



Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
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	-46.25	-40.25	1000	-40	-0.25	Pass
3540.00	Low	-36.00	-30.00	1000	-25	-5.00	
3549.00	Low	-27.87	-21.87	1000	-13	-8.87	
3550.00	Low	-22.18	-16.18	500	-13	-3.18	
3590.00	High	-23.64	-17.64	500	-13	-4.64	
3591.00	High	-27.12	-21.12	1000	-13	-8.12	
3600.00	High	-31.90	-25.90	1000	-25	-0.90	
3720.00	High	-46.49	-40.49	1000	-40	-0.49	
Mid frequency 3625.0 MHz							
3530.00	Low	-50.16	-44.16	1000	-40	-4.16	Pass
3595.00	Low	-31.88	-25.88	1000	-25	-0.88	
3604.00	Low	-27.43	-21.43	1000	-13	-8.43	
3605.00	Low	-20.22	-14.22	500	-13	-1.22	
3645.00	High	-24.02	-18.02	500	-13	-5.02	
3646.00	High	-27.87	-21.87	1000	-13	-8.87	
3655.00	High	-31.05	-25.05	1000	-25	-0.05	
3720.00	High	-48.23	-42.23	1000	-40	-2.23	
High frequency 3680.0 MHz							
3530.00	Low	-50.82	-44.82	1000	-40	-4.82	Pass
3650.00	Low	-33.56	-27.56	1000	-25	-2.56	
3659.00	Low	-29.27	-23.27	1000	-13	-10.27	
3660.00	Low	-22.54	-16.54	500	-13	-3.54	
3700.00	High	-24.19	-18.19	500	-13	-5.19	
3701.00	High	-31.62	-25.62	1000	-13	-12.62	
3710.00	High	-37.61	-31.61	1000	-25	-6.61	
3720.00	High	-46.18	-40.18	1000	-40	-0.18	



Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Table 7.4.5 Emission outside the fundamental test results (continued)

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
256 QAM							
Low frequency 3570.0 MHz							
3530.00	Low	-46.35	-40.35	1000	-40	-0.35	Pass
3540.00	Low	-37.28	-31.28	1000	-25	-6.28	
3549.00	Low	-30.06	-24.06	1000	-13	-11.06	
3550.00	Low	-21.38	-15.38	500	-13	-2.38	
3590.00	High	-20.10	-14.10	500	-13	-1.10	
3591.00	High	-28.49	-22.49	1000	-13	-9.49	
3600.00	High	-32.48	-26.48	1000	-25	-1.48	
3720.00	High	-46.46	-40.46	1000	-40	-0.46	
Mid frequency 3625.0 MHz							
3530.00	Low	-50.39	-44.39	1000	-40	-4.39	Pass
3595.00	Low	-32.59	-26.59	1000	-25	-1.59	
3604.00	Low	-28.60	-22.60	1000	-13	-9.60	
3605.00	Low	-19.41	-13.41	500	-13	-0.41	
3645.00	High	-21.62	-15.62	500	-13	-2.62	
3646.00	High	-27.46	-21.46	1000	-13	-8.46	
3655.00	High	-32.90	-26.90	1000	-25	-1.90	
3720.00	High	-47.76	-41.76	1000	-40	-1.76	
High frequency 3680.0 MHz							
3530.00	Low	-50.18	-44.18	1000	-40	-4.18	Pass
3650.00	Low	-32.63	-26.63	1000	-25	-1.63	
3659.00	Low	-28.90	-22.90	1000	-13	-9.90	
3660.00	Low	-22.51	-16.51	500	-13	-3.51	
3700.00	High	-23.19	-17.19	500	-13	-4.19	
3701.00	High	-30.16	-24.16	1000	-13	-11.16	
3710.00	High	-36.17	-30.17	1000	-25	-5.17	
3720.00	High	-46.21	-40.21	1000	-40	-0.21	

* - 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 4355	HL 4366	HL 5643	HL 5409	HL 5636	HL 5637	HL 5642
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Full description is given in Appendix A.



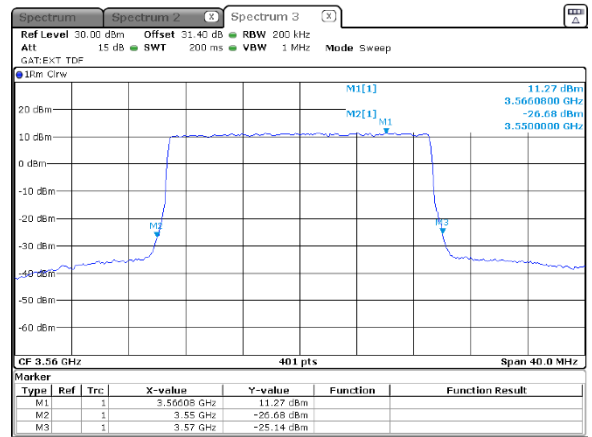
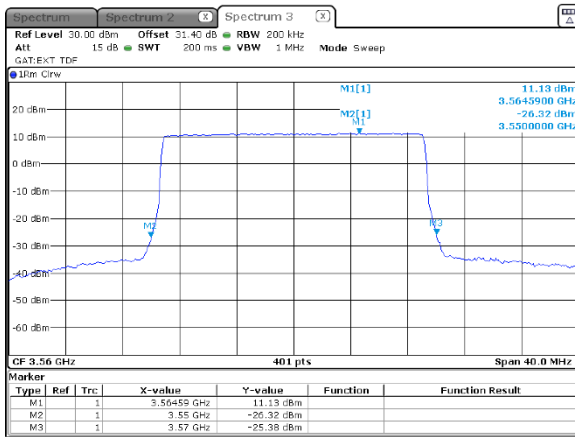
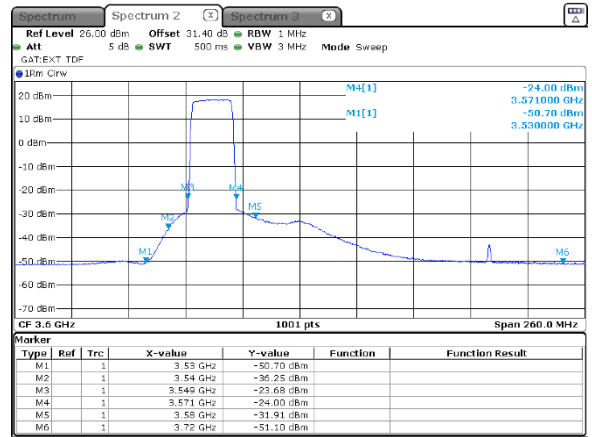
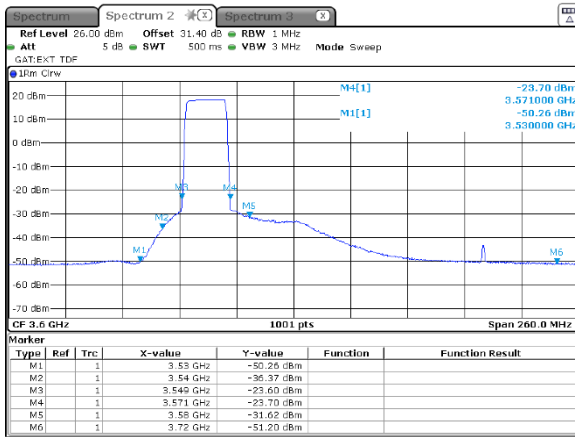
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.1 Emission outside the fundamental test results at low carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
1
Modulation: 256QAM





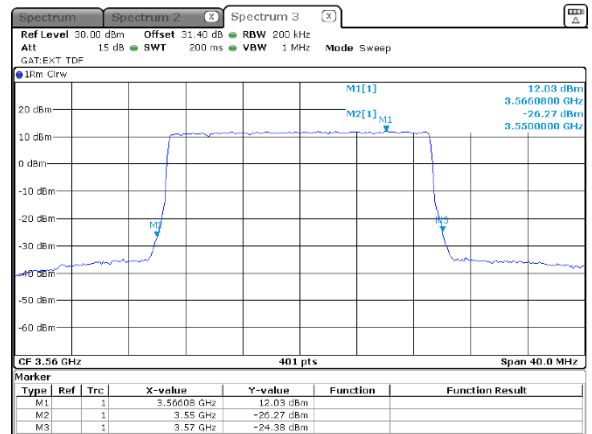
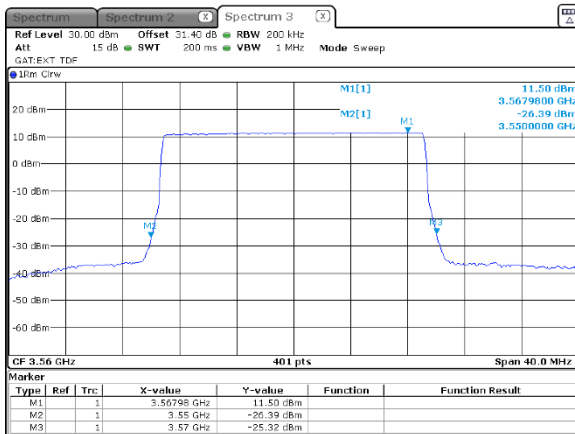
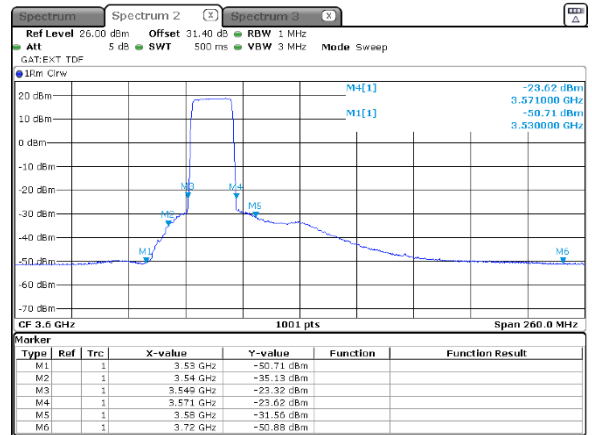
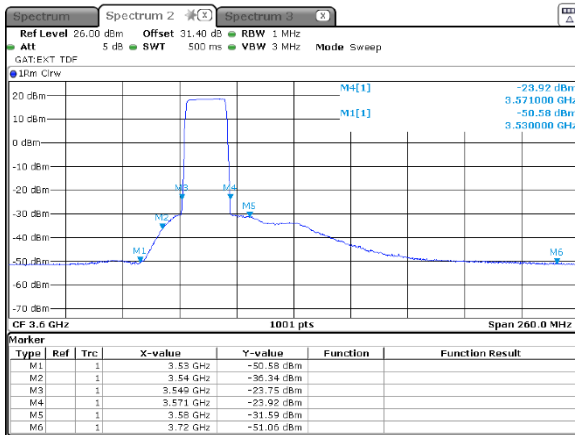
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.2 Emission outside the fundamental test results at low carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
2
Modulation: 256QAM





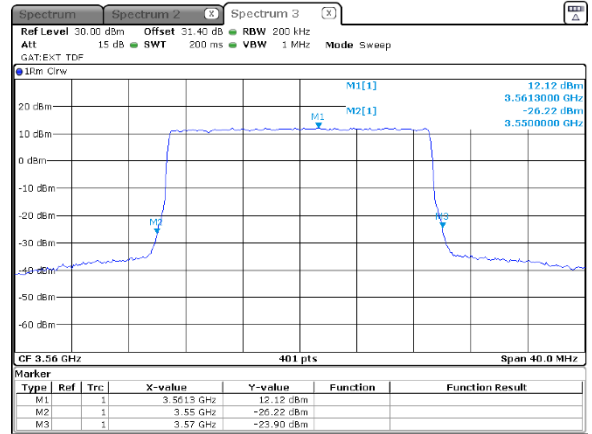
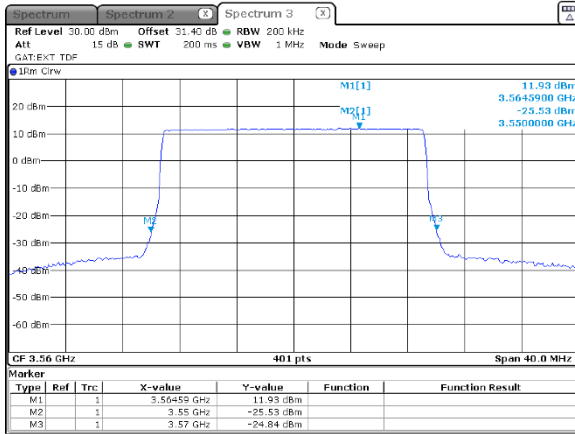
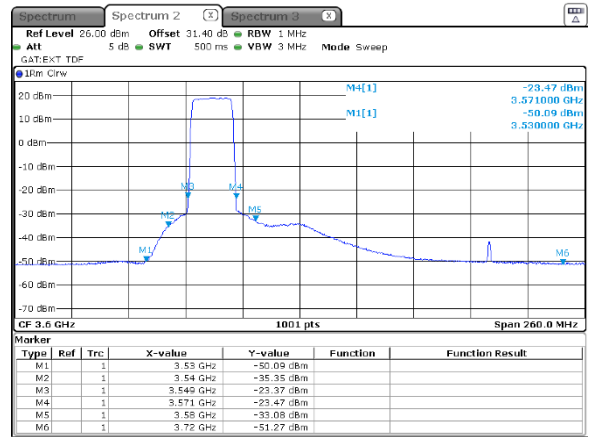
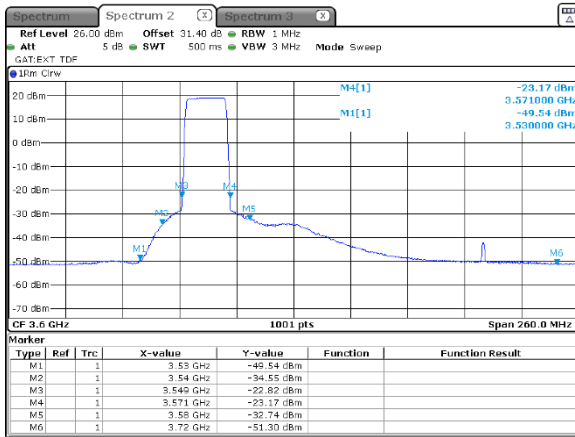
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.3 Emission outside the fundamental test results at low carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
3
Modulation: 256QAM





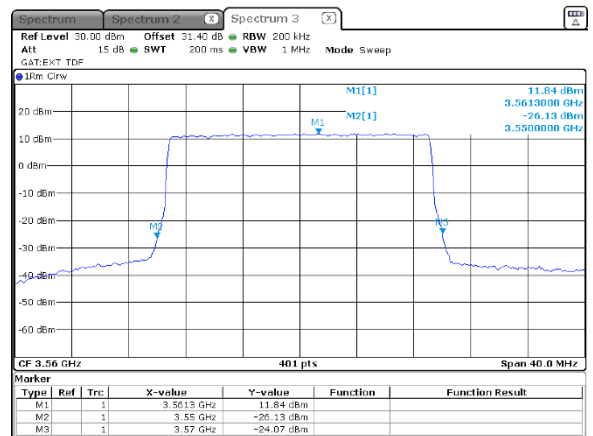
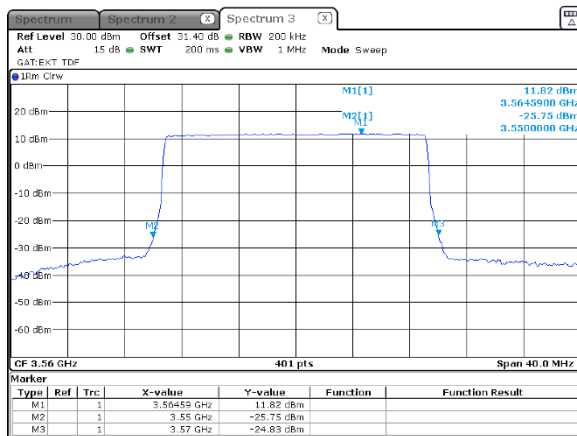
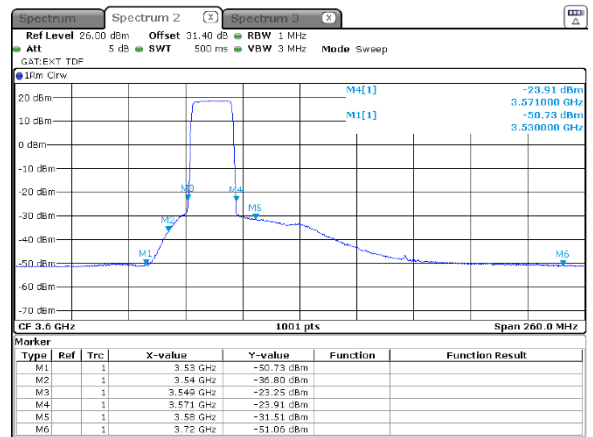
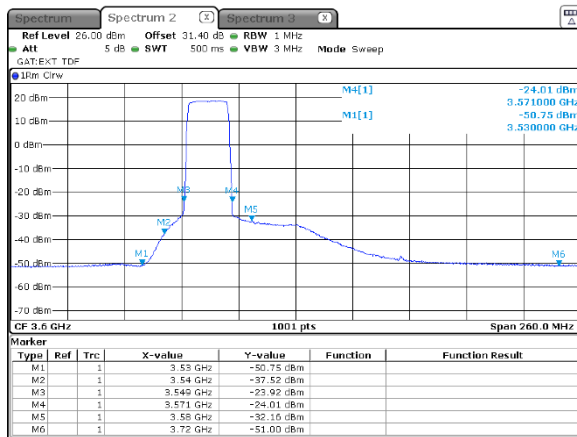
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.4 Emission outside the fundamental test results at low carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
4
Modulation: 256QAM





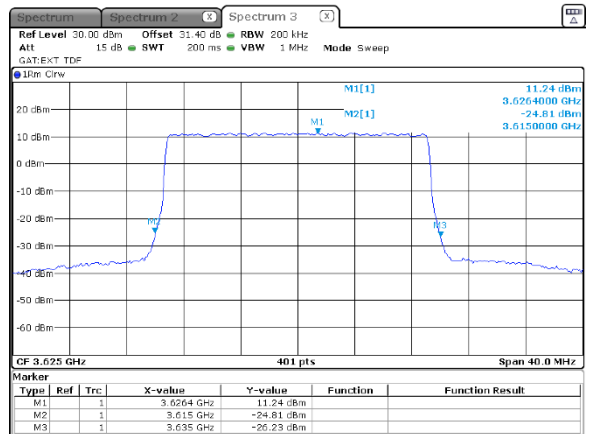
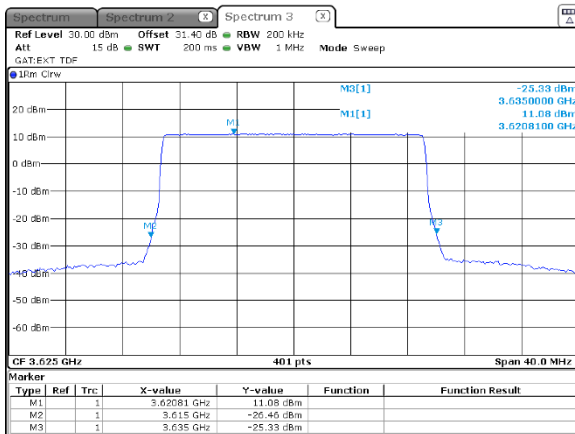
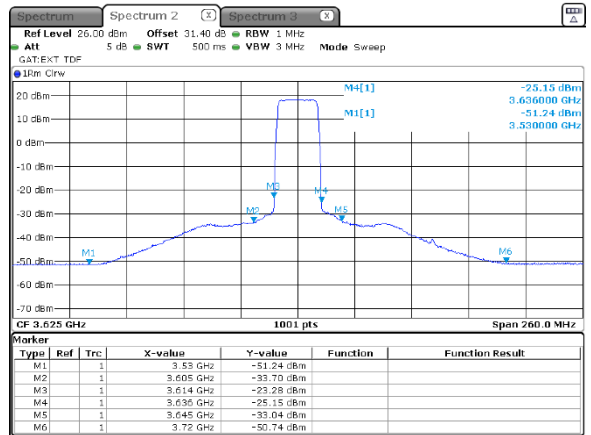
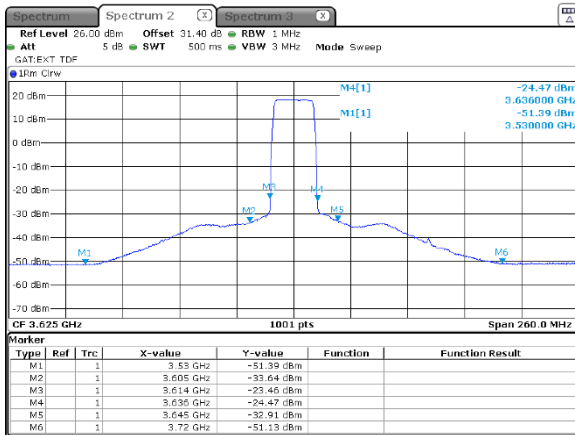
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.5 Emission outside the fundamental test results at mid carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
1
Modulation: 256QAM





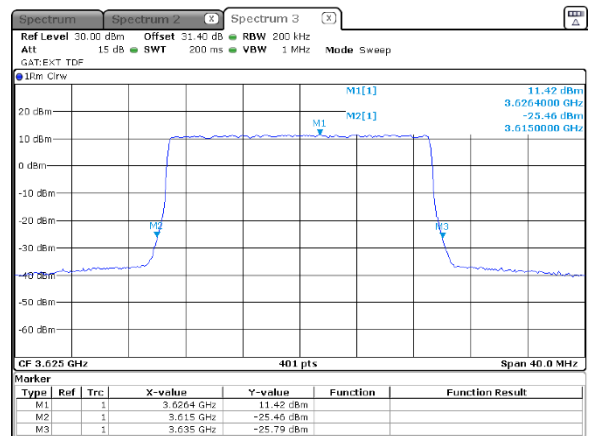
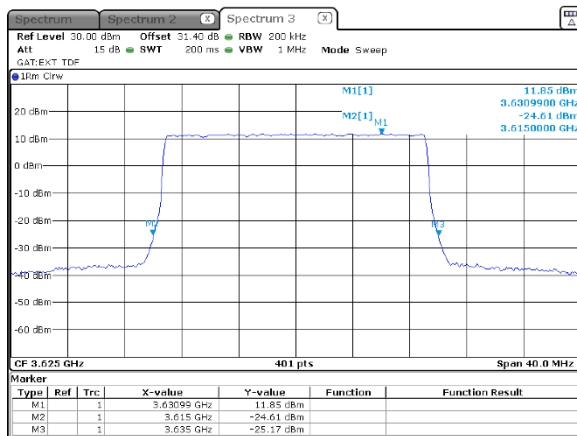
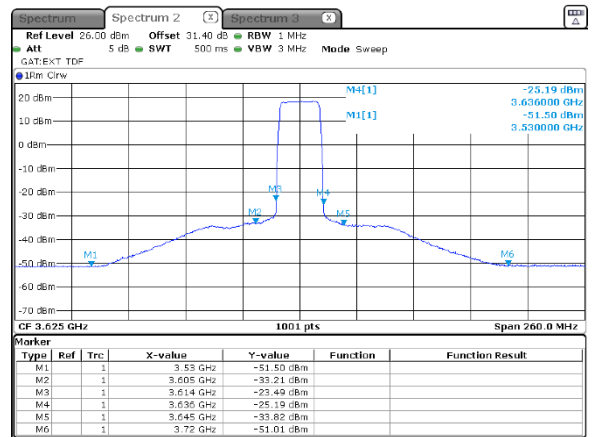
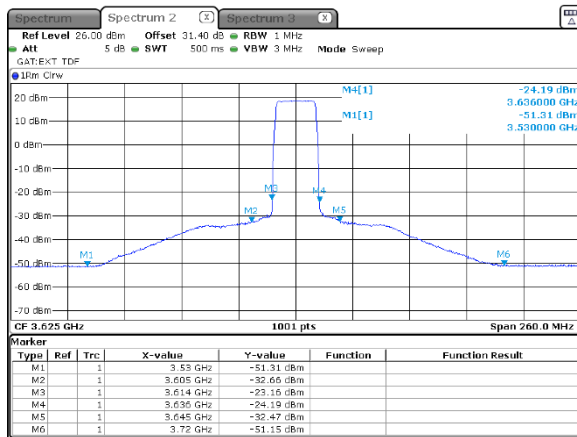
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.6 Emission outside the fundamental test results at mid carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
2
Modulation: 256QAM





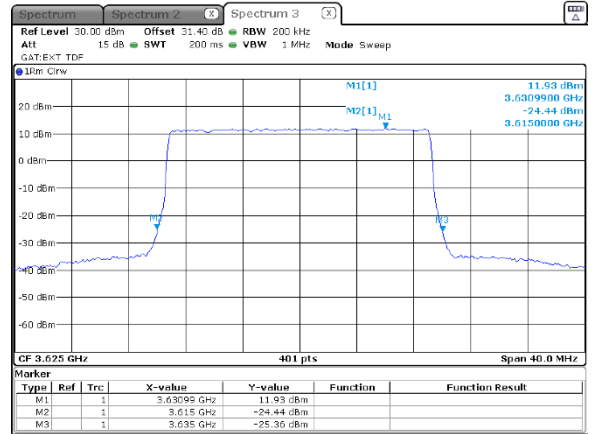
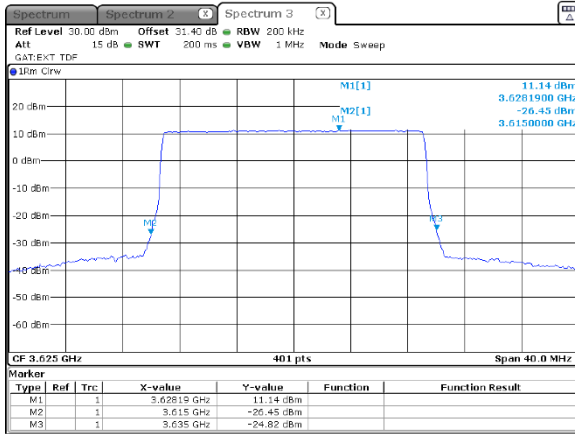
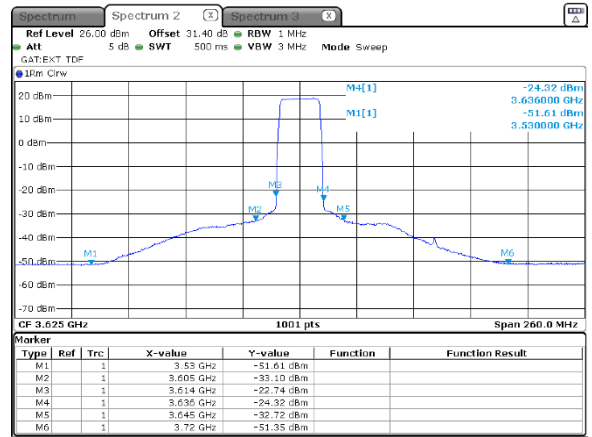
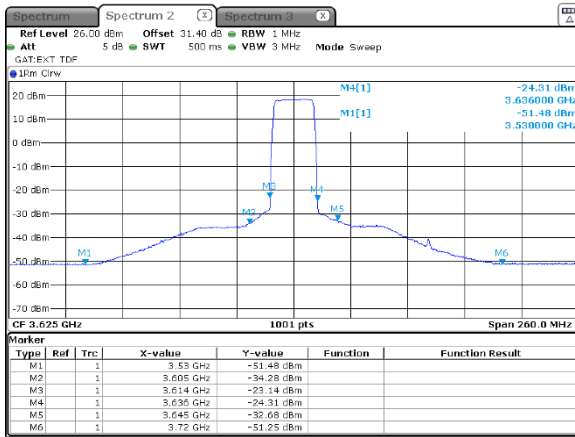
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.7 Emission outside the fundamental test results at mid carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
3
Modulation: 256QAM





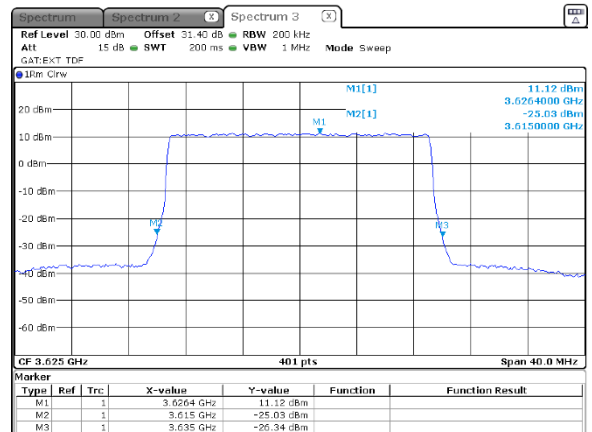
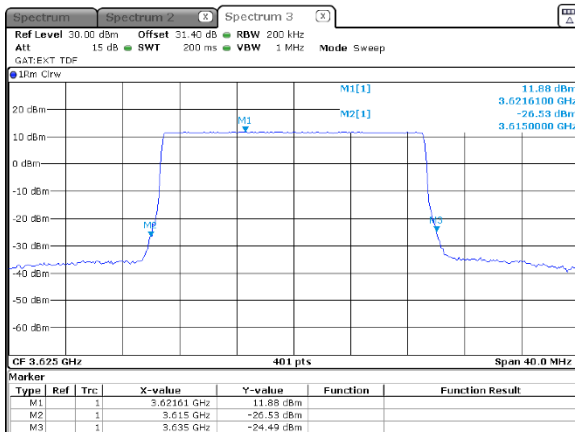
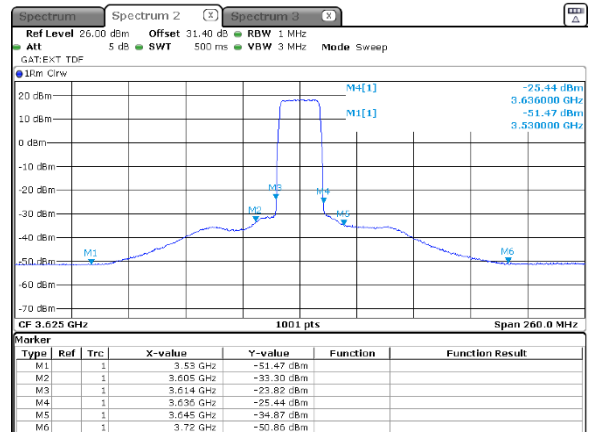
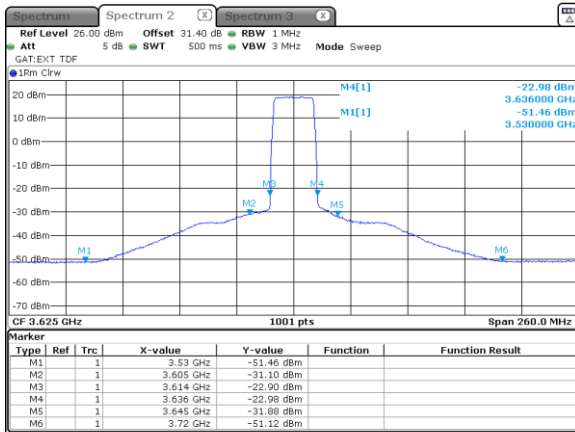
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.8 Emission outside the fundamental test results at mid carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
4
Modulation: 256QAM





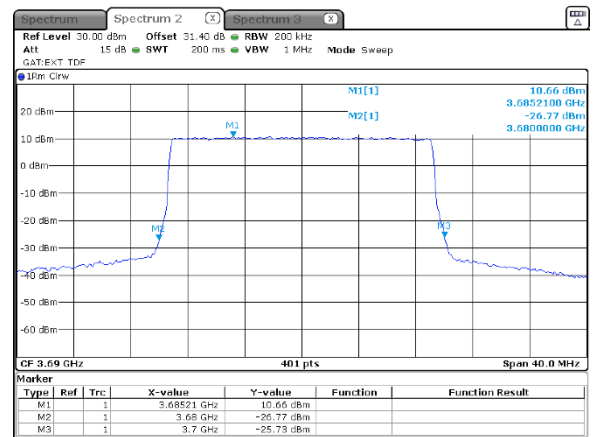
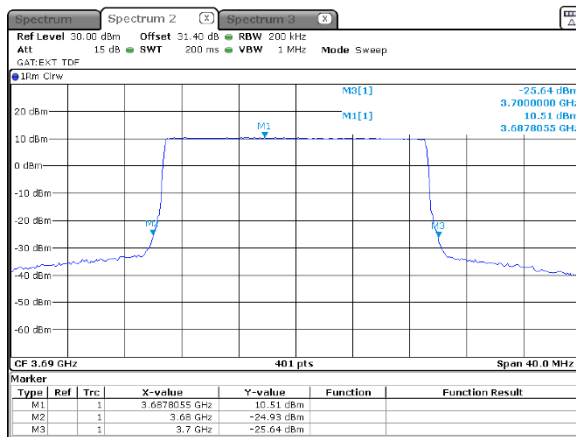
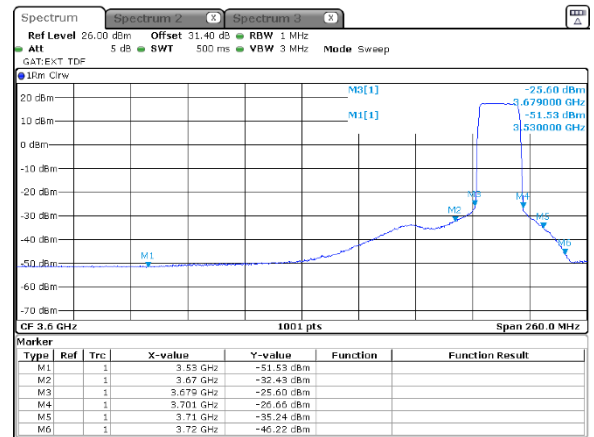
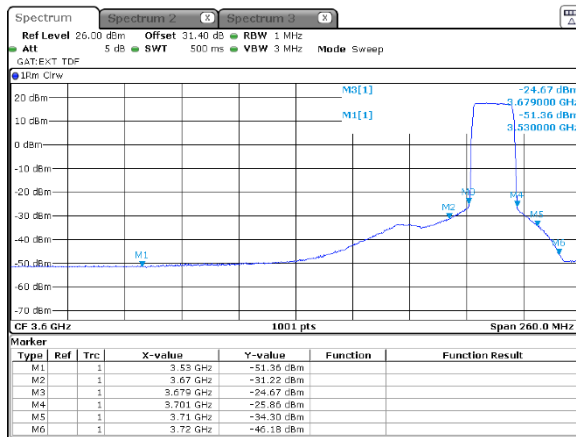
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.9 Emission outside the fundamental test results at high carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
1
Modulation: 256QAM





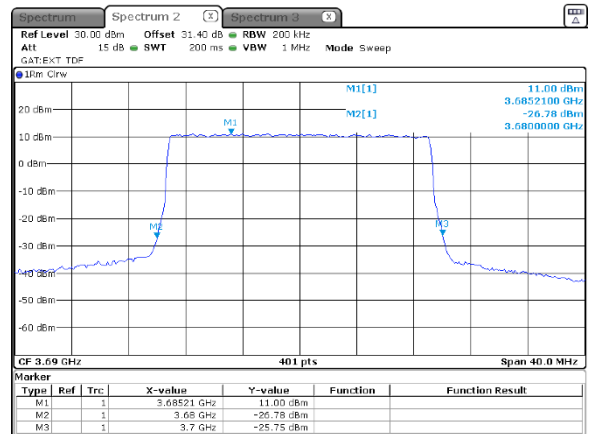
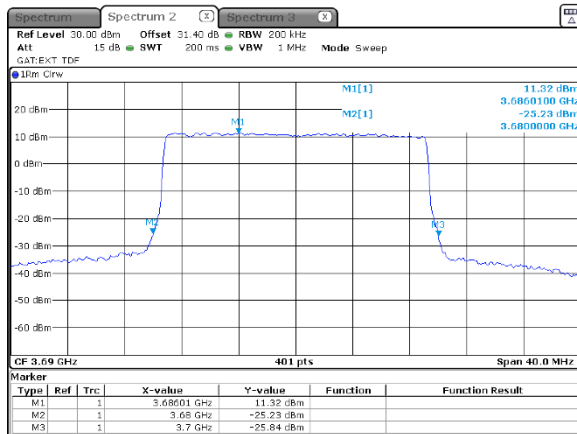
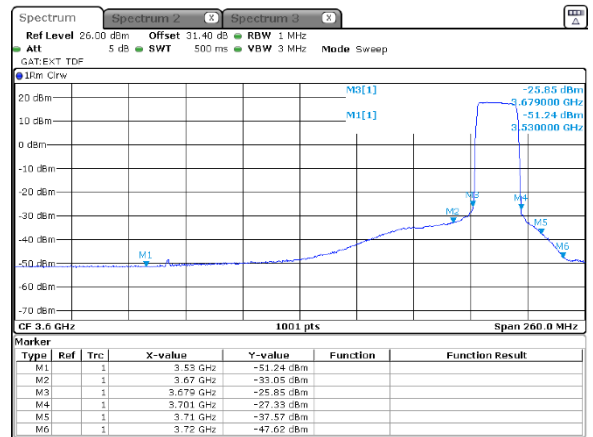
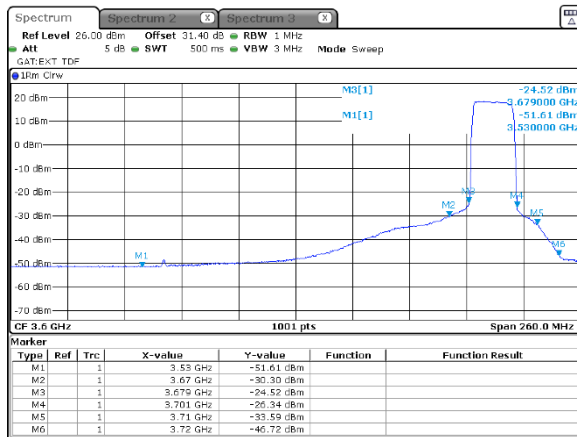
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.10 Emission outside the fundamental test results at high carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
2
Modulation: 256QAM





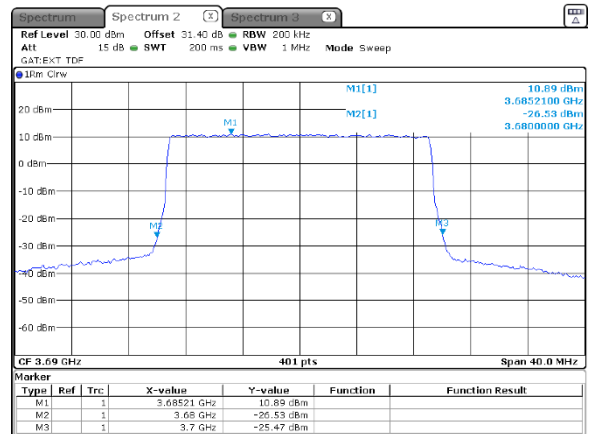
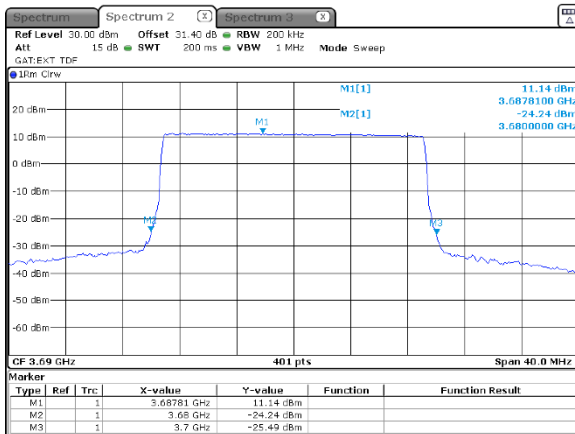
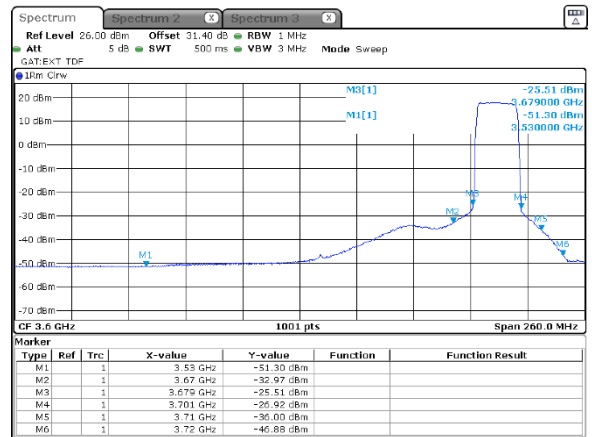
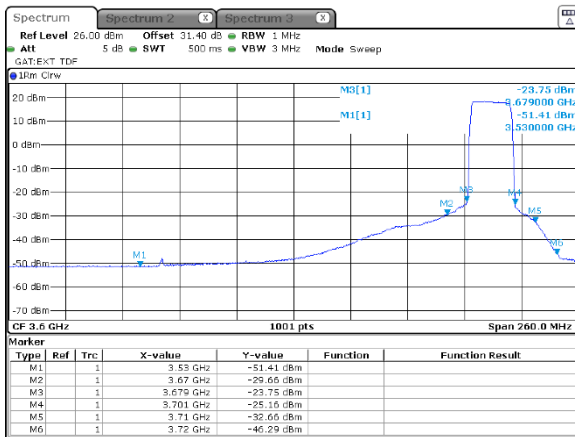
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.11 Emission outside the fundamental test results at high carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
3
Modulation: 256QAM





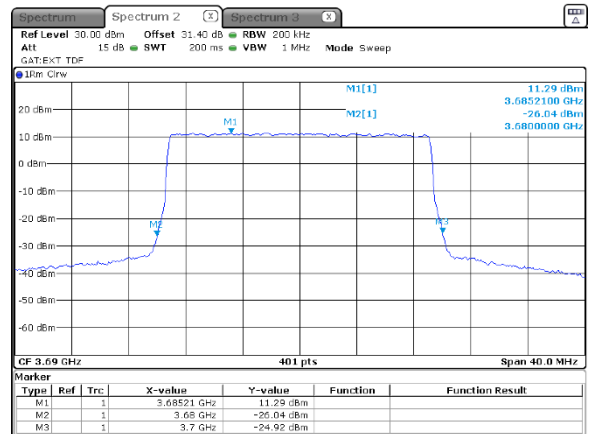
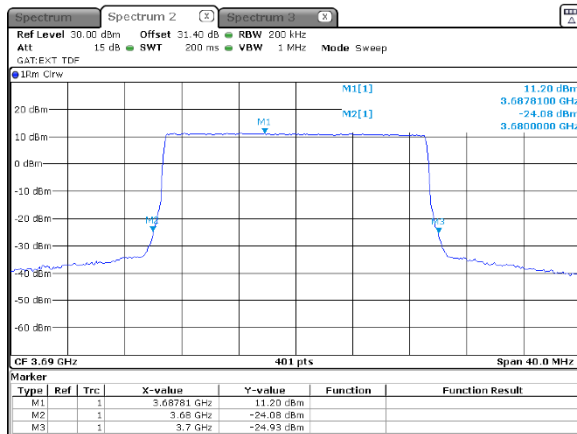
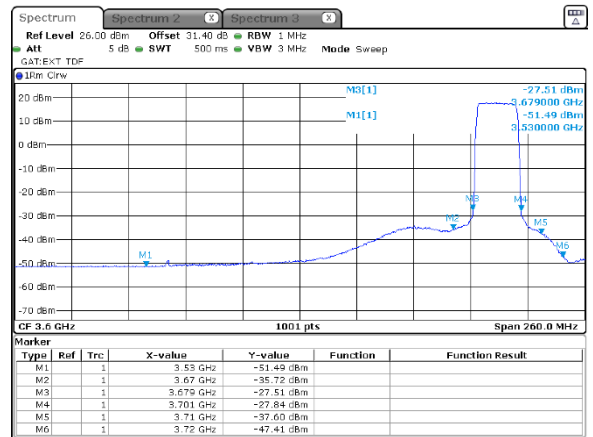
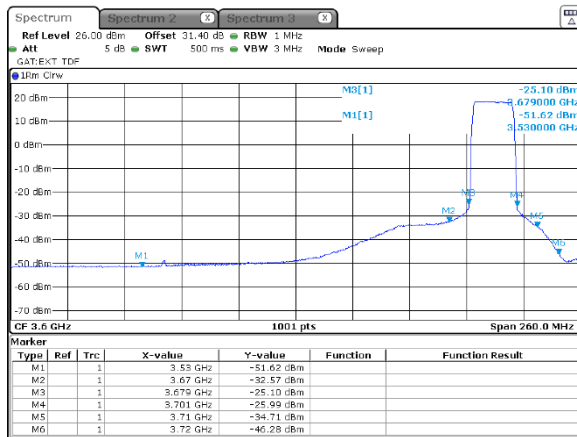
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.12 Emission outside the fundamental test results at high carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

20 MHz
4
Modulation: 256QAM





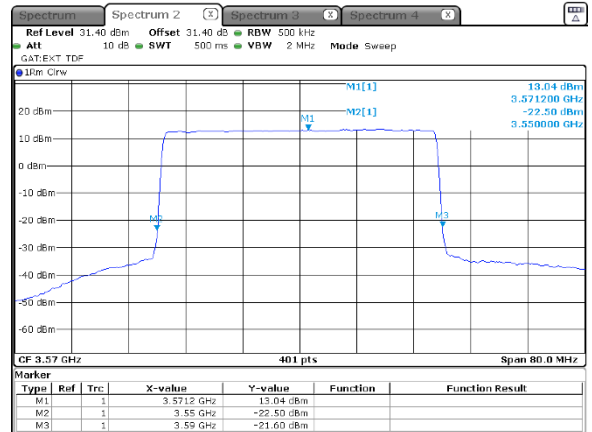
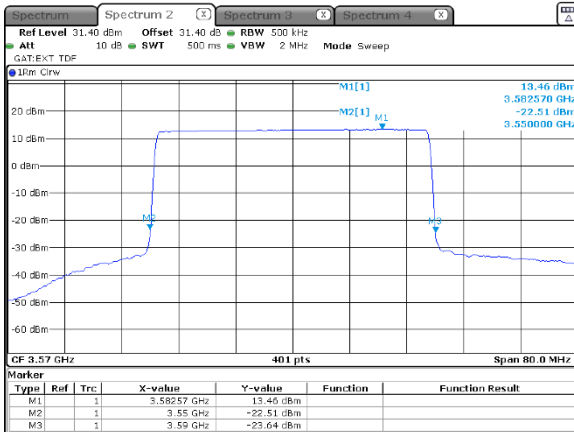
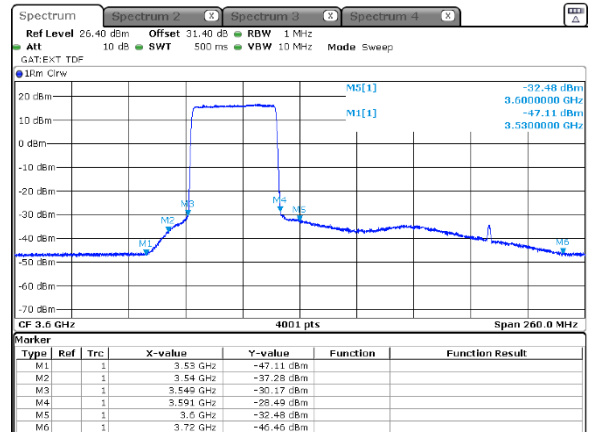
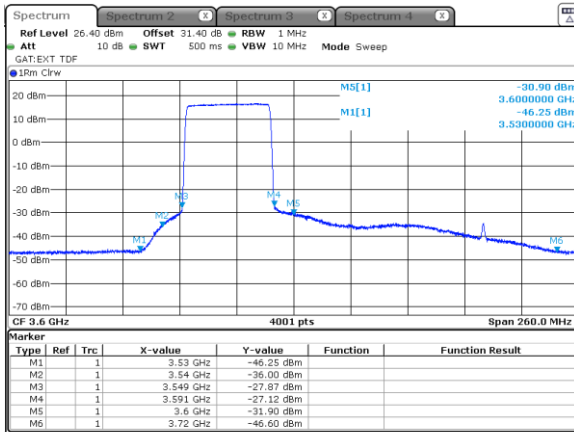
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.13 Emission outside the fundamental test results at low carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
1
Modulation: 256QAM





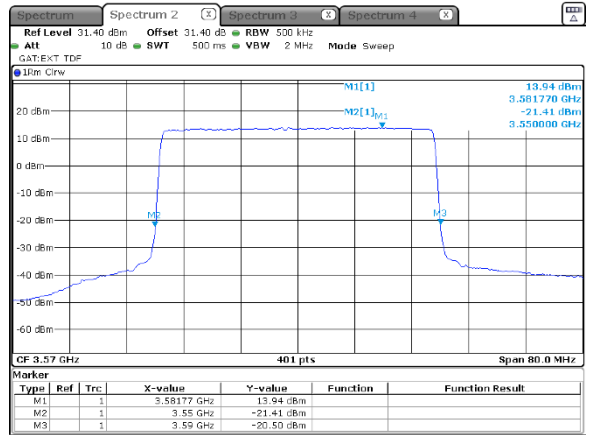
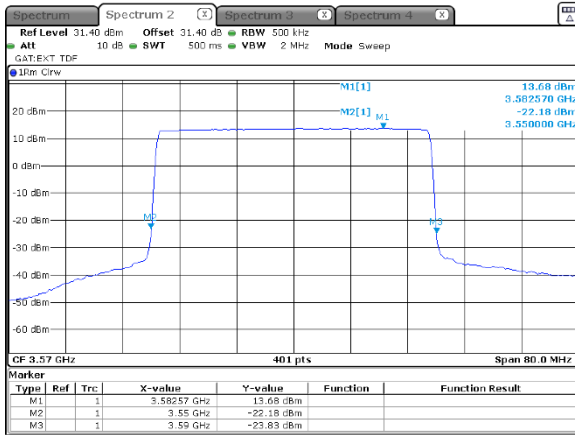
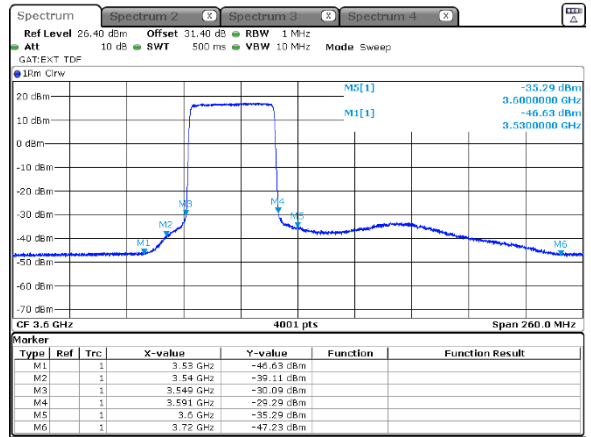
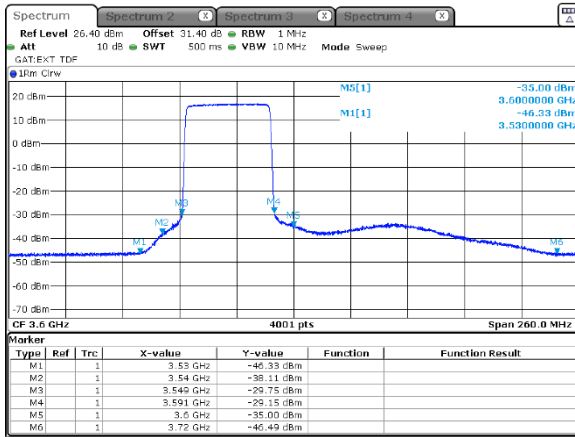
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.14 Emission outside the fundamental test results at low carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
2
Modulation: 256QAM





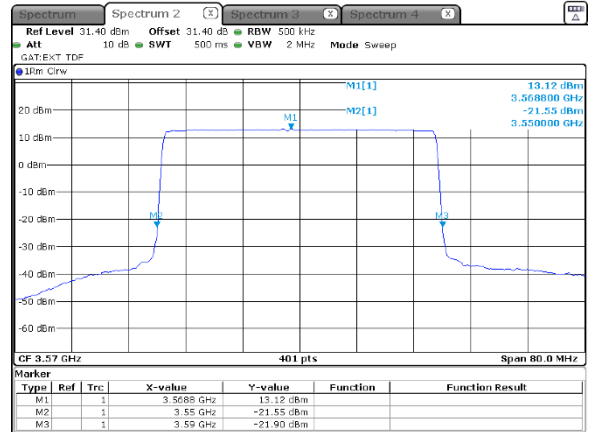
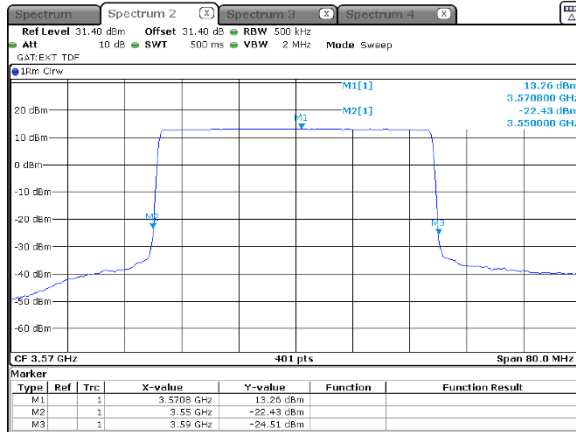
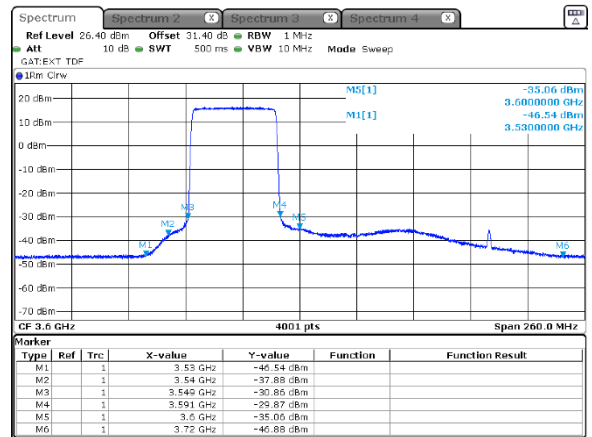
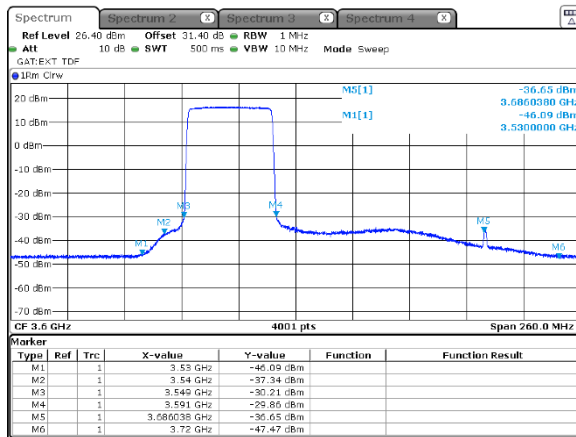
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.15 Emission outside the fundamental test results at low carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
3
Modulation: 256QAM





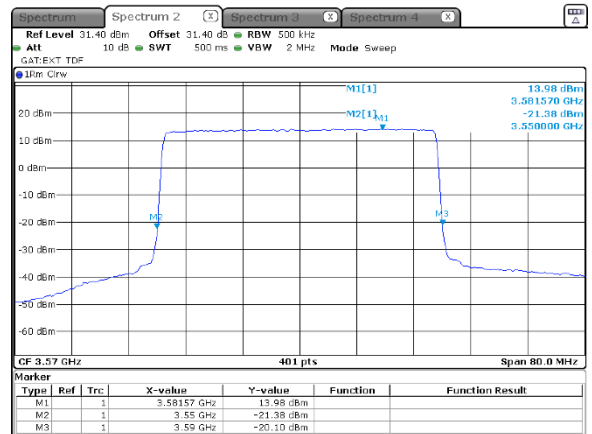
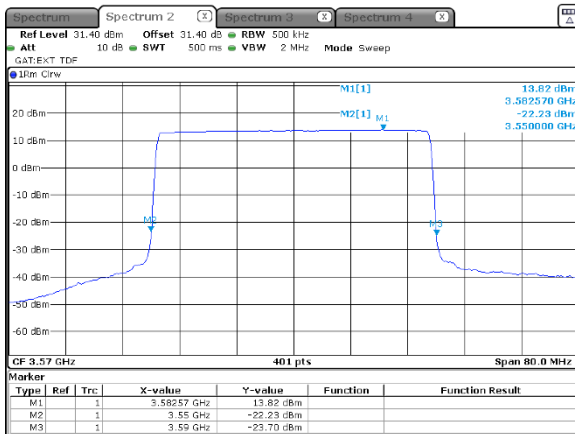
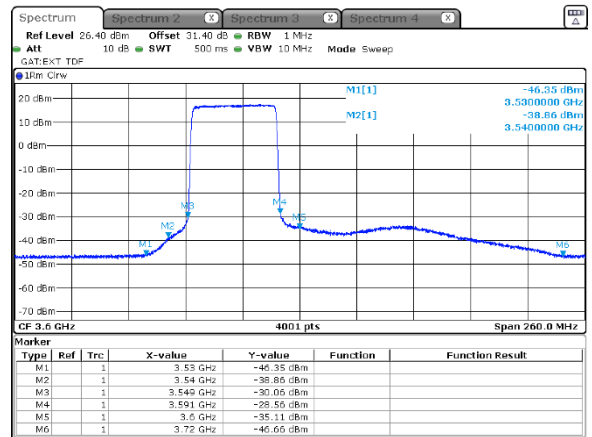
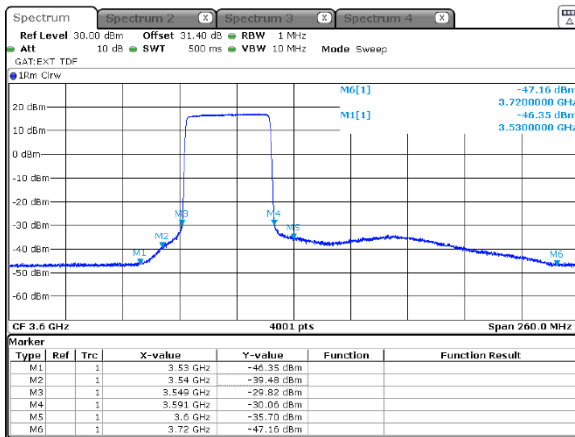
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.16 Emission outside the fundamental test results at low carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
4
Modulation: 256QAM





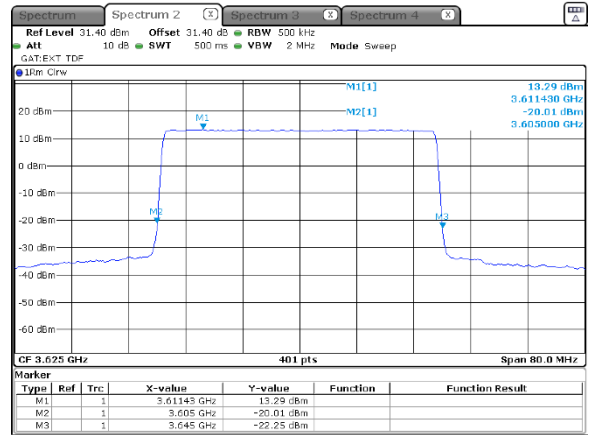
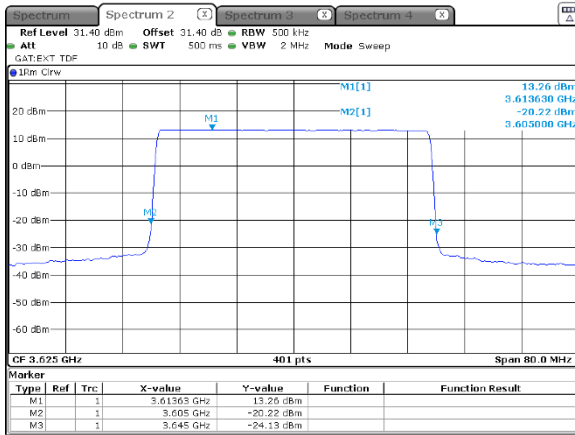
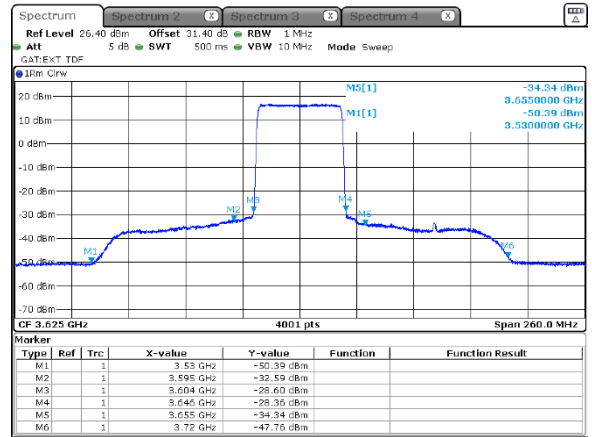
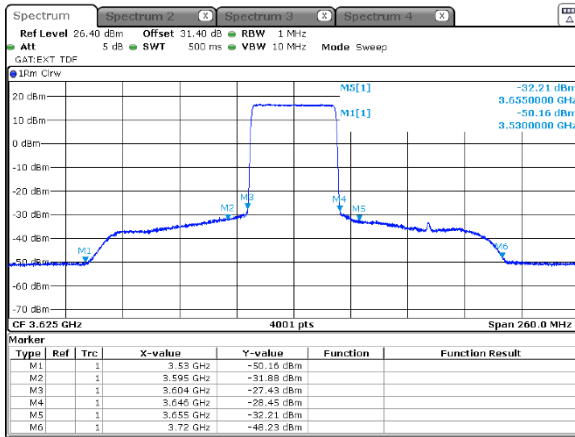
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.17 Emission outside the fundamental test results at mid carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
1
Modulation: 256QAM





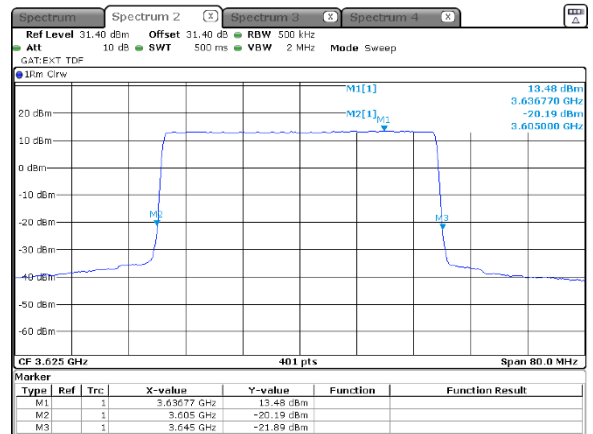
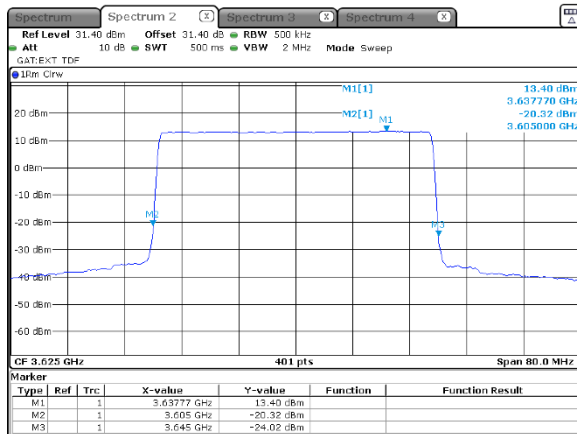
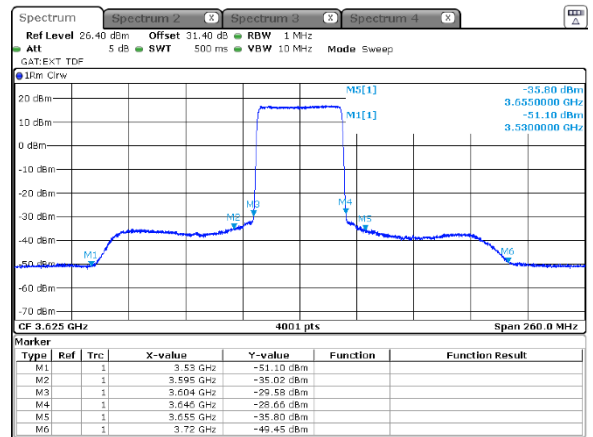
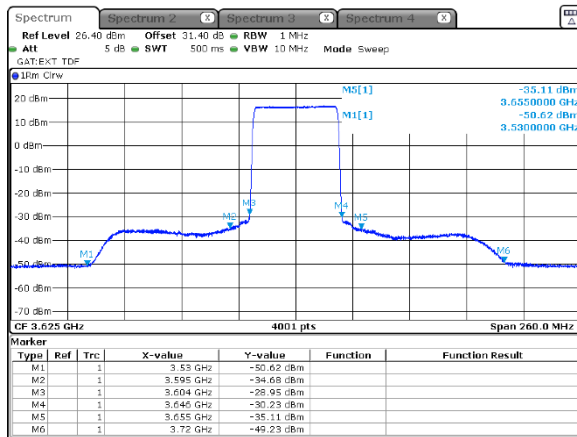
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.18 Emission outside the fundamental test results at mid carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
2
Modulation: 256AM





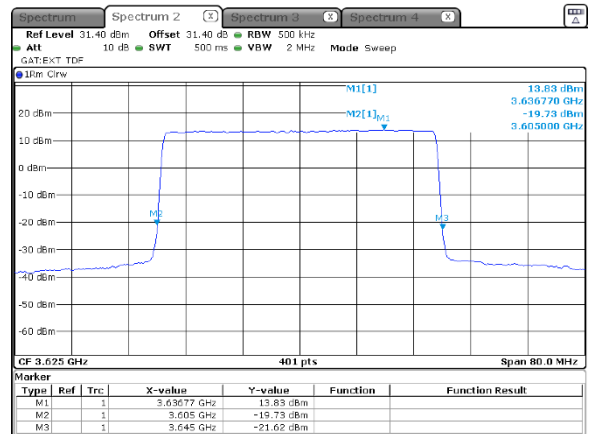
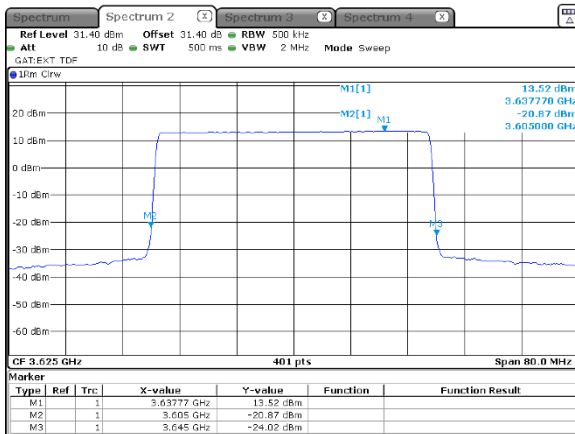
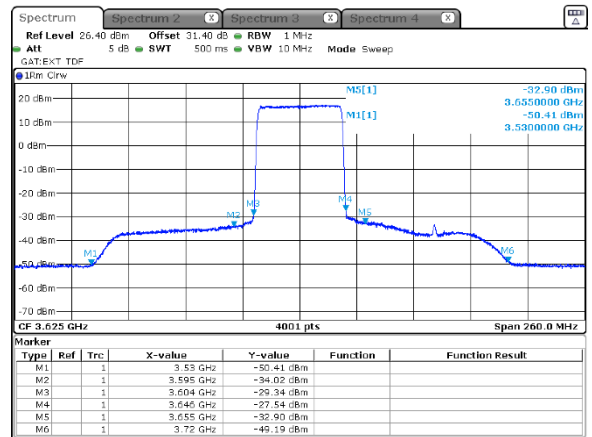
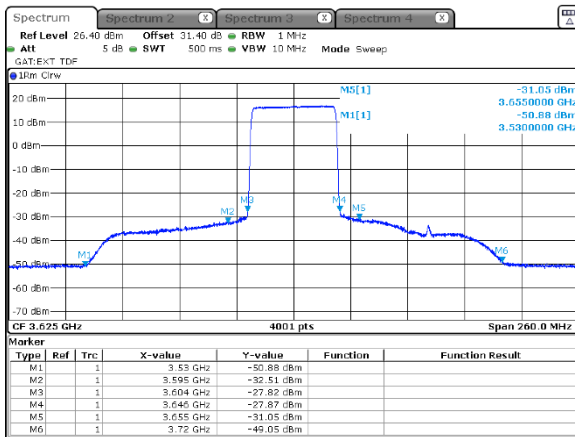
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.19 Emission outside the fundamental test results at mid carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
3
Modulation: 256QAM





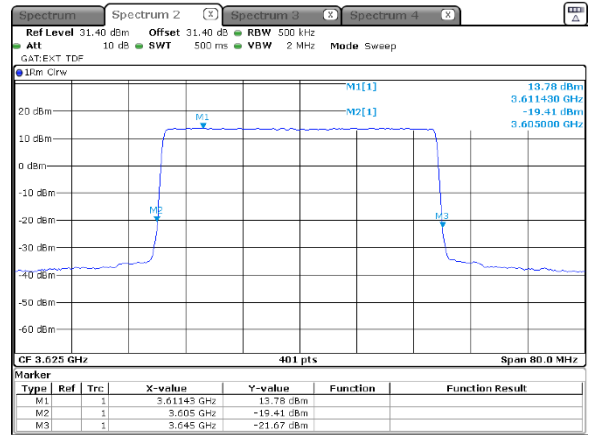
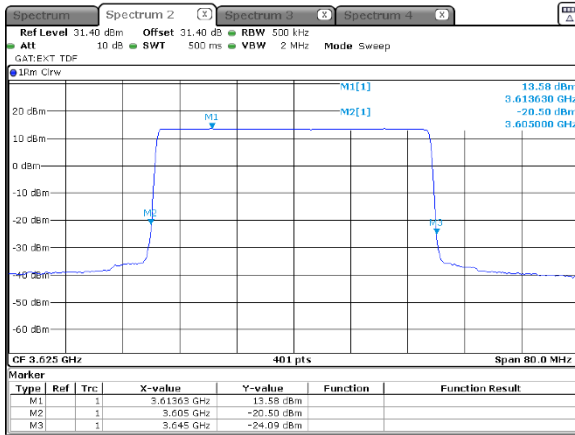
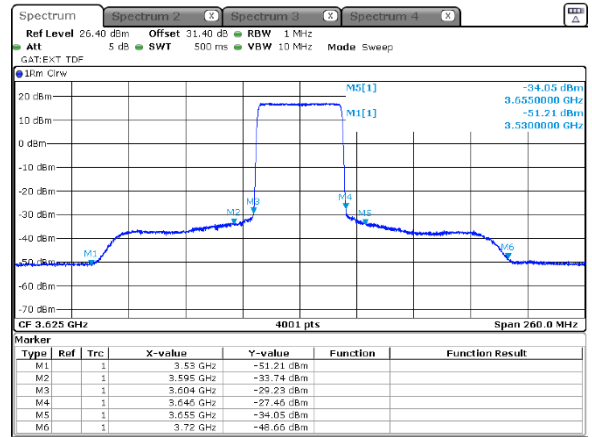
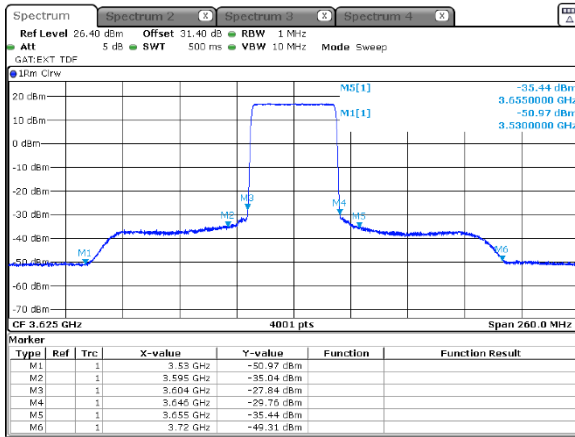
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.20 Emission outside the fundamental test results at mid carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
4
Modulation: 256QAM





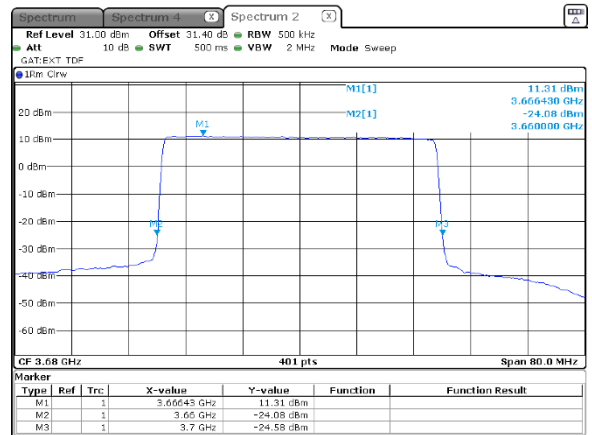
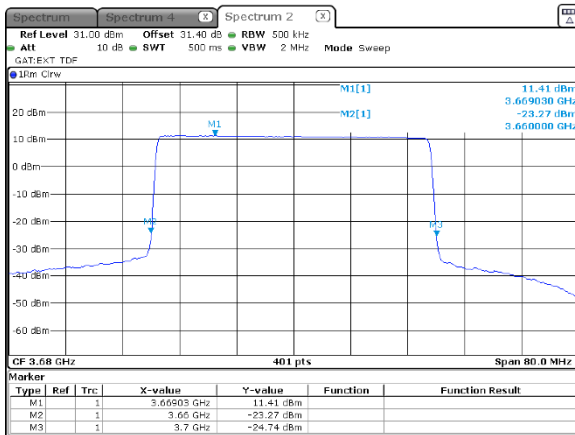
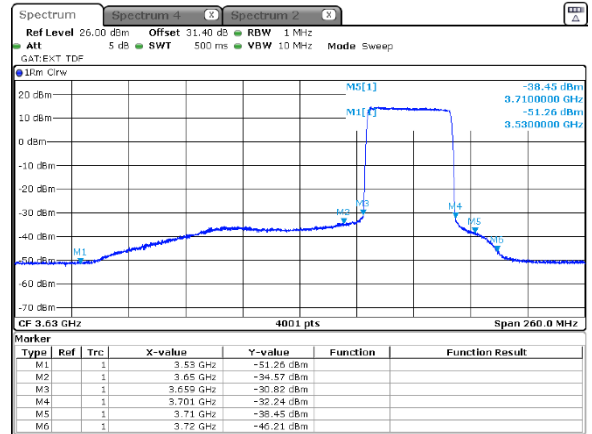
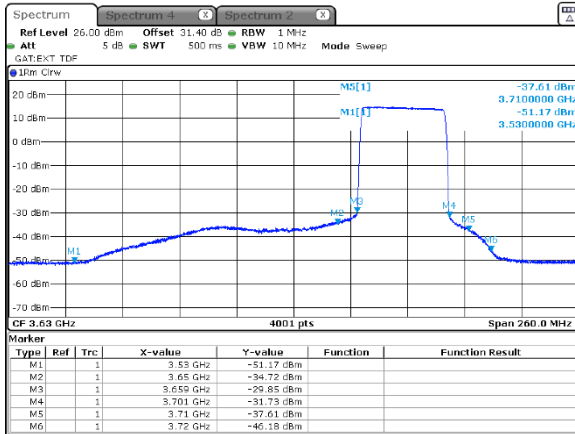
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.21 Emission outside the fundamental test results at high carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
1
Modulation: 256QAM





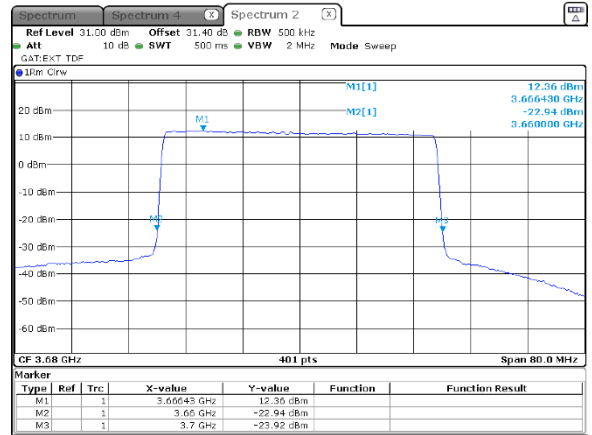
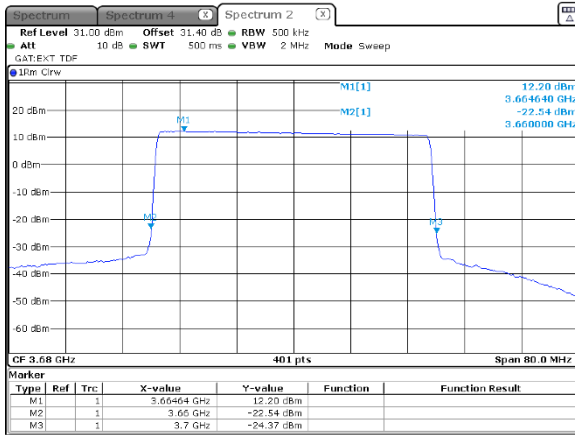
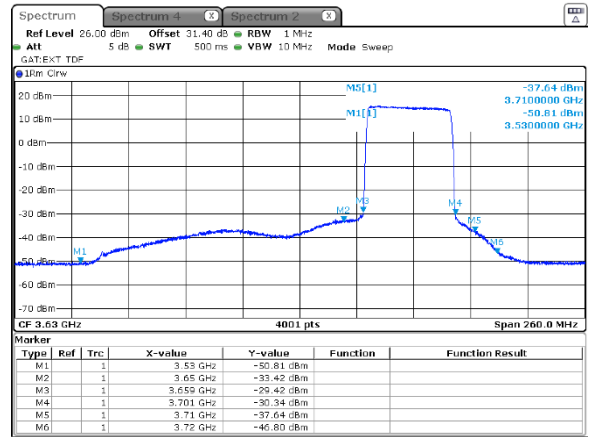
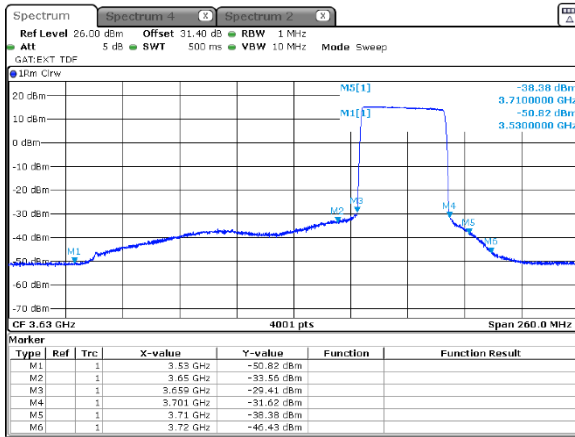
HERMON LABORATORIES

Test specification: Section 96.41(e), Emission mask			
Test procedure: Section 96.41(e)(3)			
Test mode: Compliance		Verdict: PASS	
Date(s): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.22 Emission outside the fundamental test results at high carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 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): 15-Nov-21			
Temperature: 25 °C	Relative Humidity: 54 %	Air Pressure: 1011 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.23 Emission outside the fundamental test results at high carrier frequency

CHANNEL SPACING:
ANTENNA CHAIN:
Modulation: QPSK

40 MHz
3
Modulation: 256QAM

