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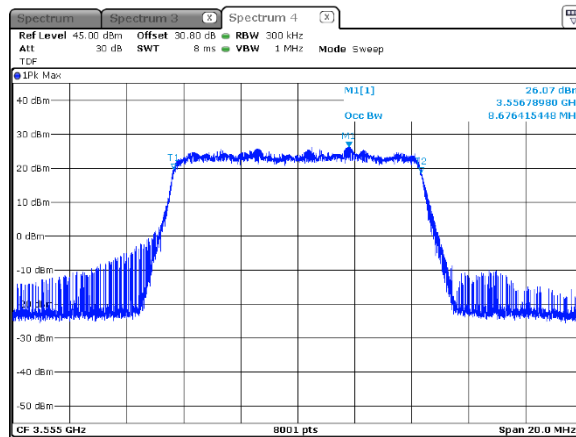
Report ID: AIRRAD_FCC.42554_Rev2

Date of Issue: 25-Oct-21

Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

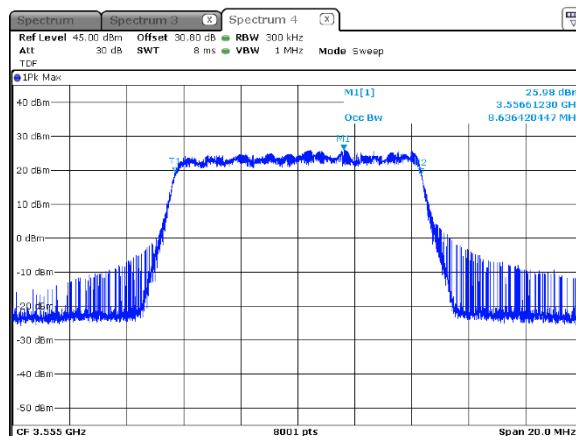
Plot 7.3.3 Occupied bandwidth test result at low frequency

MODULATION: 64QAM
CHANNEL SPACING: 10 MHz
ANTENNA CHAIN: 1



Plot 7.3.4 Occupied bandwidth test result at low frequency

MODULATION: 256QAM
CHANNEL SPACING: 10 MHz
ANTENNA CHAIN: 1





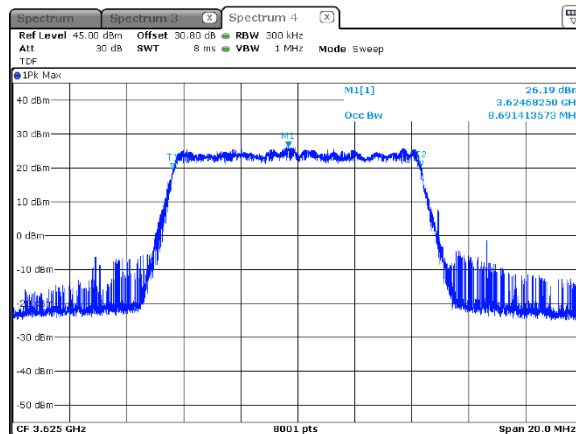
HERMON LABORATORIES

Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

Plot 7.3.5 Occupied bandwidth test result at mid frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN:

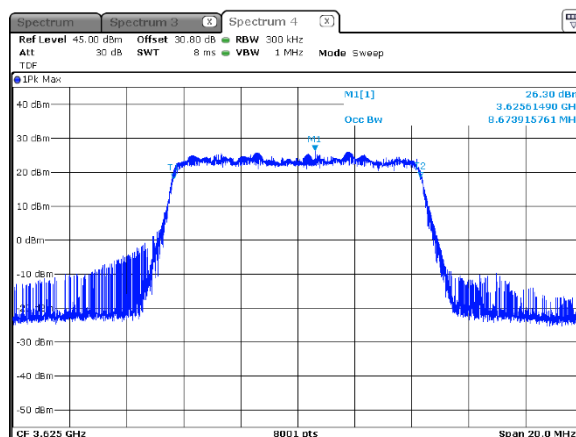
QPSK
10 MHz
1



Plot 7.3.6 Occupied bandwidth test result at mid frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN:

16QAM
10 MHz
1





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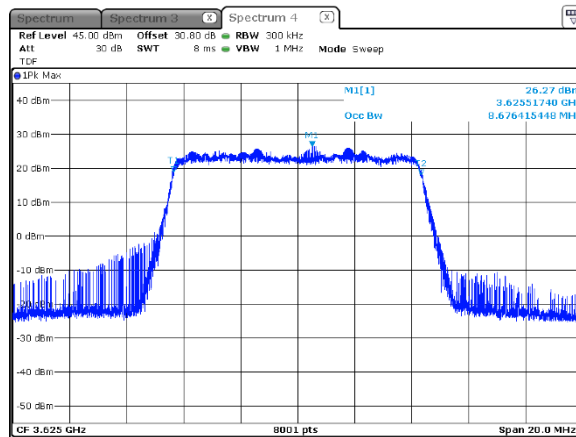
Report ID: AIRRAD_FCC.42554_Rev2

Date of Issue: 25-Oct-21

Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

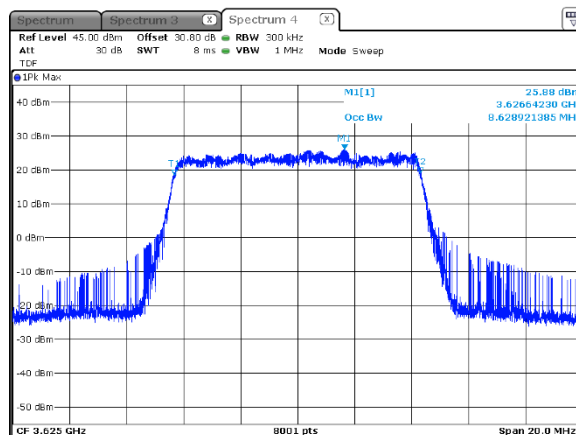
Plot 7.3.7 Occupied bandwidth test result at mid frequency

MODULATION: 64QAM
CHANNEL SPACING: 10 MHz
ANTENNA CHAIN: 1



Plot 7.3.8 Occupied bandwidth test result at mid frequency

MODULATION: 256QAM
CHANNEL SPACING: 10 MHz
ANTENNA CHAIN: 1



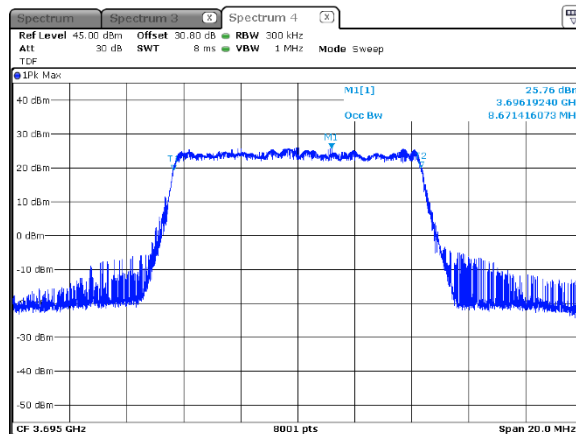


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Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

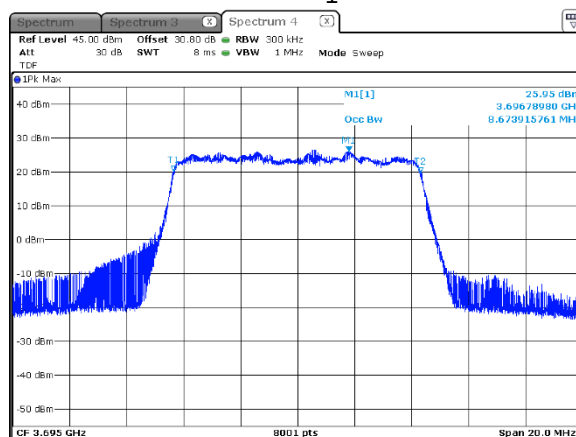
Plot 7.3.9 Occupied bandwidth test result at high frequency

MODULATION: QPSK
CHANNEL SPACING: 10 MHz
ANTENNA CHAIN: 1



Plot 7.3.10 Occupied bandwidth test result at high frequency

MODULATION: 16QAM
CHANNEL SPACING: 10 MHz
ANTENNA CHAIN: 1



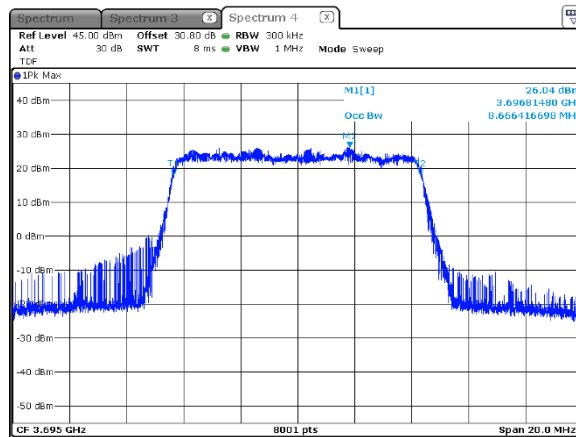


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Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

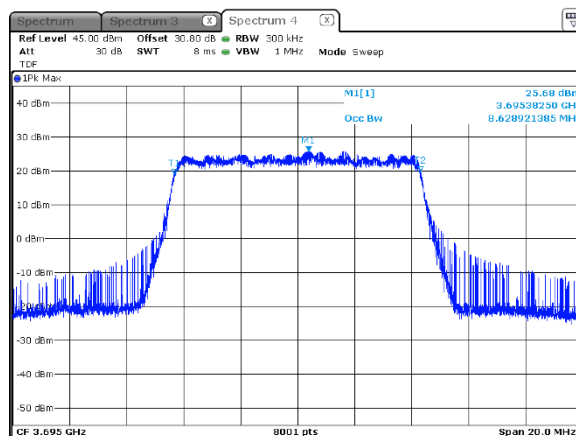
Plot 7.3.11 Occupied bandwidth test result at high frequency

MODULATION: 64QAM
CHANNEL SPACING: 10 MHz
ANTENNA CHAIN: 1



Plot 7.3.12 Occupied bandwidth test result at high frequency

MODULATION: 256QAM
CHANNEL SPACING: 10 MHz
ANTENNA CHAIN: 1





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Report ID: AIRRAD_FCC.42554_Rev2

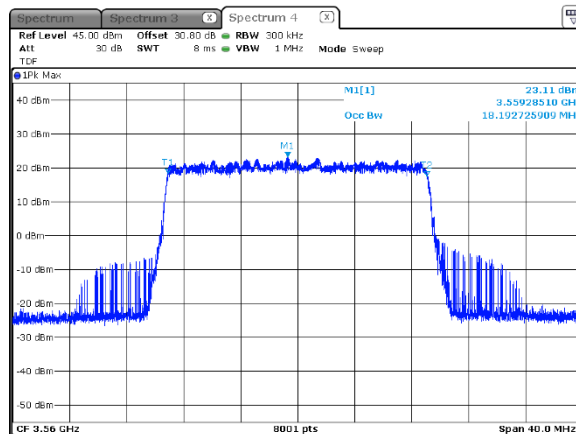
Date of Issue: 25-Oct-21

Test specification:		Section2.1049, Occupied bandwidth	
Test procedure:		47 CFR, Section 2.1049	
Test mode:		Verdict: PASS	
Date(s):			
25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

Plot 7.3.13 Occupied bandwidth test result at low frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN:

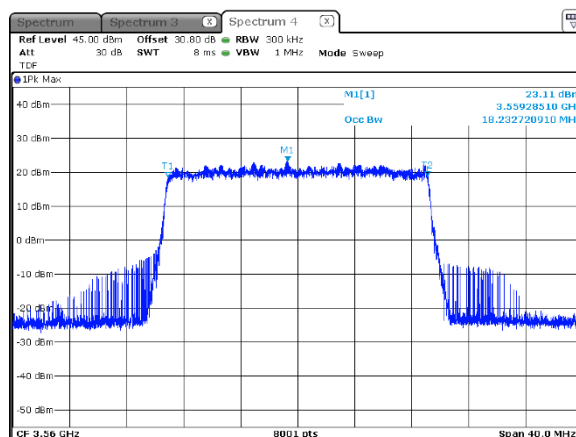
QPSK
20 MHz
1



Plot 7.3.14 Occupied bandwidth test result at low frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN:

16QAM
20 MHz
1



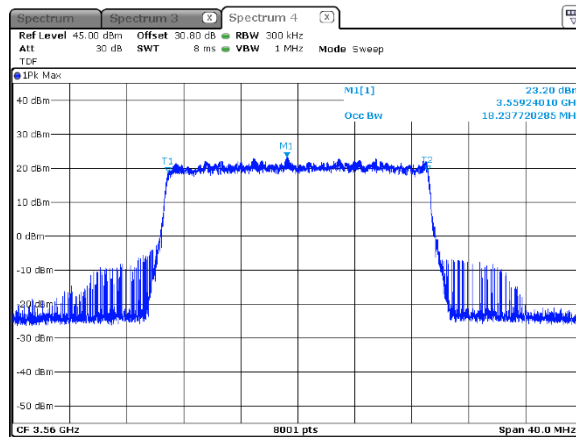


HERMON LABORATORIES

Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

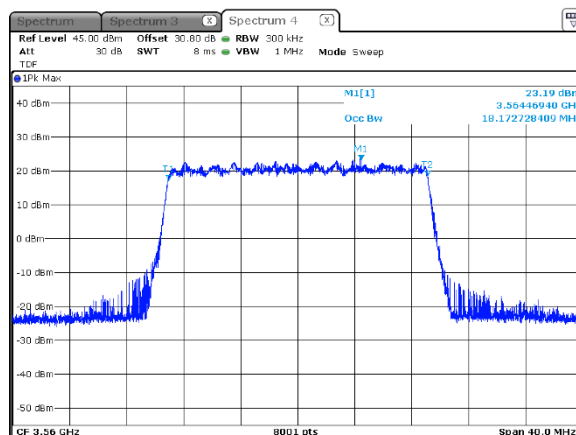
Plot 7.3.15 Occupied bandwidth test result at low frequency

MODULATION: 64QAM
CHANNEL SPACING: 20 MHz
ANTENNA CHAIN: 1



Plot 7.3.16 Occupied bandwidth test result at low frequency

MODULATION: 256QAM
CHANNEL SPACING: 20 MHz
ANTENNA CHAIN: 1





HERMON LABORATORIES

Report ID: AIRRAD_FCC.42554_Rev2

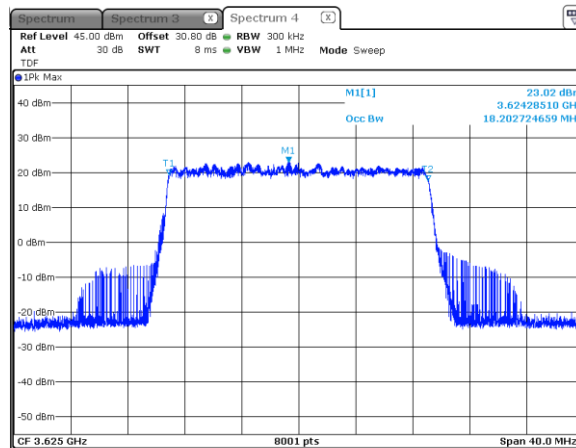
Date of Issue: 25-Oct-21

Test specification:		Section2.1049, Occupied bandwidth	
Test procedure:		47 CFR, Section 2.1049	
Test mode:		Verdict: PASS	
Date(s):			
25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

Plot 7.3.17 Occupied bandwidth test result at mid frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN:

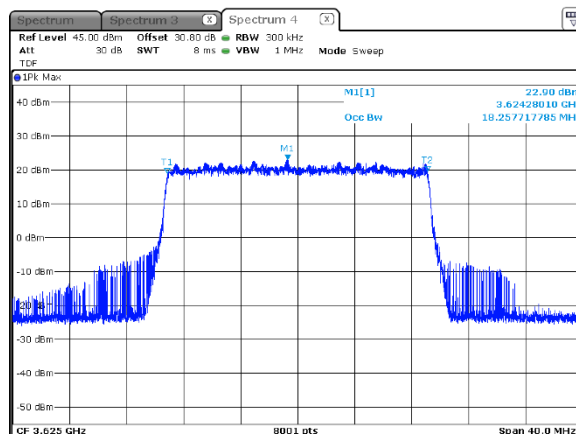
QPSK
20 MHz
1



Plot 7.3.18 Occupied bandwidth test result at mid frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN:

16QAM
20 MHz
1



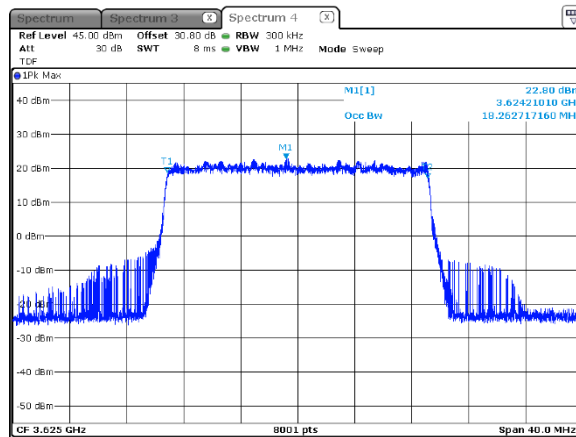


HERMON LABORATORIES

Test specification:		Section2.1049, Occupied bandwidth	
Test procedure:		47 CFR, Section 2.1049	
Test mode:		Verdict: PASS	
Date(s):			
25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

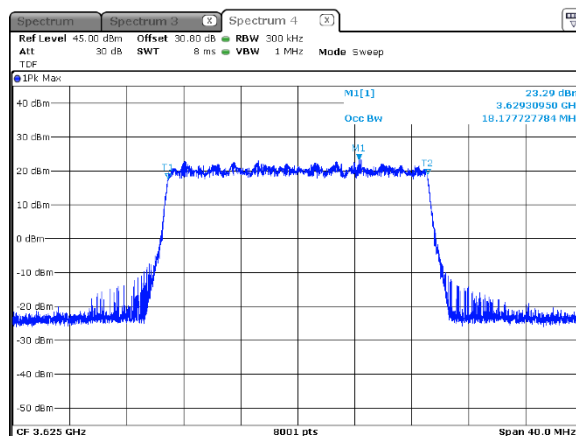
Plot 7.3.19 Occupied bandwidth test result at mid frequency

MODULATION: 64QAM
CHANNEL SPACING: 20 MHz
ANTENNA CHAIN: 1



Plot 7.3.20 Occupied bandwidth test result at mid frequency

MODULATION: 256QAM
CHANNEL SPACING: 20 MHz
ANTENNA CHAIN: 1





HERMON LABORATORIES

Report ID: AIRRAD_FCC.42554_Rev2

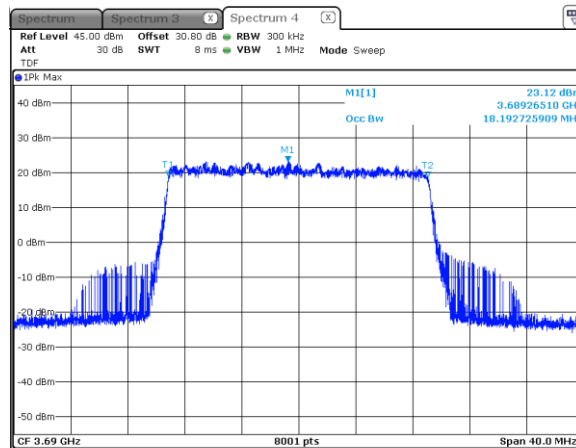
Date of Issue: 25-Oct-21

Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

Plot 7.3.21 Occupied bandwidth test result at high frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN:

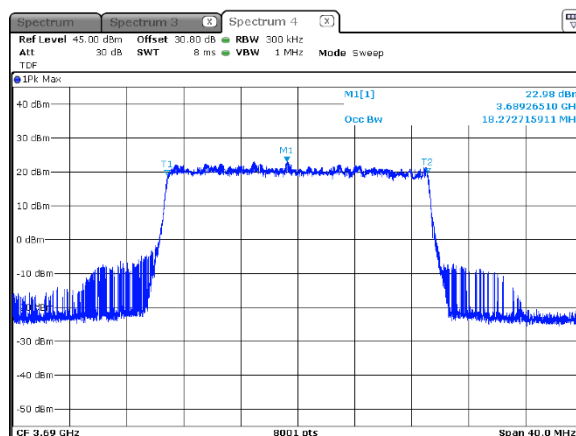
QPSK
20 MHz
1



Plot 7.3.22 Occupied bandwidth test result at high frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN:

16QAM
20 MHz
1



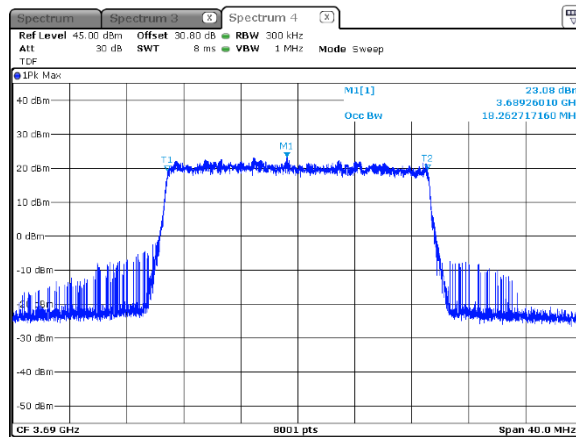


HERMON LABORATORIES

Test specification:		Section2.1049, Occupied bandwidth	
Test procedure:		47 CFR, Section 2.1049	
Test mode:		Verdict: PASS	
Date(s):			
25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

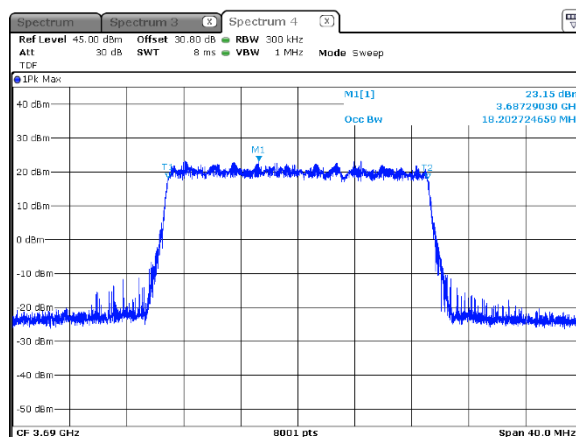
Plot 7.3.23 Occupied bandwidth test result at high frequency

MODULATION: 64QAM
CHANNEL SPACING: 20 MHz
ANTENNA CHAIN: 1



Plot 7.3.24 Occupied bandwidth test result at high frequency

MODULATION: 256QAM
CHANNEL SPACING: 20 MHz
ANTENNA CHAIN: 1





HERMON LABORATORIES

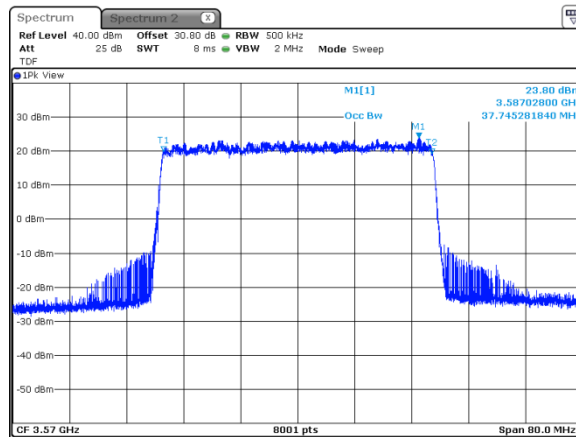
Report ID: AIRRAD_FCC.42554_Rev2

Date of Issue: 25-Oct-21

Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

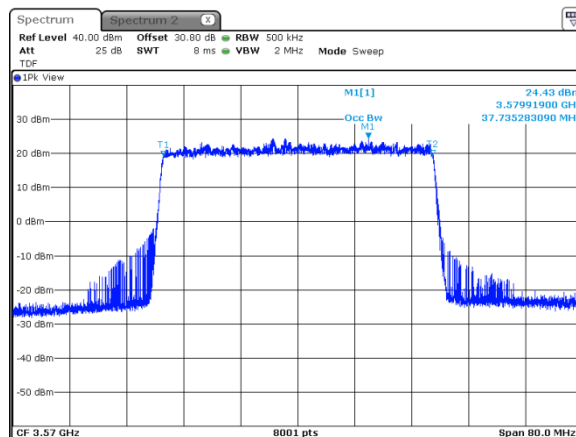
Plot 7.3.25 Occupied bandwidth test result at low frequency

MODULATION: QPSK
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1



Plot 7.3.26 Occupied bandwidth test result at low frequency

MODULATION: 16QAM
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1



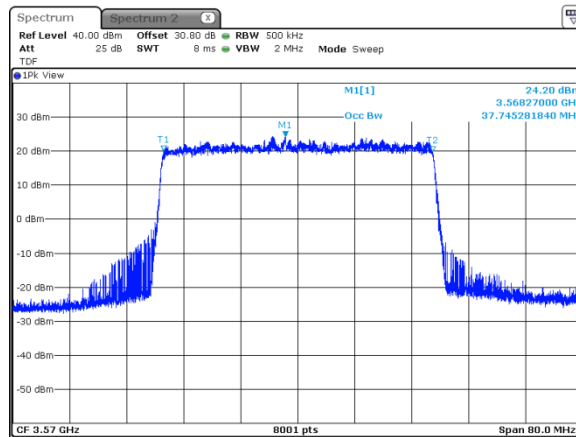


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Test specification:		Section2.1049, Occupied bandwidth	
Test procedure:		47 CFR, Section 2.1049	
Test mode:		Verdict: PASS	
Date(s):			
25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

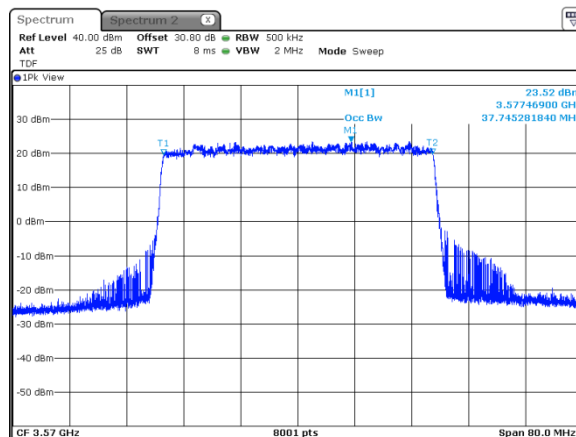
Plot 7.3.27 Occupied bandwidth test result at low frequency

MODULATION: 64QAM
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1



Plot 7.3.28 Occupied bandwidth test result at low frequency

MODULATION: 256QAM
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1





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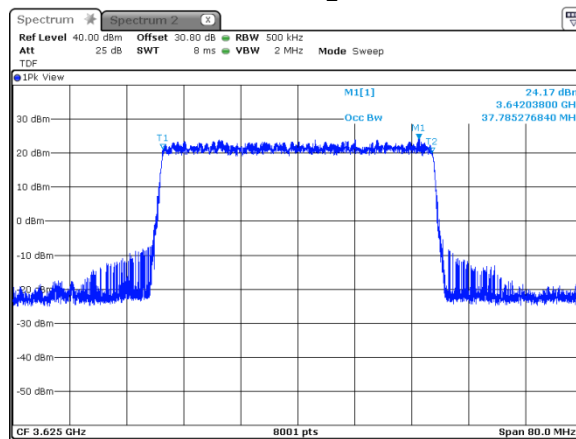
Report ID: AIRRAD_FCC.42554_Rev2

Date of Issue: 25-Oct-21

Test specification:		Section2.1049, Occupied bandwidth	
Test procedure:		47 CFR, Section 2.1049	
Test mode:		Verdict: PASS	
Date(s):			
25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

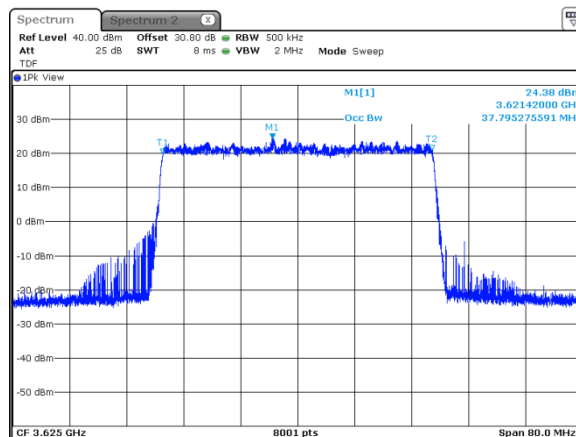
Plot 7.3.29 Occupied bandwidth test result at mid frequency

MODULATION: QPSK
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1



Plot 7.3.30 Occupied bandwidth test result at mid frequency

MODULATION: 16QAM
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1





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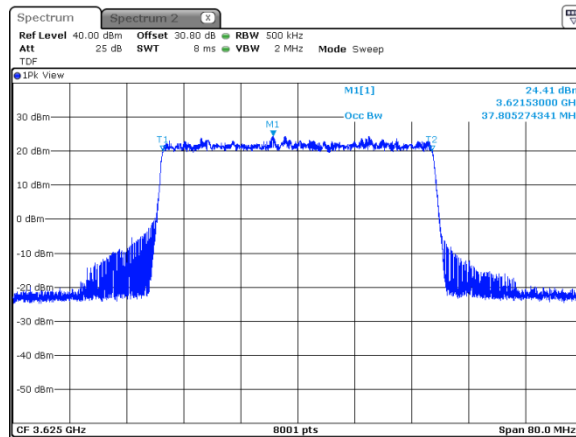
Report ID: AIRRAD_FCC.42554_Rev2

Date of Issue: 25-Oct-21

Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

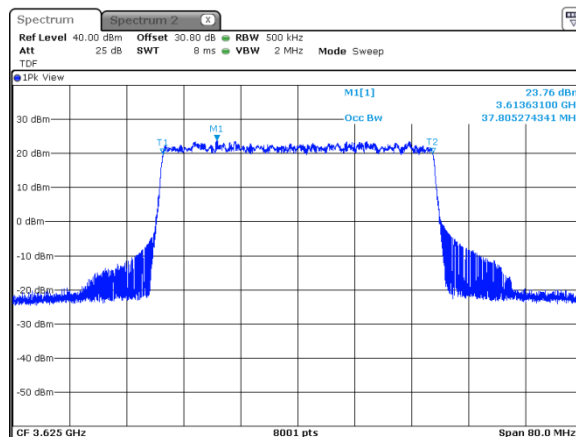
Plot 7.3.31 Occupied bandwidth test result at mid frequency

MODULATION: 64QAM
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1



Plot 7.3.32 Occupied bandwidth test result at mid frequency

MODULATION: 256QAM
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1



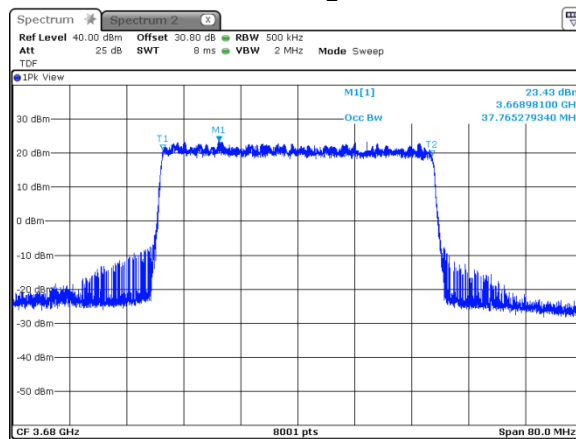


HERMON LABORATORIES

Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

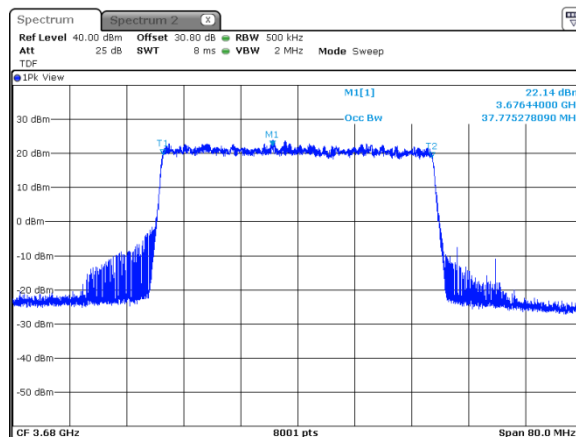
Plot 7.3.33 Occupied bandwidth test result at high frequency

MODULATION: QPSK
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1



Plot 7.3.34 Occupied bandwidth test result at high frequency

MODULATION: 16QAM
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1



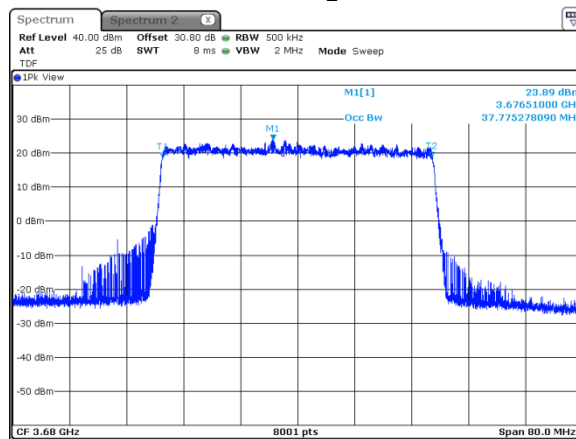


HERMON LABORATORIES

Test specification: Section2.1049, Occupied bandwidth			
Test procedure: 47 CFR, Section 2.1049			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Jul-21 – 30-Aug-21			
Temperature: 24 °C	Relative Humidity: 52 %	Air Pressure: 1012 hPa	Power: 48 VAC
Remarks:			

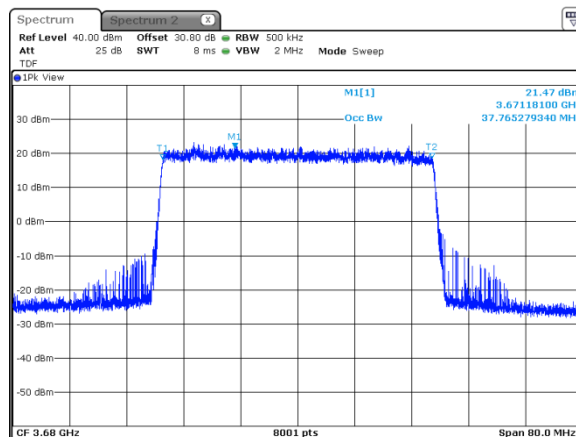
Plot 7.3.35 Occupied bandwidth test result at high frequency

MODULATION: 64QAM
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1



Plot 7.3.36 Occupied bandwidth test result at high frequency

MODULATION: 256QAM
CHANNEL SPACING: 40 MHz
ANTENNA CHAIN: 1





Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

7.4 Emission outside the fundamental test

7.4.1 General

This test was performed to measure Emission outside the fundamental at RF antenna connector. Specification test limits are given in Table 7.4.1.

Table 7.4.1 Emission outside the fundamental limits

Frequency displacement from frequency block	Limit*, dBm/MHz	RBW, kHz
Channel Spacing 10 MHz		
0 – 1 MHz	- 13	100
0 – 10 MHz	- 13	1000
10 – 20 MHz	- 25	1000
Above 3530 MHz and below 3720 MHz	- 25	1000
Below 3530 MHz and above 3720 MHz	- 40	1000
Channel Spacing 20 MHz		
0 – 1 MHz	- 13	200
0 – 10 MHz	- 13	1000
10 – 20 MHz	- 25	1000
Above 3530 MHz and below 3720 MHz	- 25	1000
Below 3530 MHz and above 3720 MHz	- 40	1000
Channel Spacing 40 MHz		
0 – 1 MHz	- 13	400
0 – 10 MHz	- 13	1000
10 – 20 MHz	- 25	1000
Above 3530 MHz and below 3720 MHz	- 25	1000
Below 3530 MHz and above 3720 MHz	- 40	1000

* - Limit at each antenna connector (amount of antennas N = 4)

7.4.2 Test procedure

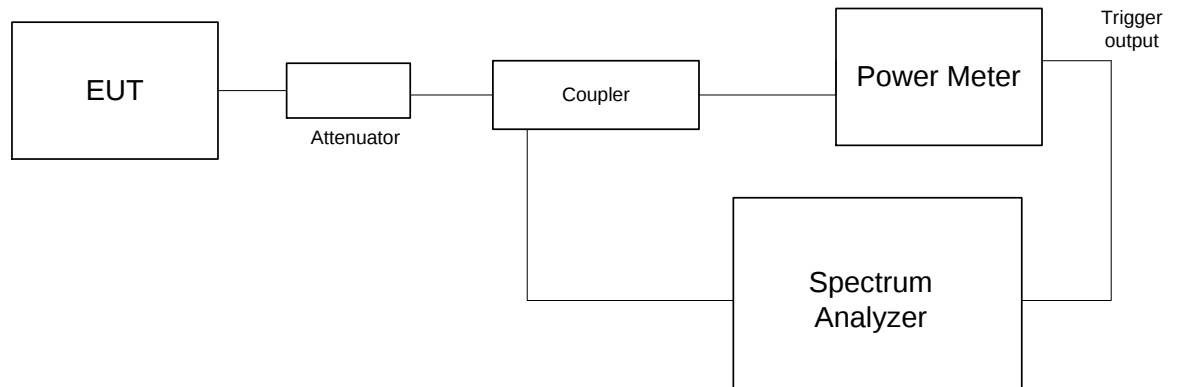
7.4.2.1 The EUT was set up as shown in Figure 7.4.1, energized and its proper operation was checked.

7.4.2.2 The Emission outside the fundamental was measured with spectrum analyzer as provided in Table 7.4.2, Table 7.4.3 and the the associated plots.



Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Figure 7.4.1 Emission outside the fundamental test setup





Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Table 7.4.2 Emission outside the fundamental test results

ASSIGNED FREQUENCY RANGE: 3550.0 – 3700.0 MHz
 DETECTOR USED: Average (gated)
 VIDEO BANDWIDTH: ≥ Resolution bandwidth
 NUMBER OF CHAINS: 4
 ANTENNA PORT: Worst case
 CHANNEL SPACING: 10MHz

Frequency MHz	Band edge	SA reading over 1 chain, dBm	Total band edge*, dBm	RBW, kHz	Limit, dBm	Margin, dB	Verdict
QPSK							
Low frequency 3555.0 MHz							
3530.00	Low	-46.04	-40.04	1000	-40	-0.04	Pass
3540.00	Low	-35.89	-29.89	1000	-25	-4.89	
3550.00	Low	-26.73	-20.73	100	-13	-7.73	
3560.00	High	-25.85	-19.85	100	-13	-6.85	
3570.00	High	-31.74	-25.74	1000	-25	-0.74	
3720.00	High	-46.08	-40.08	1000	-40	-0.08	
Mid frequency 3625.0 MHz							
3530.00	Low	-46.12	-40.12	1000	-40	-0.12	Pass
3610.00	Low	-32.61	-26.61	1000	-25	-1.61	
3620.00	Low	-26.74	-20.74	100	-13	-7.74	
3630.00	High	-27.09	-21.09	100	-13	-8.09	
3640.00	High	-31.81	-25.81	1000	-25	-0.81	
3720.00	High	-46.07	-40.07	1000	-40	-0.07	
High frequency 3695.0 MHz							
3530.00	Low	-50.70	-44.70	1000	-40	-4.70	Pass
3680.00	Low	-31.66	-25.66	1000	-25	-0.66	
3690.00	Low	-20.48	-14.48	100	-13	-1.48	
3700.00	High	-26.36	-20.36	100	-13	-7.36	
3710.00	High	-34.14	-28.14	1000	-25	-3.14	
3720.00	High	-46.47	-40.47	1000	-40	-0.47	
256 QAM							
Low frequency 3555.0 MHz							
3530.00	Low	-46.10	-40.10	1000	-40	-0.10	Pass
3540.00	Low	-37.96	-31.96	1000	-25	-6.96	
3550.00	Low	-27.57	-21.57	100	-13	-8.57	
3560.00	High	-26.43	-20.43	100	-13	-7.43	
3570.00	High	-32.24	-26.24	1000	-25	-1.24	
3720.00	High	-46.06	-40.06	1000	-40	-0.06	
Mid frequency 3625.0 MHz							
3530.00	Low	-46.25	-40.25	1000	-40	-0.25	Pass
3610.00	Low	-34.04	-28.04	1000	-25	-3.04	
3620.00	Low	-27.66	-21.66	100	-13	-8.66	
3630.00	High	-27.67	-21.67	100	-13	-8.67	
3640.00	High	-33.68	-27.68	1000	-25	-2.68	
3720.00	High	-46.08	-40.08	1000	-40	-0.08	
High frequency 3695.0 MHz							
3530.00	Low	-50.55	-44.55	1000	-40	-4.55	Pass
3680.00	Low	-31.42	-25.42	1000	-25	-0.42	
3690.00	Low	-26.39	-20.39	100	-13	-7.39	
3700.00	High	-27.35	-21.35	100	-13	-8.35	
3710.00	High	-34.19	-28.19	1000	-25	-3.19	
3720.00	High	-46.82	-40.82	1000	-40	-0.82	

* - SA Reading over 1 chain = Max SA reading (Chains #1&2 and #3&4)

** - Total band edge = Maximum SA Reading over 1 chain + 10*log(N) = SA reading +6 dB

*** - Margin = Total band edge – Specification limit



HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Table 7.4.3 Emission outside the fundamental test results

ASSIGNED FREQUENCY RANGE: 3550.0 – 3700.0 MHz
DETECTOR USED: Average (gated)
VIDEO BANDWIDTH: ≥ Resolution bandwidth
NUMBER OF CHAINS: 4
ANTENNA PORT: Worst case
CHANNEL SPACING: 20MHz

Summary of Results:

Frequency MHz	Band edge	SA reading over 1 chain, dBm	Total band edge*, dBm	RBW, kHz	Limit, dBm	Margin, dB	Verdict
QPSK							
Low frequency 3560.0 MHz							
3530.00	Low	-46.07	-40.07	1000	-40	-0.07	Pass
3540.00	Low	-35.17	-29.17	1000	-25	-4.17	
3550.00	Low	-29.70	-23.70	200	-13	-10.70	
3570.00	High	-25.50	-19.50	200	-13	-6.50	
3580.00	High	-31.95	-25.95	1000	-25	-0.95	
3720.00	High	-46.07	-40.07	1000	-40	-0.07	
Mid frequency 3625.0 MHz							
3530.00	Low	-47.49	-41.49	1000	-40	-1.49	Pass
3605.00	Low	-32.55	-26.55	1000	-25	-1.55	
3615.00	Low	-27.66	-21.66	200	-13	-8.66	
3635.00	High	-25.33	-19.33	200	-13	-6.33	
3645.00	High	-31.22	-25.22	1000	-25	-0.22	
3720.00	High	-46.06	-40.06	1000	-40	-0.06	
High frequency 3690.0 MHz							
3530.00	Low	-49.36	-43.36	1000	-40	-3.36	Pass
3670.00	Low	-31.57	-25.57	1000	-25	-0.57	
3680.00	Low	-27.10	-21.10	200	-13	-8.10	
3700.00	High	-26.43	-20.43	200	-13	-7.43	
3710.00	High	-33.53	-27.53	1000	-25	-2.53	
3720.00	High	-46.05	-40.05	1000	-40	-0.05	
256 QAM							
Low frequency 3560.0 MHz							
3530.00	Low	-46.05	-40.05	1000	-40	-0.05	Pass
3540.00	Low	-34.83	-28.83	1000	-25	-3.83	
3550.00	Low	-29.46	-23.46	200	-13	-10.46	
3570.00	High	-24.79	-18.79	200	-13	-5.79	
3580.00	High	-32.91	-26.91	1000	-25	-1.91	
3720.00	High	-46.24	-40.24	1000	-40	-0.24	
Mid frequency 3625.0 MHz							
3530.00	Low	-47.53	-41.53	1000	-40	-1.53	Pass
3605.00	Low	-32.40	-26.40	1000	-25	-1.40	
3615.00	Low	-29.46	-23.46	200	-13	-10.46	
3635.00	High	-24.79	-18.79	200	-13	-5.79	
3645.00	High	-31.11	-25.11	1000	-25	-0.11	
3720.00	High	-46.44	-40.44	1000	-40	-0.44	
High frequency 3690.0 MHz							
3530.00	Low	-49.45	-43.45	1000	-40	-3.45	Pass
3670.00	Low	-33.19	-27.19	1000	-25	-2.19	
3680.00	Low	-28.25	-22.25	200	-13	-9.25	
3700.00	High	-26.11	-20.11	200	-13	-7.11	
3710.00	High	-35.92	-29.92	1000	-25	-4.92	
3720.00	High	-46.43	-40.43	1000	-40	-0.43	

* - SA Reading over 1 chain = Max SA reading (Chains #1&2 and #3&4)

** - Total band edge = Maximum SA Reading over 1 chain + 10*log(N) = SA reading +6 dB

*** - Margin = Total band edge – Specification limit



Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Table 7.4.4 Emission outside the fundamental test results

ASSIGNED FREQUENCY RANGE: 3550.0 –3700.0 MHz
 DETECTOR USED: Average (gated)
 VIDEO BANDWIDTH: ≥ Resolution bandwidth
 NUMBER OF CHAINS: 4
 ANTENNA PORT: Worst case
 CHANNEL SPACING: 40MHz

Frequency MHz	Band edge	SA reading over 1 chain, dBm	Total band edge*, dBm	RBW, kHz	Limit, dBm	Margin, dB	Verdict
QPSK							
Low frequency 3570.0 MHz							
3530.00	Low	-46.62	-40.62	1000	-40.00	-0.62	Pass
3540.00	Low	-36.49	-30.49	1000	-25.00	-5.49	
3549.00	Low	-31.65	-25.65	1000	-13.00	-12.65	
3550.00	Low	-23.36	-17.36	100	-13.00	-4.36	
3590.00	High	-24.11	-18.11	100	-13.00	-5.11	
3591.00	High	-29.77	-23.77	1000	-13.00	-10.77	
3600.00	High	-32.68	-26.68	1000	-25.00	-1.68	
3720.00	High	-48.69	-42.69	1000	-40.00	-2.69	
Mid frequency 3625.0 MHz							
3530.00	Low	-48.11	-42.11	1000	-40.00	-2.11	Pass
3595.00	Low	-31.31	-25.31	1000	-25.00	-0.31	
3604.00	Low	-28.44	-22.44	1000	-13.00	-9.44	
3605.00	Low	-20.43	-14.43	100	-13.00	-1.43	
3645.00	High	-21.68	-15.68	100	-13.00	-2.68	
3646.00	High	-29.73	-23.73	1000	-13.00	-10.73	
3655.00	High	-32.52	-26.52	1000	-25.00	-1.52	
3720.00	High	-46.52	-40.52	1000	-40.00	-0.52	
High frequency 3680.0 MHz							
3530.00	Low	-51.50	-45.50	1000	-40.00	-5.50	Pass
3650.00	Low	-32.86	-26.86	1000	-25.00	-1.86	
3659.00	Low	-29.10	-23.10	1000	-13.00	-10.10	
3640.00	Low	-21.97	-15.97	100	-13.00	-2.97	
3660.00	High	-23.99	-17.99	100	-13.00	-4.99	
3701.00	High	-30.23	-24.23	1000	-13.00	-11.23	
3710.00	High	-37.21	-31.21	1000	-25.00	-6.21	
3720.00	High	-46.14	-40.14	1000	-40.00	-0.14	



HERMON LABORATORIES

Report ID: AIRRAD_FCC.42554_Rev2

Date of Issue: 25-Oct-21

Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Table 7.4.5 Emission outside the fundamental test results (continue)

Frequenc y MHz	Band edge	SA reading over 1 chain, dBm	Total band edge*, dBm	RBW, kHz	Limit, dBm	Margin, dB	Verdi ct
256 QAM							
Low frequency 3570.0 MHz							
3530.00	Low	-48.84	-42.84	1000	-40.00	-2.84	Pass
3540.00	Low	-37.59	-31.59	1000	-25.00	-6.59	
3549.00	Low	-30.14	-24.14	1000	-13.00	-11.14	
3550.00	Low	-22.50	-16.50	100	-13.00	-3.50	
3590.00	High	-20.99	-14.99	100	-13.00	-1.99	
3591.00	High	-29.96	-23.96	1000	-13.00	-10.96	
3600.00	High	-33.80	-27.80	1000	-25.00	-2.80	
3720.00	High	-48.69	-42.69	1000	-40.00	-2.69	
Mid frequency 3625.0 MHz							
3530.00	Low	-48.35	-42.35	1000	-40.00	-2.35	Pass
3595.00	Low	-33.35	-27.35	1000	-25.00	-2.35	
3604.00	Low	-28.25	-22.25	1000	-13.00	-9.25	
3605.00	Low	-20.38	-14.38	100	-13.00	-1.38	
3645.00	High	-21.52	-15.52	100	-13.00	-2.52	
3646.00	High	-30.17	-24.17	1000	-13.00	-11.17	
3655.00	High	-33.23	-27.23	1000	-25.00	-2.23	
3720.00	High	-47.22	-41.22	1000	-40.00	-1.22	
High frequency 3680.0 MHz							
3530.00	Low	-51.55	-45.55	1000	-40.00	-5.55	Pass
3650.00	Low	-33.41	-27.41	1000	-25.00	-2.41	
3659.00	Low	-29.28	-23.28	1000	-13.00	-10.28	
3640.00	Low	-23.14	-17.14	100	-13.00	-4.14	
3660.00	High	-23.30	-17.30	100	-13.00	-4.30	
3701.00	High	-30.89	-24.89	1000	-13.00	-11.89	
3710.00	High	-37.51	-31.51	1000	-25.00	-6.51	
3720.00	High	-47.28	-41.28	1000	-40.00	-1.28	

* - SA Reading over 1 chain = Max SA reading (Chains #1&2 and #3&4)

** - Total band edge = Maximum SA Reading over 1 chain + 10*log(N) = SA reading +6 dB

*** - Margin = Total band edge – Specification limit

Reference numbers of test equipment used

HL 3301	HL 3302	HL 4355	HL 3901	HL 4366			
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Full description is given in Appendix A.



HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.1 Emission outside the fundamental test results in 3470 - 3730 GHz range at low carrier frequency

CHANNEL SPACING:

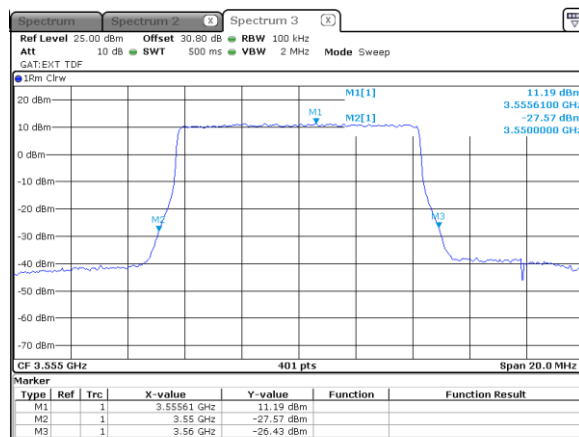
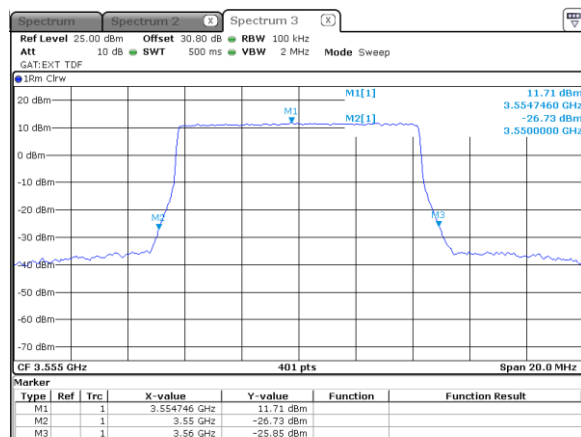
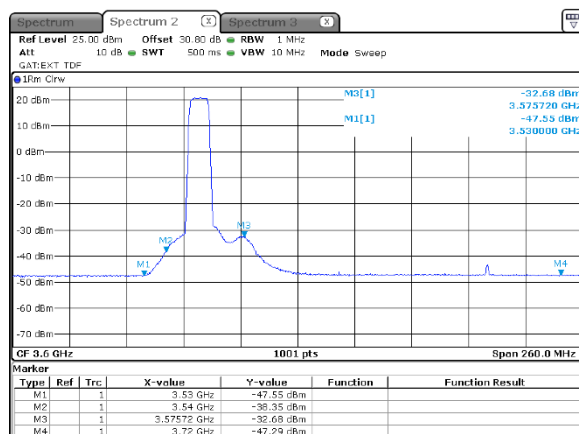
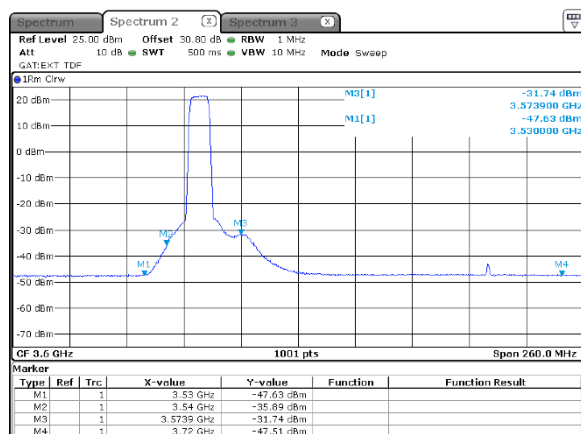
ANTENNA CHAIN:

Modulation: QPSK

10 MHz

1

Modulation: 256QAM





HERMON LABORATORIES

Report ID: AIRRAD_FCC.42554_Rev2

Date of Issue: 25-Oct-21

Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.2 Emission outside the fundamental test results in 3470 - 3730 GHz range at low carrier frequency

CHANNEL SPACING:

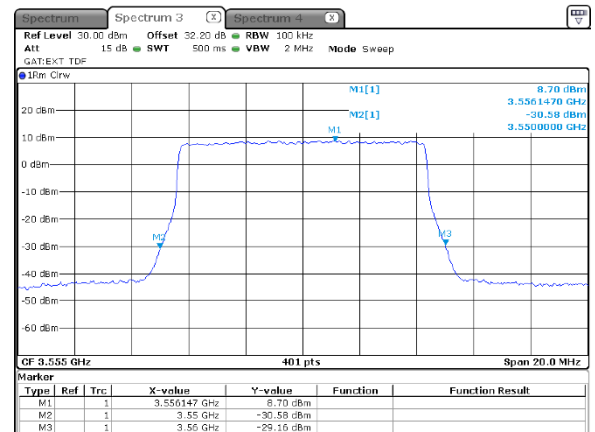
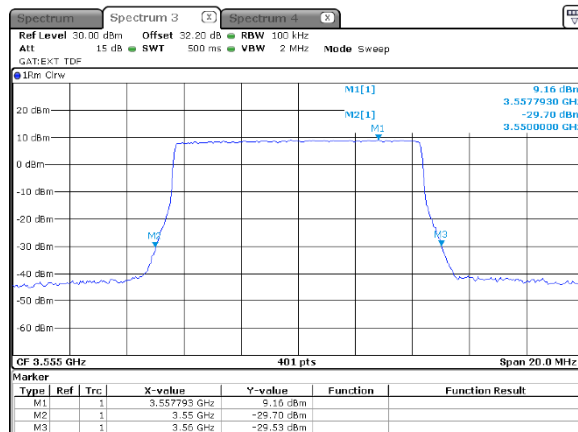
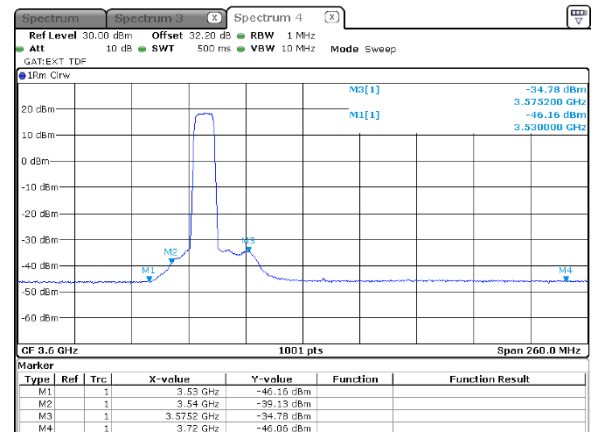
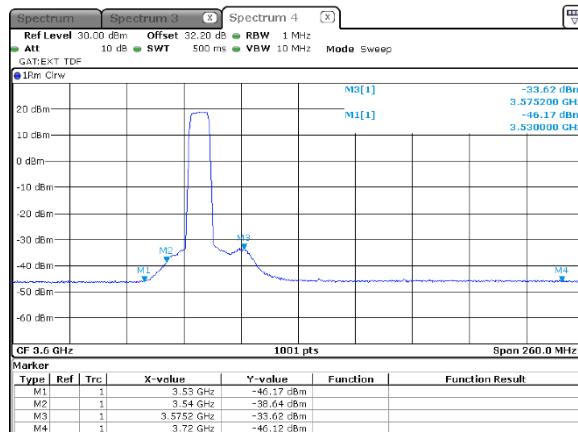
ANTENNA CHAIN:

Modulation: QPSK

10 MHz

2

Modulation: 256QAM





HERMON LABORATORIES

Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.3 Emission outside the fundamental test results in 3470 - 3730 GHz range at low carrier frequency

CHANNEL SPACING:

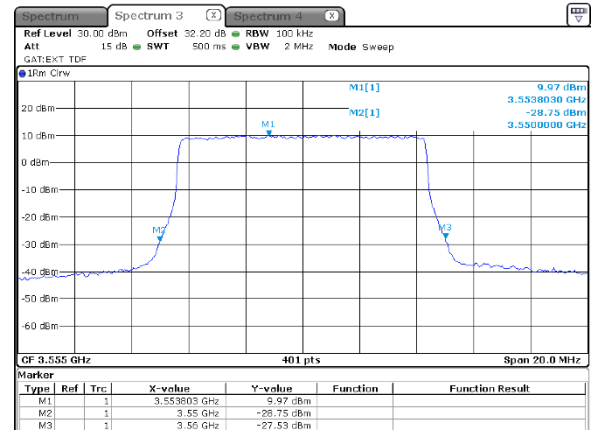
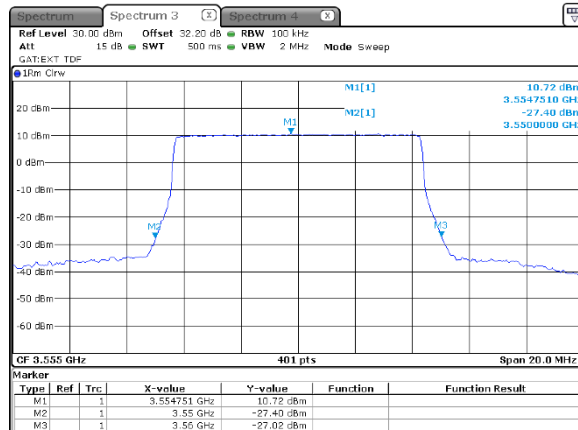
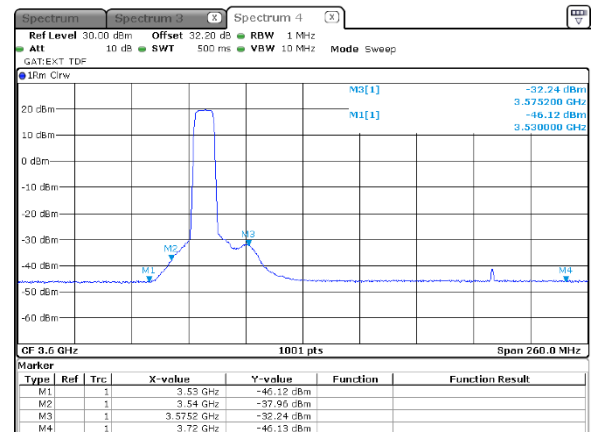
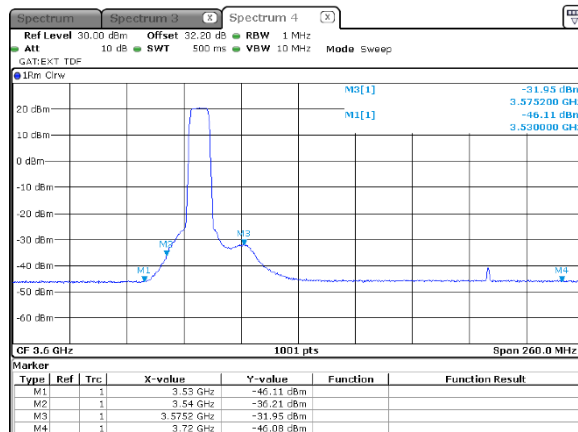
ANTENNA CHAIN:

Modulation: QPSK

10 MHz

3

Modulation: 256QAM





HERMON LABORATORIES

Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.5 Emission outside the fundamental test results in 3495 - 3755 GHz range at mid carrier frequency

CHANNEL SPACING:

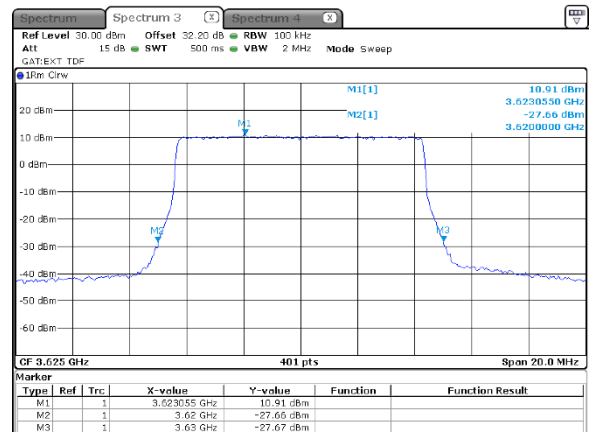
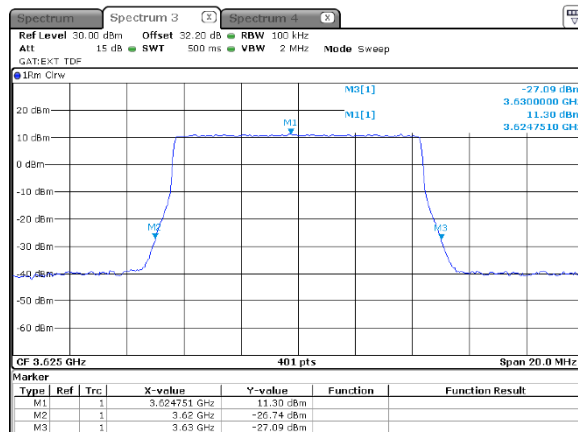
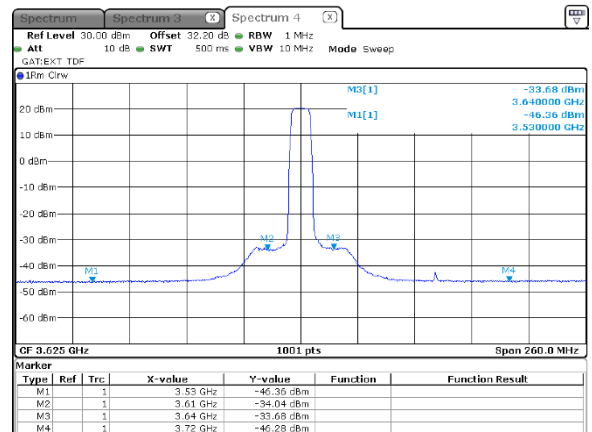
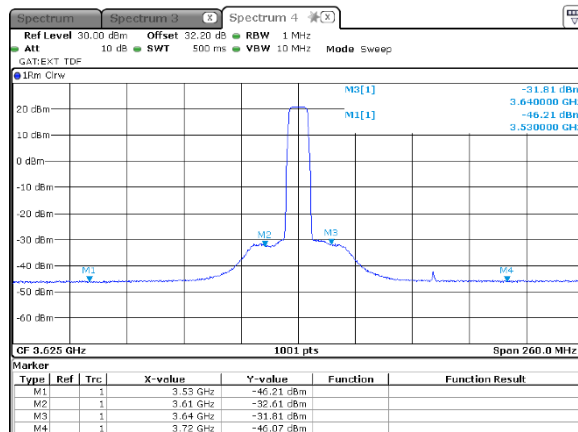
ANTENNA CHAIN:

Modulation: QPSK

10 MHz

1

Modulation: 256QAM





HERMON LABORATORIES

Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.6 Emission outside the fundamental test results in 3495 - 3755 GHz range at mid carrier frequency

CHANNEL SPACING:

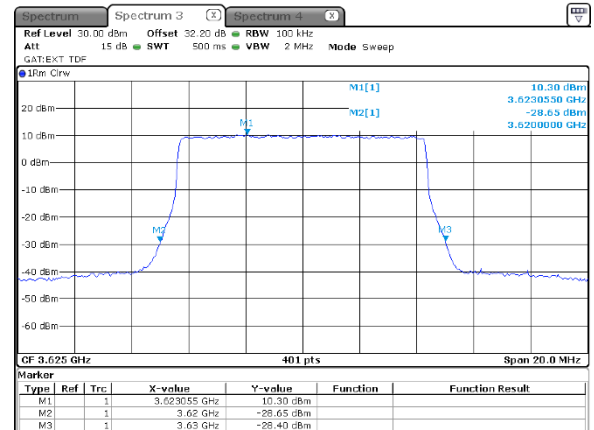
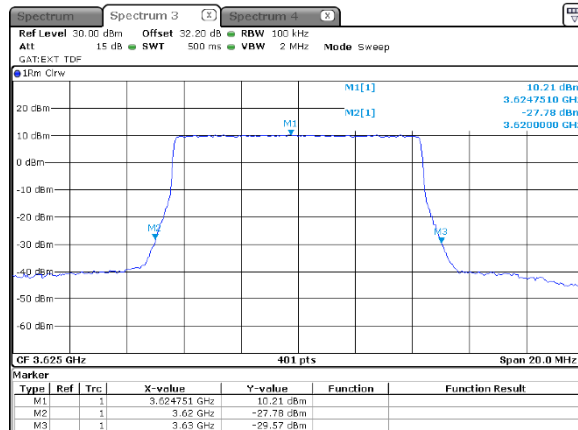
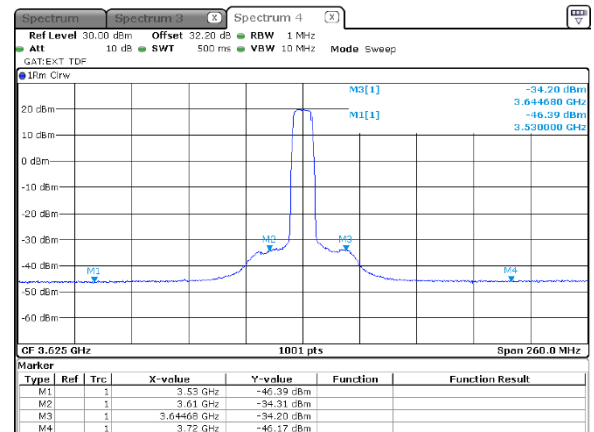
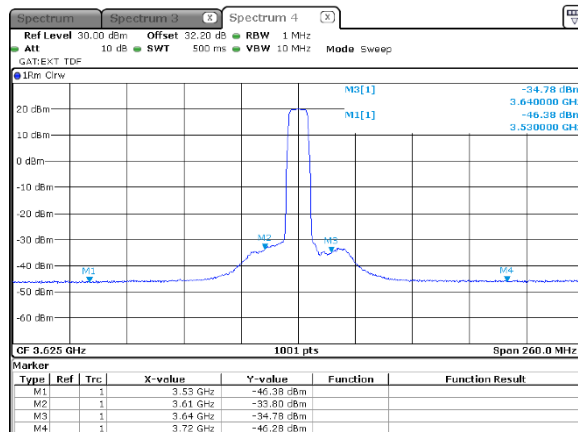
ANTENNA CHAIN:

Modulation: QPSK

10 MHz

2

Modulation: 256QAM





HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.7 Emission outside the fundamental test results in 3495 - 3755 GHz range at mid carrier frequency

CHANNEL SPACING:

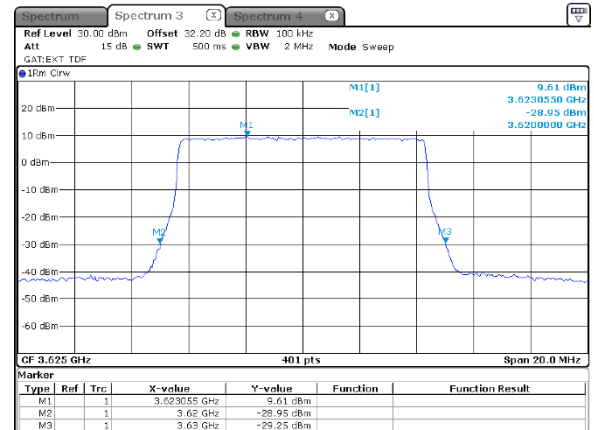
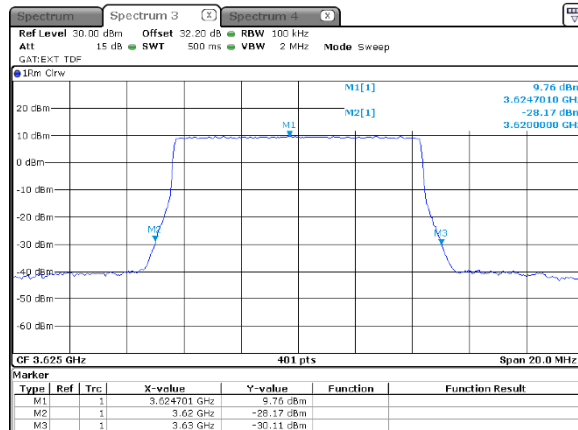
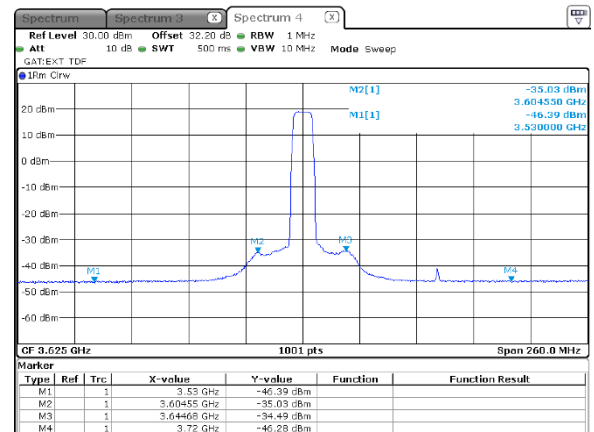
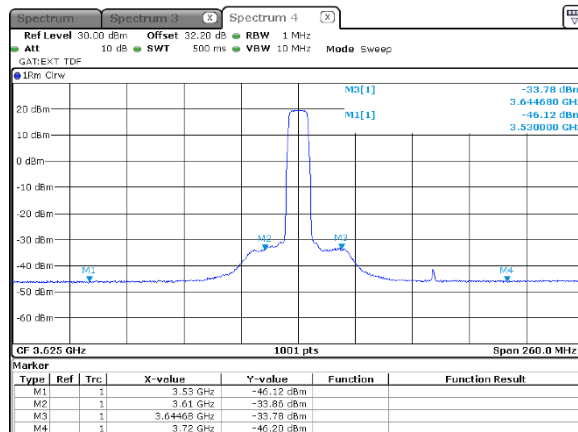
ANTENNA CHAIN:

Modulation: QPSK

10 MHz

3

Modulation: 256QAM





HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.8 Emission outside the fundamental test results in 3495 - 3755 GHz range at mid carrier frequency

CHANNEL SPACING:

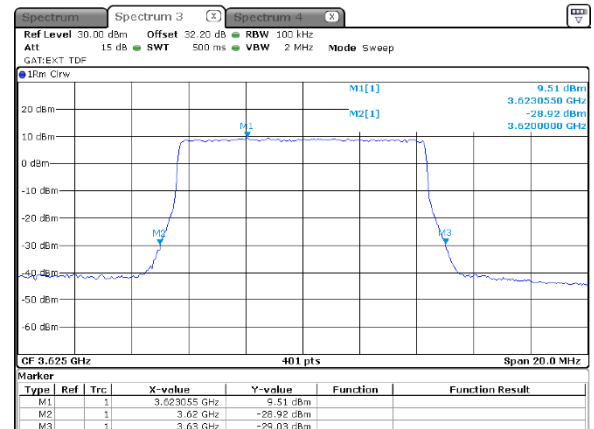
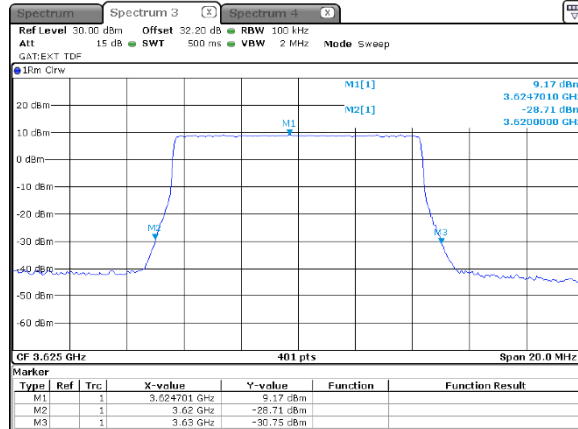
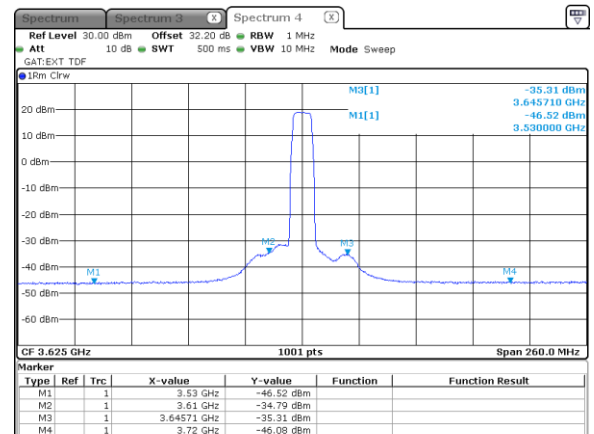
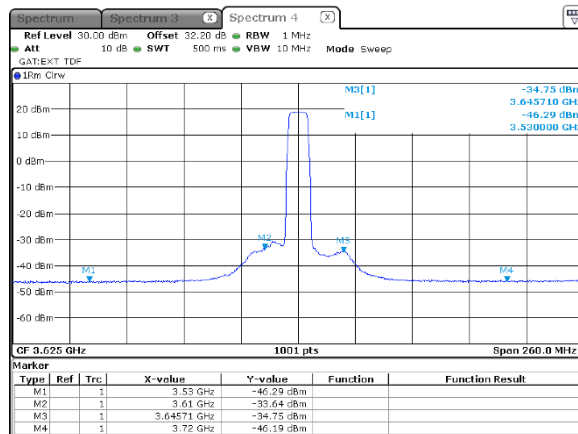
ANTENNA CHAIN:

Modulation: QPSK

10 MHz

4

Modulation: 256QAM





HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.9 Emission outside the fundamental test results in 3470 - 3730 GHz range at high carrier frequency

CHANNEL SPACING:

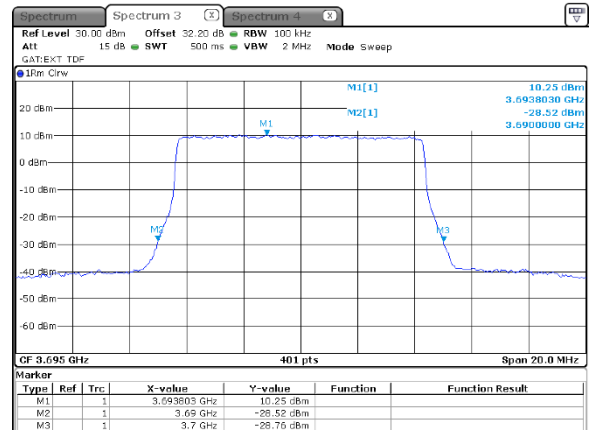
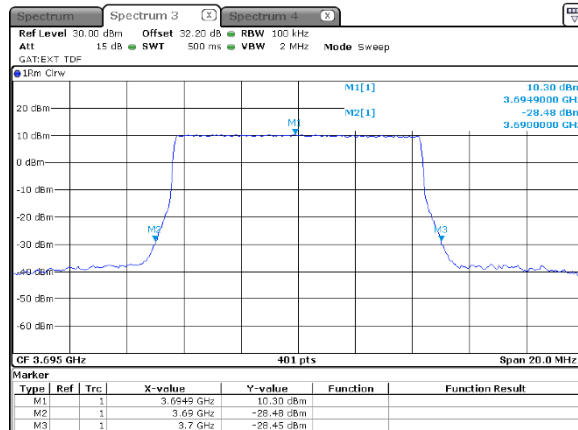
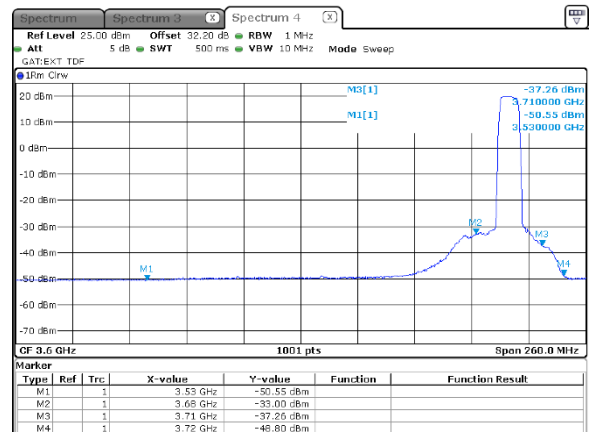
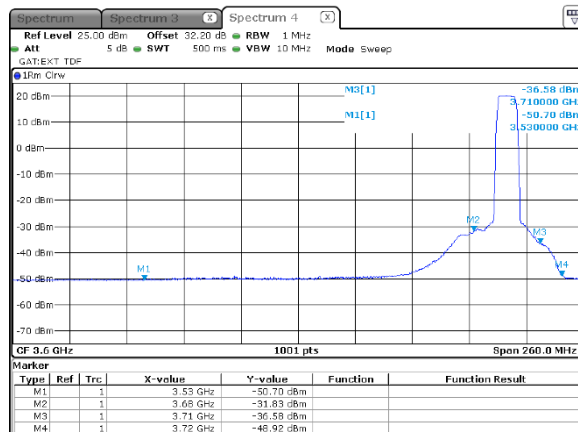
ANTENNA CHAIN:

Modulation: QPSK

10 MHz

1

Modulation: 256QAM





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Date of Issue: 25-Oct-21

Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

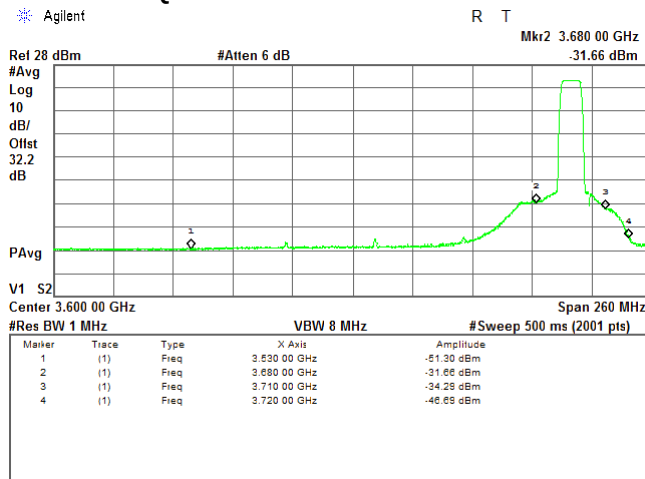
Plot 7.4.10 Emission outside the fundamental test results in 3470 - 3730 GHz range at high carrier frequency

CHANNEL SPACING:

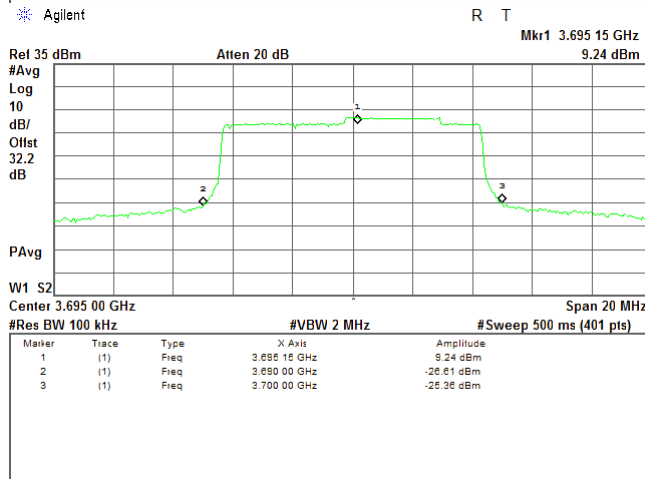
ANTENNA CHAIN:

Modulation: QPSK

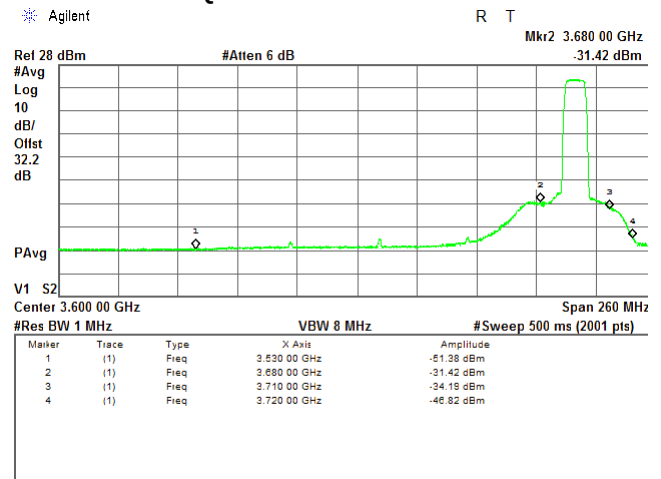
Agilent



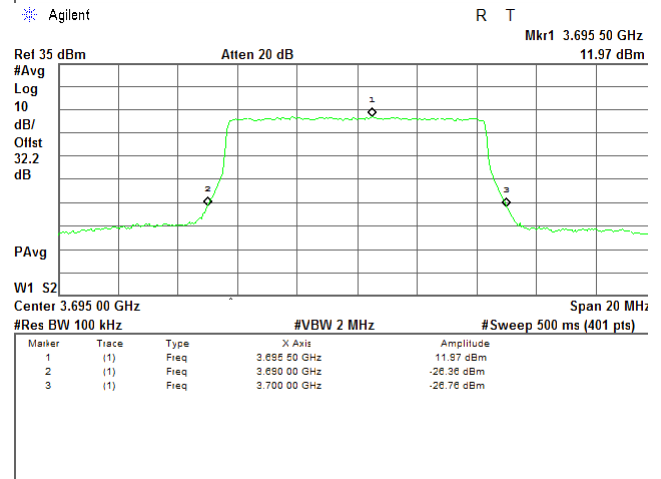
Agilent



Agilent



Agilent





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Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.11 Emission outside the fundamental test results in 3470 - 3730 GHz range at high carrier frequency

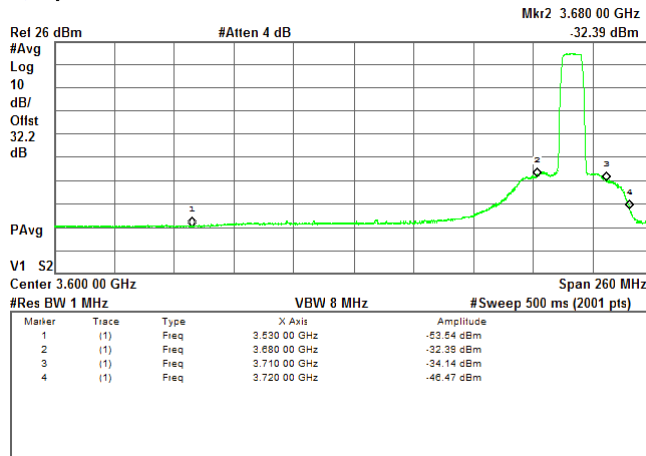
CHANNEL SPACING:

ANTENNA CHAIN:

Modulation: QPSK

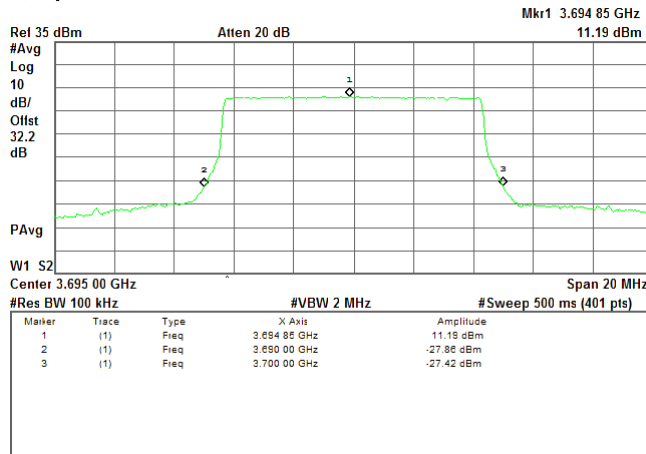
✱ Agilent

R T



✱ Agilent

R T



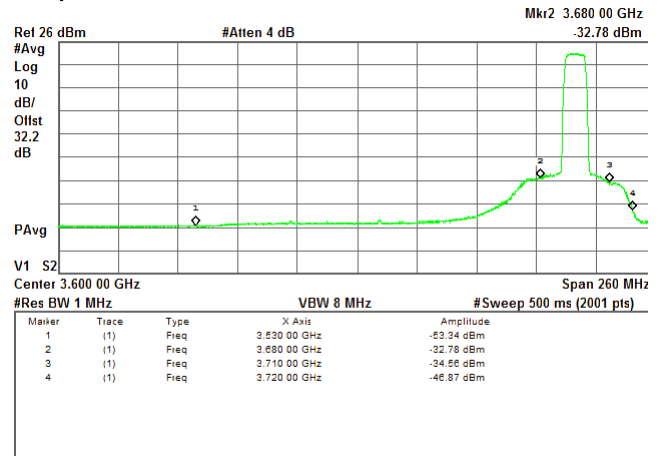
10 MHz

3

Modulation: 256QAM

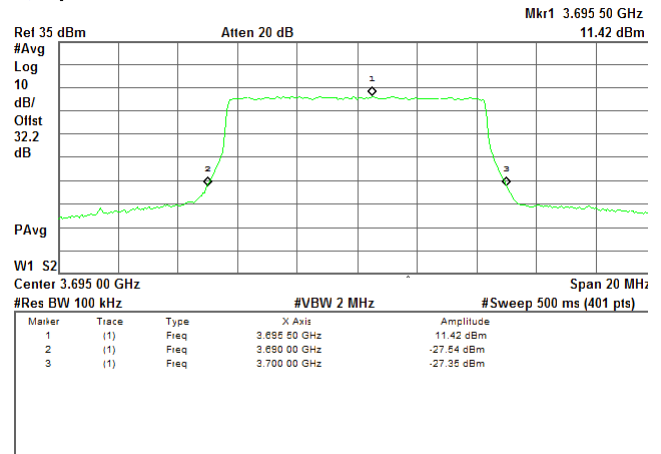
✱ Agilent

R T



✱ Agilent

R T





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Report ID: AIRRAD_FCC.42554_Rev2

Date of Issue: 25-Oct-21

Test specification:		Section 96.41(e), Emission mask	
Test procedure:		Section 96.41(e)(3)	
Test mode:		Verdict: PASS	
Date(s):			
25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

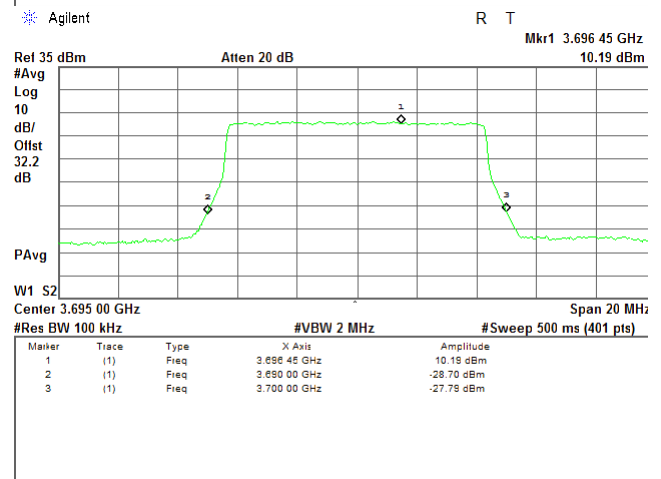
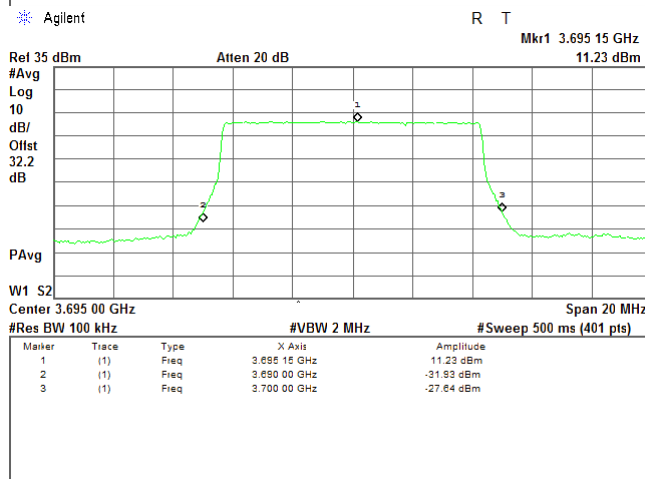
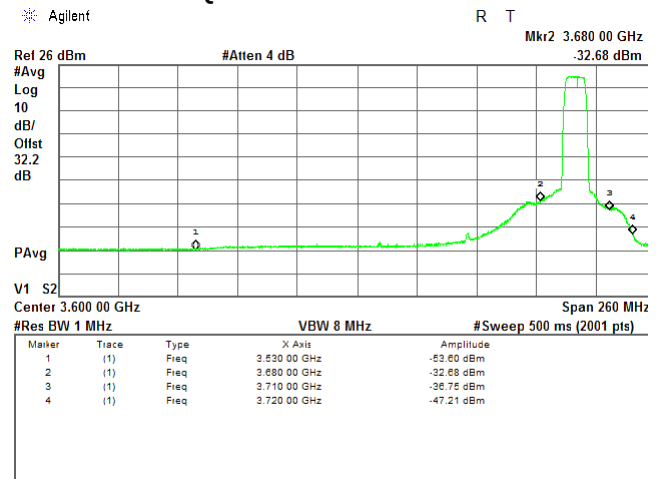
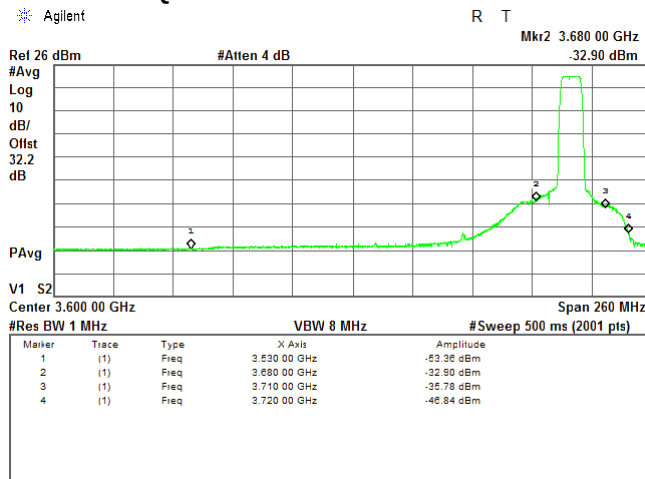
Plot 7.4.12 Emission outside the fundamental test results in 3470 - 3730 GHz range at high carrier frequency

CHANNEL SPACING:

ANTENNA CHAIN:

Modulation: QPSK

Agilent





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Date of Issue: 25-Oct-21

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.13 Emission outside the fundamental test results in 3470 - 3730 GHz range at low carrier frequency

CHANNEL SPACING:

20 MHz

ANTENNA CHAIN:

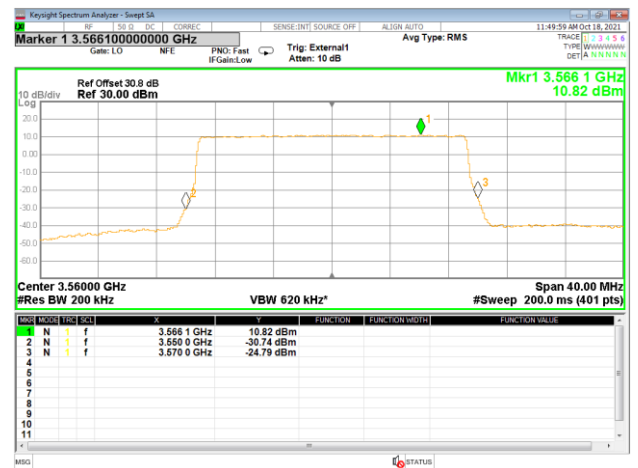
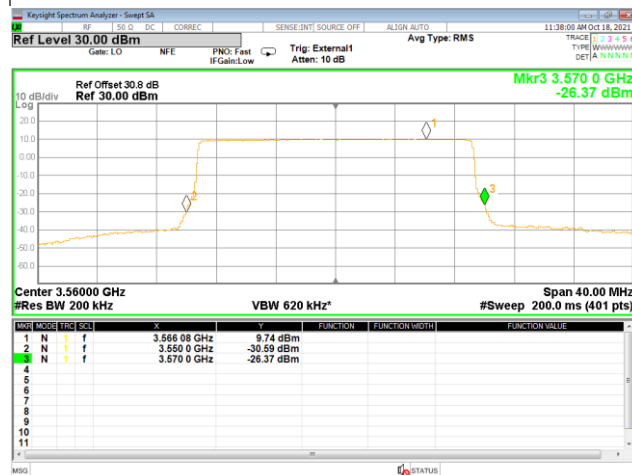
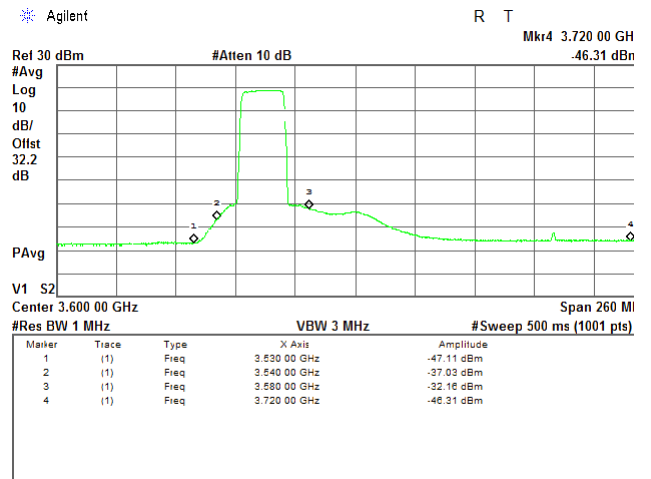
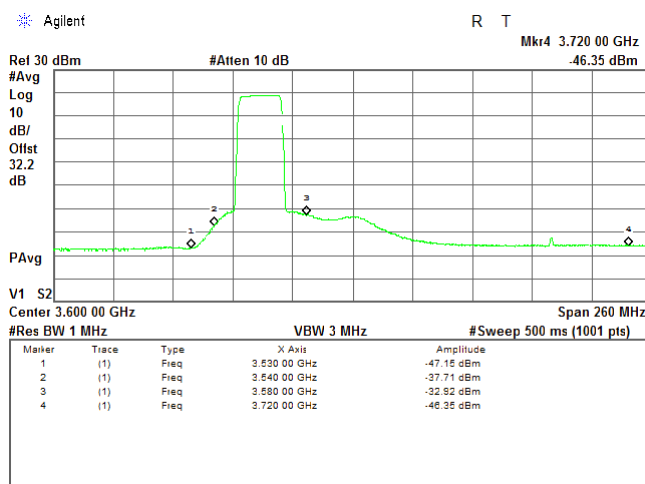
1

Modulation: QPSK

Modulation: 256QAM

RBW = 1-5% OBW = 200kHz

RBW = 1-5% OBW = 200kHz





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Report ID: AIRRAD_FCC.42554_Rev2

Date of Issue: 25-Oct-21

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 25-Aug-21 – 30-Sep-21			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VAC
Remarks:			

Plot 7.4.14 Emission outside the fundamental test results in 3470 - 3730 GHz range at low carrier frequency

CHANNEL SPACING:

20 MHz

ANTENNA CHAIN:

2

Modulation: QPSK

Modulation: 256QAM

RBW = 1-5% OBW = 200kHz

RBW = 1-5% OBW = 200kHz

