



Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
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
 EBW: 10 MHz
 NUMBER OF CHAINS: 2
 ANTENNA PORT: Worst case

Frequency MHz	Band edge	SA reading over 1 chain, dBm	Total band edge*, dBm	RBW, kHz	Integration BW, kHz	Limit, dBm	Verdict
QPSK							
Low frequency 3555.0 MHz							
3549.50	Low	-55.99	-52.99	100	1000	-13.0	Pass
3539.50	Low	-67.33	-64.33	100	1000	-25.0	
3560.50	High	-55.51	-52.51	100	1000	-13.0	
3570.50	High	-66.04	-63.04	100	1000	-25.0	
Mid frequency 3625.0 MHz							
3619.50	Low	-55.37	-52.37	100	1000	-13.0	Pass
3609.50	Low	-67.11	-64.11	100	1000	-25.0	
3630.50	High	-55.71	-52.71	100	1000	-13.0	
3640.50	High	-67.27	-64.27	100	1000	-25.0	
High frequency 3695.0 MHz							
3689.50	Low	-55.90	-52.90	100	1000	-13.0	Pass
3679.50	Low	-64.18	-61.18	100	1000	-25.0	
3700.50	High	-55.16	-52.16	100	1000	-13.0	
3710.50	High	-66.57	-63.57	100	1000	-25.0	
256 QAM							
Low frequency 3555.0 MHz							
3549.50	Low	-56.51	-53.51	100	1000	-13.0	Pass
3539.50	Low	-66.72	-63.72	100	1000	-25.0	
3560.50	High	-56.62	-53.62	100	1000	-13.0	
3570.50	High	-67.03	-64.03	100	1000	-25.0	
Mid frequency 3625.0 MHz							
3619.50	Low	-55.77	-52.77	100	1000	-13.0	Pass
3609.50	Low	-67.32	-64.32	100	1000	-25.0	
3630.50	High	-56.37	-53.37	100	1000	-13.0	
3640.50	High	-67.91	-64.91	100	1000	-25.0	
High frequency 2680.0 MHz							
3689.50	Low	-55.98	-52.98	100	1000	-13.0	Pass
3679.50	Low	-65.03	-62.03	100	1000	-25.0	
3700.50	High	-56.32	-53.32	100	1000	-13.0	
3710.50	High	-66.84	-63.84	100	1000	-25.0	

* - SA Reading over 1 chain = Max SA reading (Chains #1&2 and #3&4)
 ** - Total band edge = SA Reading over 1 chain + 10*log(N) = SA reading +3 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): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
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
 EBW: 20 MHz
 NUMBER OF CHAINS: 2
 ANTENNA PORT: Worst case

Frequency MHz	Band edge	SA reading over 1 chain, dBm	Total band edge*, dBm	RBW, kHz	Integration BW, kHz	Limit, dBm	Verdict
QPSK							
Low frequency 3560.0 MHz							
3549.50	Low	-53.73	-50.73	100	1000	-13.0	Pass
3539.50	Low	-64.11	-61.43	100	1000	-25.0	
3570.50	High	-53.59	-50.59	100	1000	-13.0	
3580.50	High	-62.31	-59.31	100	1000	-25.0	
Mid frequency 3625.0 MHz							
3615.50	Low	-54.47	-51.47	100	1000	-13.0	Pass
3604.50	Low	-65.54	-62.54	100	1000	-25.0	
3635.50	High	-54.85	-51.85	100	1000	-13.0	
3645.50	High	-64.22	-61.22	100	1000	-25.0	
High frequency 3690.0 MHz							
3679.50	Low	-54.82	-51.82	100	1000	-13.0	Pass
3669.50	Low	-63.32	-60.32	100	1000	-25.0	
3700.50	High	-55.12	-52.12	100	1000	-13.0	
3710.50	High	-63.98	-60.98	100	1000	-25.0	
256 QAM							
Low frequency 3560.0 MHz							
3549.50	Low	-54.92	-51.92	100	1000	-13.0	Pass
3539.50	Low	-65.87	-62.87	100	1000	-25.0	
3570.50	High	-55.11	-52.11	100	1000	-13.0	
3580.50	High	-65.36	-62.36	100	1000	-25.0	
Mid frequency 3625.0 MHz							
3615.50	Low	-55.75	-52.75	100	1000	-13.0	Pass
3604.50	Low	-66.19	-63.19	100	1000	-25.0	
3635.50	High	-55.79	-52.79	100	1000	-13.0	
3645.50	High	-67.30	-64.30	100	1000	-25.0	
High frequency 3690.0 MHz							
3679.50	Low	-55.12	-52.12	100	1000	-13.0	Pass
3669.50	Low	-63.96	-60.96	100	1000	-25.0	
3700.50	High	-56.89	-53.89	100	1000	-13.0	
3710.50	High	-65.83	-62.83	100	1000	-25.0	

* - SA Reading over 1 chain = Max SA reading (Chains #1&2 and #3&4)
 ** - Total band edge = SA Reading over 1 chain + 10*log(N) = SA reading +3 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.



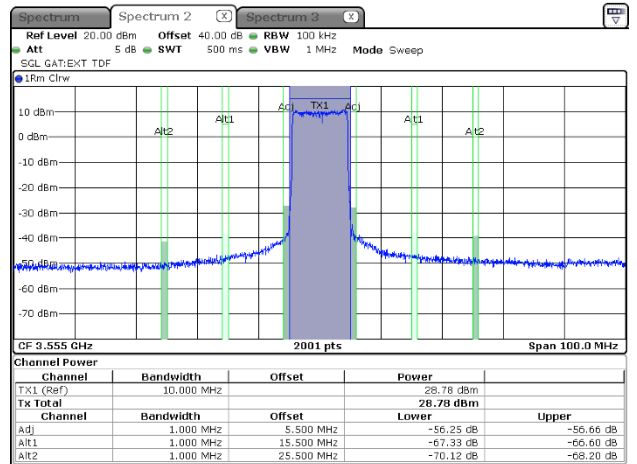
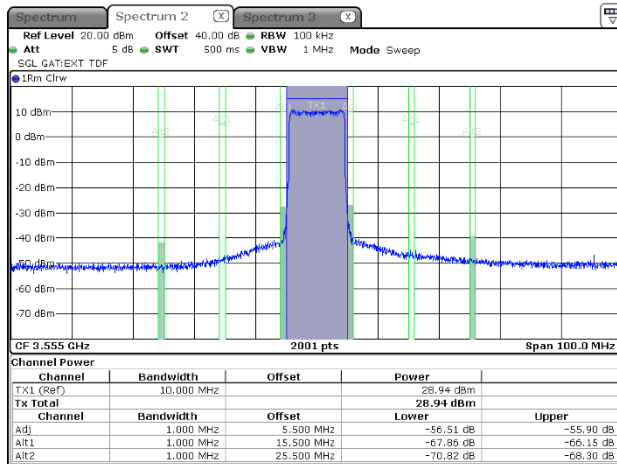
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.1 Emission outside the fundamental test results in 3505 - 3605 GHz range at low carrier frequency

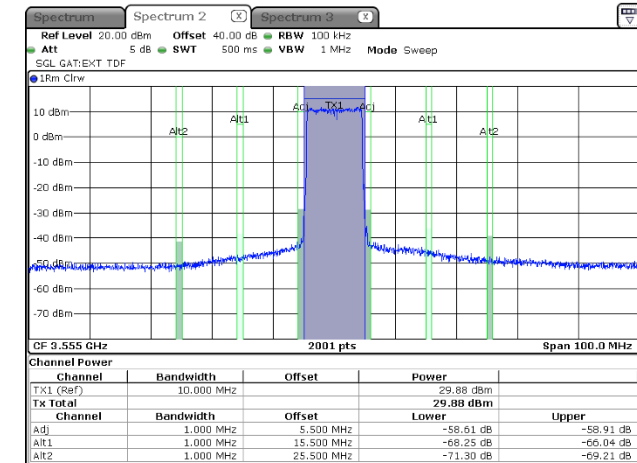
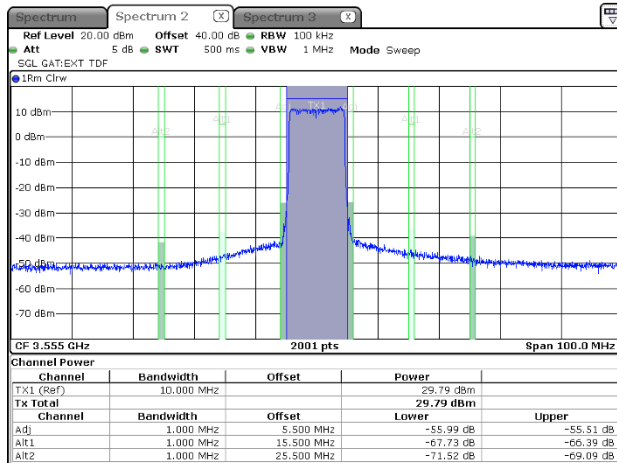
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





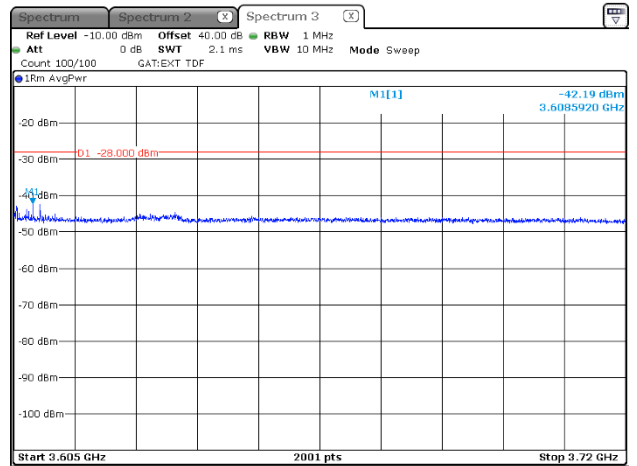
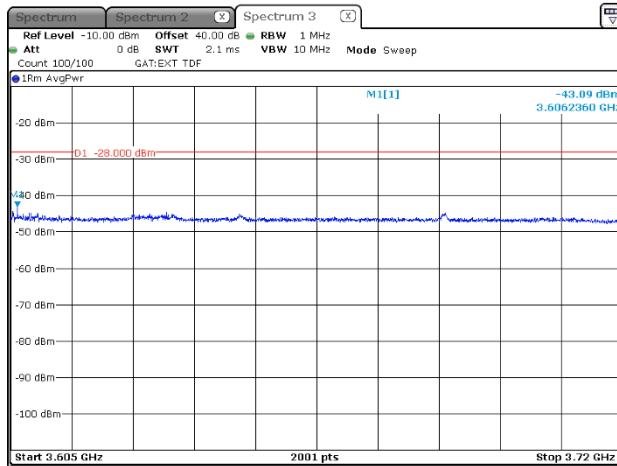
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.2 Emission outside the fundamental test results in 3605 - 3720 GHz range at low carrier frequency

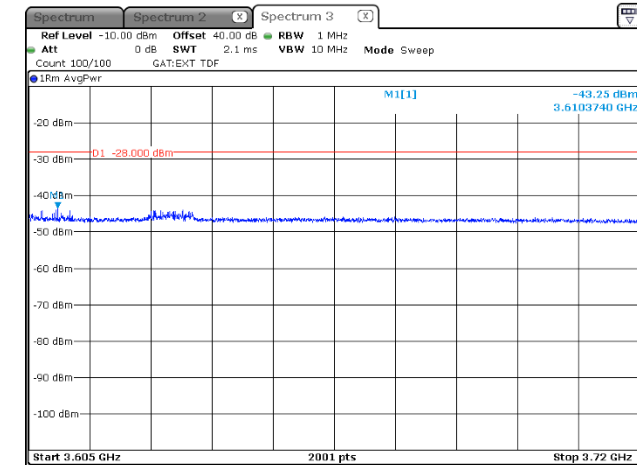
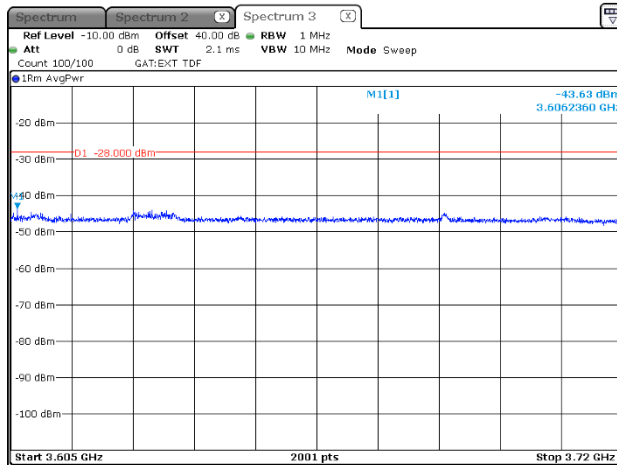
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





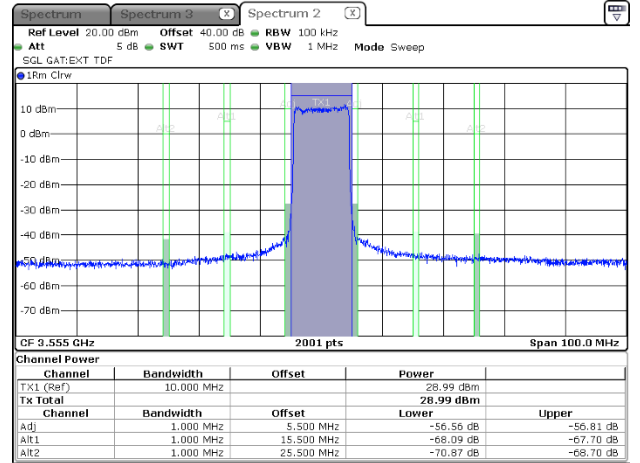
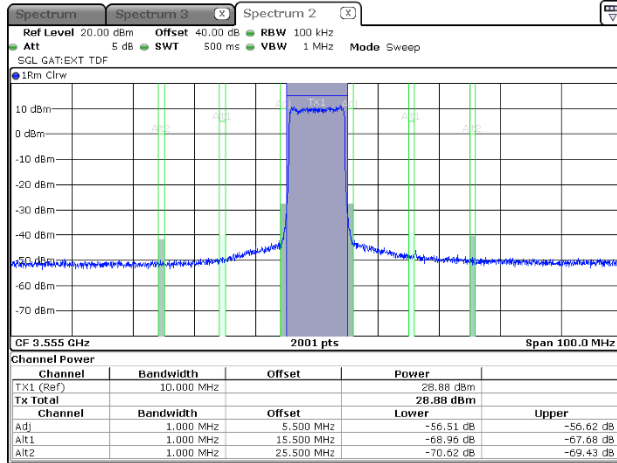
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.3 Emission outside the fundamental test results in 3505 - 3605 GHz range at low carrier frequency

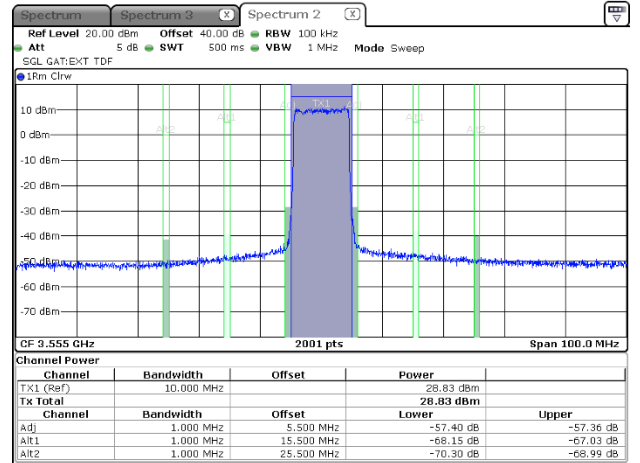
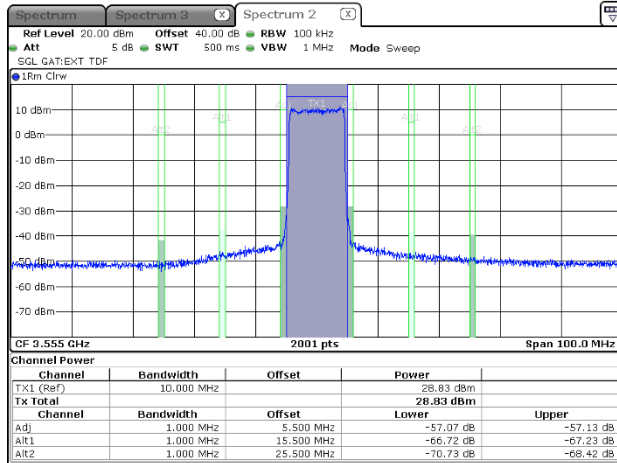
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

256QAM
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





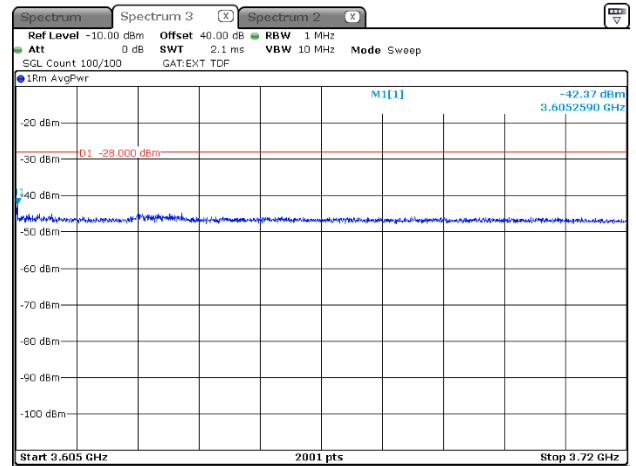
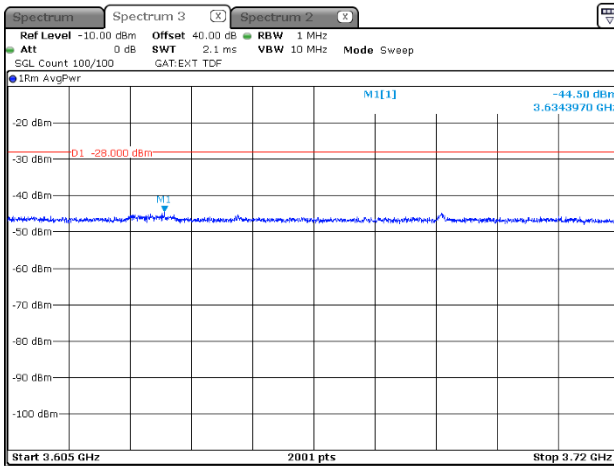
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.4 Emission outside the fundamental test results in 3605 - 3720 GHz range at low carrier frequency

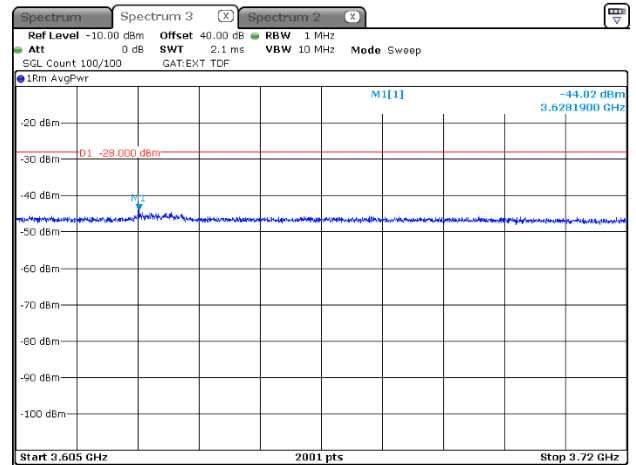
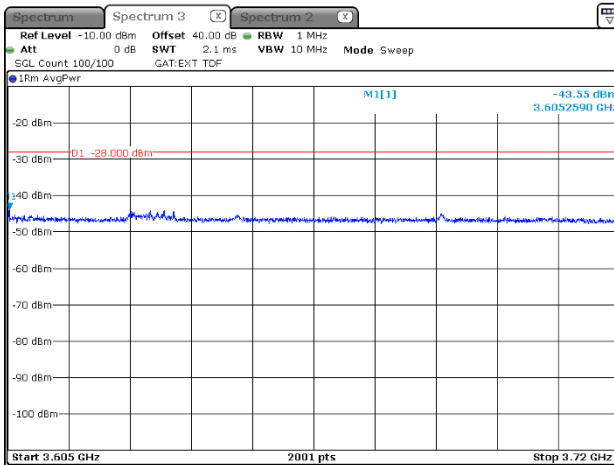
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

256QAM
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





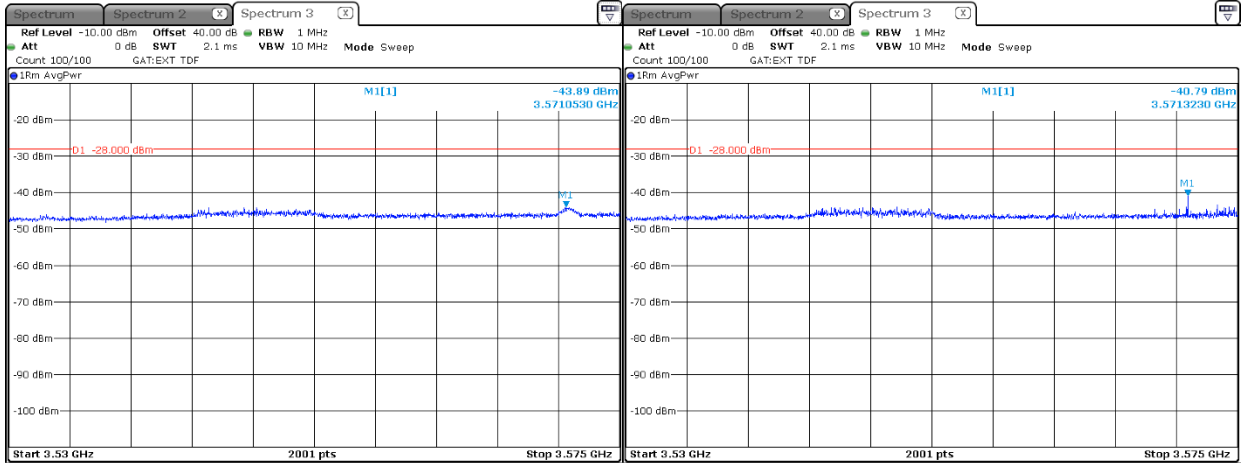
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict:	PASS
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.5 Emission outside the fundamental test results in 3530 - 3575 GHz range at mid carrier frequency

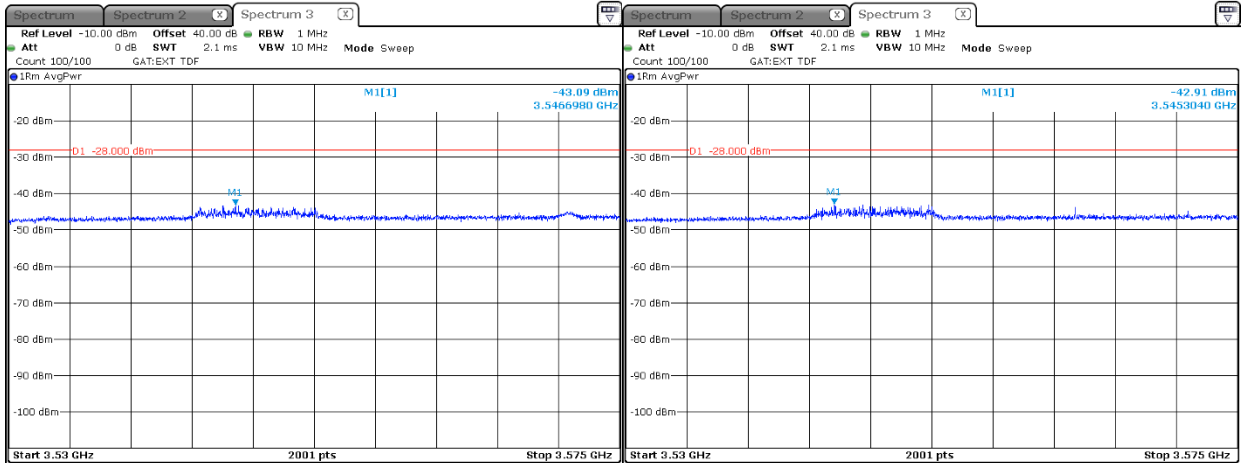
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





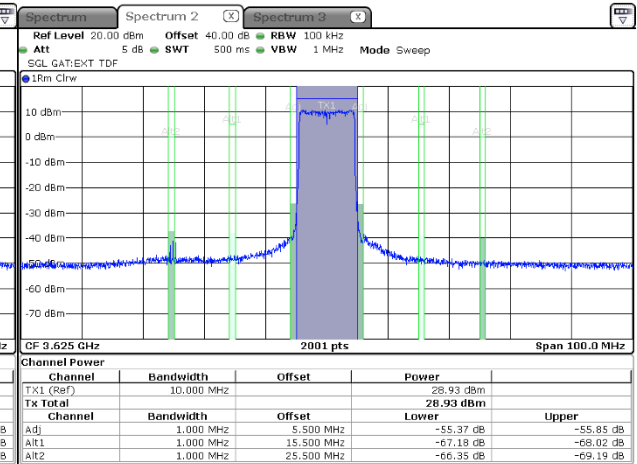
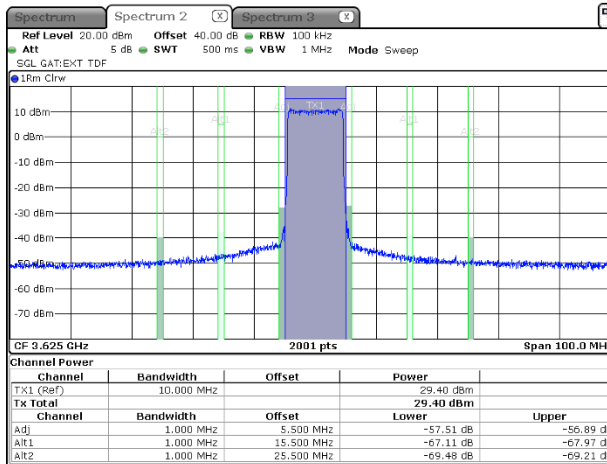
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict:	PASS
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.6 Emission outside the fundamental test results in 3575 - 3675 GHz range at mid carrier frequency

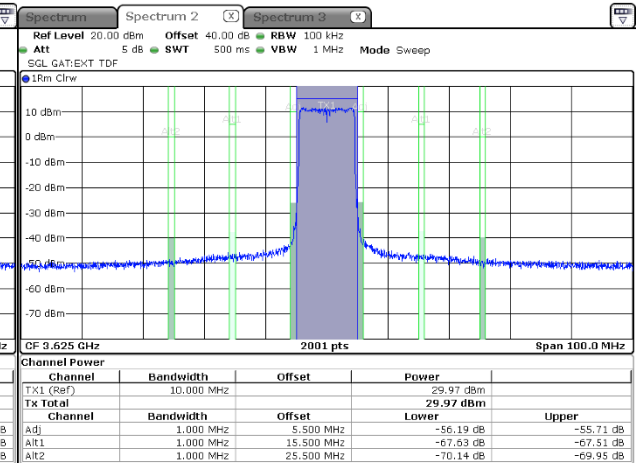
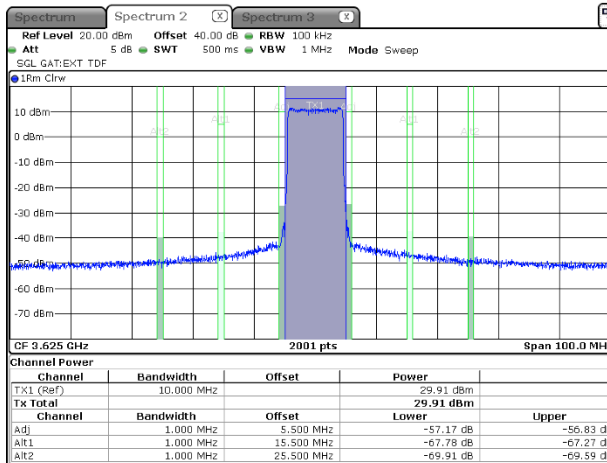
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





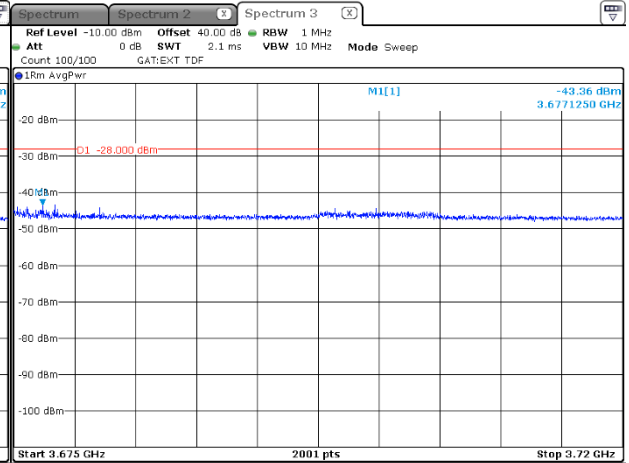
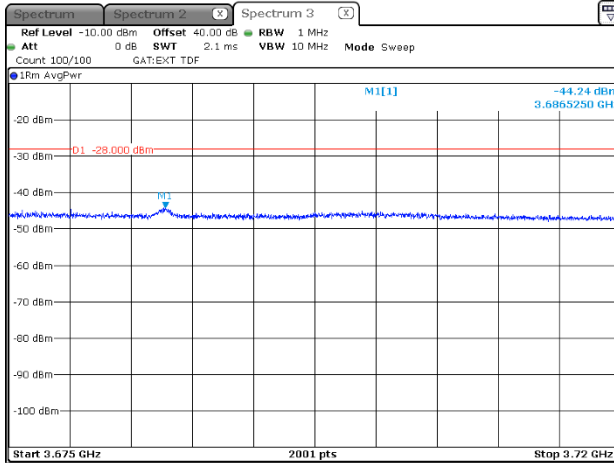
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.7 Emission outside the fundamental test results in 3675 - 3720 GHz range at mid carrier frequency

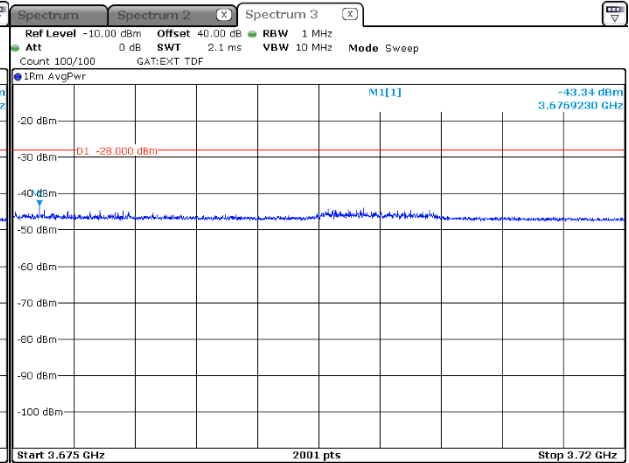
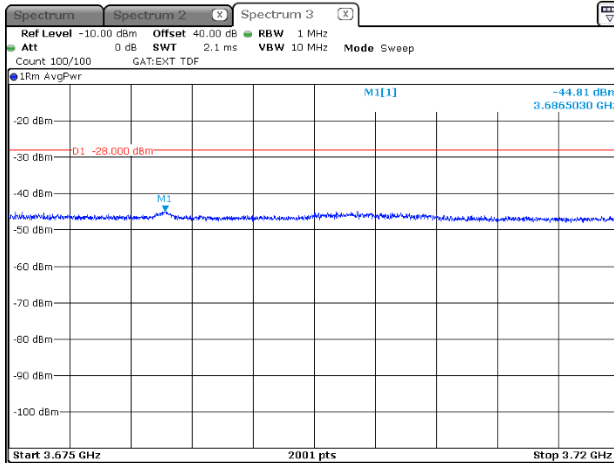
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





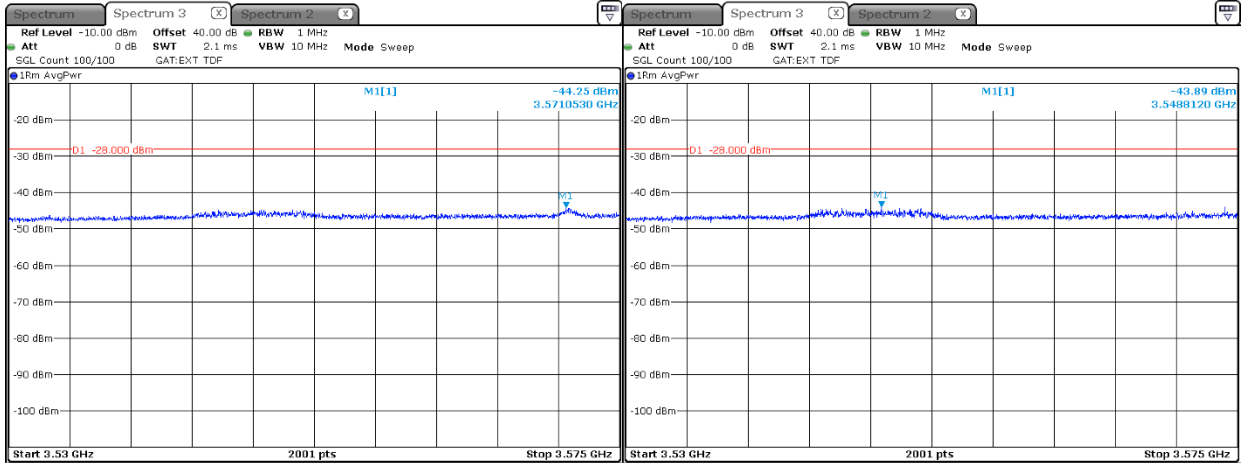
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict:	PASS
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.8 Emission outside the fundamental test results in 3530 - 3575 GHz range at mid carrier frequency

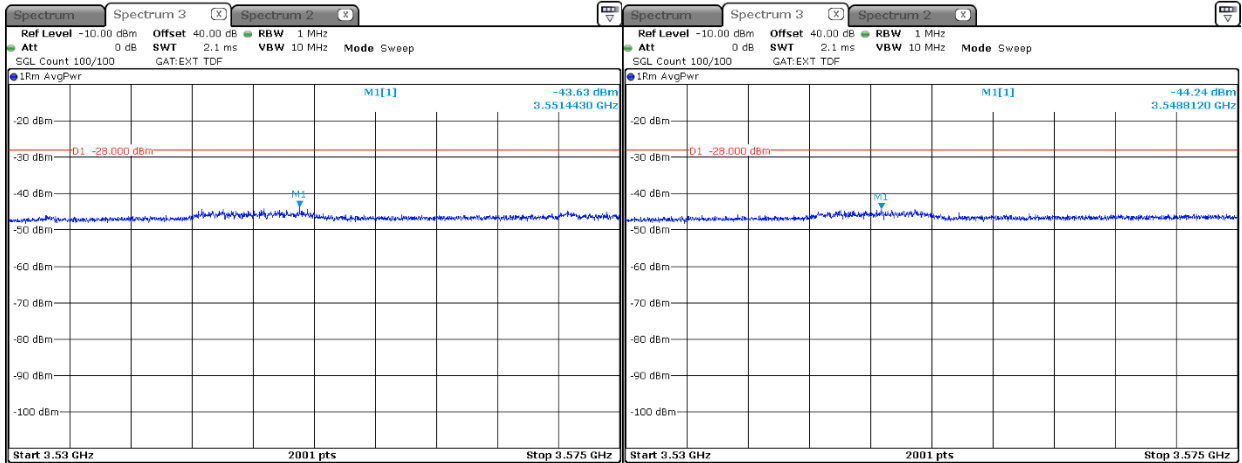
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

256QAM
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





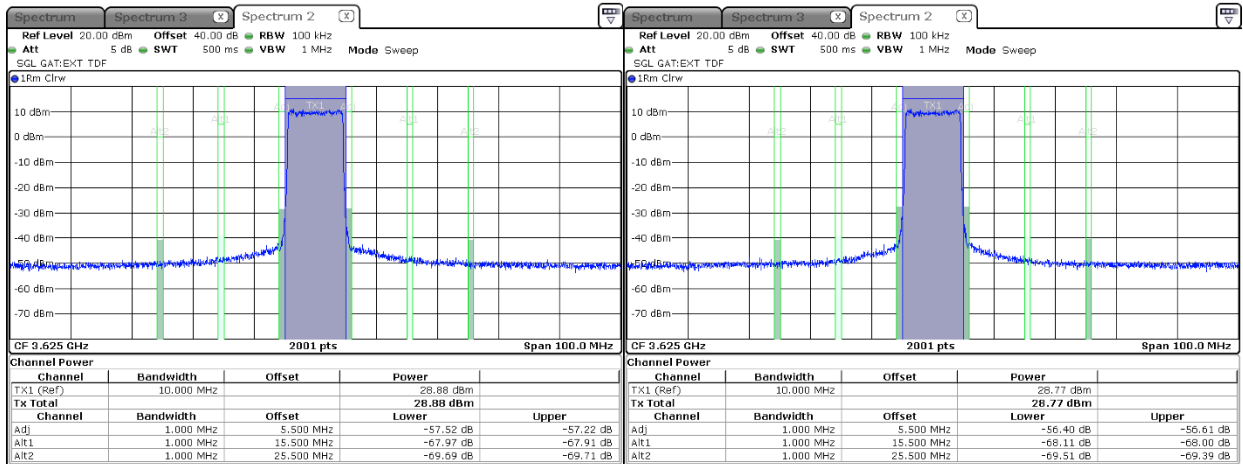
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.9 Emission outside the fundamental test results in 3575 - 3675 GHz range at mid carrier frequency

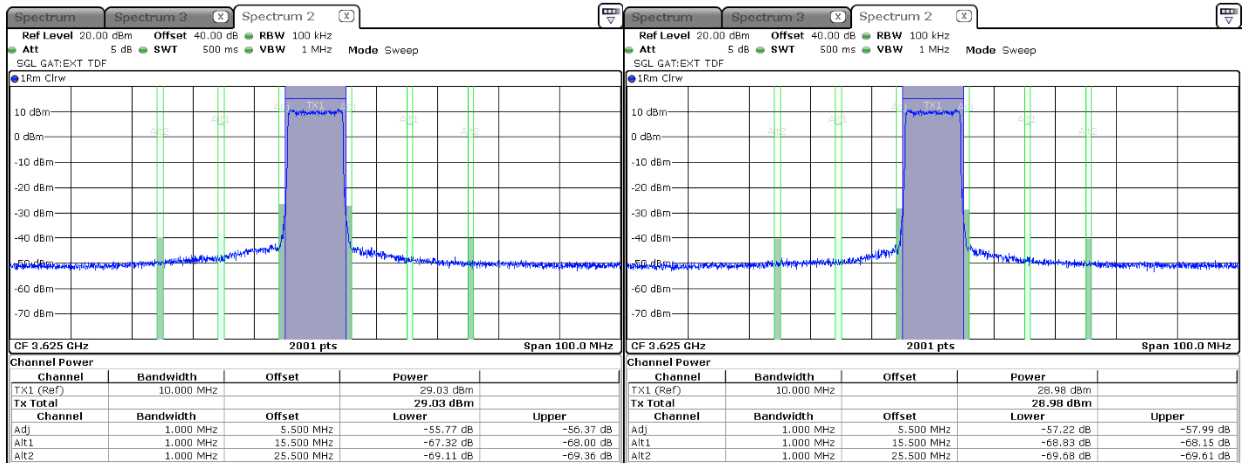
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

256QAM
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





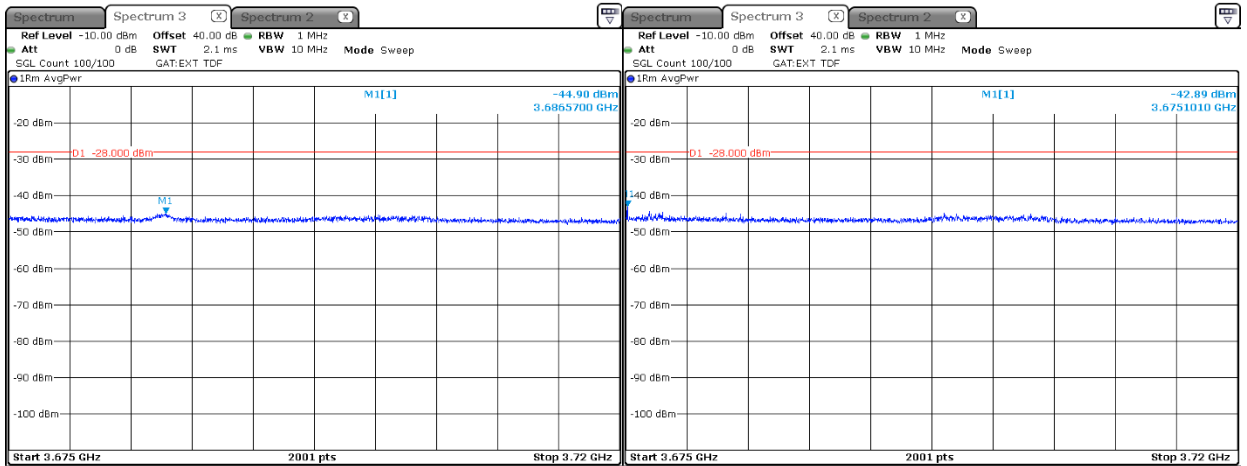
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.10 Emission outside the fundamental test results in 3675 - 3720 GHz range at mid carrier frequency

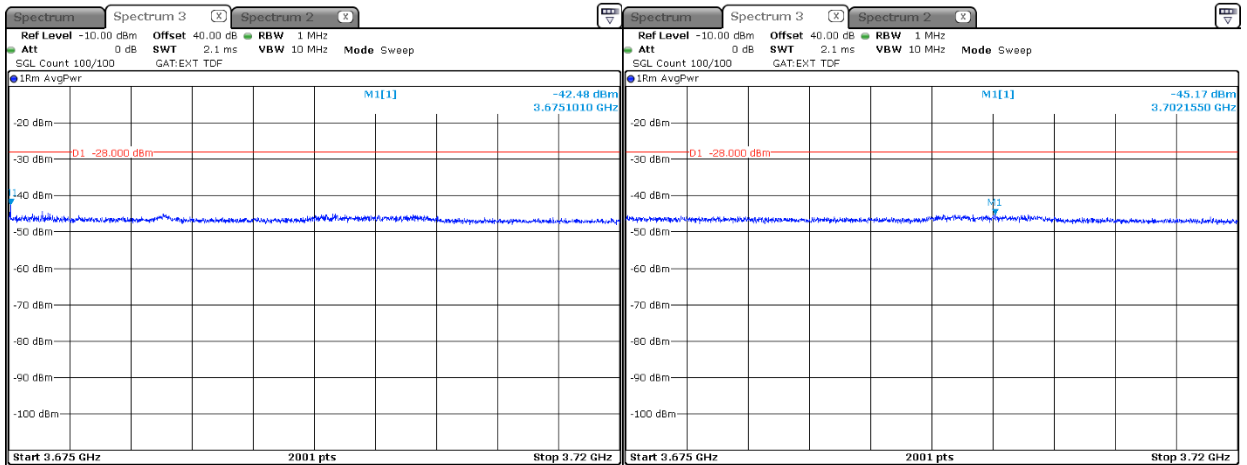
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

256QAM
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





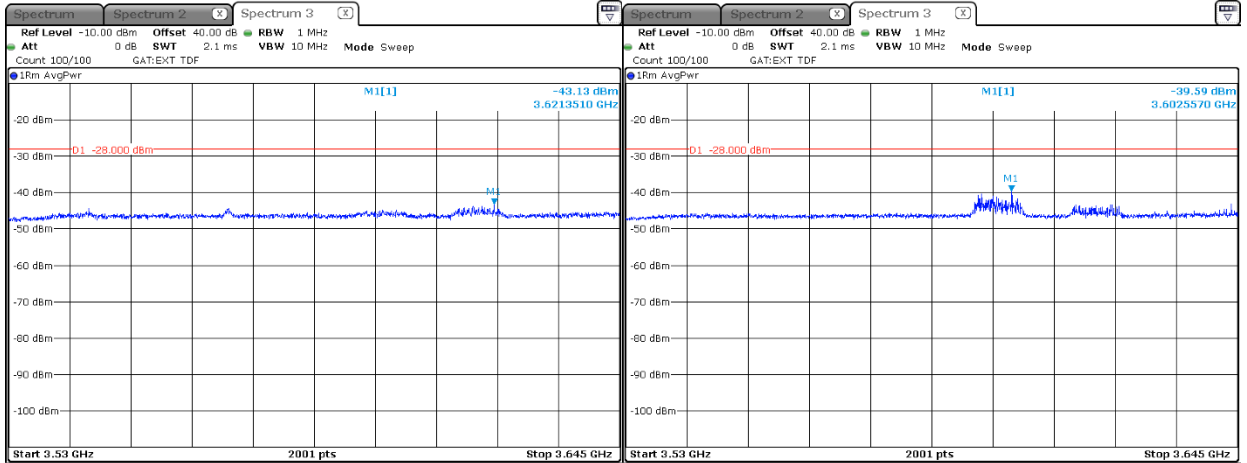
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict:	PASS
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.11 Emission outside the fundamental test results in 3530 - 3645 GHz range at high carrier frequency

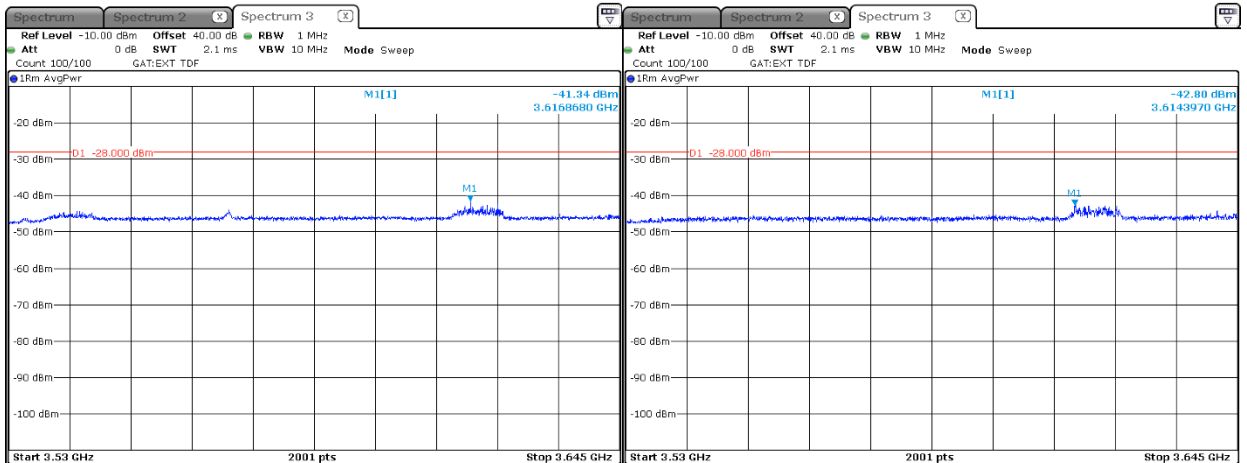
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





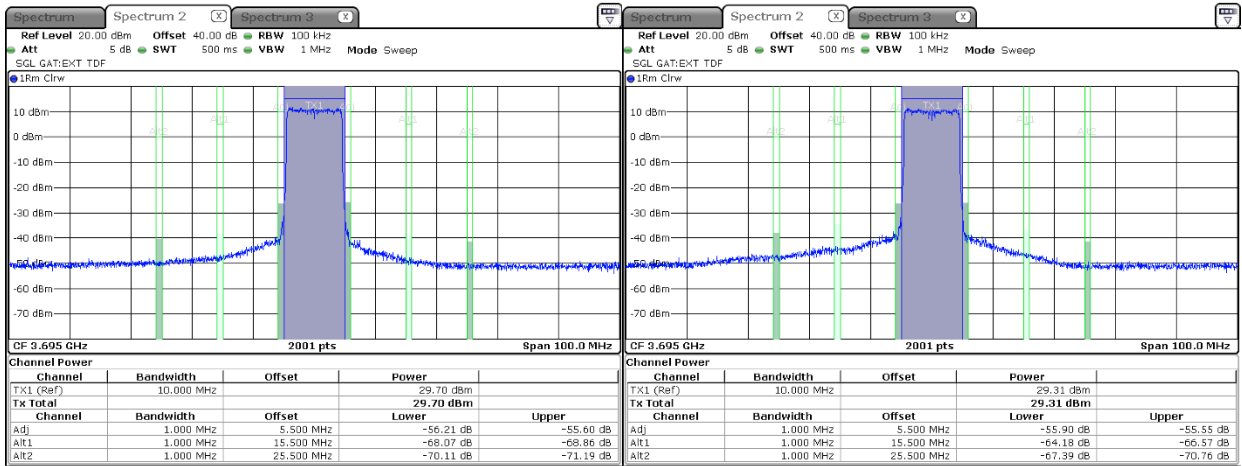
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict:	PASS
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.12 Emission outside the fundamental test results in 3645 - 3745 GHz range at high carrier frequency

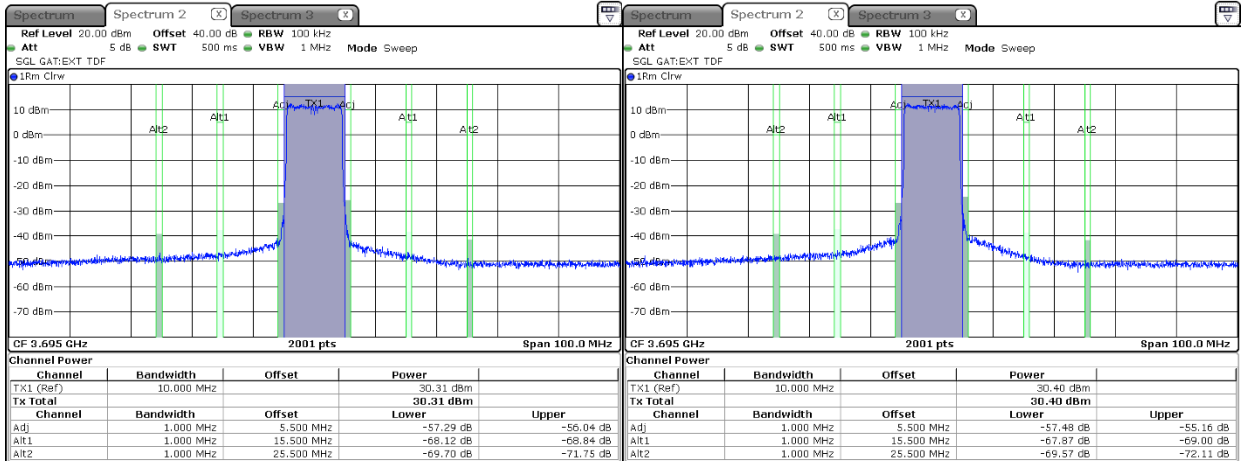
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





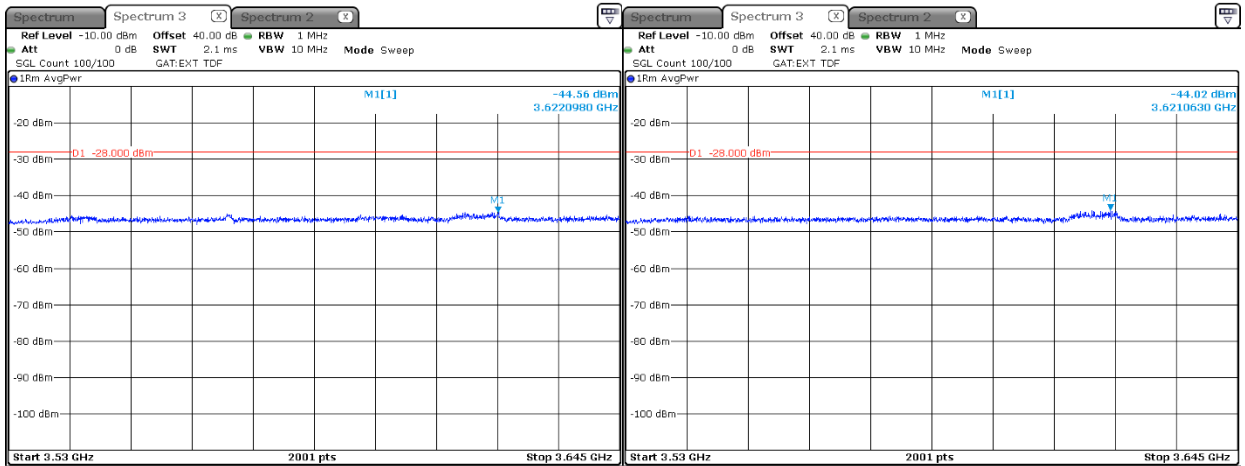
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.13 Emission outside the fundamental test results in 3530 - 3645 GHz range at high carrier frequency

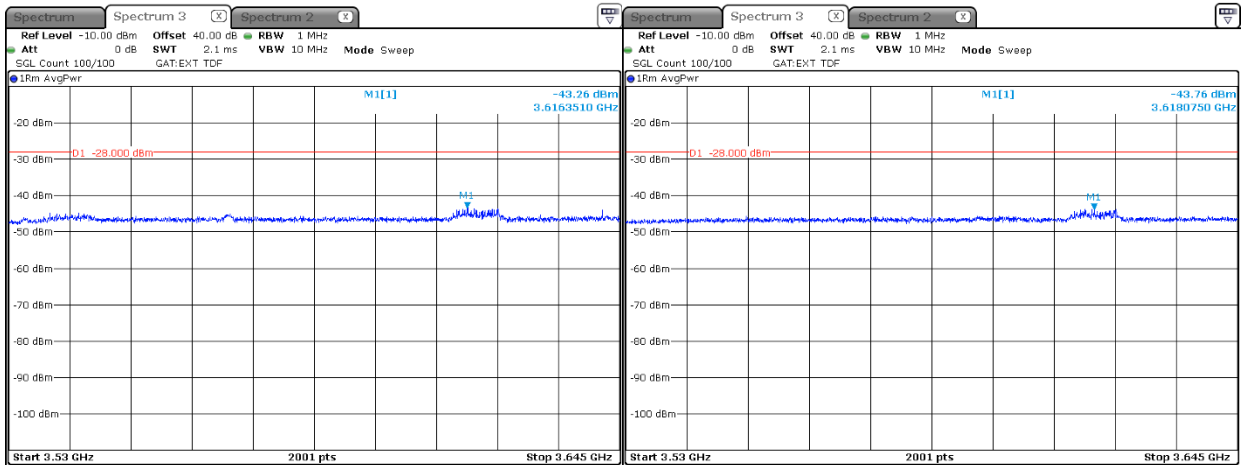
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

256QAM
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





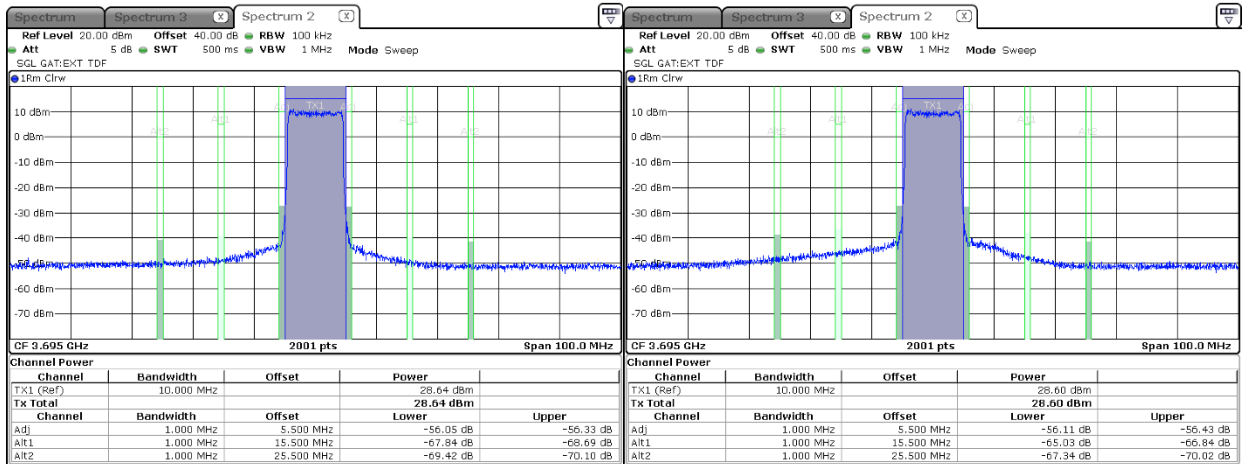
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

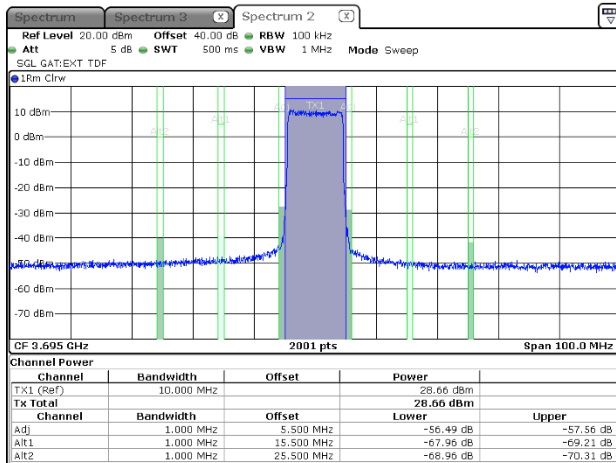
Plot 7.4.14 Emission outside the fundamental test results in 3645 - 3745 GHz range at high carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

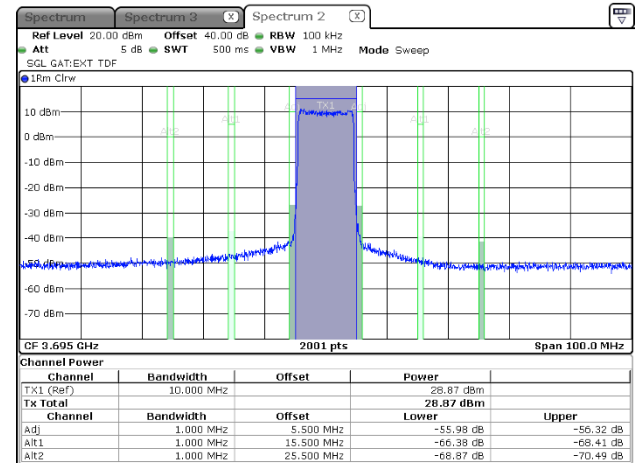
256QAM
10 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3



ANTENNA CHAIN: #4





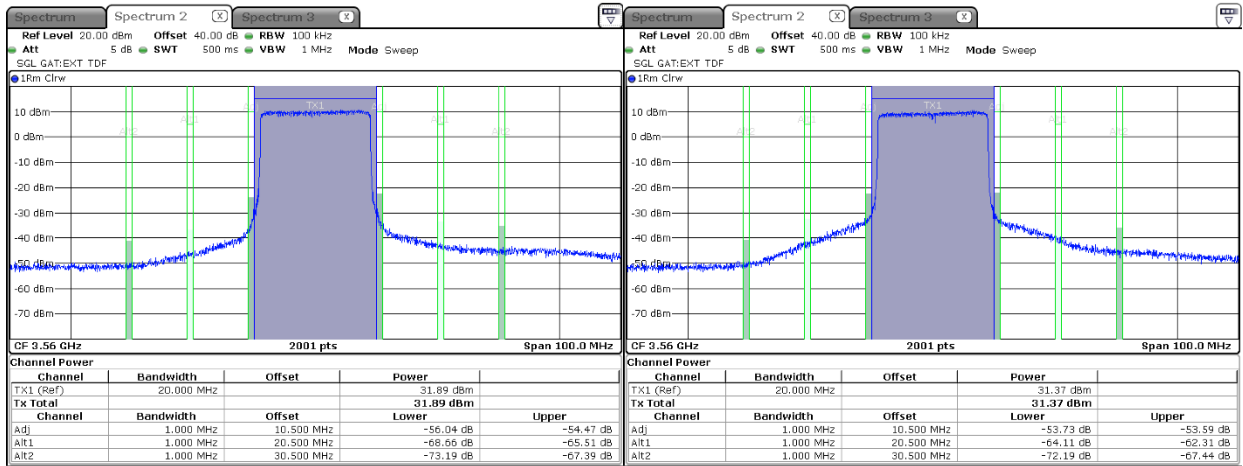
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.15 Emission outside the fundamental test results in 3510 - 3610 GHz range at low carrier frequency

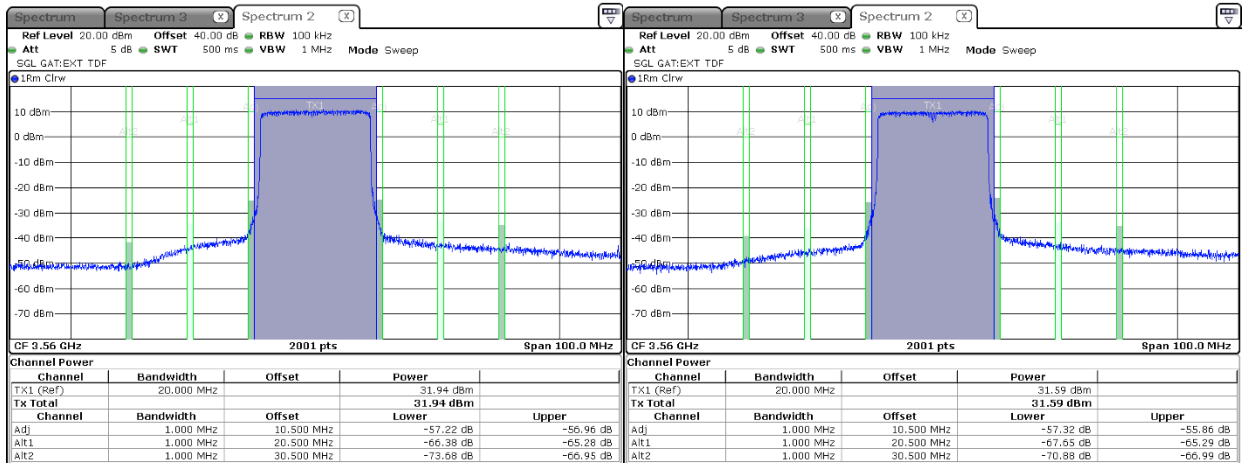
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
20 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





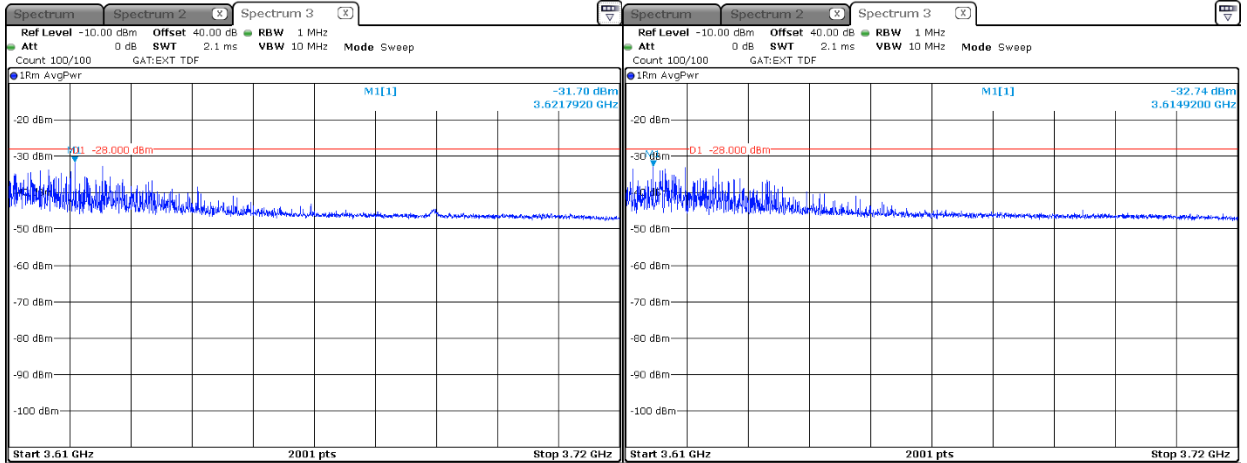
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.16 Emission outside the fundamental test results in 3610 - 3720 GHz range at low carrier frequency

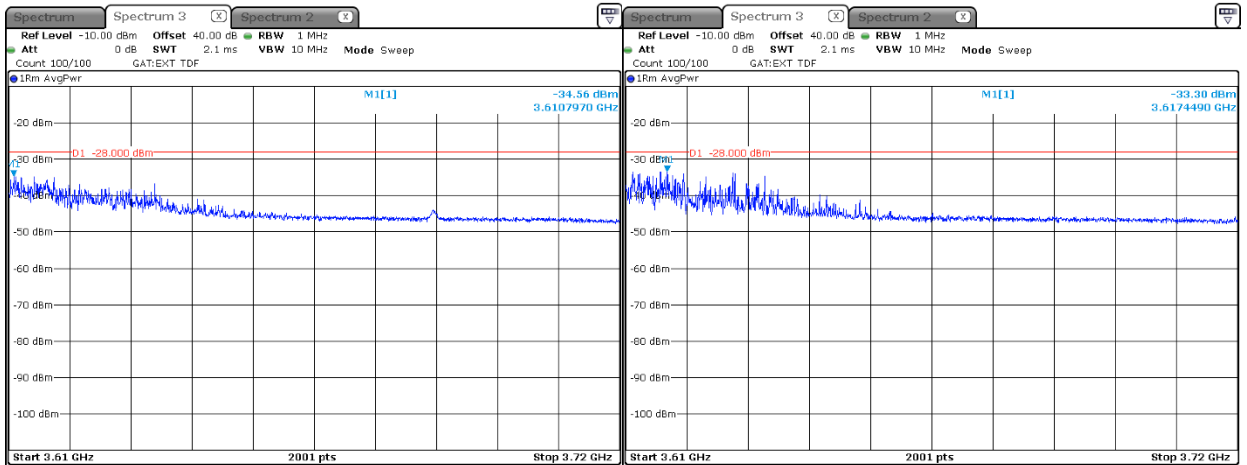
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
20 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





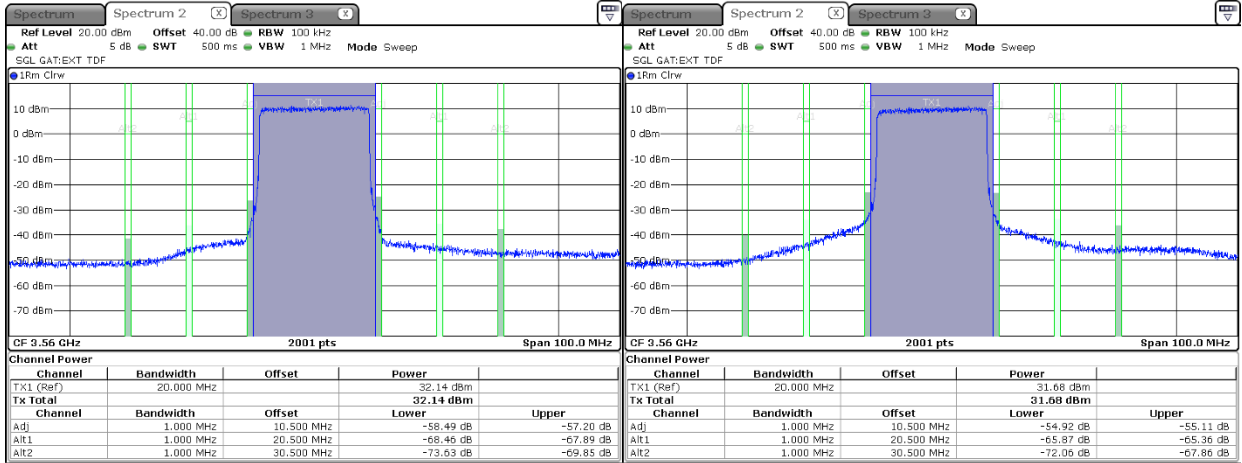
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.17 Emission outside the fundamental test results in 3510 - 3610 GHz range at low carrier frequency

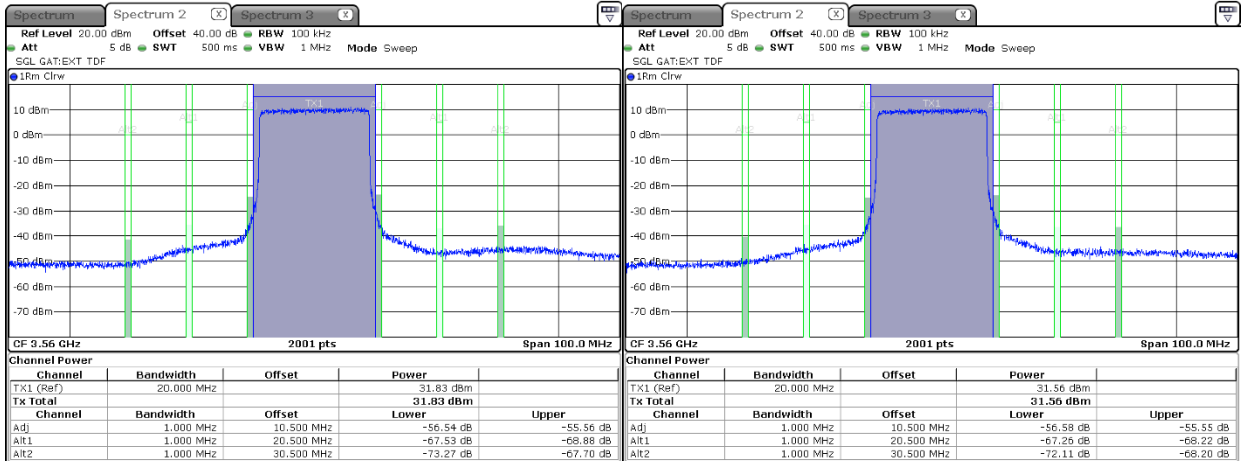
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

256QAM
20 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





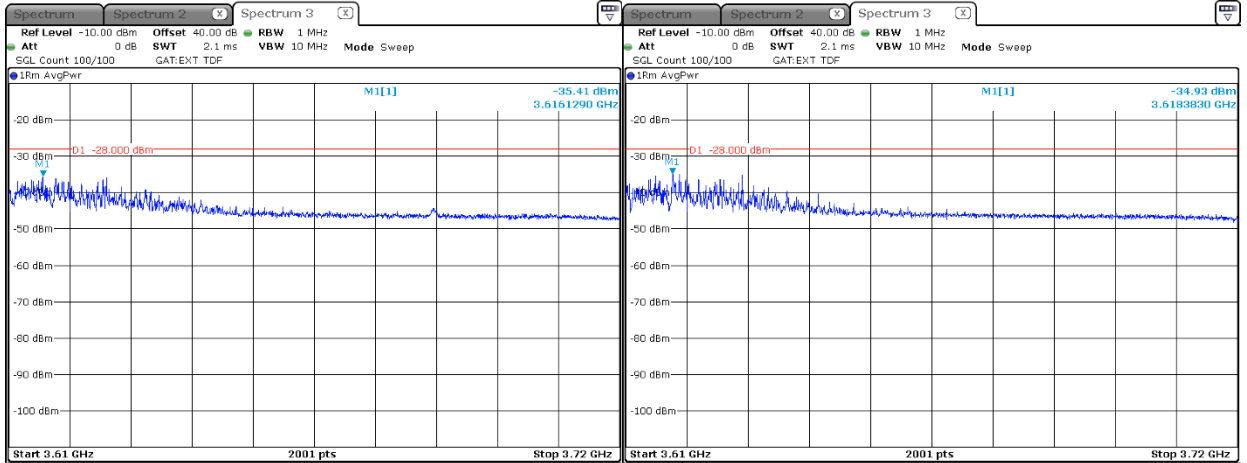
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict:	PASS
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.18 Emission outside the fundamental test results in 3610 - 3720 GHz range at low carrier frequency

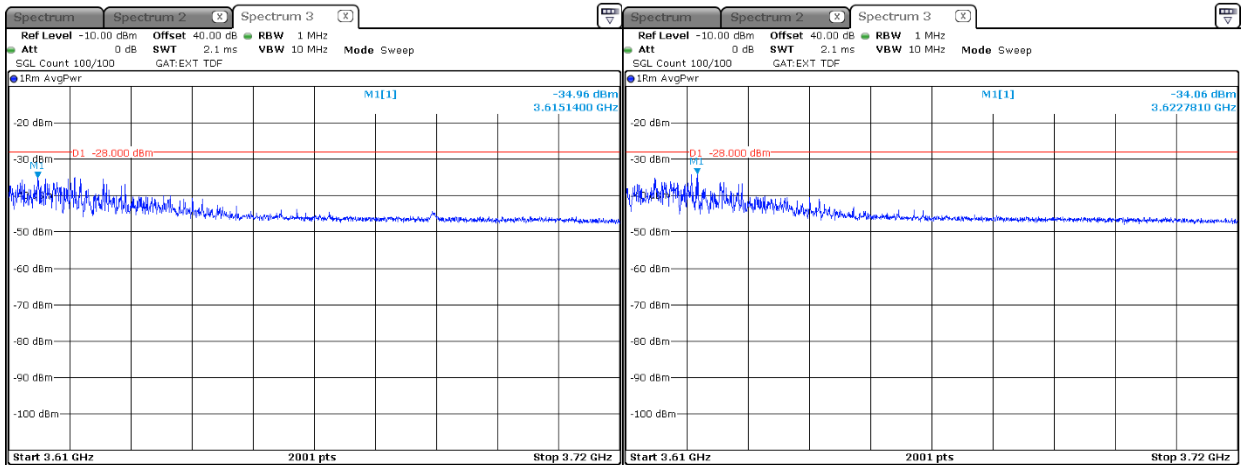
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

256QAM
20 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





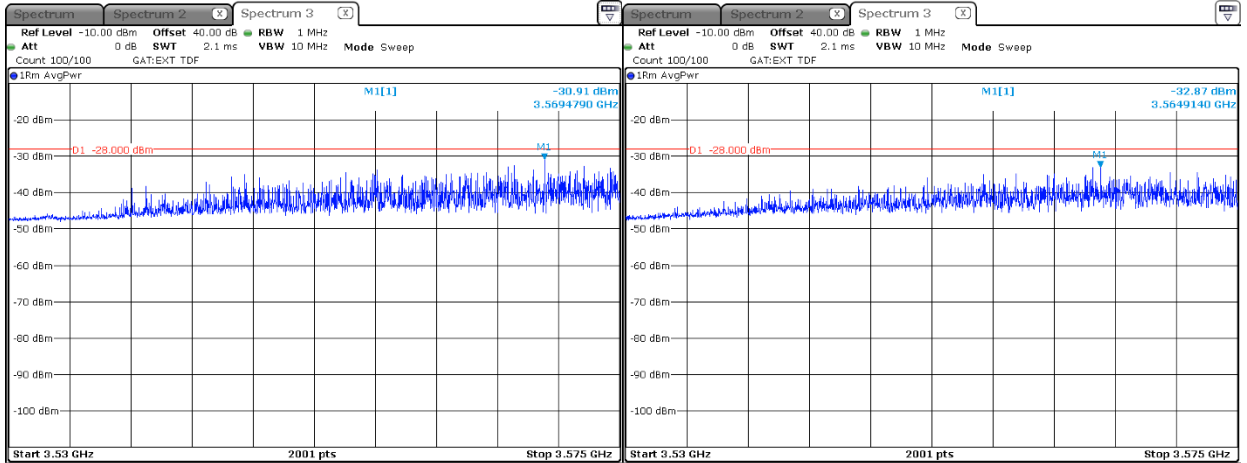
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict:	PASS
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.19 Emission outside the fundamental test results in 3530 - 3575 GHz range at mid carrier frequency

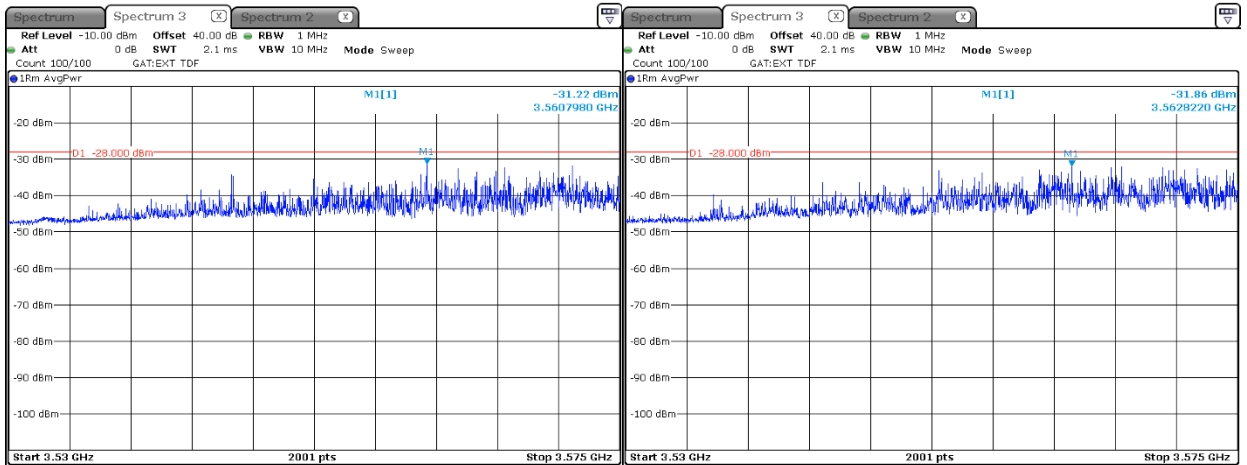
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
20 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





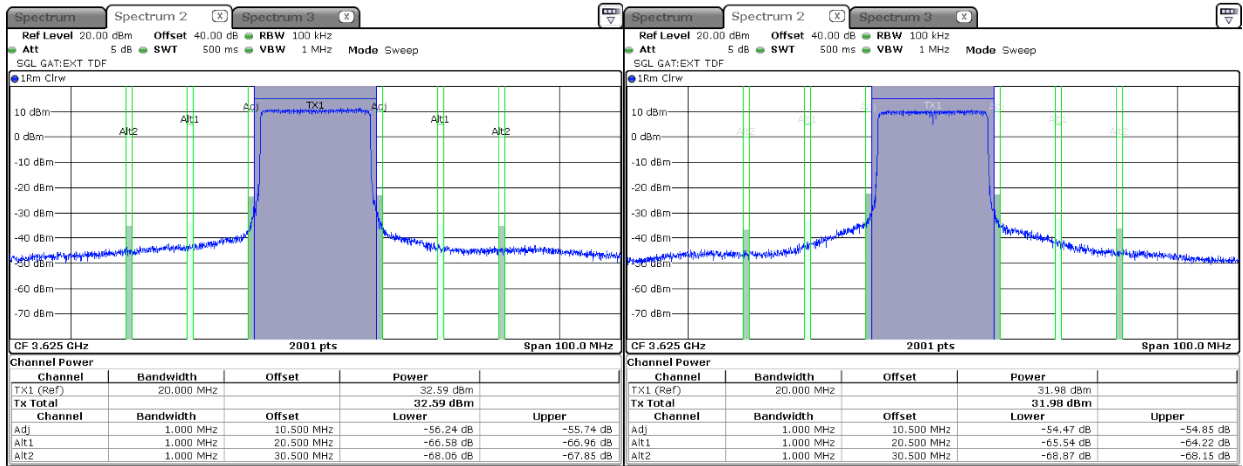
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.20 Emission outside the fundamental test results in 3575 - 3675 GHz range at mid carrier frequency

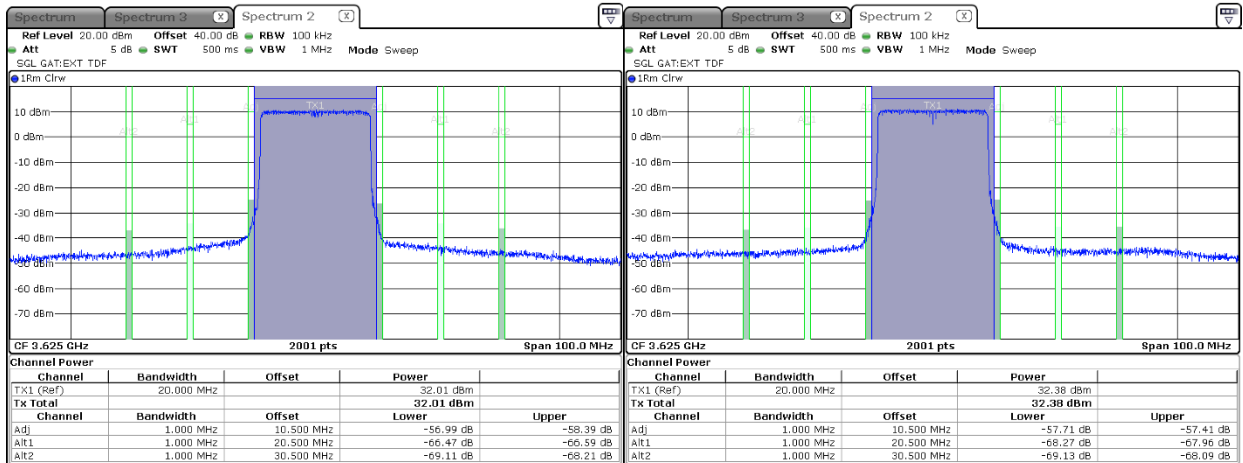
MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
20 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





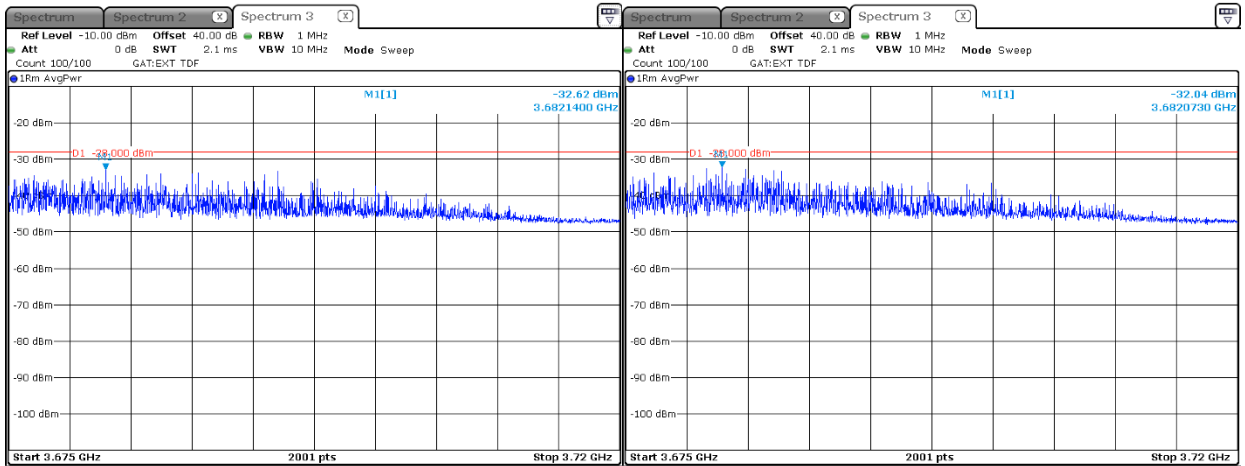
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 19-Jul-20 - 29-Nov-20			
Temperature: 24.2 °C	Relative Humidity: 49 %	Air Pressure: 1010 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.21 Emission outside the fundamental test results in 3675 - 3720 GHz range at mid carrier frequency

MODULATION:
CHANNEL SPACING:
ANTENNA CHAIN: #1

QPSK
20 MHz
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4

