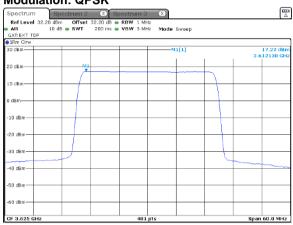


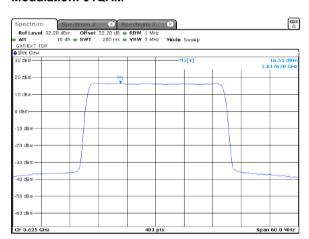
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict:	PASS	
Date(s):	25-Jul-21 – 24-Nov-21	verdict:	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

Plot 7.1.30 Peak spectral power density at mid frequency

**Modulation: QPSK** 



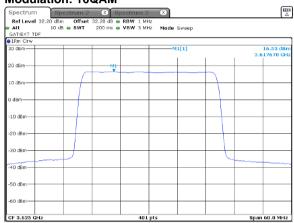
**Modulation: 64QAM** 

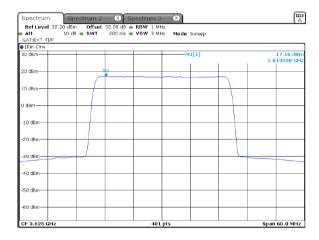


30 MHz

2

## **Modulation: 16QAM**



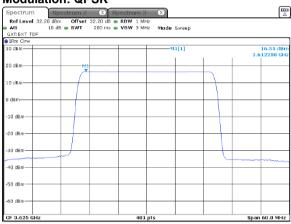




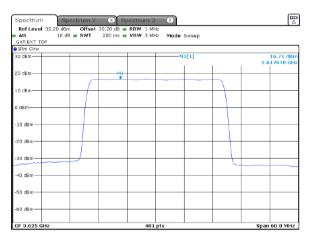
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict:	PASS	
Date(s):	25-Jul-21 – 24-Nov-21	verdict:	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

Plot 7.1.31 Peak spectral power density at mid frequency

**Modulation: QPSK** 



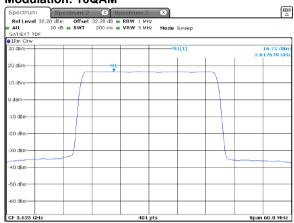
Modulation: 64QAM

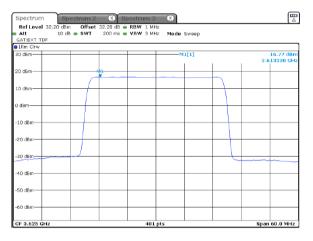


30 MHz

3

### **Modulation: 16QAM**







Test specification: Section 96.41(b), Maximum EIRP and maximum power spectral density

Test procedure: Section 96.41(e)(3)

Test mode: Compliance Verdict: PASS

Date(s): 25-Jul-21 - 24-Nov-21

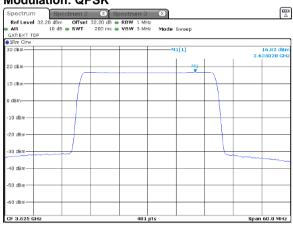
Temperature: 24 °C Relative Humidity: 55 % Air Pressure: 1011 hPa Power: 48 VAC

Remarks:

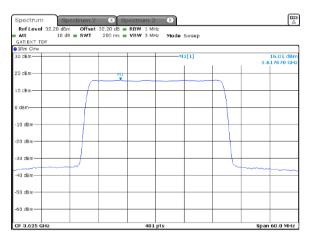
Plot 7.1.32 Peak spectral power density at mid frequency

CHANNEL SPACING: ANTENNA CHAIN:

**Modulation: QPSK** 



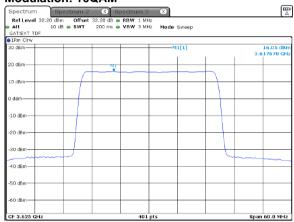
Modulation: 64QAM

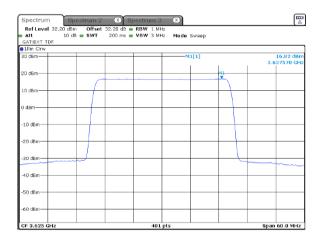


30 MHz

4

#### **Modulation: 16QAM**





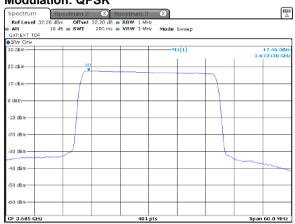


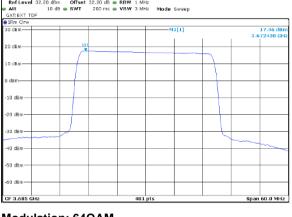
Test specification: Section 96.41(b), Maximum EIRP and maximum power spectral density Section 96.41(e)(3) Test procedure: Test mode: Compliance Verdict: **PASS** 25-Jul-21 – 24-Nov-21 Date(s): Temperature: 24 °C Relative Humidity: 55 % Air Pressure: 1011 hPa Power: 48 VAC Remarks:

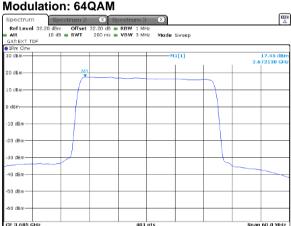
### Plot 7.1.33 Peak spectral power density at high frequency

CHANNEL SPACING: ANTENNA CHAIN:

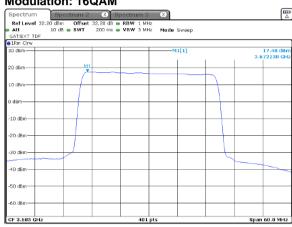
Modulation: QPSK

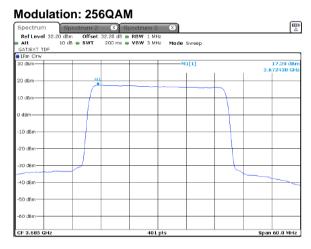






30 MHz





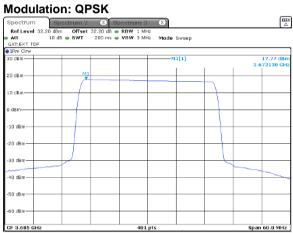


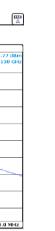
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict: PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

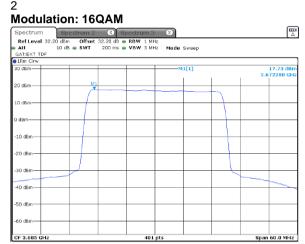
Plot 7.1.34 Peak spectral power density at high frequency

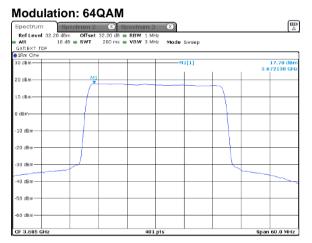
30 MHz

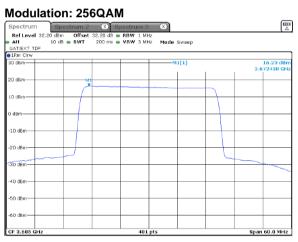
CHANNEL SPACING: ANTENNA CHAIN:













Test specification: Section 96.41(b), Maximum EIRP and maximum power spectral density

Test procedure: Section 96.41(e)(3)

Test mode: Compliance Verdict: PASS

Date(s): 25-Jul-21 - 24-Nov-21

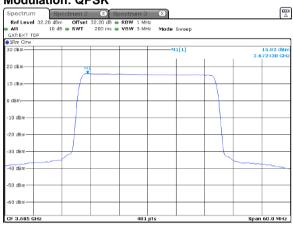
Temperature: 24 °C Relative Humidity: 55 % Air Pressure: 1011 hPa Power: 48 VAC

Remarks:

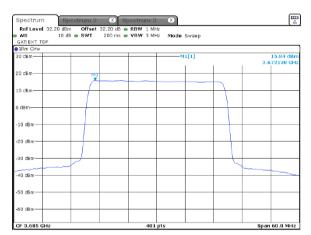
Plot 7.1.35 Peak spectral power density at high frequency

CHANNEL SPACING: ANTENNA CHAIN:

**Modulation: QPSK** 



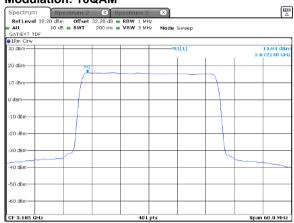
Modulation: 64QAM

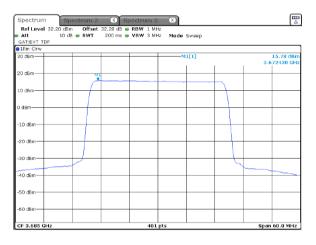


30 MHz

3





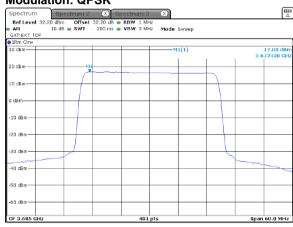




Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict: PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

Plot 7.1.36 Peak spectral power density at high frequency

**Modulation: QPSK** 



**Modulation: 64QAM** 

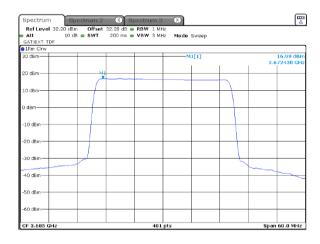


30 MHz

4

### **Modulation: 16QAM**



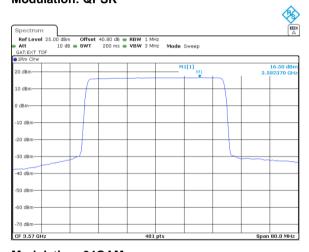




Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict: PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

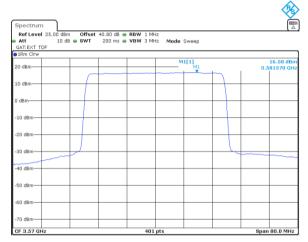
Plot 7.1.37 Peak spectral power density at low frequency

CHANNEL SPACING: ANTENNA CHAIN: Modulation: QPSK

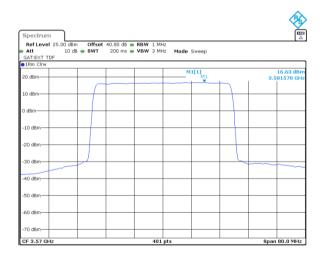


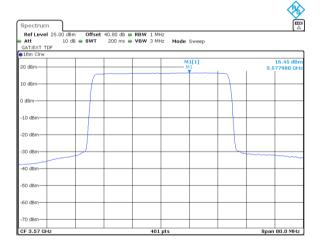
40 MHz

**Modulation: 16QAM** 



Modulation: 64QAM

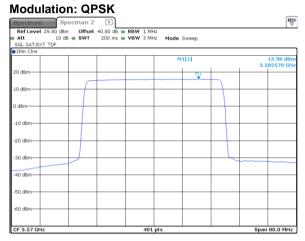






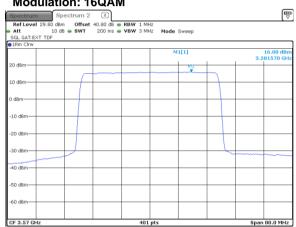
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict: PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

Plot 7.1.38 Peak spectral power density at low frequency

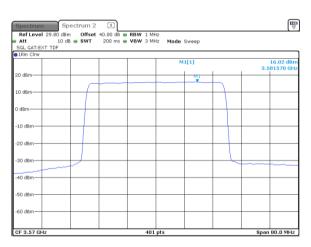


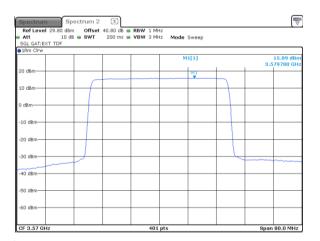
40 MHz

**Modulation: 16QAM** 



**Modulation: 64QAM** 



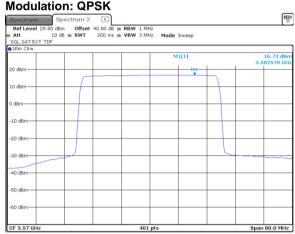




Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict:	PASS	
Date(s):	25-Jul-21 – 24-Nov-21	verdict:	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

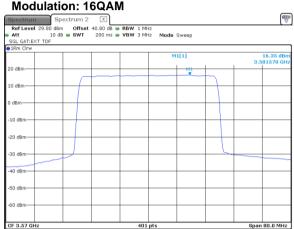
Plot 7.1.39 Peak spectral power density at low frequency

**Modulation: QPSK** 

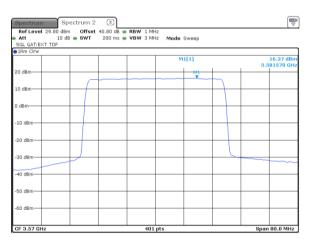


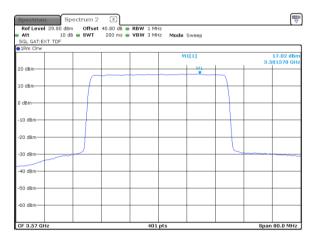
40 MHz

**Modulation: 16QAM** 



**Modulation: 64QAM** 



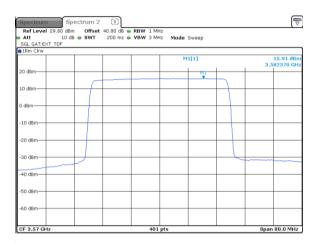




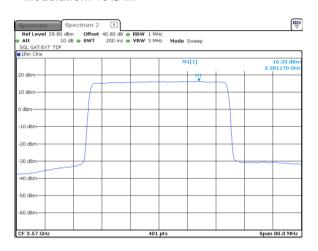
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict:	PASS	
Date(s):	25-Jul-21 – 24-Nov-21	verdict:	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

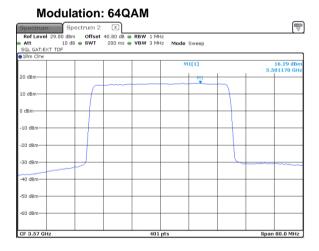
Plot 7.1.40 Peak spectral power density at low frequency

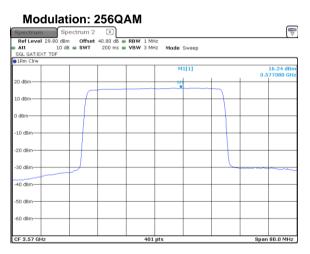
**Modulation: QPSK** 













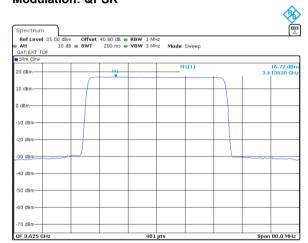
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict: PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

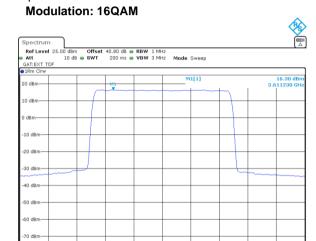
Plot 7.1.41 Peak spectral power density at mid frequency

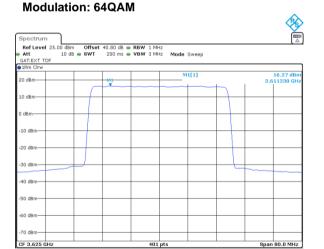
40 MHz

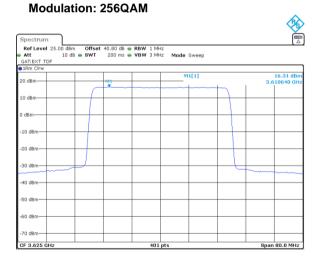
CF 3.625 GHz

CHANNEL SPACING: ANTENNA CHAIN: **Modulation: QPSK** 





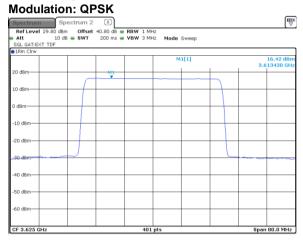






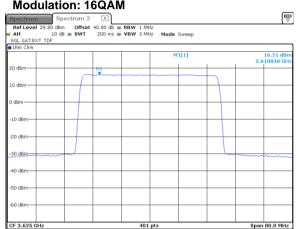
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density		
Test procedure:	Section 96.41(e)(3)		
Test mode:	Compliance	Verdict: PASS	
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC
Remarks:			

Plot 7.1.42 Peak spectral power density at mid frequency

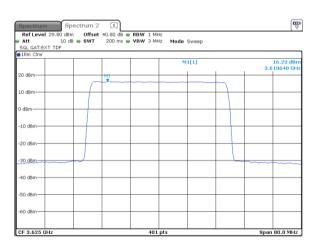


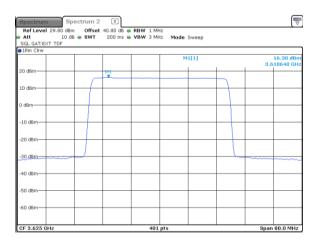
40 MHz

**Modulation: 16QAM** 



Modulation: 64QAM

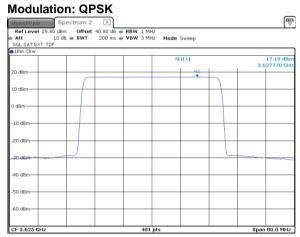






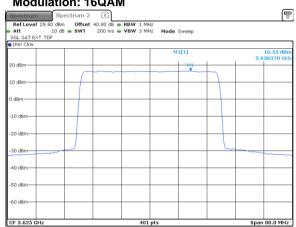
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict:	PASS	
Date(s):	25-Jul-21 – 24-Nov-21	verdict:	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

Plot 7.1.43 Peak spectral power density at mid frequency

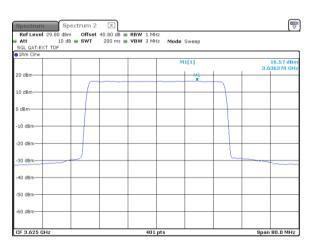


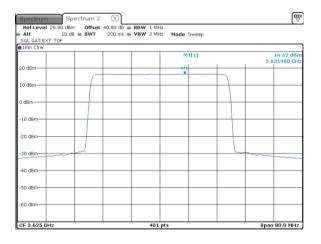
40 MHz





Modulation: 64QAM



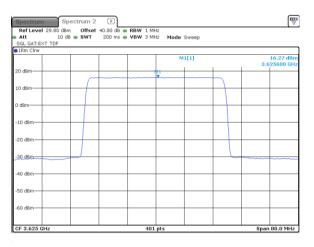




Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict: PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

Plot 7.1.44 Peak spectral power density at mid frequency

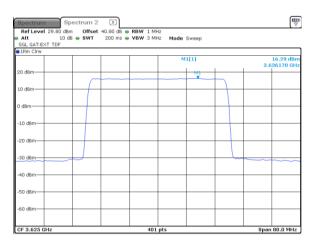
Modulation: QPSK



40 MHz

4

**Modulation: 16QAM** 



### **Modulation: 64QAM**







Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density				
Test procedure:	Section 96.41(e)(3)				
Test mode:	Compliance	Verdict:	PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS		
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC		
Remarks:					

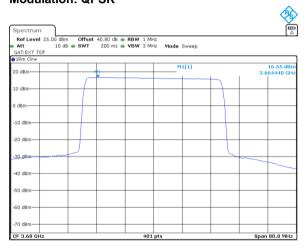
Plot 7.1.45 Peak spectral power density at high frequency

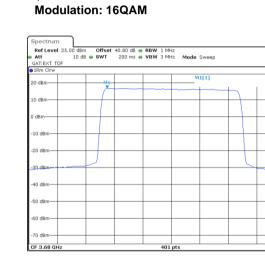
40 MHz

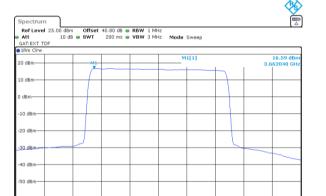
CHANNEL SPACING: ANTENNA CHAIN: **Modulation: QPSK** 

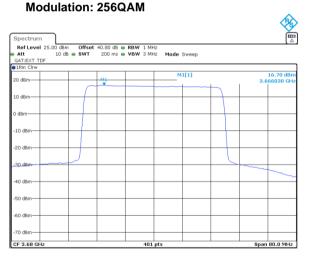
**Modulation: 64QAM** 

CF 3.68 GHz





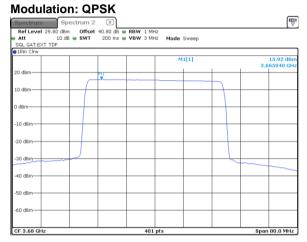






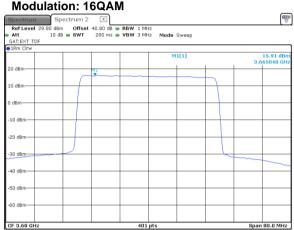
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density			
Test procedure:	Section 96.41(e)(3)			
Test mode:	Compliance	Verdict:	PASS	
Date(s):	25-Jul-21 – 24-Nov-21	verdict:	PASS	
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC	
Remarks:				

Plot 7.1.46 Peak spectral power density at high frequency

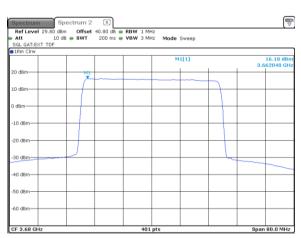


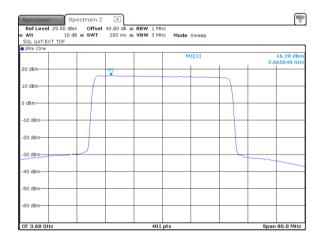
40 MHz

**Modulation: 16QAM** 



**Modulation: 64QAM** 

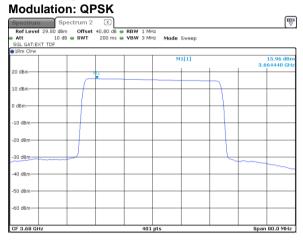




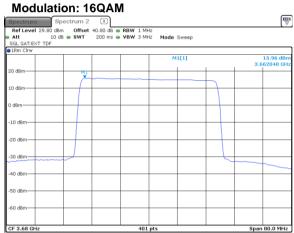


Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density				
Test procedure:	Section 96.41(e)(3)				
Test mode:	Compliance	Verdict:	PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict:	PA33		
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC		
Remarks:					

Plot 7.1.47 Peak spectral power density at high frequency

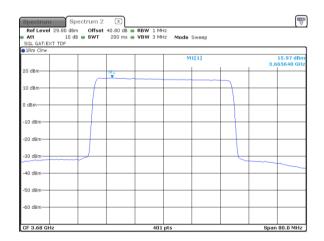


40 MHz



**Modulation: 64QAM** 

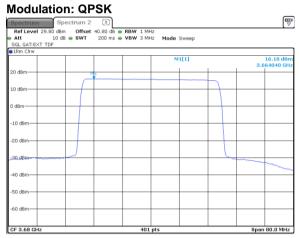






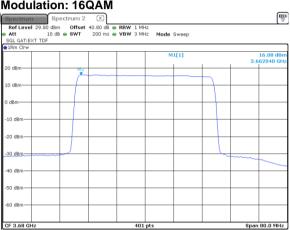
Test specification:	Section 96.41(b), Maximum EIRP and maximum power spectral density				
Test procedure:	Section 96.41(e)(3)				
Test mode:	Compliance	Verdict:	PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS		
Temperature: 24 °C	Relative Humidity: 55 %	Air Pressure: 1011 hPa	Power: 48 VAC		
Remarks:					

Plot 7.1.48 Peak spectral power density at high frequency

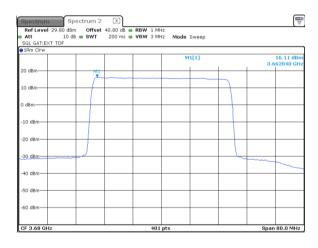


40 MHz

**Modulation: 16QAM** 



**Modulation: 64QAM** 







Test specification:	Section 96.41(g), Peak-to- average power ratio			
Test procedure:	Section 96.41(g)			
Test mode:	Compliance	Verdict:	PASS	
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS	
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC	
Remarks:				

# 7.2 Peak-to-average power ratio (PAPR) test

### 7.2.1 General

This test was performed to measure the peak to average power ratio at RF antenna connector. Specification test limits are given in Table 7.2.1.

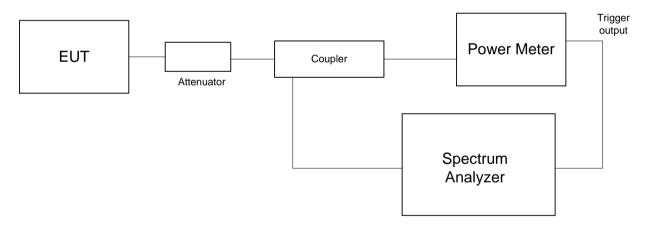
Table 7.2.1 Peak-to-average power ratio limits

Assigned frequency range MU=	Peak to average power ratio limit		
Assigned frequency range, MHz	Probability, %	dB	
3550.0 - 3700.0	0.1	13.0	

### 7.2.2 Test procedure

- 7.2.2.1 The EUT was set up as shown in Figure 7.2.1, energized and its proper operation was checked.
- 7.2.2.2 The EUT was adjusted to produce maximum available to the end user RF output power.
- **7.2.2.3** The peak to average power ratio was measured with power meter as provided in Table 7.2.2 and the associated plots.

Figure 7.2.1 Peak-to-average power ratio test setup





Test specification:	Section 96.41(g), Peak-to- average power ratio			
Test procedure:	Section 96.41(g)			
Test mode:	Compliance	Verdict:	PASS	
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS	
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC	
Remarks:				

## Table 7.2.2 Peak-to-average power ratio test results

OPERATING FREQUENCY RANGE: 3550 - 3700 MHz Peak/Average **DETECTOR USED: PRBS** MODULATING SIGNAL:

TRANSMITTER OUTPL	JT POWER SETTINGS:	Maximum		
Carrier frequency, MHz	Peak to average ratio, dB	Limit, dBm	Margin, dB	Verdict
Channel spacing 10 M	Hz			
Modulation QPSK				
3555.0	8.84	13.0	-4.16	Pass
3625.0	8.90	13.0	-4.10	Pass
3695.0	8.78	13.0	-4.22	Pass
Modulation 16QAM				
3555.0	8.49	13.0	-4.51	Pass
3625.0	8.55	13.0	-4.45	Pass
3695.0	8.49	13.0	-4.51	Pass
Modulation 64QAM				
3555.0	8.52	13.0	-4.48	Pass
3625.0	8.52	13.0	-4.48	Pass
3695.0	8.49	13.0	-4.51	Pass
Modulation 256QAM				
3555.0	8.52	13.0	-4.48	Pass
3625.0	8.52	13.0	-4.48	Pass
3695.0	8.43	13.0	-4.57	Pass



Test specification:	Section 96.41(g), Peak-to- average power ratio				
Test procedure:	Section 96.41(g)				
Test mode:	Compliance	Verdict:	PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS		
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC		
Remarks:	-				

# Table 7.2.3 Peak-to-average power ratio test results (continue)

OPERATING FREQUENCY RANGE: 3550 – 3700 MHz
DETECTOR USED: Peak/Average
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum

Channel spacing 20 MH				
Modulation QPSK	12			
3560.0	8.72	13.0	-4.28	Pass
3625.0	8.67	13.0	-4.33	Pass
3690.0	8.67	13.0	-4.33	Pass
Modulation 16QAM		•	•	
3560.0	8.38	13.0	-4.62	Pass
3625.0	8.35	13.0	-4.65	Pass
3690.0	8.41	13.0	-4.59	Pass
Modulation 64QAM				
3560.0	8.29	13.0	-4.71	Pass
3625.0	8.35	13.0	-4.65	Pass
3690.0	8.41	13.0	-4.59	Pass
Modulation 256QAM				
3560.0	8.35	13.0	-4.65	Pass
3625.0	8.55	13.0	-4.45	Pass
3690.0	8.46	13.0	-4.54	Pass
Channel spacing 30 MH	lz			
Modulation QPSK				
3565.0	9.63	13.0	-3.37	Pass
3625.0	9.59	13.0	-3.41	Pass
3685.0	9.63	13.0	-3.37	Pass
Modulation 16QAM			•	
3565.0	9.42	13.0	-3.58	Pass
3625.0	9.39	13.0	-3.61	Pass
3685.0	9.43	13.0	-3.57	Pass
Modulation 64QAM			•	
3565.0	9.42	13.0	-3.58	Pass
3625.0	9.38	13.0	-3.62	Pass
3685.0	9.44	13.0	-3.56	Pass
Modulation 256QAM				
3565.0	9.42	13.0	-3.58	Pass
3625.0	9.42	13.0	-3.58	Pass
3685.0	9.48	13.0	-3.52	Pass



Test specification:	Section 96.41(g), Peak-to- average power ratio				
Test procedure:	Section 96.41(g)				
Test mode:	Compliance	Verdict:	PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS		
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC		
Remarks:	-				

# Table 7.2.4 Peak-to-average power ratio test results (continue)

OPERATING FREQUENCY RANGE: 3550 – 3700 MHz
DETECTOR USED: Peak/Average
MODULATING SIGNAL: PRBS
TRANSMITTER OUTPUT POWER SETTINGS: Maximum

Channel spacing 40 MHz	Z			
Modulation QPSK				
3570.0	9.54	13.0	-3.46	Pass
3625.0	9.57	13.0	-3.43	Pass
3680.0	9.58	13.0	-3.42	Pass
Modulation 16QAM				
3570.0	9.38	13.0	-3.62	Pass
3625.0	9.38	13.0	-3.62	Pass
3680.0	9.39	13.0	-3.61	Pass
Modulation 64QAM				
3570.0	9.54	13.0	-3.46	Pass
3625.0	9.36	13.0	-3.64	Pass
3680.0	9.39	13.0	-3.61	Pass
Modulation 256QAM				
3570.0	9.37	13.0	-3.63	Pass
3625.0	9.37	13.0	-3.63	Pass
3680.0	9.37	13.0	-3.63	Pass

## Reference numbers of test equipment used

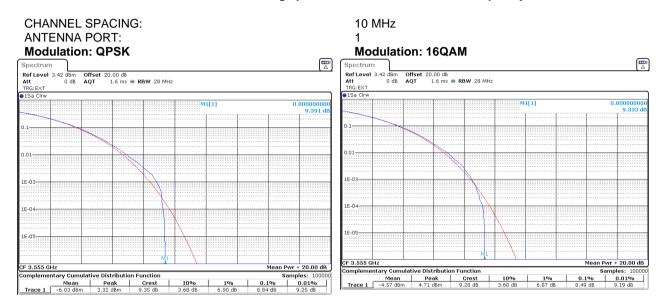
HL 3301	HL 3302	HL 4366	HL 5409				

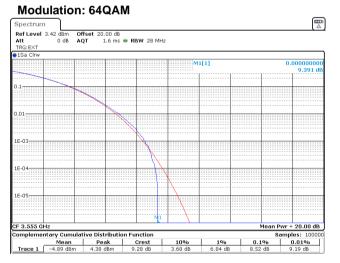
Full description is given in Appendix A.

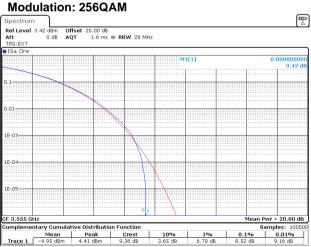


Test specification: Section 96.41(g), Peak-to- average power ratio				
Test procedure:	Section 96.41(g)			
Test mode:	Compliance	Verdict: PASS		
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS	
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC	
Remarks:				

Plot 7.2.1 Peak-to-average power ratio test results at low frequency



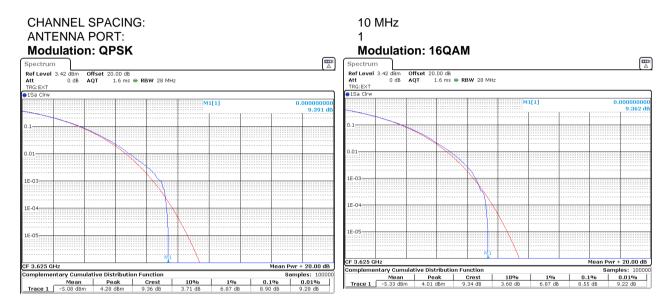


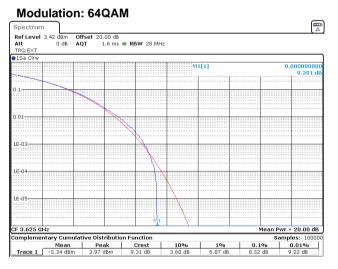


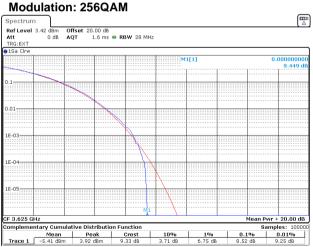


Test specification: Section 96.41(g), Peak-to- average power ratio					
Test procedure: Section 96.41(g)					
Test mode:	Compliance	Verdict: PASS			
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS		
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC		
Remarks:					

Plot 7.2.2 Peak-to-average power ratio test results at mid frequency



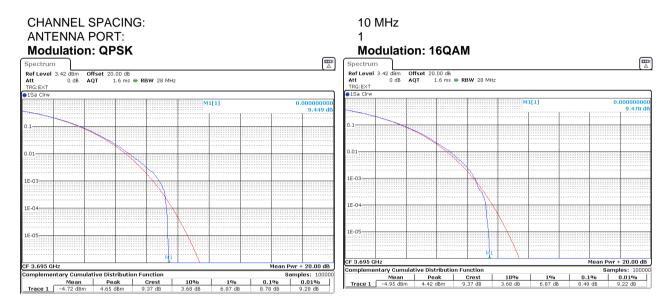


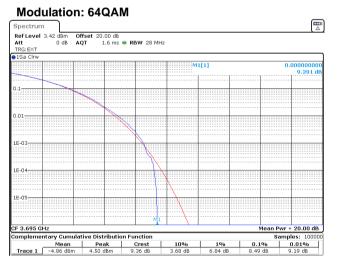


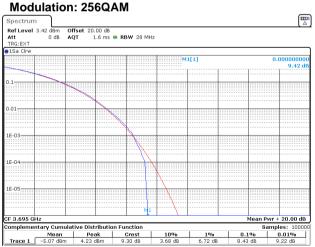


Test specification: Section 96.41(g), Peak-to- average power ratio					
Test procedure:	Test procedure: Section 96.41(g)				
Test mode:	Compliance	Verdict: PASS			
Date(s):	25-Jul-21 – 24-Nov-21				
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC		
Remarks:					

Plot 7.2.3 Peak-to-average power ratio test results at high frequency



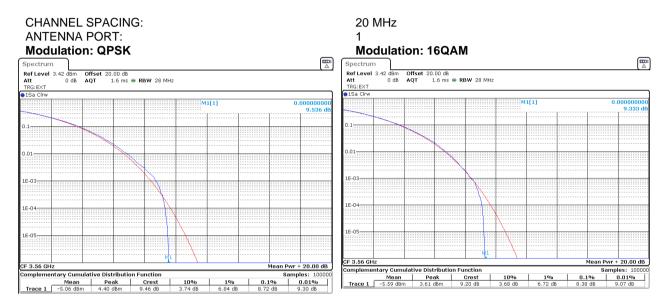


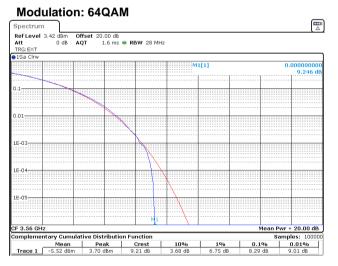


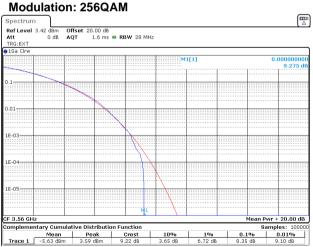


Test specification: Section 96.41(g), Peak-to- average power ratio					
Test procedure: Section 96.41(g)					
Test mode:	Compliance	Verdict: PASS			
Date(s):	25-Jul-21 – 24-Nov-21				
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC		
Remarks:					

Plot 7.2.4 Peak-to-average power ratio test results at low frequency



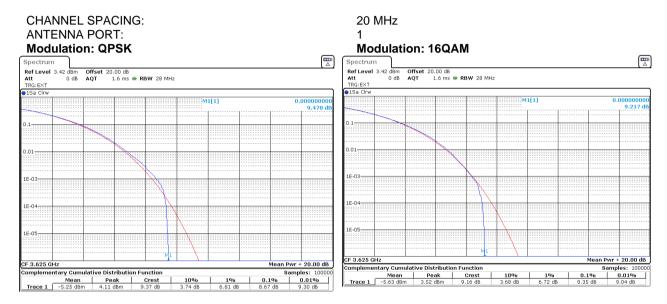


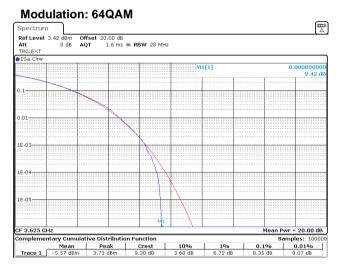


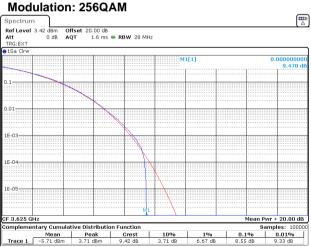


Test specification: Section 96.41(g), Peak-to- average power ratio					
Test procedure:	Test procedure: Section 96.41(g)				
Test mode:	Compliance	Verdict: PASS			
Date(s):	25-Jul-21 – 24-Nov-21				
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC		
Remarks:					

Plot 7.2.5 Peak-to-average power ratio test results at mid frequency









Test specification: Section 96.41(g), Peak-to- average power ratio					
Test procedure: Section 96.41(g)					
Test mode:	Compliance	Verdict: PASS			
Date(s):	25-Jul-21 – 24-Nov-21	verdict.	PASS		
Temperature: 24.3. °C	Relative Humidity: 48 %	Air Pressure: 1010 hPa	Power: 48 VAC		
Remarks:					

Plot 7.2.6 Peak-to-average power ratio test results at high frequency

