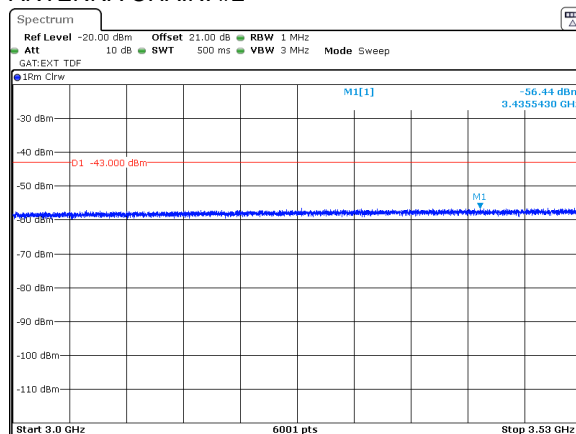
Test specification: Section 96.41(e)(3), Conducted spurious emissions			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.15 Spurious emission measurements in 3000 - 3530 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

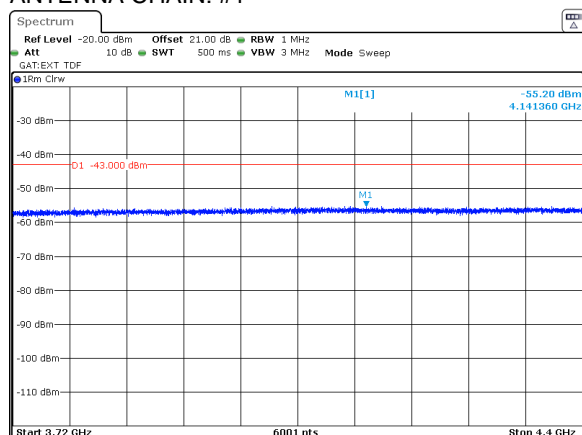


QPSK
10 MHz
ANTENNA CHAIN: #2

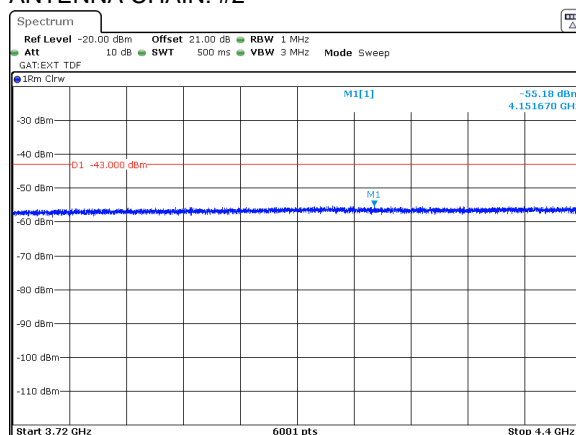


Plot 7.6.16 Spurious emission measurements in 3720 - 4400 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2



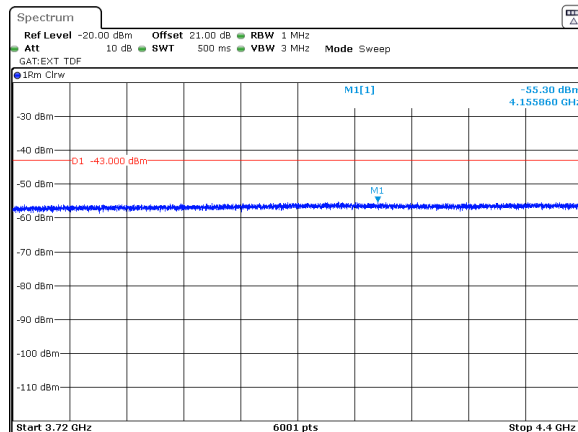


HERMON LABORATORIES

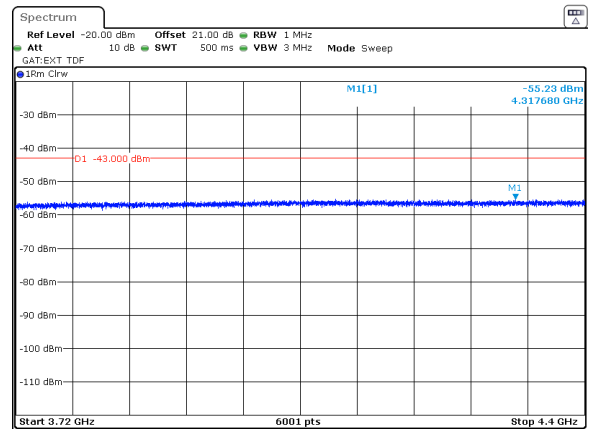
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.17 Spurious emission measurements in 3720 - 4400 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

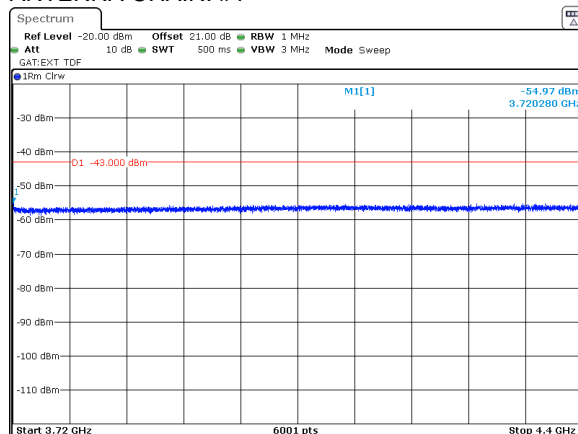


QPSK
10 MHz
ANTENNA CHAIN: #2

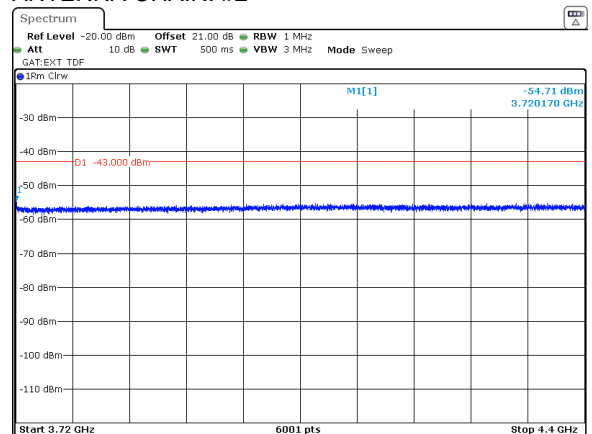


Plot 7.6.18 Spurious emission measurements in 3720 - 4400 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2





HERMON LABORATORIES

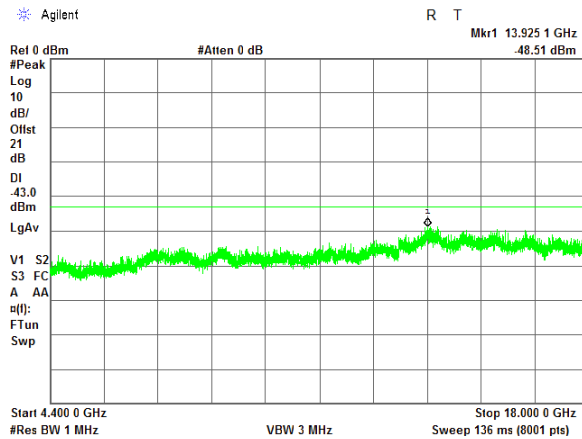
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.19 Spurious emission measurements in 4400 - 18000 MHz range at low carrier frequency

MODULATION:

CHANNEL SPACING:

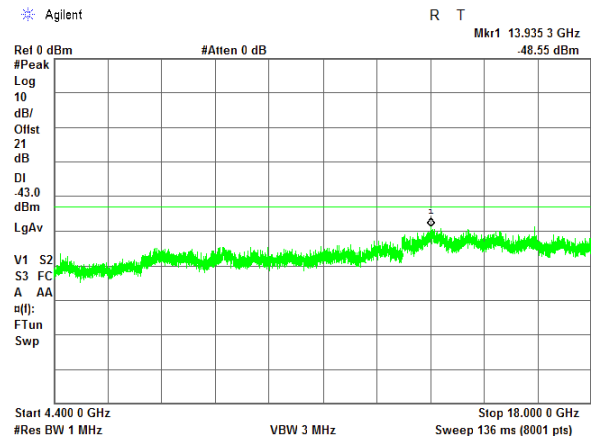
ANTENNA CHAIN: #1



QPSK

10 MHz

ANTENNA CHAIN: #2

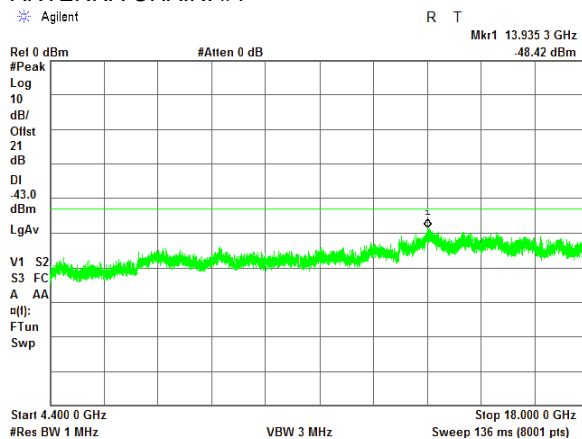


Plot 7.6.20 Spurious emission measurements in 4400 - 18000 MHz range at mid carrier frequency

MODULATION:

CHANNEL SPACING:

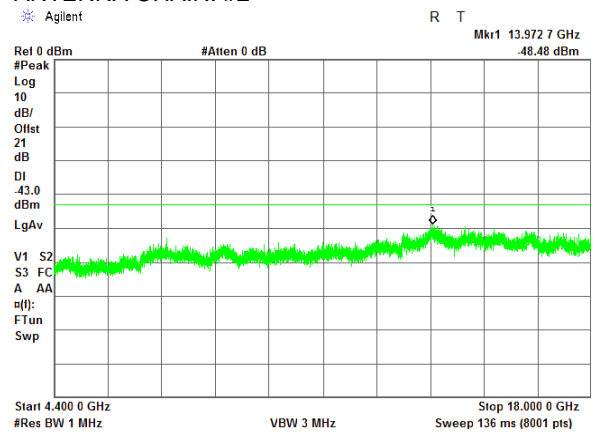
ANTENNA CHAIN: #1



QPSK

10 MHz

ANTENNA CHAIN: #2





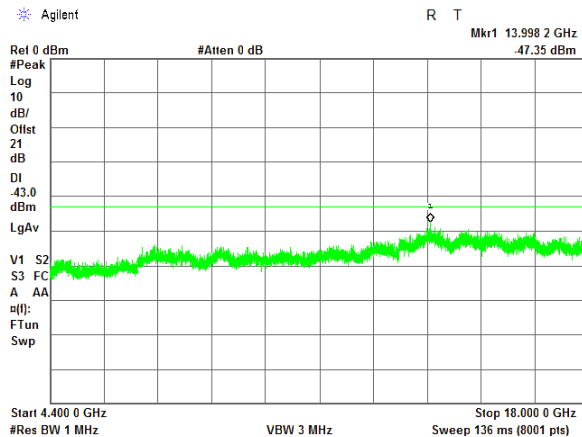
Test specification: Section 96.41(e)(3), Conducted spurious emissions			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.21 Spurious emission measurements in 4400 - 18000 MHz range at high carrier frequency

MODULATION:

CHANNEL SPACING:

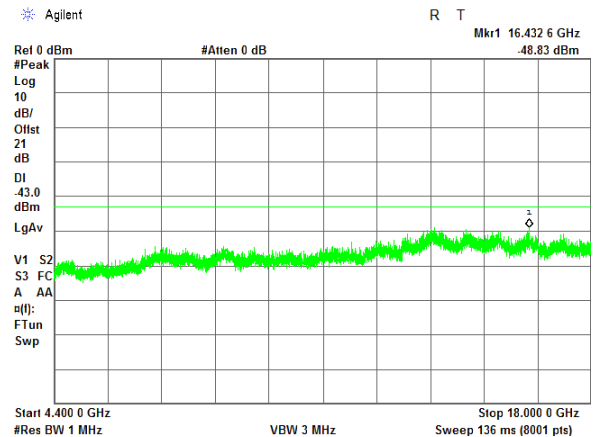
ANTENNA CHAIN: #1



QPSK

10 MHz

ANTENNA CHAIN: #2

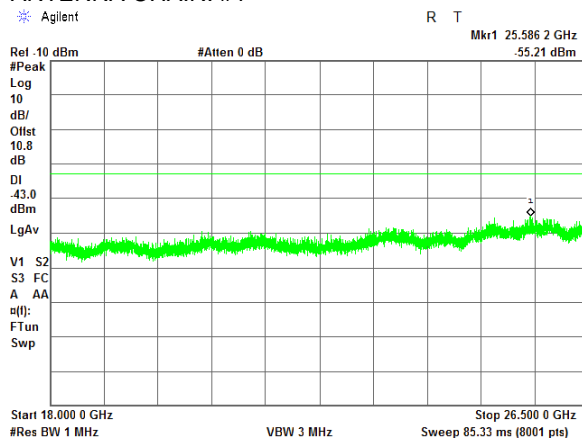


Plot 7.6.22 Spurious emission measurements in 18000 - 26500 MHz range at low carrier frequency

MODULATION:

CHANNEL SPACING:

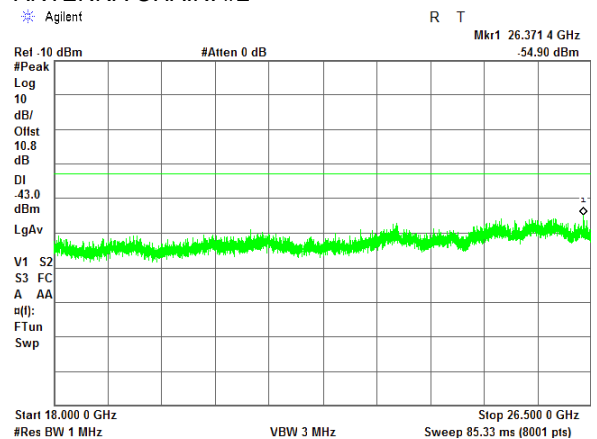
ANTENNA CHAIN: #1



QPSK

10 MHz

ANTENNA CHAIN: #2



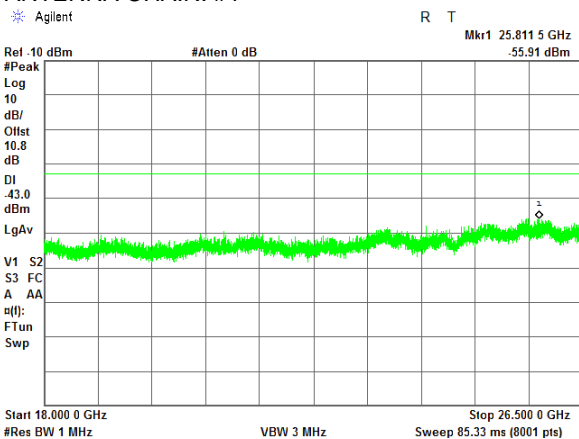


HERMON LABORATORIES

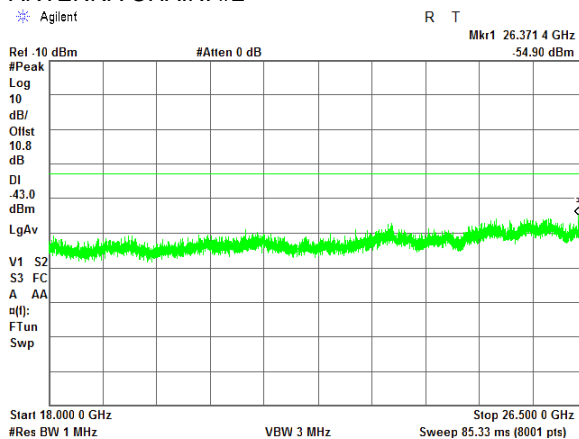
Test specification: Section 96.41(e)(3), Conducted spurious emissions			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.23 Spurious emission measurements in 18000 - 26500 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

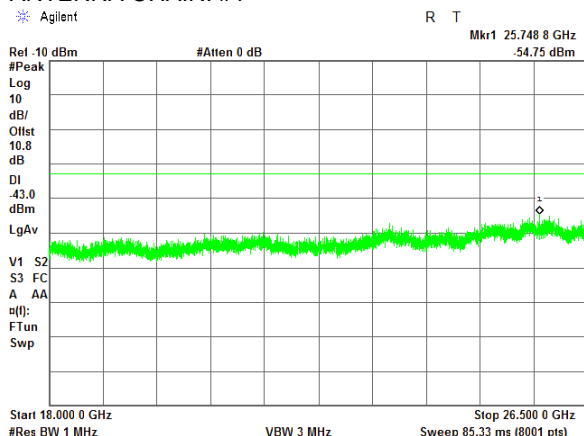


QPSK
10 MHz
ANTENNA CHAIN: #2

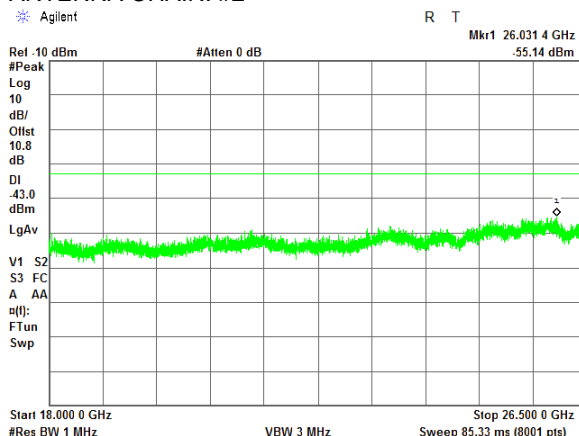


Plot 7.6.24 Spurious emission measurements in 18000 - 26500 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2



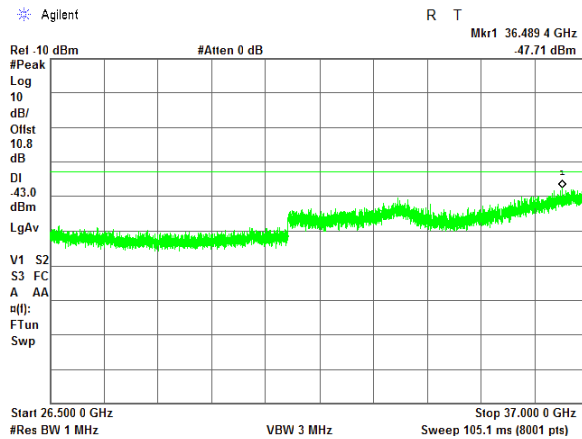


HERMON LABORATORIES

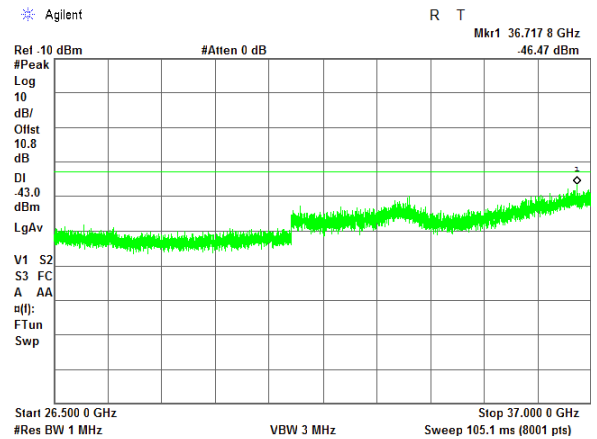
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.25 Spurious emission measurements in 26500 - 37000 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

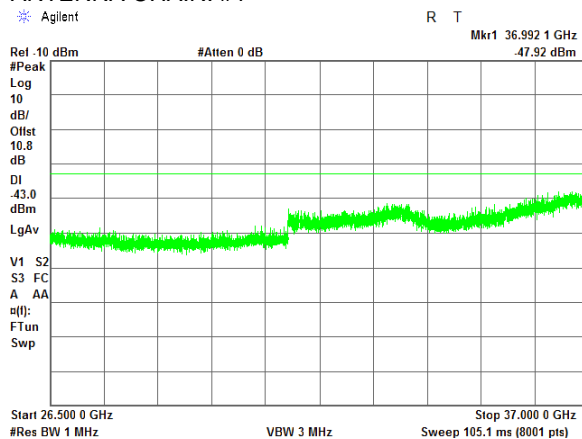


QPSK
10 MHz
ANTENNA CHAIN: #2

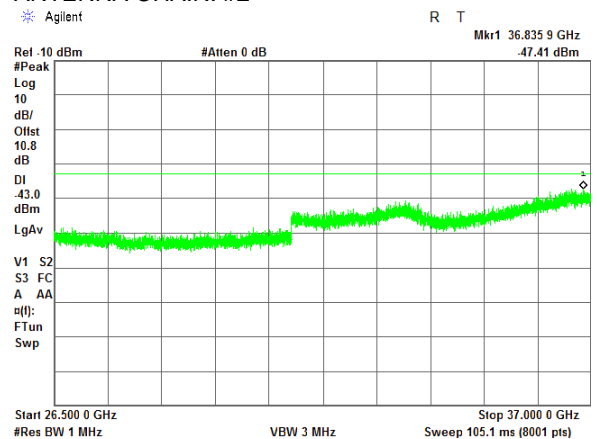


Plot 7.6.26 Spurious emission measurements in 26500 - 37000 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
10 MHz
ANTENNA CHAIN: #2





HERMON LABORATORIES

Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

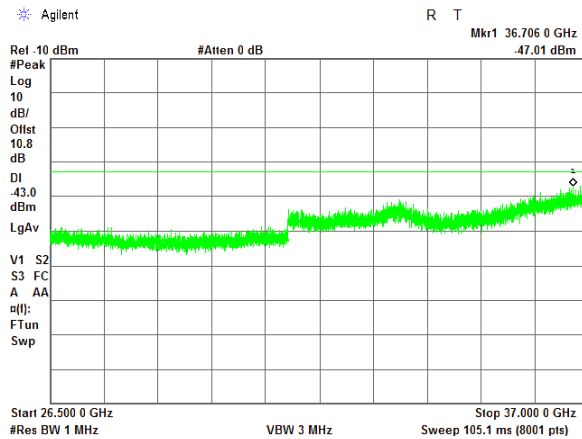
Plot 7.6.27 Spurious emission measurements in 26500 - 37000 MHz range at high carrier frequency

MODULATION:

CHANNEL SPACING:

ANTENNA CHAIN: #1

* Agilent

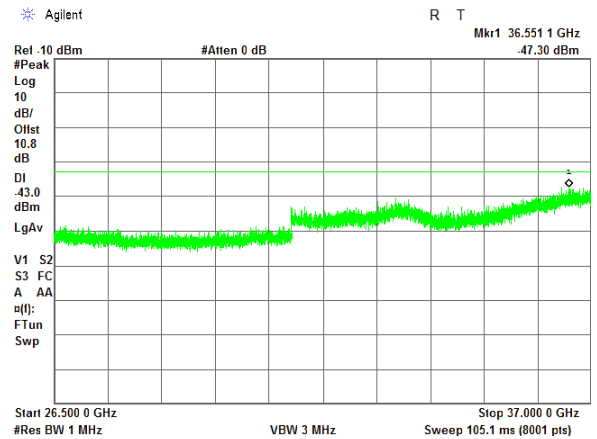


QPSK

10 MHz

ANTENNA CHAIN: #2

* Agilent



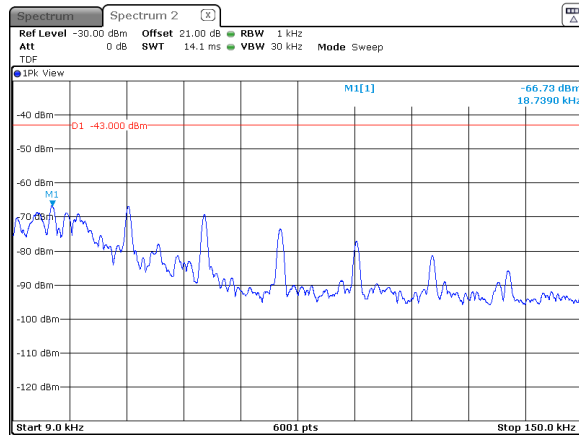


HERMON LABORATORIES

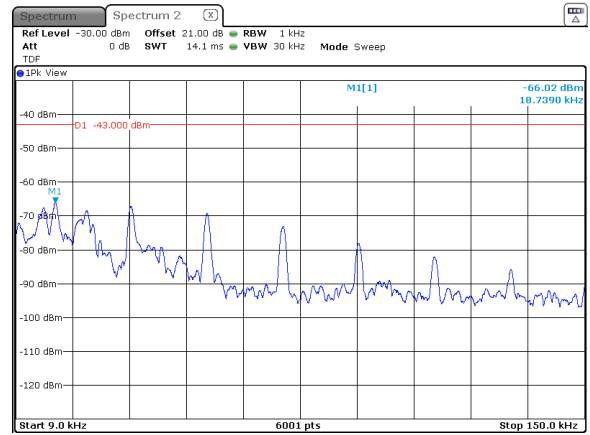
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.28 Spurious emission measurements in 9 - 150 kHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

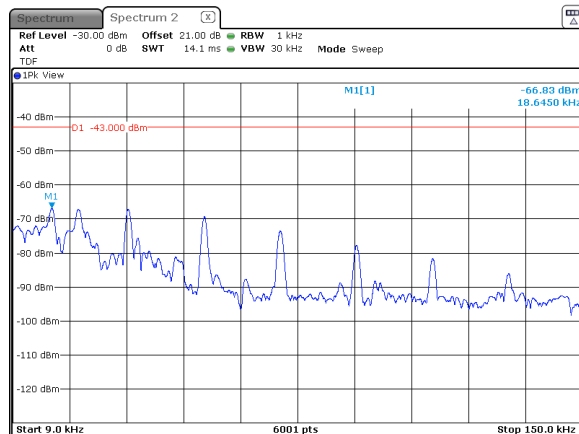


QPSK
20 MHz
ANTENNA CHAIN: #2

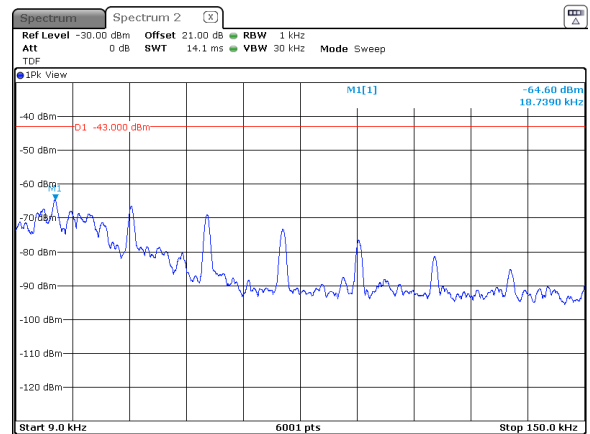


Plot 7.6.29 Spurious emission measurements in 9 - 150 kHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
20 MHz
ANTENNA CHAIN: #2



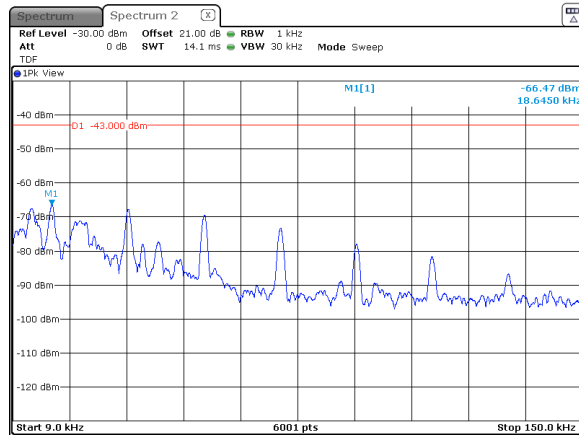


HERMON LABORATORIES

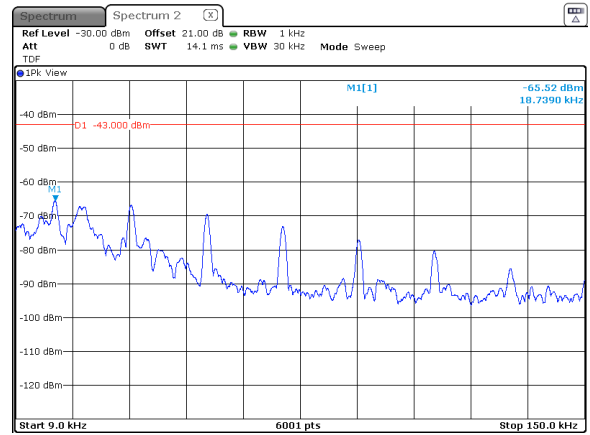
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.30 Spurious emission measurements in 9 - 150 kHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

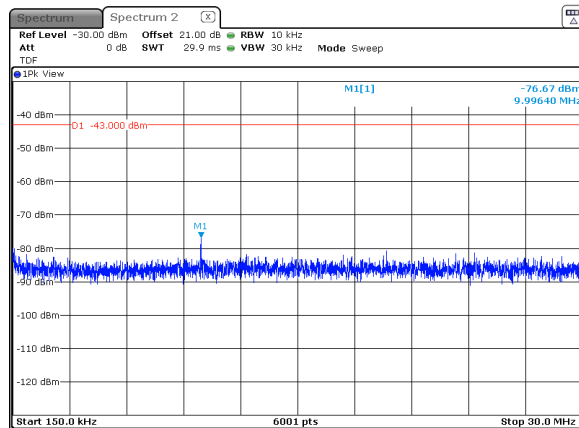


QPSK
20 MHz
ANTENNA CHAIN: #2

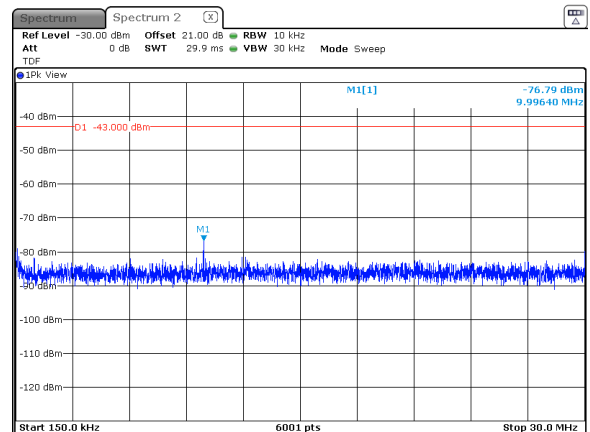


Plot 7.6.31 Spurious emission measurements in 150 kHz - 30 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
20 MHz
ANTENNA CHAIN: #2



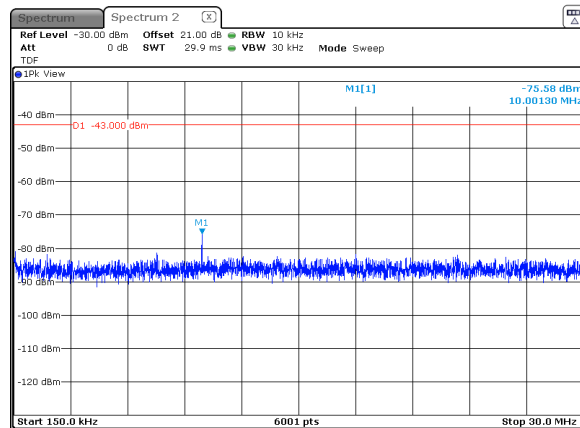


HERMON LABORATORIES

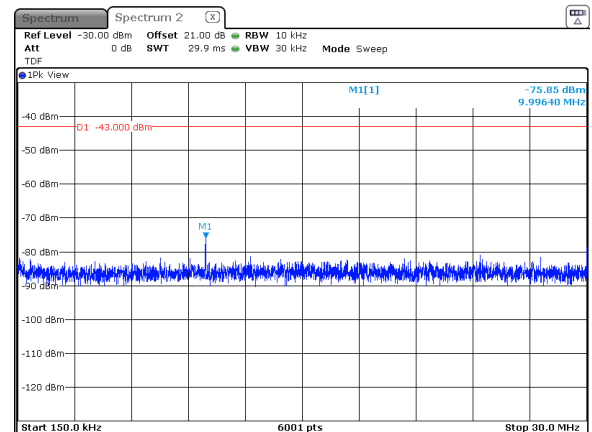
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.32 Spurious emission measurements in 150 kHz - 30 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

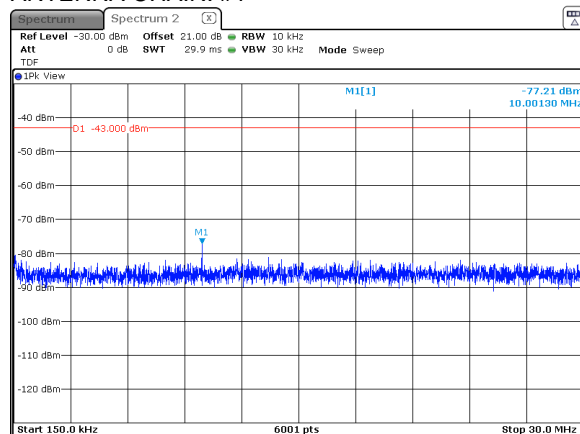


QPSK
20 MHz
ANTENNA CHAIN: #2

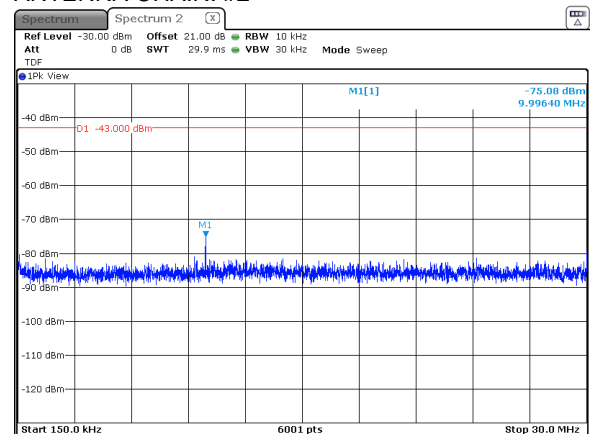


Plot 7.6.33 Spurious emission measurements in 150 kHz - 30 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
20 MHz
ANTENNA CHAIN: #2



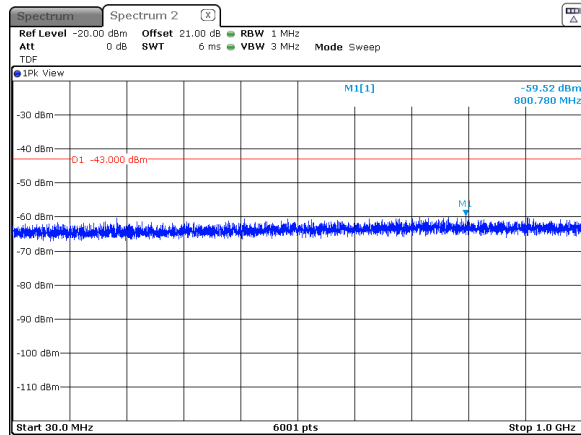


HERMON LABORATORIES

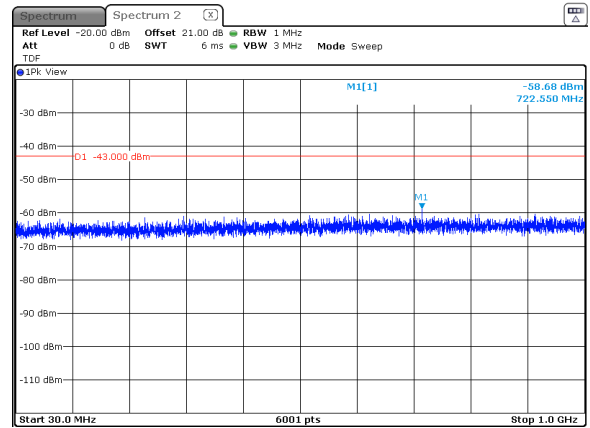
Test specification: Section 96.41(e)(3), Conducted spurious emissions			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.34 Spurious emission measurements in 30 - 1000 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

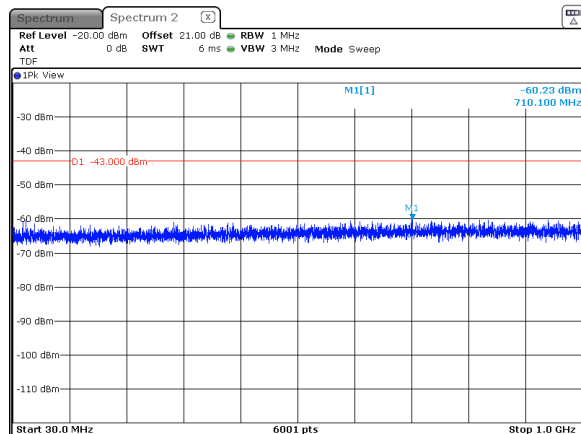


QPSK
20 MHz
ANTENNA CHAIN: #2

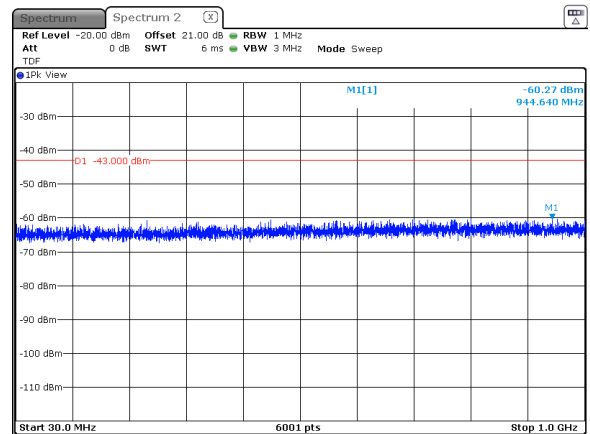


Plot 7.6.35 Spurious emission measurements in 30 - 1000 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
20 MHz
ANTENNA CHAIN: #2



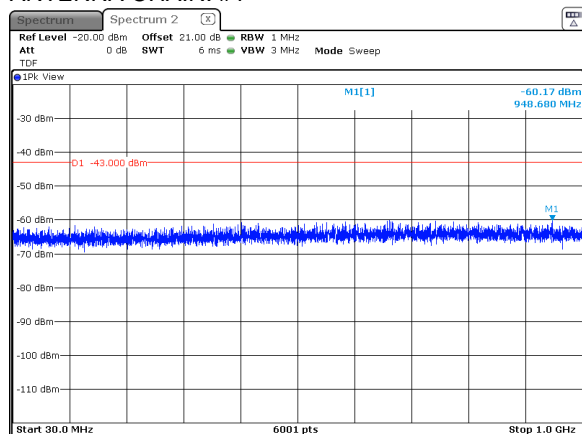


HERMON LABORATORIES

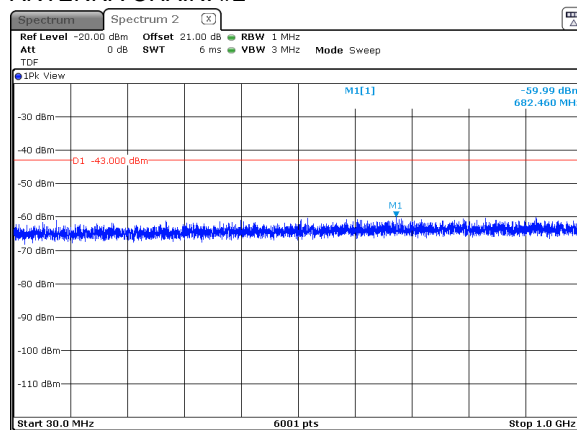
Test specification: Section 96.41(e)(3), Conducted spurious emissions			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.36 Spurious emission measurements in 30 - 1000 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

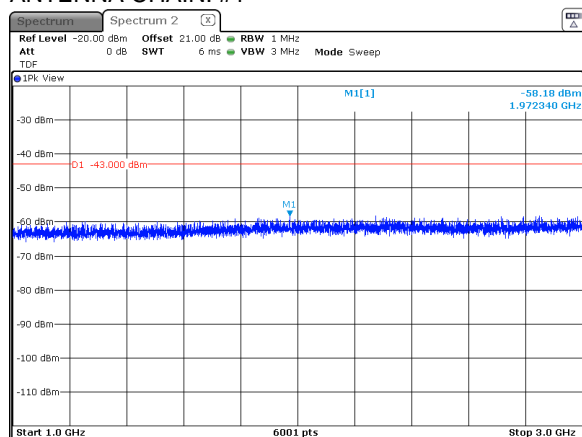


QPSK
20 MHz
ANTENNA CHAIN: #2

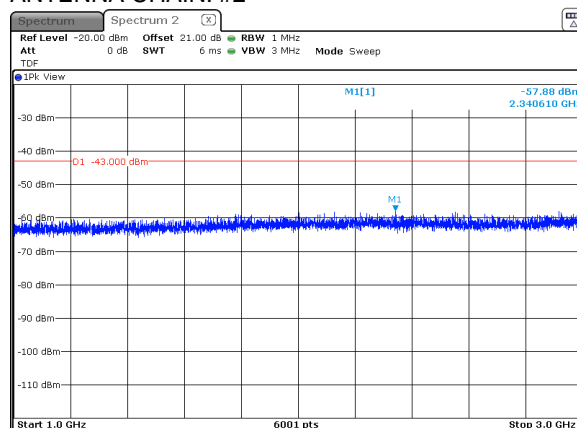


Plot 7.6.37 Spurious emission measurements in 1000 - 3000 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
20 MHz
ANTENNA CHAIN: #2



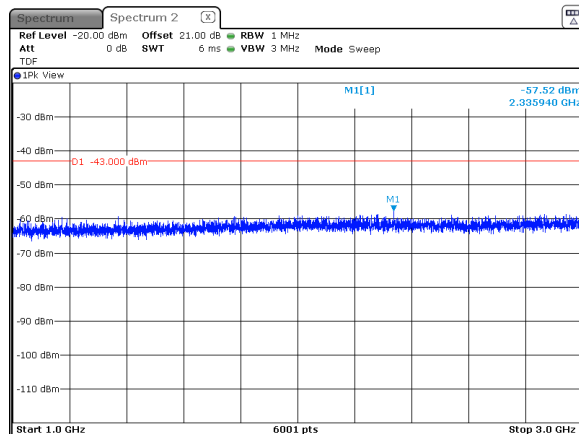


HERMON LABORATORIES

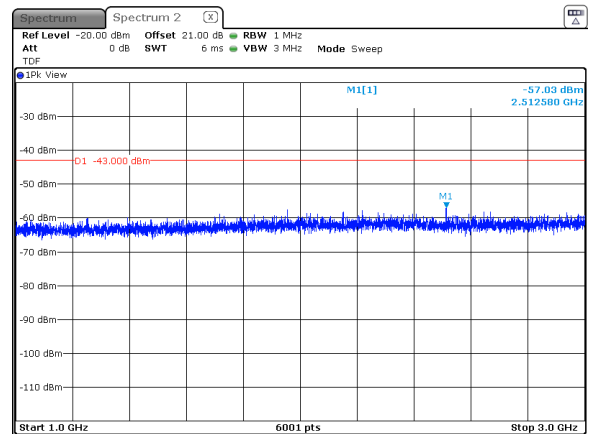
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.38 Spurious emission measurements in 1000 - 3000 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

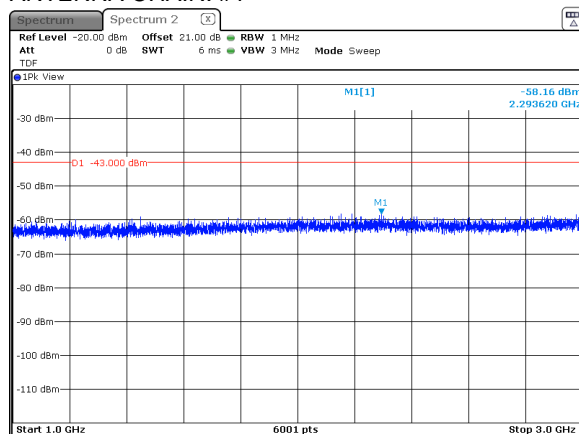


QPSK
20 MHz
ANTENNA CHAIN: #2

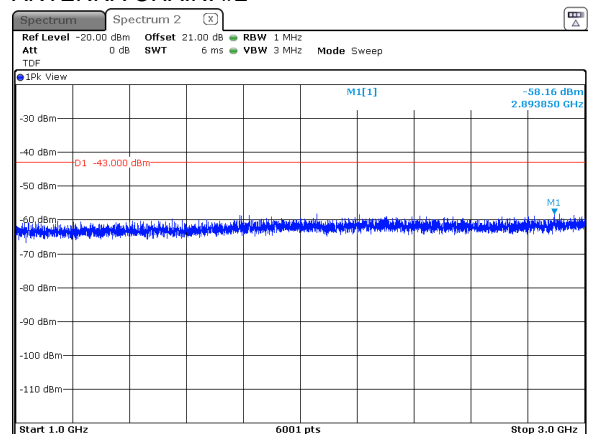


Plot 7.6.39 Spurious emission measurements in 1000 - 3000 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
20 MHz
ANTENNA CHAIN: #2



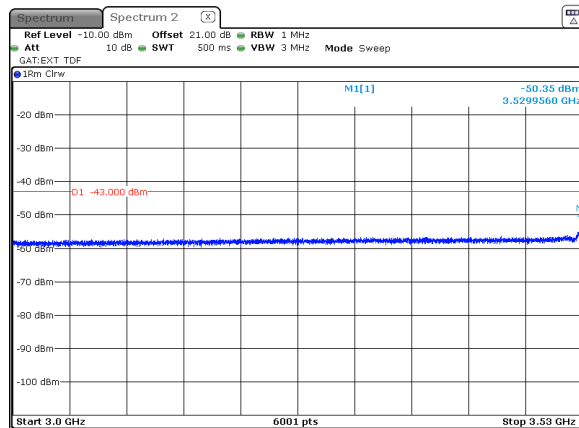


HERMON LABORATORIES

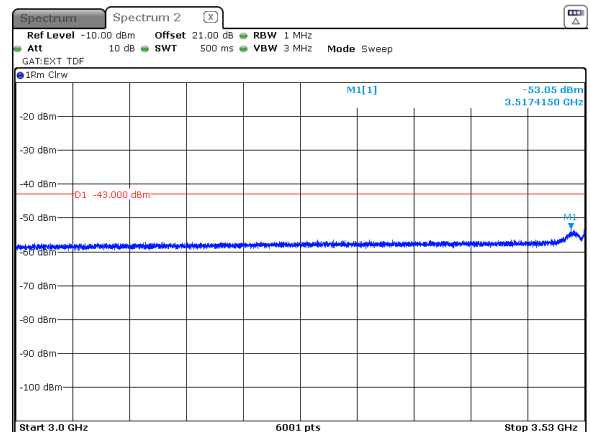
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.40 Spurious emission measurements in 3000 - 3530 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

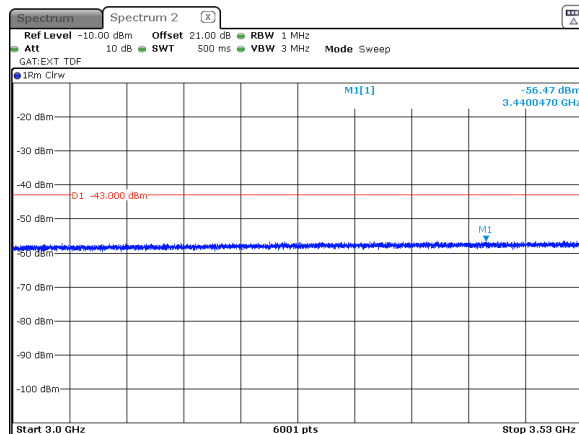


QPSK
20 MHz
ANTENNA CHAIN: #2

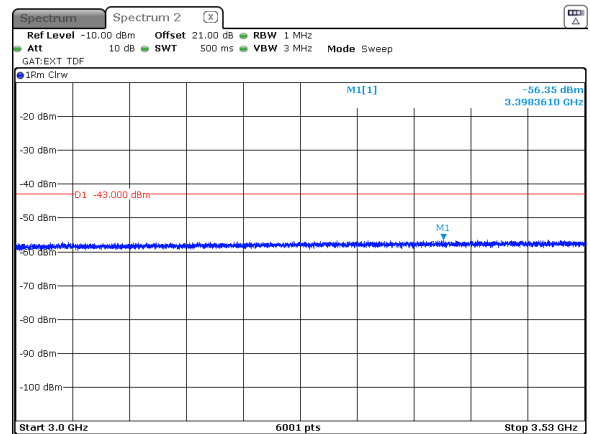


Plot 7.6.41 Spurious emission measurements in 3000 - 3530 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
20 MHz
ANTENNA CHAIN: #2



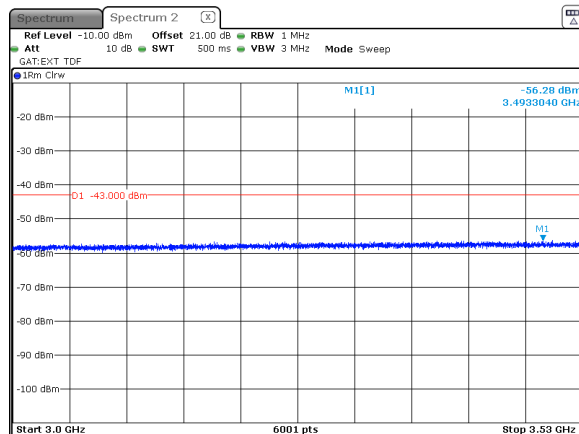


HERMON LABORATORIES

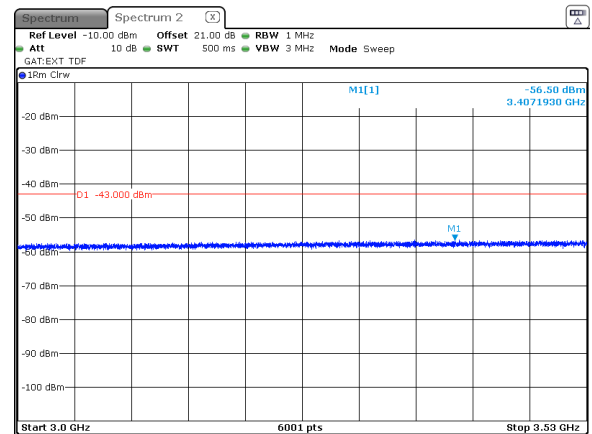
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.42 Spurious emission measurements in 3000 - 3530 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

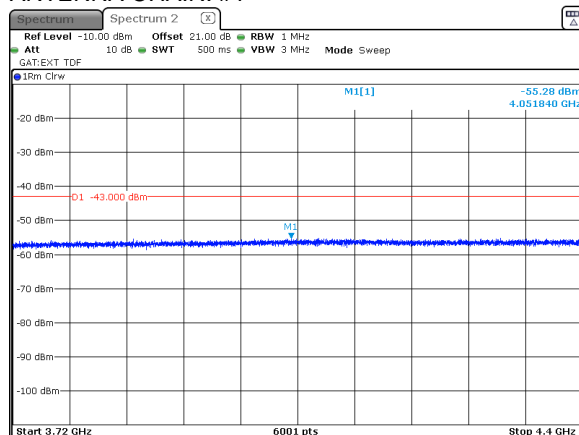


QPSK
20 MHz
ANTENNA CHAIN: #2

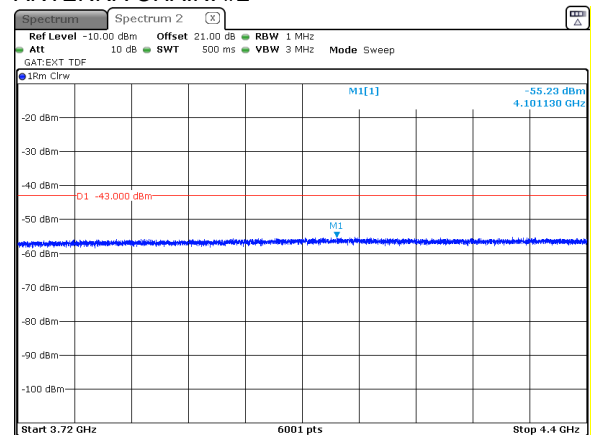


Plot 7.6.43 Spurious emission measurements in 3720 - 4400 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
20 MHz
ANTENNA CHAIN: #2



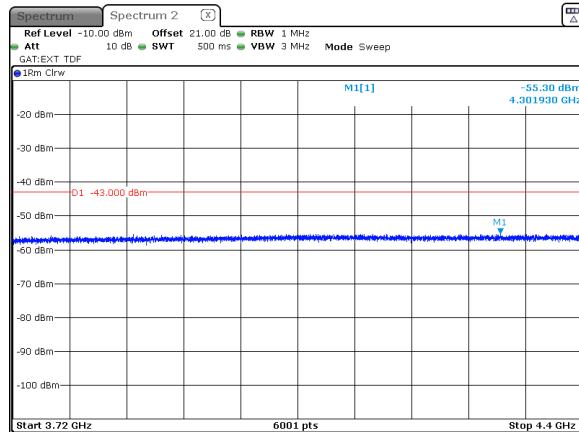


HERMON LABORATORIES

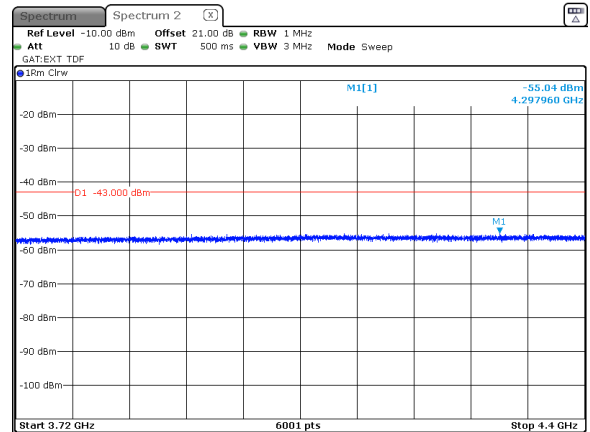
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.44 Spurious emission measurements in 3720 - 4400 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

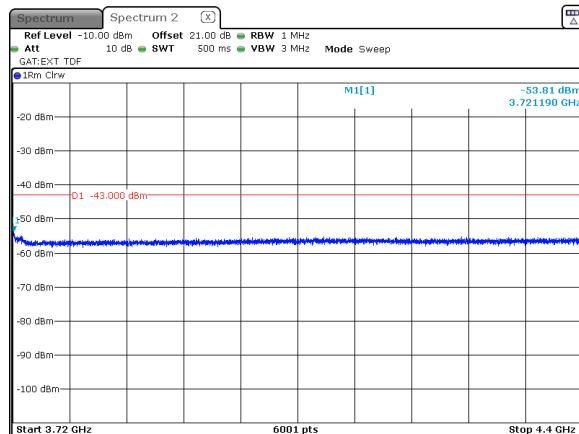


QPSK
20 MHz
ANTENNA CHAIN: #2

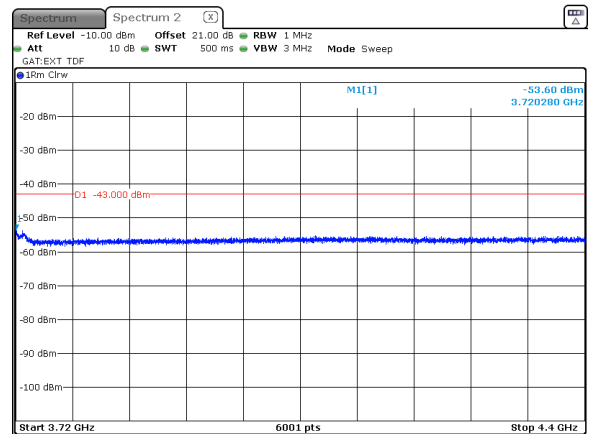


Plot 7.6.45 Spurious emission measurements in 3720 - 4400 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
20 MHz
ANTENNA CHAIN: #2





HERMON LABORATORIES

Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

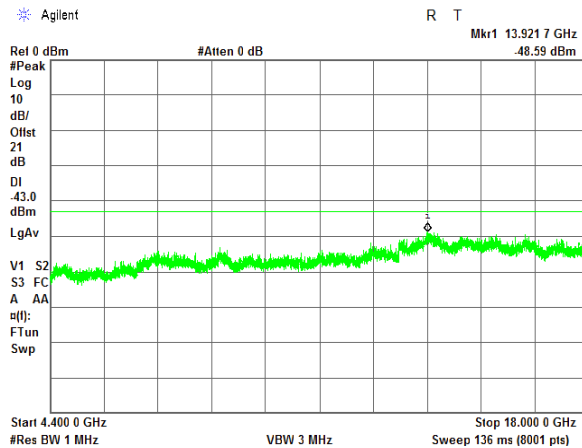
Plot 7.6.46 Spurious emission measurements in 4400 - 18000 MHz range at low carrier frequency

MODULATION:

CHANNEL SPACING:

ANTENNA CHAIN: #1

* Agilent

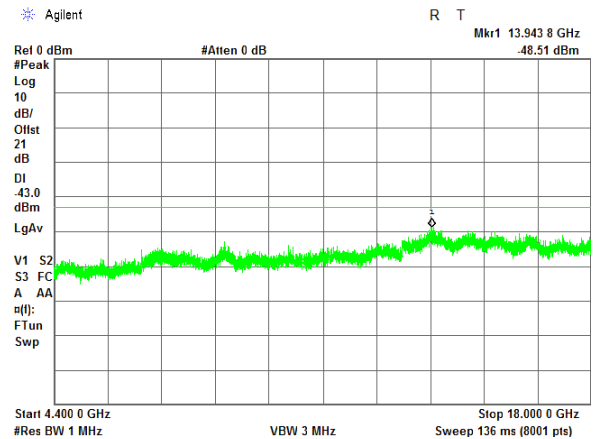


QPSK

20 MHz

ANTENNA CHAIN: #2

* Agilent



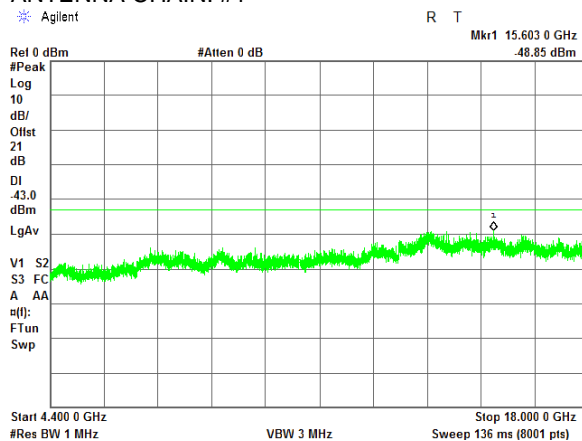
Plot 7.6.47 Spurious emission measurements in 4400 - 18000 MHz range at mid carrier frequency

MODULATION:

CHANNEL SPACING:

ANTENNA CHAIN: #1

* Agilent

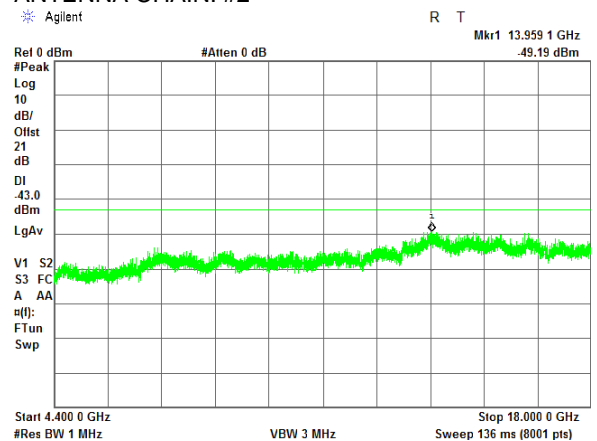


QPSK

20 MHz

ANTENNA CHAIN: #2

* Agilent





HERMON LABORATORIES

Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

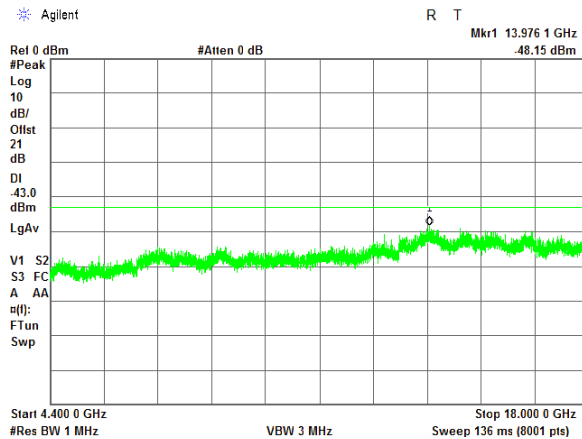
Plot 7.6.48 Spurious emission measurements in 4400 - 18000 MHz range at high carrier frequency

MODULATION:

CHANNEL SPACING:

ANTENNA CHAIN: #1

* Agilent

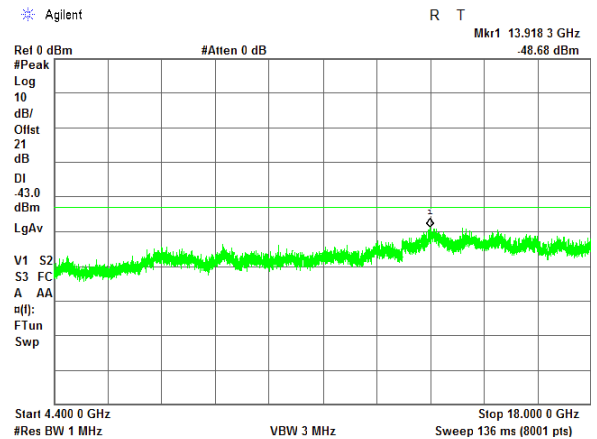


QPSK

20 MHz

ANTENNA CHAIN: #2

* Agilent



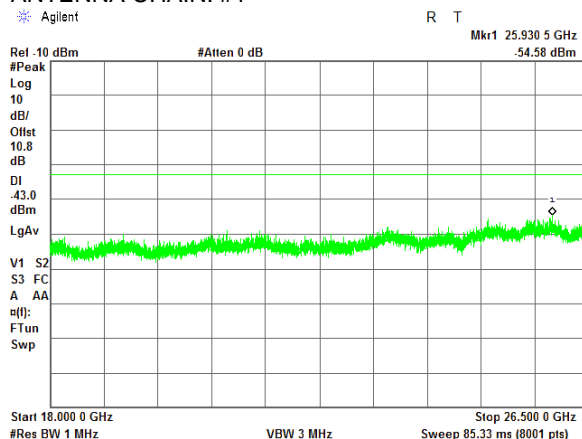
Plot 7.6.49 Spurious emission measurements in 18000 - 26500 MHz range at low carrier frequency

MODULATION:

CHANNEL SPACING:

ANTENNA CHAIN: #1

* Agilent

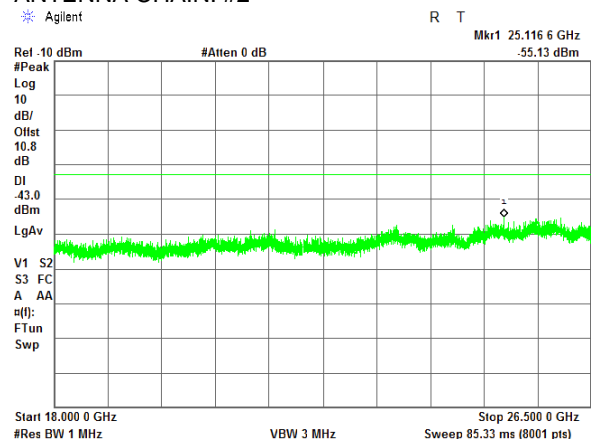


QPSK

20 MHz

ANTENNA CHAIN: #2

* Agilent





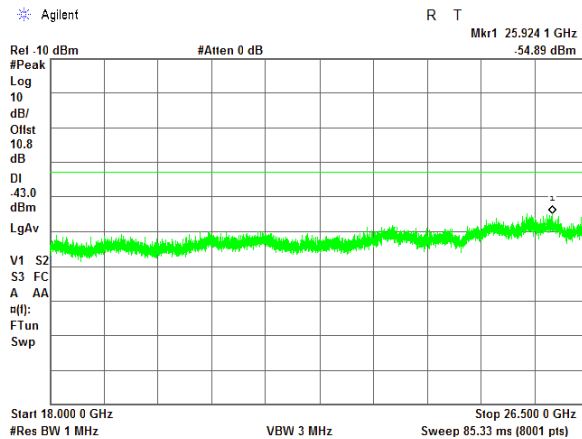
HERMON LABORATORIES

Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.50 Spurious emission measurements in 18000 - 26500 MHz range at mid carrier frequency

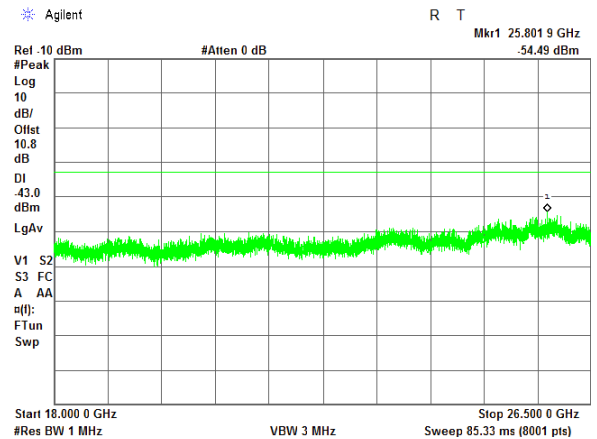
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

* Agilent



QPSK
20 MHz
ANTENNA CHAIN: #2

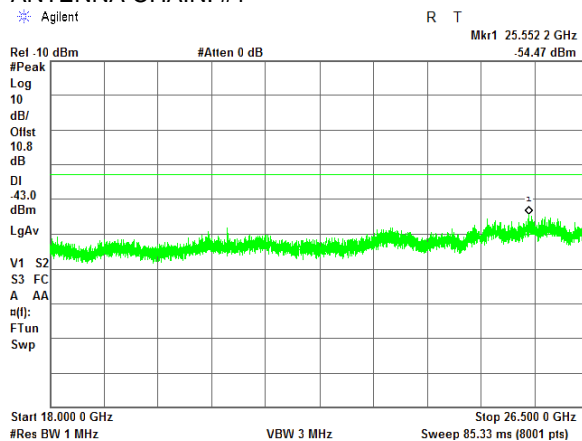
* Agilent



Plot 7.6.51 Spurious emission measurements in 18000 - 26500 MHz range at high carrier frequency

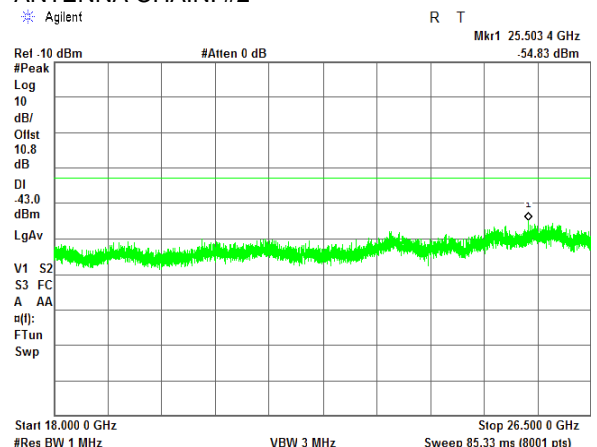
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

* Agilent



QPSK
20 MHz
ANTENNA CHAIN: #2

* Agilent





HERMON LABORATORIES

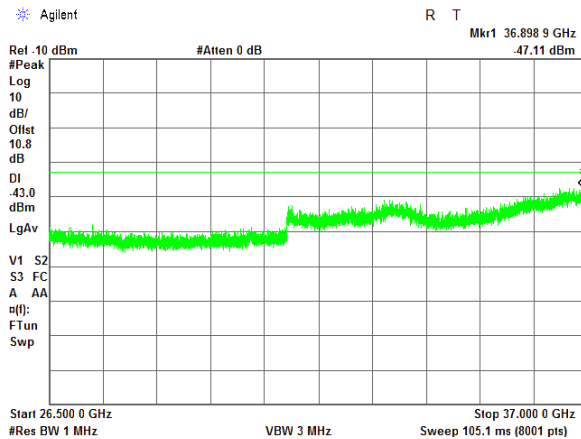
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.52 Spurious emission measurements in 26500 - 37000 MHz range at low carrier frequency

MODULATION:

CHANNEL SPACING:

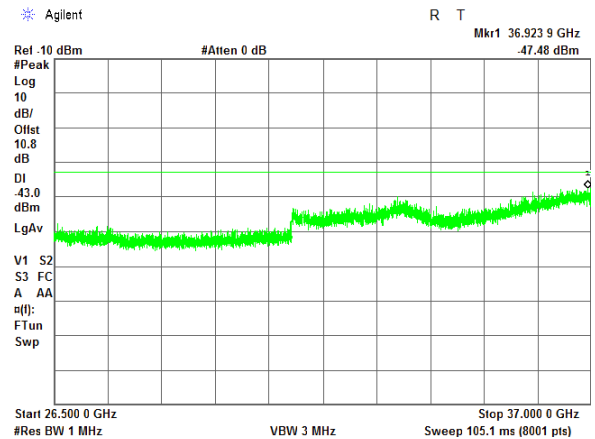
ANTENNA CHAIN: #1



QPSK

20 MHz

ANTENNA CHAIN: #2

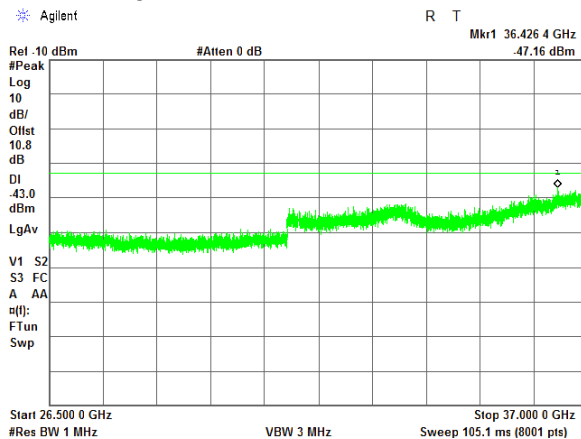


Plot 7.6.53 Spurious emission measurements in 26500 - 37000 MHz range at mid carrier frequency

MODULATION:

CHANNEL SPACING:

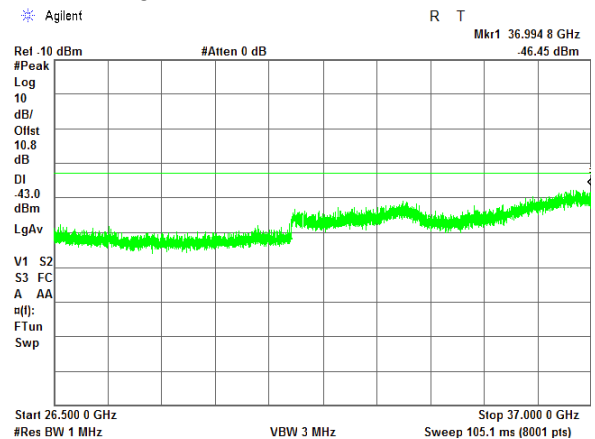
ANTENNA CHAIN: #1



QPSK

20 MHz

ANTENNA CHAIN: #2





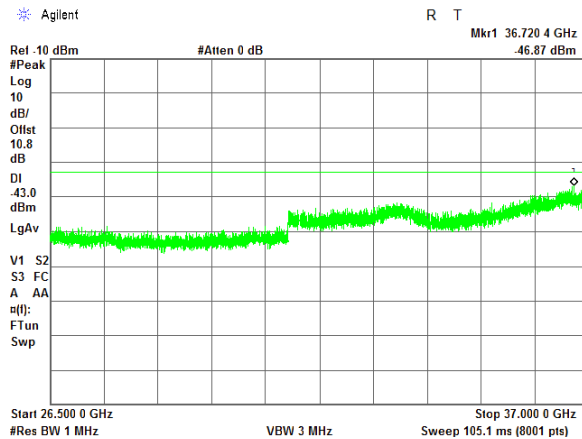
HERMION LABORATORIES

Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.54 Spurious emission measurements in 26500 - 37000 MHz range at high carrier frequency

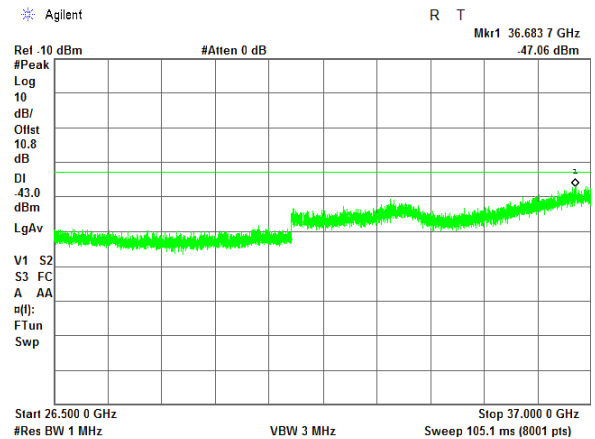
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

* Agilent



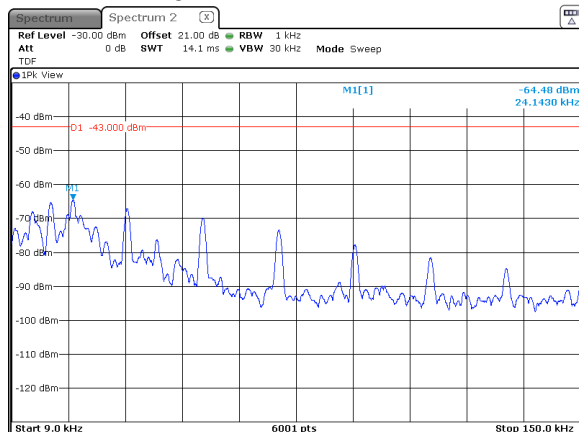
QPSK
20 MHz
ANTENNA CHAIN: #2

* Agilent

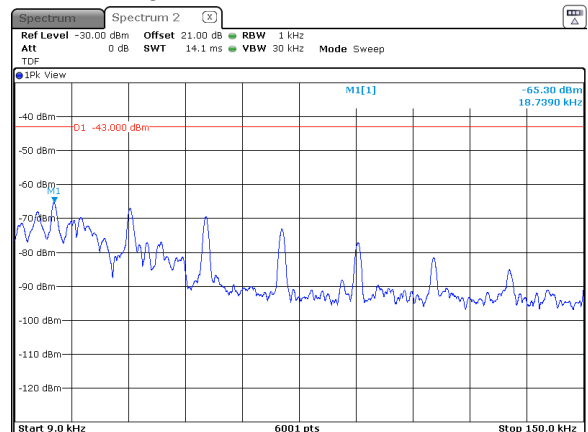


Plot 7.6.55 Spurious emission measurements in 9 - 150 kHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2



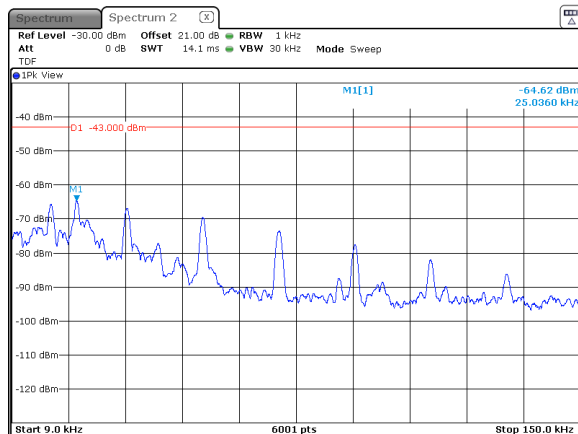


HERMON LABORATORIES

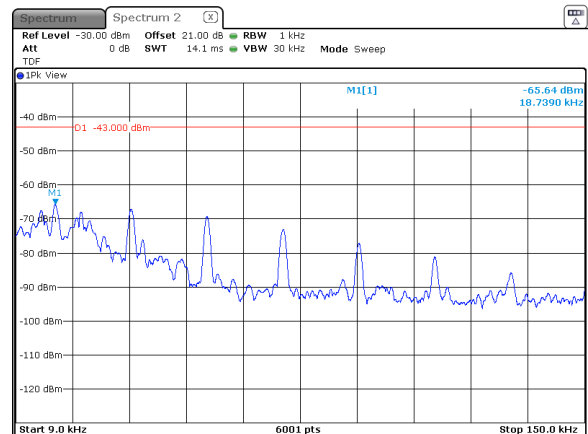
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.56 Spurious emission measurements in 9 - 150 kHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

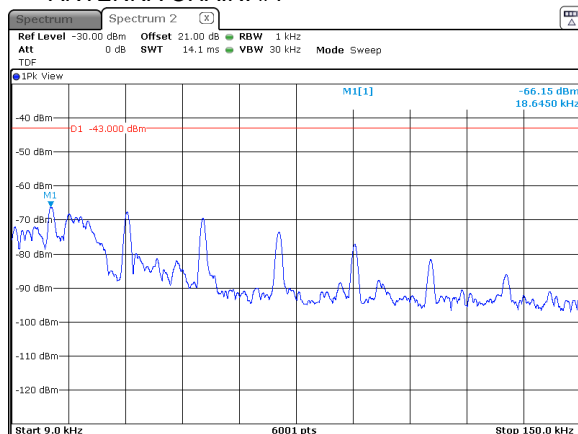


QPSK
40 MHz
ANTENNA CHAIN: #2

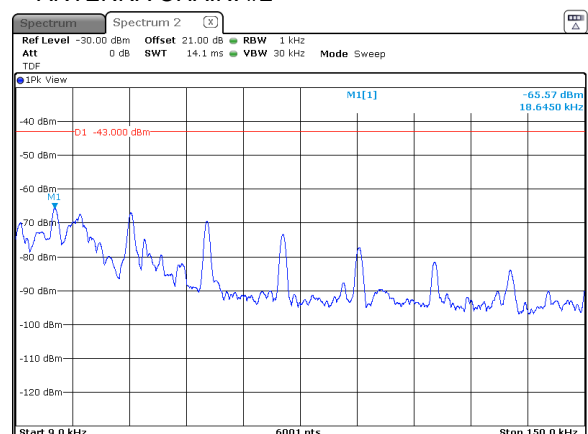


Plot 7.6.57 Spurious emission measurements in 9 - 150 kHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2





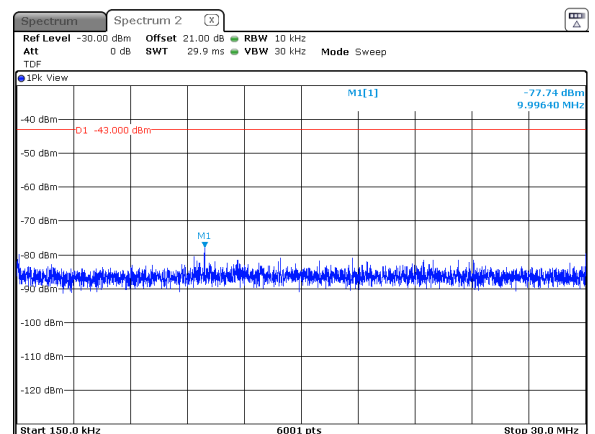
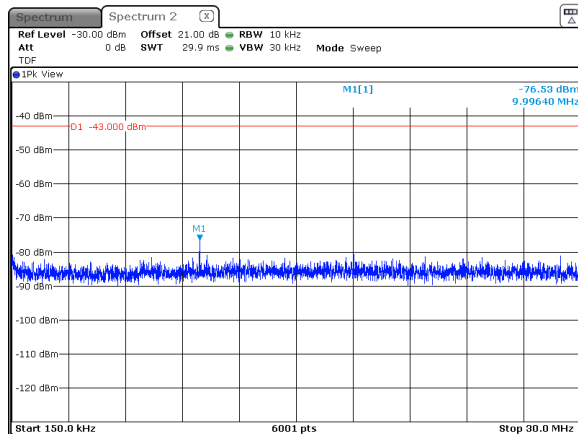
HERMON LABORATORIES

Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.58 Spurious emission measurements in 150 kHz - 30 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

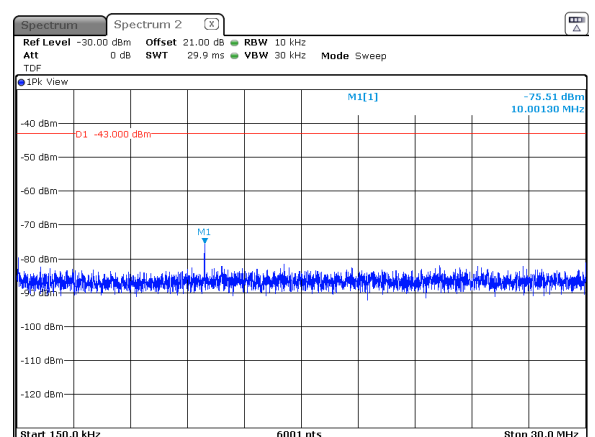
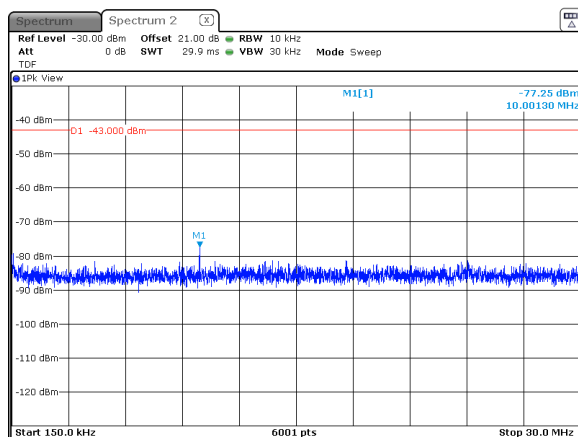
QPSK
40 MHz
ANTENNA CHAIN: #2



Plot 7.6.59 Spurious emission measurements in 150 kHz - 30 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
40 MHz
ANTENNA CHAIN: #2



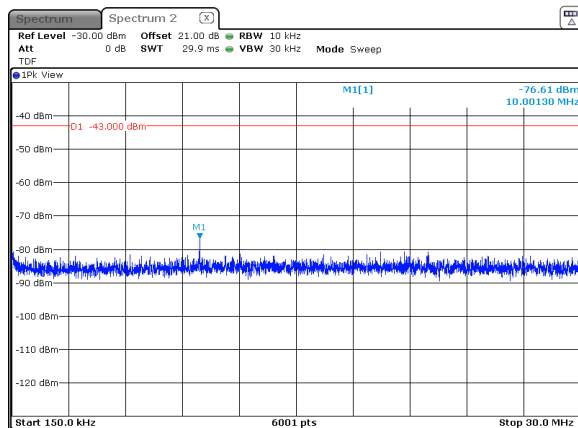


HERMON LABORATORIES

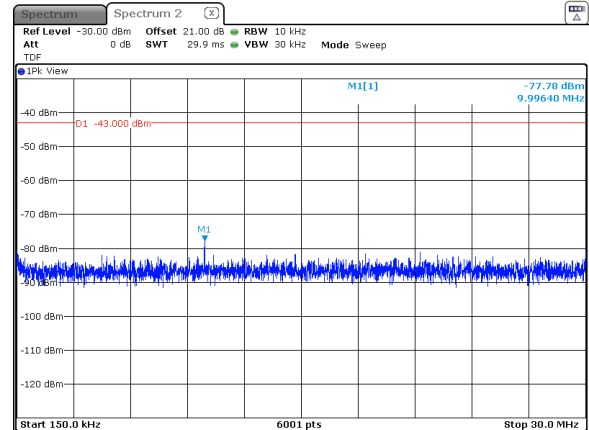
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.60 Spurious emission measurements in 150 kHz - 30 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

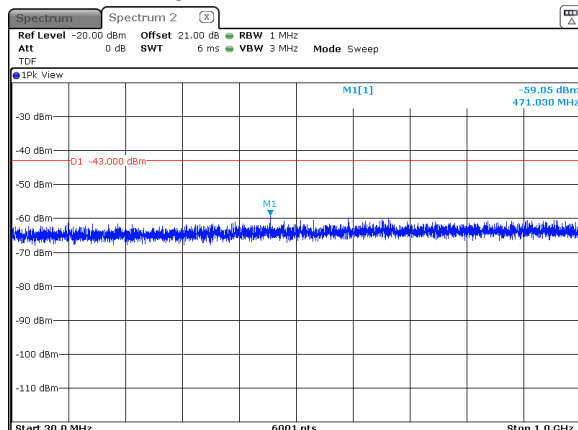


QPSK
40 MHz
ANTENNA CHAIN: #2

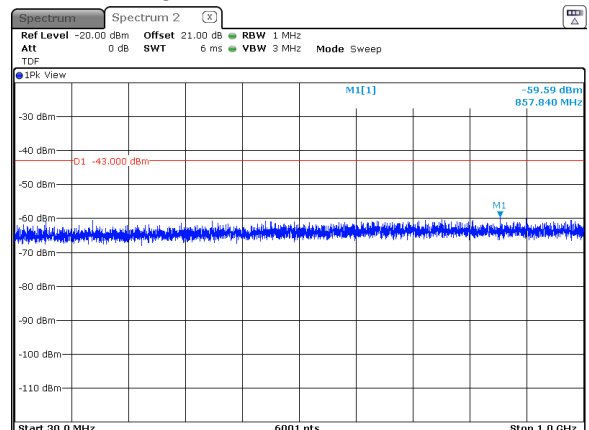


Plot 7.6.61 Spurious emission measurements in 30 - 1000 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2



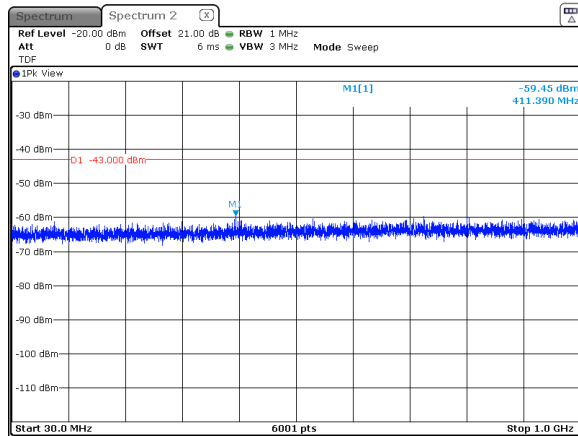


HERMON LABORATORIES

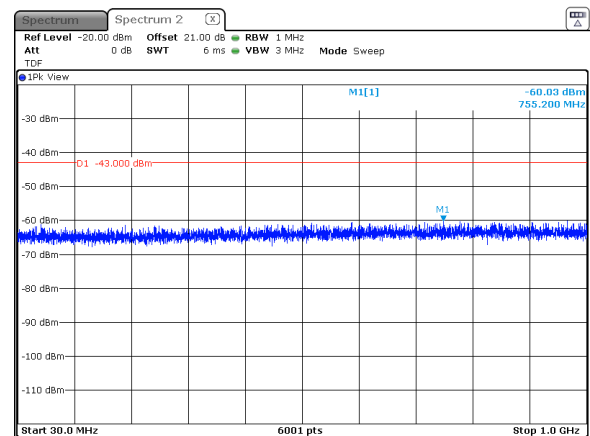
Test specification: Section 96.41(e)(3), Conducted spurious emissions			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.62 Spurious emission measurements in 30 - 1000 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

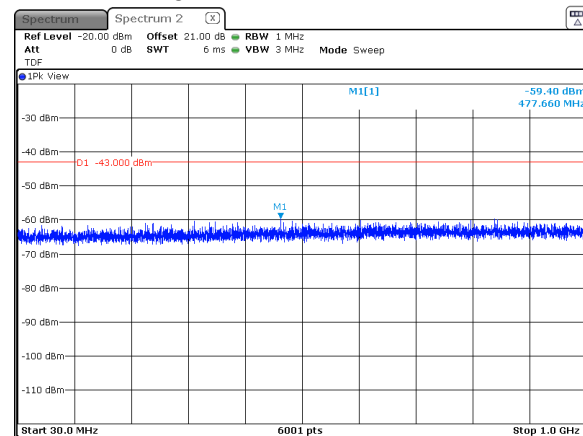


QPSK
40 MHz
ANTENNA CHAIN: #2

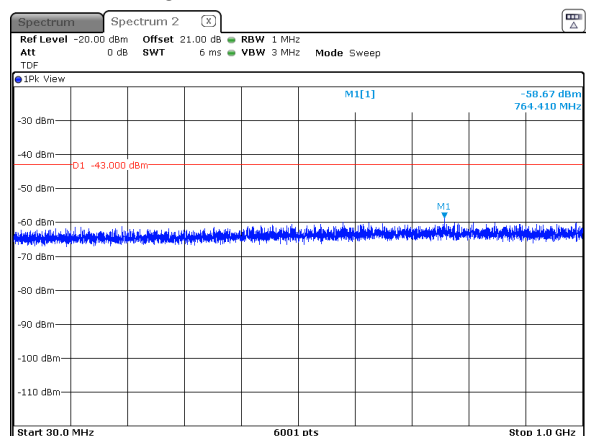


Plot 7.6.63 Spurious emission measurements in 30 - 1000 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2





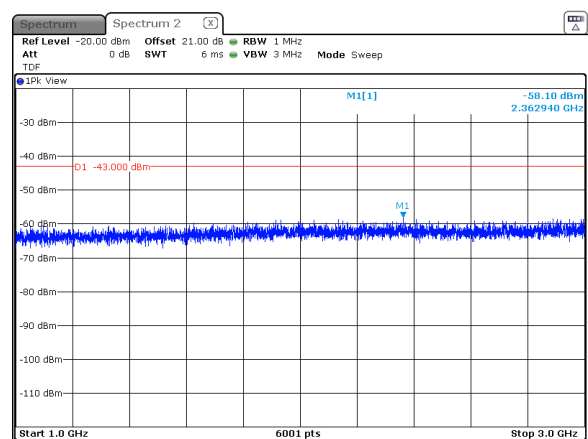
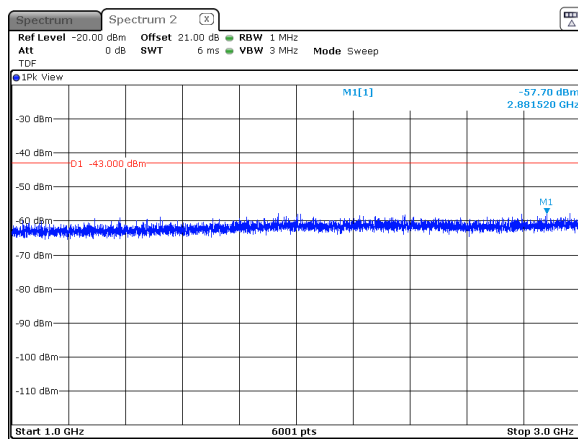
HERMON LABORATORIES

Test specification: Section 96.41(e)(3), Conducted spurious emissions			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.64 Spurious emission measurements in 1000 - 3000 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

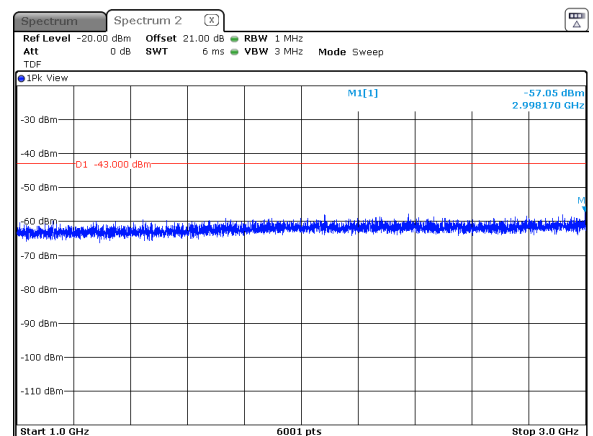
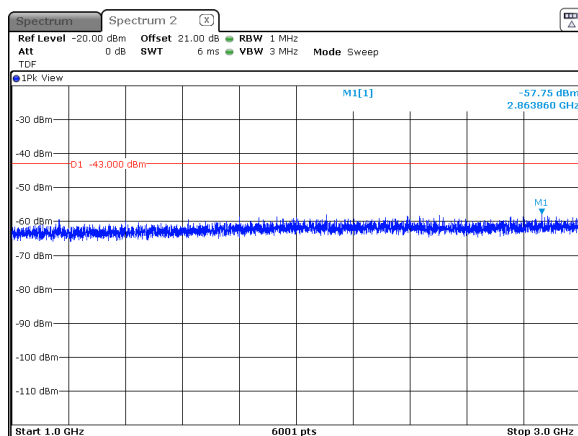
QPSK
40 MHz
ANTENNA CHAIN: #2



Plot 7.6.65 Spurious emission measurements in 1000 - 3000 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
40 MHz
ANTENNA CHAIN: #2



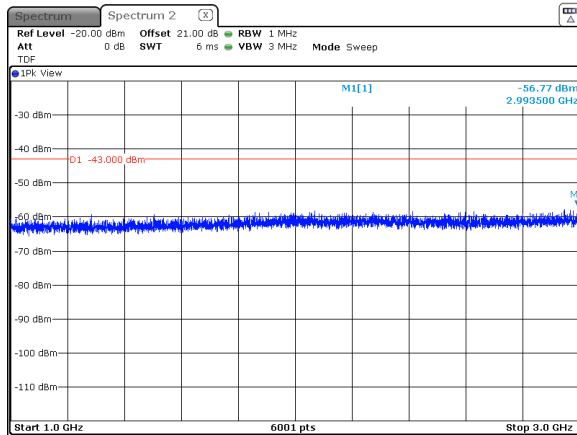


HERMON LABORATORIES

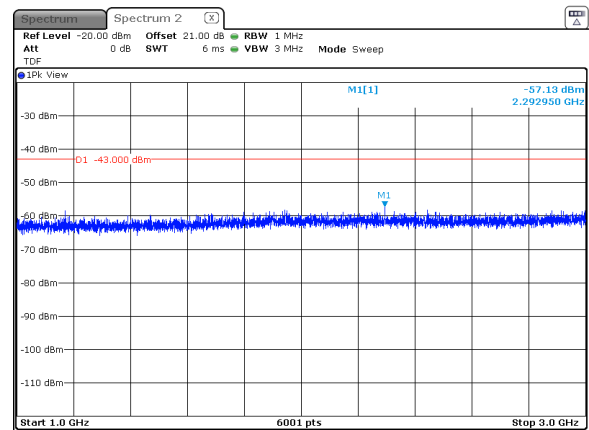
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.66 Spurious emission measurements in 1000 - 3000 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

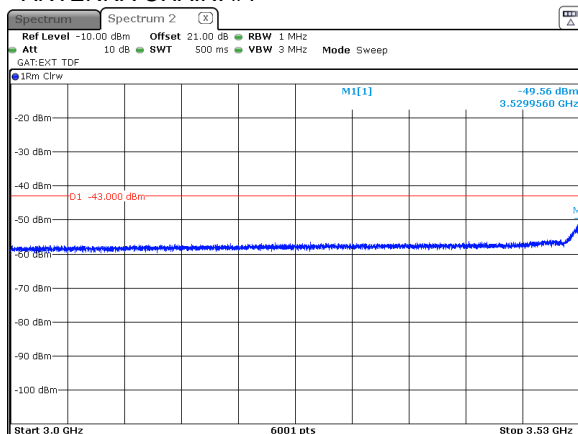


QPSK
40 MHz
ANTENNA CHAIN: #2

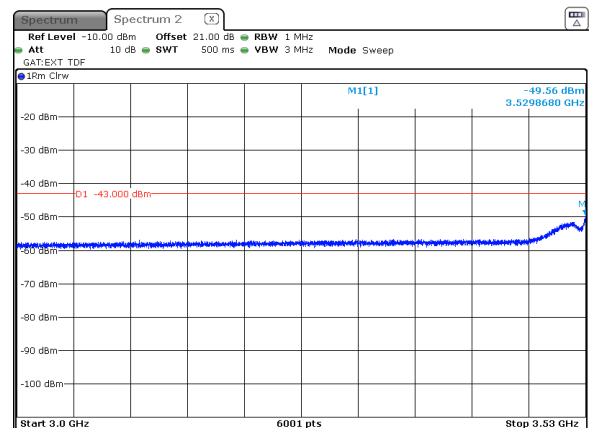


Plot 7.6.67 Spurious emission measurements in 3000 - 3530 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2



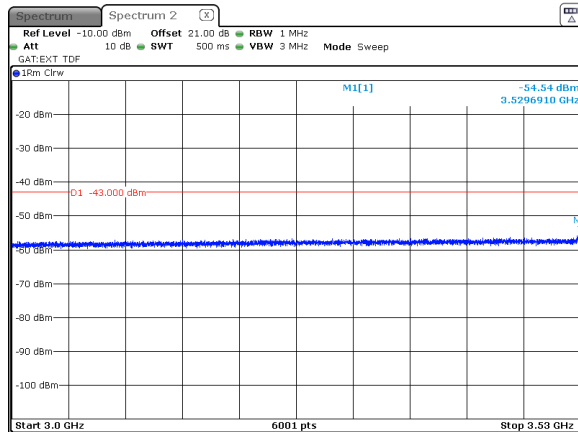


HERMON LABORATORIES

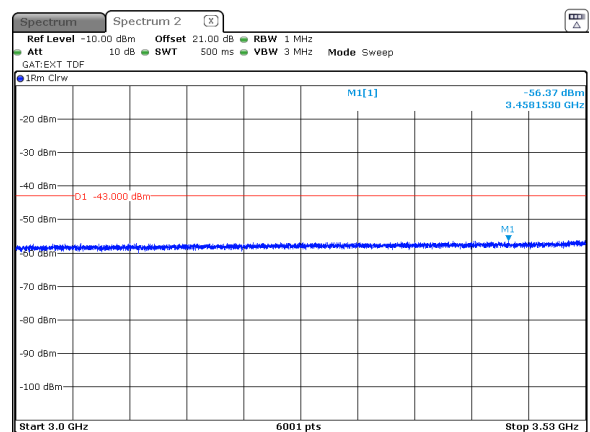
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.68 Spurious emission measurements in 3000 - 3530 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

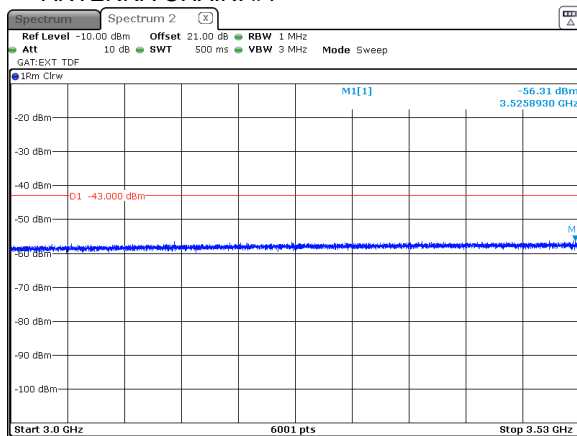


QPSK
40 MHz
ANTENNA CHAIN: #2

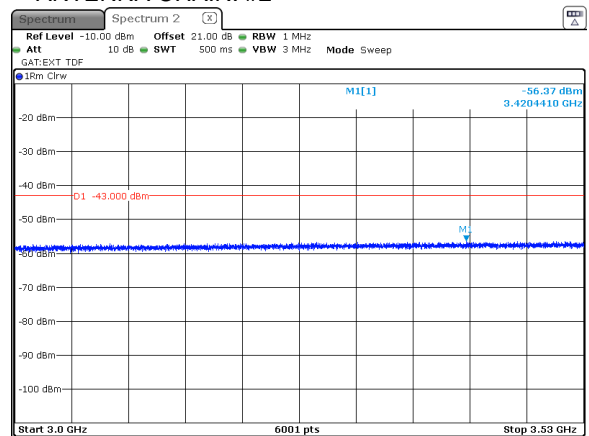


Plot 7.6.69 Spurious emission measurements in 3000 - 3530 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2



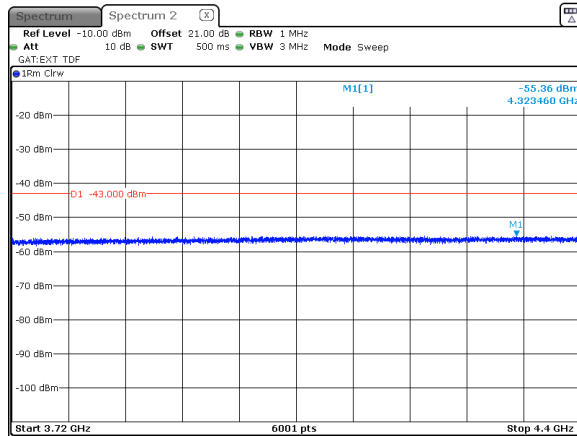


HERMON LABORATORIES

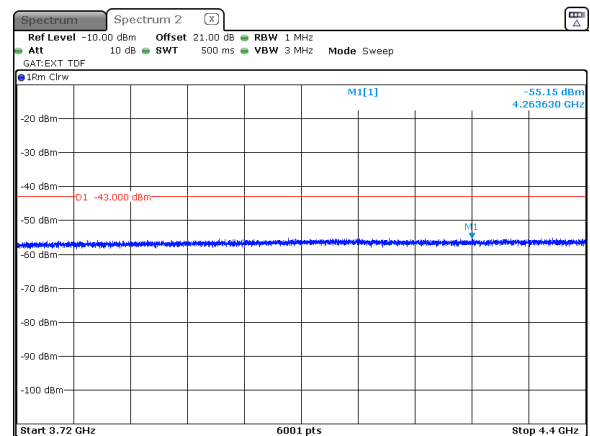
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.70 Spurious emission measurements in 3720 - 4400 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

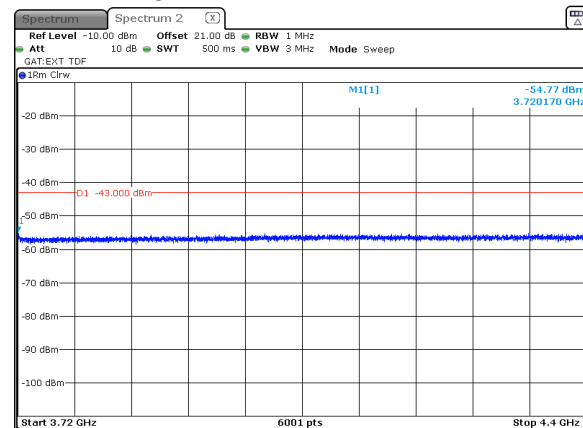


QPSK
40 MHz
ANTENNA CHAIN: #2

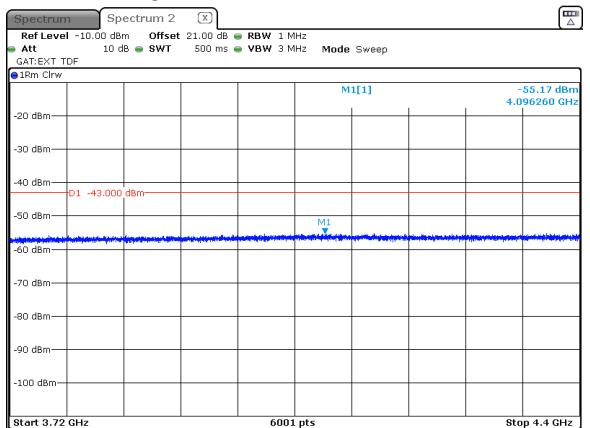


Plot 7.6.71 Spurious emission measurements in 3720 - 4400 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2



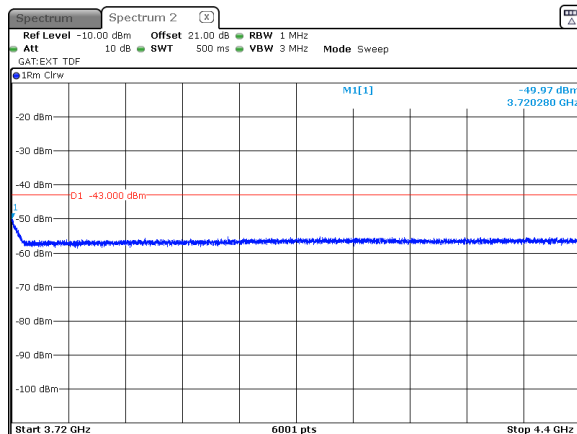


HERMON LABORATORIES

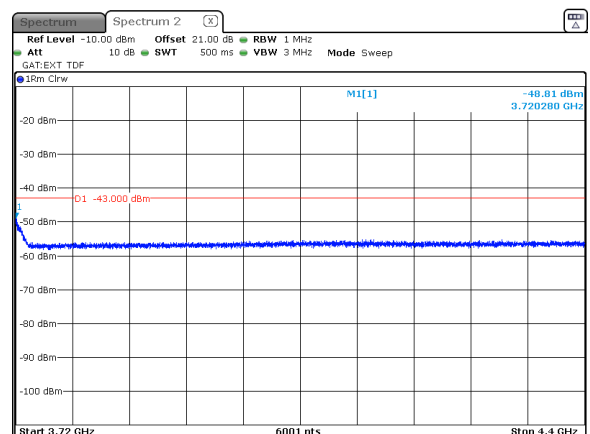
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.72 Spurious emission measurements in 3720 - 4400 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

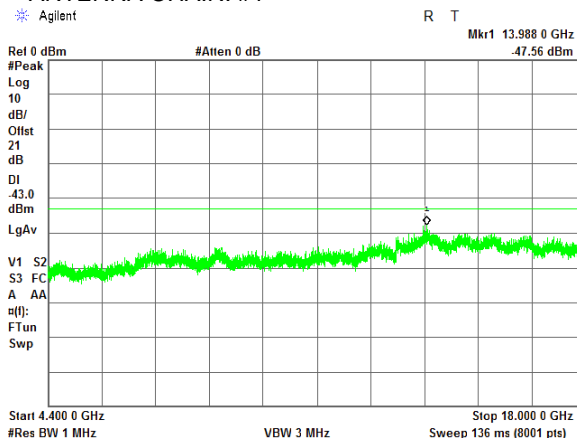


QPSK
40 MHz
ANTENNA CHAIN: #2

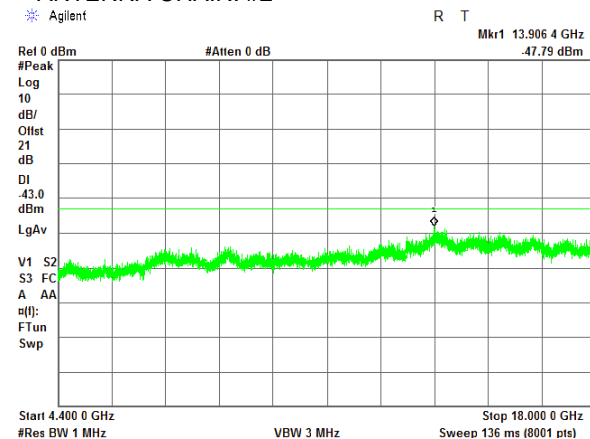


Plot 7.6.73 Spurious emission measurements in 4400 - 18000 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2





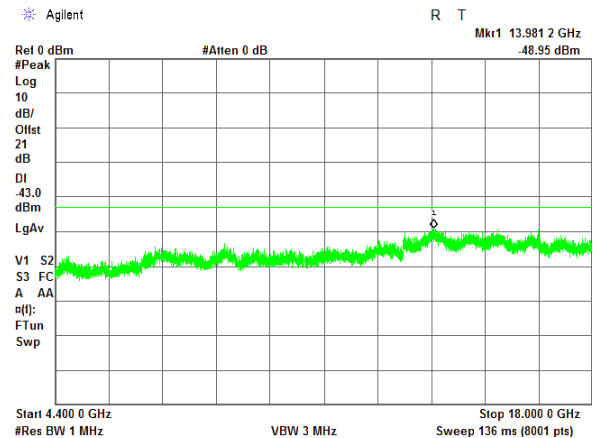
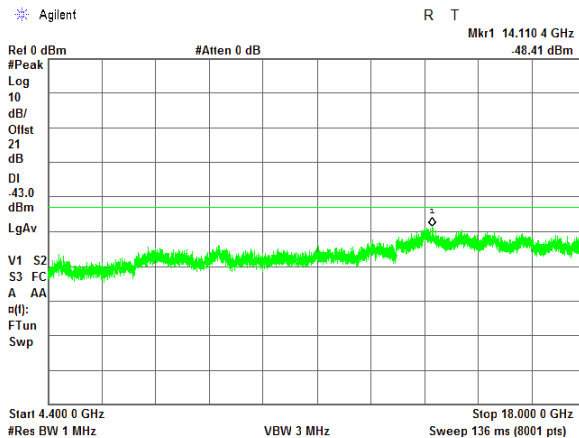
HERMON LABORATORIES

Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.74 Spurious emission measurements in 4400 - 18000 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

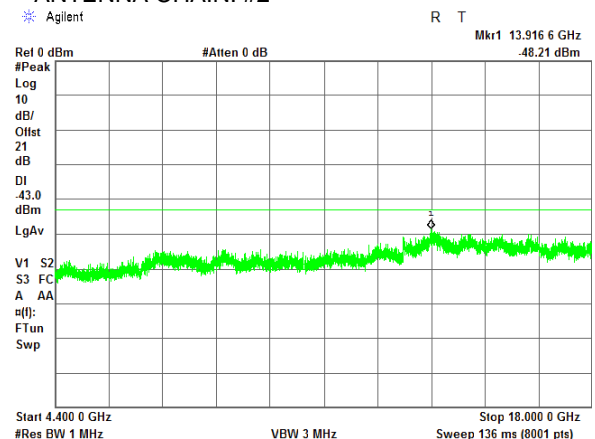
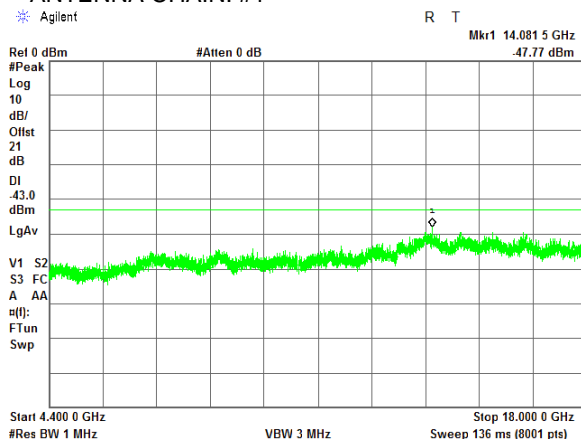
QPSK
40 MHz
ANTENNA CHAIN: #2



Plot 7.6.75 Spurious emission measurements in 4400 - 18000 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
40 MHz
ANTENNA CHAIN: #2



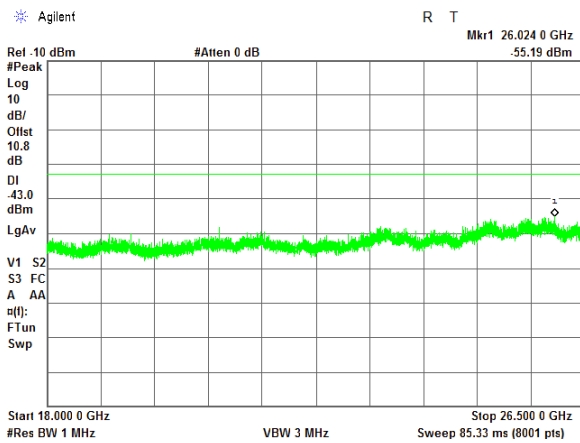


HERMON LABORATORIES

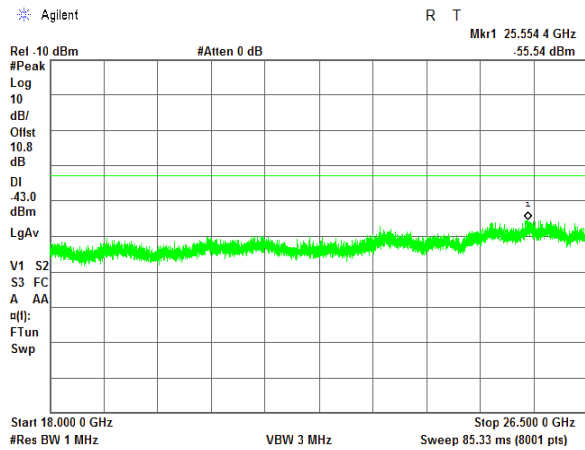
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.76 Spurious emission measurements in 18000 - 26500 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

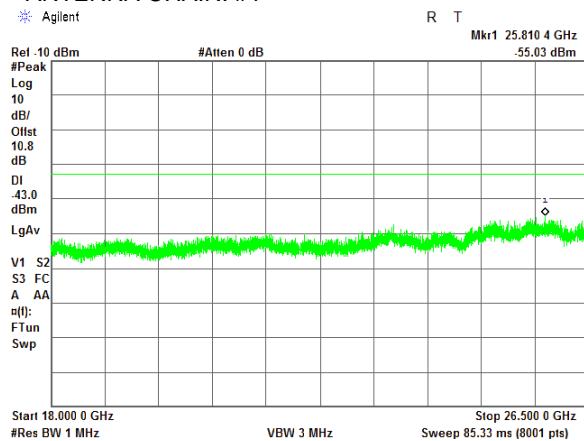


QPSK
40 MHz
ANTENNA CHAIN: #2

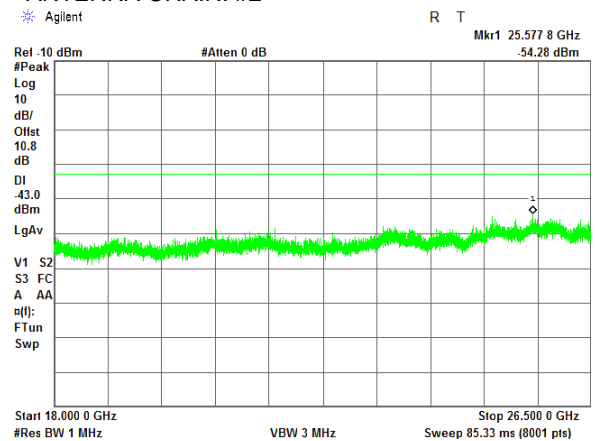


Plot 7.6.77 Spurious emission measurements in 18000 - 26500 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2





HERMON LABORATORIES

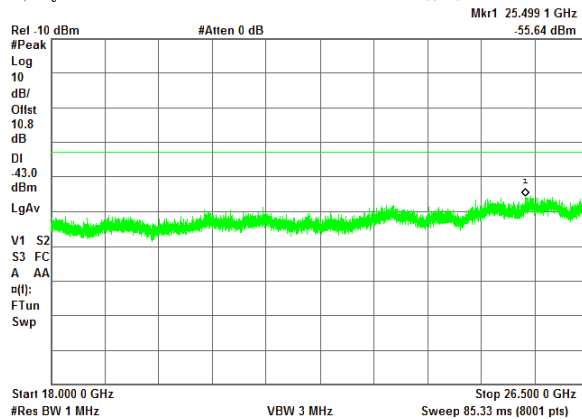
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.78 Spurious emission measurements in 18000 - 26500 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

* Agilent

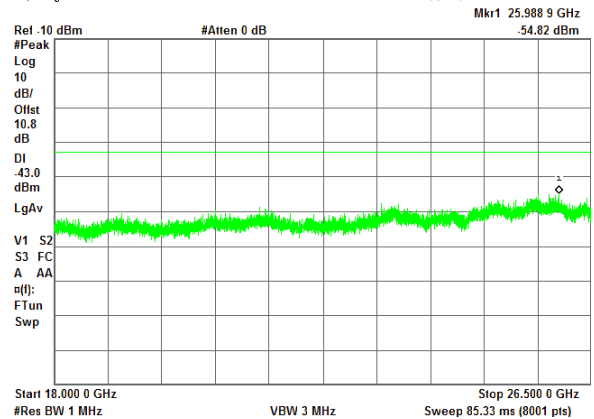
R T



QPSK
40 MHz
ANTENNA CHAIN: #2

* Agilent

R T

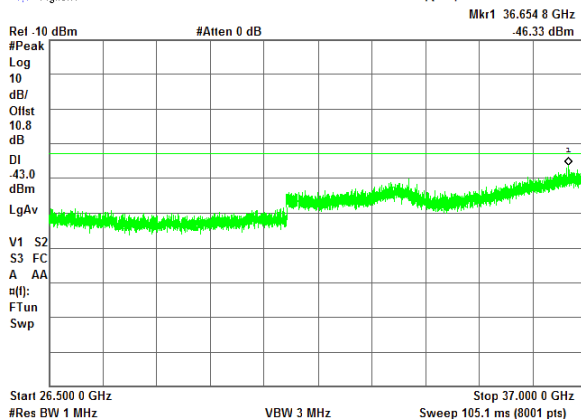


Plot 7.6.79 Spurious emission measurements in 26500 - 37000 MHz range at low carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

* Agilent

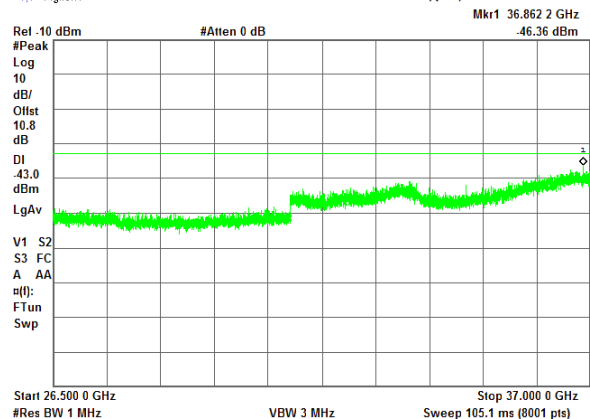
R T



QPSK
40 MHz
ANTENNA CHAIN: #2

* Agilent

R T



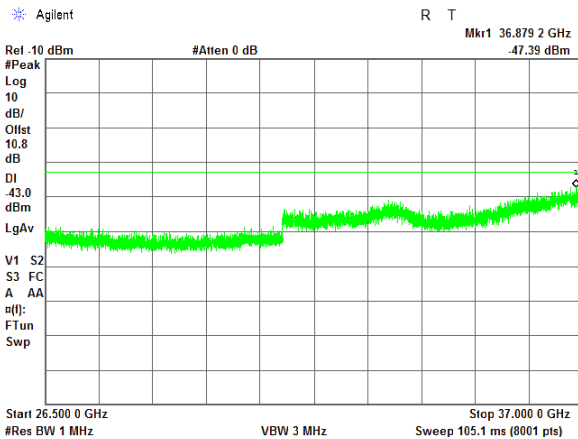


HERMON LABORATORIES

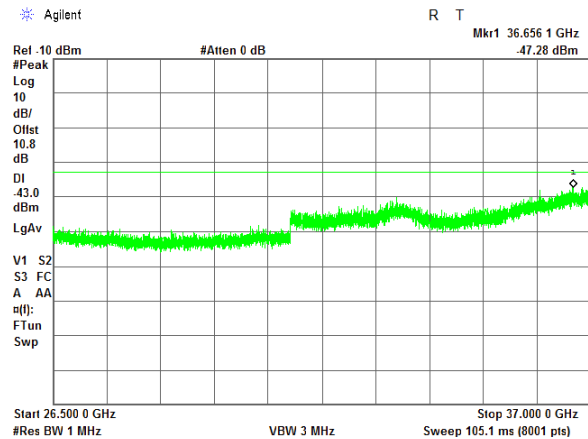
Test specification:		Section 96.41(e)(3), Conducted spurious emissions	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
09-Feb-22			
Temperature: 24.1 °C	Relative Humidity: 49 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.6.80 Spurious emission measurements in 26500 - 37000 MHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

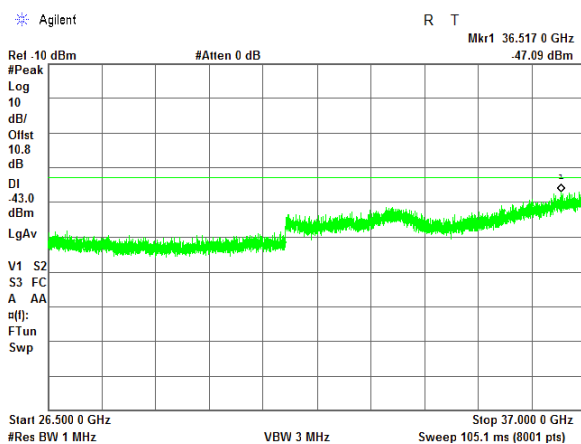


QPSK
40 MHz
ANTENNA CHAIN: #2

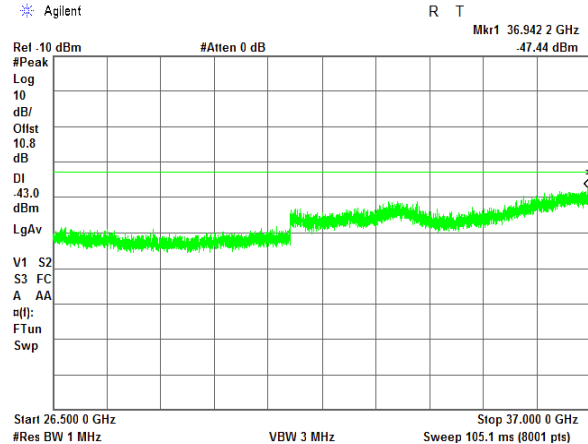


Plot 7.6.81 Spurious emission measurements in 26500 - 37000 MHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1



QPSK
40 MHz
ANTENNA CHAIN: #2





Test specification: Section 2.1055, Frequency stability			
Test procedure: 47 CFR, Section 2.1055			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Feb-22			
Temperature: 24.2 °C	Relative Humidity: 48 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

7.7 Frequency stability test

7.7.1 General

This test was performed to measure frequency stability of transmitter RF carrier. Specification test limits are given in Table 7.7.1.

Table 7.7.1 Frequency stability limits

Assigned frequency, MHz	Maximum allowed frequency displacement	
	ppm	Hz
3555.0	NA	NA
3625.0		NA
3695.0		NA

7.7.2 Test procedure

- 7.7.2.1 The EUT was set up as shown in Figure 7.7.1, energized and its proper operation was checked.
- 7.7.2.2 The EUT power was turned off. Temperature within test chamber was set to +30°C and a period of time sufficient to stabilize all of the oscillator circuit components was allowed.
- 7.7.2.3 The EUT was powered on and carrier frequency was measured at start up moment and then every minute until frequency had been stabilized or 10 minutes elapsed whichever reached the last. The EUT was powered off.
- 7.7.2.4 The above procedure was repeated at 0°C and at the lowest test temperature.
- 7.7.2.5 The EUT was powered on and carrier frequency was measured at start up moment and at the end of stabilization period at the rest of test temperatures and voltages. The EUT was powered off.
- 7.7.2.6 Frequency displacement was calculated and compared with the limit as provided in Table 7.7.2.

Figure 7.7.1 Frequency stability test setup

