



REPORT

For

Dali Wireless, Inc.

535 Middlefield Road, Suite 280
Menlo Park, CA 94025



Date: 11 April 2022
Report No.: 20.01.20808
Revision No.: 1
Project No.: 20808
Equipment: Advanced Digital Distributed Antenna System
Model No.: hd37-3-PS-ABH-21-1N-D0
FCC ID: HCOHD373PSABH21A

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ISO 17025 ACCREDITED**

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TEST REPORT_FCC Part 2, 90	
Private Land Mobile Services	
Report Reference No.....:	20.01.20808
Report Revision History.....:	✓ Rev. 1
Compiled by (+ signature).....	Jack Qin 
Approved by (+ signature).....	David Johanson 
Date of issue.....:	March 31, 2022
Total number of pages.....	
FCC Site Registration No.:	721268
IC Site Registration No.:	5970A-2
Testing Laboratory.....:	LabTest Certification Inc.
Address	Unit 3128-20800 Westminster HWY, Richmond, B.C. V6V 2W3 Canada
Applicant's name.....:	Dali Wireless, Inc.
Address	535 Middlefield Road, Suite 280, Menlo Park, CA 94025
Manufacturer's Name	Dali Wireless (Canada) Inc.
Address	8618 Commerce Court, Burnaby, B.C. V5A 4N6, Canada
Test specification:	
Standards.....:	<ul style="list-style-type: none"> ➤ FCC Part 2; 2018 ➤ FCC Part 90; 2018
Test procedure.....:	<ul style="list-style-type: none"> ➤ FCC KDB 935210 D05 Indus Booster Basic Meas v01r03: April 15, 2019 ➤ ANSI/TIA-603- E-2016 ➤ ANSI C63.4:2014
Test item description:	
Trade Mark.....:	hd37™
Model/Type reference	hd37-3-PS-ABH-21-1N-D0-1
Serial Number.....:	10911132E01BB9008
FCC ID	HCOHD373PSABH21A

Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing:	
Date of receipt of test item.....:	07 March 2022
Date (s) of performance of tests.....:	07 to 14 March 2022

Revision History

Revision	Date	Reason For Change	Author(s)
0	March 31, 2022	Initial Data	Jack Qin
1	April 11, 2022	Update	Jack Qin

Device Under Test Description

Application for	PS 700/800/450 Remote Unit, Dual Band Medium Power DAS
Passing Transmit Frequency	851 MHz – 861 MHz 769 MHz – 775 MHz 450 MHz – 470 MHz
Operating Transmit Frequency FCC	851 MHz – 861 MHz 758 MHz – 768 MHz 769 MHz – 775 MHz 450 MHz – 454 MHz 456 MHz – 462.5375 MHz 462.7375 MHz – 467.5375 MHz 467.7375 MHz – 512 MHz
Passing Receive Frequency	806 MHz – 816 MHz 788 MHz – 805 MHz 450 MHz – 470 MHz

Operating Receive Frequency FCC	806 MHz – 816 MHz 788 MHz – 798 MHz 799 MHz – 805 MHz 450 MHz – 454 MHz 456 MHz – 462.5375 MHz 462.7375 MHz – 467.5375 MHz 467.7375 MHz – 512 MHz
Number of Channels	Up to 64 channels
Rated RF Output(e.i.r.p.)	37 dBm
Modulation Type	P25 Phase I C4FM, CQPSK; P25 Phase II HDQPSK on full band of Band 800 and Band UHF; FM on Band 800 between 851 MHz – 854 MHz only; P25 Phase I C4FM, CQPSK; P25 Phase II HDQPSK on Band 700 between 769 MHz – 775 MHz
Equipment mobility	Fixed
Operating condition.....	-40 to +50 °C
Mass of equipment (g).....	< 27,700g
Dimension(W X D X H)	410 mm X 230 mm X 696 mm
Nominal Voltages for:	<u>48 V</u> stand-alone equipment <u>48 V</u> combined (or host) equipment
Supply Voltage:	_____ AC _____ Amps <u>48V</u> DC <u>7.083</u> Amps
If DC Power:	___ Internal Power Supply <input checked="" type="checkbox"/> External Power Supply ___ Battery <input type="checkbox"/> Nickel Cadmium <input type="checkbox"/> Alkaline <input type="checkbox"/> Nickel-Metal Hydride <input type="checkbox"/> Lithium-Ion <input type="checkbox"/> Other

Program details

Testing Facility by procedure:		
<input checked="" type="checkbox"/>	Radiated Measurement	LabTest Certification Inc.
Testing location/ address..... :		Unit 3128-20800 Westminster HWY, Richmond, B.C. V6V 2W3 Canada
<input checked="" type="checkbox"/>	Conducted Measurement:	LabTest Certification Inc.

Testing location/ address..... :	Unit 3128-20800 Westminster HWY, Richmond, B.C. V6V 2W3 Canada
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Summary of testing:	
Tests performed (name of test and test clause): Conducted Measurement Radiated Emissions on Enclosure	Testing location: Bench top, Richmond In SAC, Richmond
<p>The tests indicated in Test Summary were performed on the product constructed as described below. The test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.</p> <p>Based on the results of our investigation, we have concluded the product tested complies with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. LabTest does not make any claims of compliance for samples or variants which were not tested.</p>	

Description of Equipment Under Test and Variant Models

<p>Description: The hd37 700PS/800PS/UHF PS is a triple-band remote unit that provides at least 5 W of output power on each band. The triple-band unit supports up to 3 bands in a sealed type 2 chassis for Class A operation.</p> <p>On the downlink path the hd37 PS remote receives an aggregated stream of digitized RF signals from an airHost PS, which it then converts into analog RF signals. Depending on the frequency band, the signal is amplified in the RF module and then sent out through simplex RF ports to an external filter.</p> <p>On the UL path the hd37 PS remote receives analog RF signals for the RF band, from an external filter. The RF signals are converted into a digital data stream and then delivered over optical fiber to an airHost PS. The hd37 PS remote also accommodates a 1 Gbps Ethernet backhaul for transporting the data from nearby IP devices such as security cameras and Wi-Fi access points.</p> <p>The intentional transmitter only exists in the downlink path and hence the EMC tests in this report dedicated to the downlink emission.</p> <p>In order to build up a complete signal booster system, the airHost was connected as the Auxiliary device. The airHost the signal was injected and ejected via coaxial cables.</p>



Variant Models:

The following variant models were not tested as part of this evaluation, but they have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. Labtest does not make any claims of compliance for samples or variants which were not tested.

hd37-3-PS-ABH-21-1N-D0-1– Triple band 700PS 800PS UHF PS model as tested

Tri Band

1. hd37-3-PS-ABH-21-1N-D0 (hd37 with 700,800, UHF PS)
2. hd33-3-PS-ABH-21-1N-D0 (hd33 with 700,800, UHF PS)

Dual Band:

1. hd37-2-PS-AB-21-3N-D0 (hd37 with 700,800PS)
2. hd33-2-PS-AB-21-3N-D0 (hd33 with 700,800PS)
3. hd37-2-PS-AH-21-4N-D0 (hd37 with 700, UHF PS)
4. hd33-2-PS-AH-21-4N-D0 (hd33 with 700, UHF PS)
5. hd37-2-PS-BH-21-3N-D0 (hd37 with 800, UHF PS)
6. hd33-2-PS-BH-21-3N-D0 (hd33 with 800, UHF PS)

Single Band:

1. hd37-1-PS-H-21-1N-D0 (hd37 with UHF PS)
2. hd33-1-PS-H-21-1N-D0 (hd33 with UHF PS)
3. hd37-1-PS-B-21-1N-D0 (hd37 with 800PS)
4. hd33-1-PS-B-21-1N-D0 (hd33 with 800PS)
5. hd37-1-PS-A-21-1N-D0 (hd37 with 700PS)
6. hd33-1-PS-A-21-1N-D0 (hd33 with 700PS)

Client Equipment Used During Test

Use*	Product Type	Manufacturer	Model	Comments
EUT	<i>hd37, 700PS, 800PS, UHF PS</i>	Dali Wireless Inc.	hd37-3-PS-ABH-21-1N-D0	EUT where the RF (I/O) antenna attached via duplexers/multiplexer when necessary.
AE1	<i>airHost, 700PS, 800PS, UHF PS</i>	Dali Wireless Inc.	AH37-3-PS-ABH-21-3N-D0	Auxiliary equipment, which is the front end of system interfaced to Base Station.
AE2	Dali Matrix Console	Dali Wireless Inc.	hdCNSL-1-8-4-120G-AC	Auxiliary equipment provides the configuration and control interface to <i>airHost</i> and <i>hd37</i> .
AE3	Power Supply	MeanWell	HGL-480H-48	AC to DC Converter, I/P: 120VAC, 60Hz, 5.5A O/P: +48VDC, 480W

Abbreviations:
 EUT - Equipment Under Test,
 AE - Auxiliary/Associated Equipment, or
 SIM - Simulator (Not Subjected to Test)

Software and Firmware

Use*	Description	Version
EUT	Software installed	5.2.0-0.5594
AE1	Software installed	5.2.0-0.5594
AE2	Software installed	5.2.0-0.1111

Abbreviations:
 EUT - Equipment Under Test,
 AE - Auxiliary/Associated Equipment, or
 SIM - Simulator (Not Subjected to Test)

Input/Output Ports

Port #	Name	Type*	Cable Max. >3m	Cable Shielded	Comments
1	DC Power Port	DC	No	No	Dual feed 48 VDC Assembly
2	1 * RF Input/Output Ports	I/O	No	No	N-Type Coaxial
3	2 * Optical Fibre I/O Ports	I/O	No	No	LC/UPC Duplex
4	2 * TP	TP	No	No	RJ-45

*Note: AC = AC Power Port DC = DC Power Port N/E = Non-Electrical
 I/O = Signal Input or Output Port (Not Involved in Process Control)
 TP = Telecommunication Ports

Power Interface

Mode #	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
1	48	-	-	DC	-	

EUT Operation Modes

Mode #	Description
1	UL and DL transmission and receiving ON

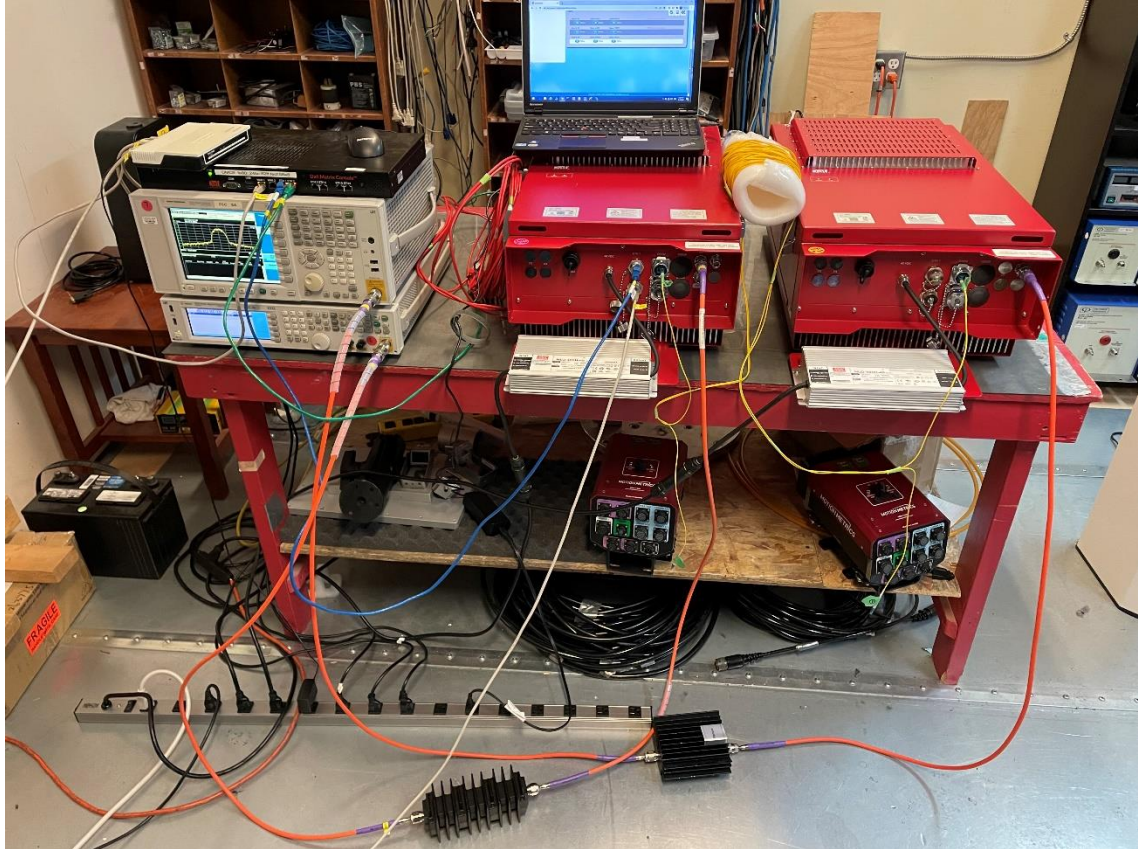
EUT Configuration Modes

Mode #	Description
1	airHost maximum input threshold set to -55 dBm, uplink attenuation set to 0dB; hd37 uplink and downlink attenuation set to 0dB.

Test Equipment Verified for function

Model #	Description	Checked Function	Results
N9038A	Spectrum Analyzer	Frequency and Amplitude	Connected 50MHz and -20 dBm Ref. signal and checked OK.
JB1	Antenna, 30 to 2000MHz	Checked structure	Normal – no damage.
SAS-571	Antenna, 1 to 18GHz	Checked structure	Normal – no damage.
AL-130	Antenna, 9kHz to 30MHz	Checked structure	Normal – no damage.
KT-N5172B	Signal Generator, up to 6GHz	Frequency, Amplitude and Modulation	Within MFR Specs
KT-N9010A	Spectrum Analyzer	Frquency and Amplitude	Within MFR Specs

Test Station Photo



Test Station Cables and Loads

Model #	Manufacture	Description
3 x TM8-N1S1-60	MegaPhase	3 times N male to SMA male coaxial cable in 60 inches
1 x 58-40-34	Aeroflex	40dB 50W attenuator
1 x 49-30-34	Aeroflex	30dB 25W attenuators

Test Station Insertion Loss

	Band 800	Band 700	Band UHF
DL Receiver	31.0 dB	31.0 dB	30.7 dB
DL Transmitter	40.7 dB	41.0 dB	41.2 dB

Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests:

Parameter	Uncertainty
Radio Frequency	±1 ppm
Total RF Power: Conducted	±1 dB
RF Power Density: Conducted	±2.75 dB
Spurious Emissions: Conducted	±3 dB
Temperature	±1 °C
Humidity	±5 %
DC and Low Frequency Voltages	±3 %
Radiated Emission, 30 to 6,000MHz	± 4.95 dB

Uncertainty figures are valid to a confidence level of 95%.

Result Summary

The Compliance Status is a judgment based on the direct measurements and calculated highest emissions to appropriate standard limits. Measurement uncertainty values, provided on calibration certificates, were not be used in the judgment of the final status of compliance.

FCC Part			
Test Type	Regulation	Measurement Method	Result
AGC Threshold	FCC KDB 935210 D05, v01r03, Section 4.2	ANSI TIA-603- E-2016	PASS
Out of Band Rejection	FCC KDB 935210 D05, v01r03, Section 4.3	ANSI TIA-603- E-2016	PASS
Input-versus-output Signal Comparison	FCC KDB 935210 D05, v01r03, Section 4.4	ANSI TIA-603- E-2016	PASS
Input/output Power and Amplifier/Booster Gain	FCC KDB 935210 D05, v01r03, Section 4.5	ANSI TIA-603- E-2016	PASS
Noise Figure	FCC KDB 935210 D05, v01r03, Section 4.6	ANSI TIA-603- E-2016	PASS
Measuring out-of-band/out-of-block (including intermodulation) and spurious emissions	FCC KDB 935210 D05, v01r03, Section 4.7	ANSI TIA-603- E-2016	PASS
Frequency stability	FCC KDB 935210 D05, v01r03, Section 4.8	ANSI TIA-603- E-2016	PASS
Spurious emissions radiated measurements	FCC KDB 935210 D05, v01r03, Section 4.9	ANSI C63.4:2014	PASS

AGC Threshold

Governing Doc	FCC Part 2.2.1046(a) FCC Part 90.219(d)	Room Temperature (°C)	
Test Procedure	ANSI/TIA-603- E-2016; FCC KDB 935210 D05, v01r03;	Relative Humidity (%)	
Test Location	Richmond	Barometric Pressure (kPa)	
Test Engineer		Date	March 7, 2022
EUT Voltage	<input checked="" type="checkbox"/> DC	<input checked="" type="checkbox"/> 120VAC @ 60Hz	
Test Equipment Used	Manufacturer	Model	Serial Number
Signal Generator	Keysight	N5172B	MY53050270
Spectrum Analyzer	Keysight	N9010A	MY50520285
Frequency Range:	<input checked="" type="checkbox"/> 851 MHz – 861 MHz <input checked="" type="checkbox"/> 769 MHz – 775 MHz <input checked="" type="checkbox"/> 450MHz – 470MHz		
Detector:	<input checked="" type="checkbox"/> Peak		
Type of Facility:	<input checked="" type="checkbox"/> Test bench		
Distance:	<input checked="" type="checkbox"/> Direct		
Arrangement of EUT:	<input checked="" type="checkbox"/> Table-top only <input type="checkbox"/> Floor-standing only <input type="checkbox"/> Rack Mounted		
Output Power is less than 37.22 dBm in band 800, less than 36.65 dBm in band 700, and less than 35.30 dBm in band UHF.			
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>			

Test setup

Description of test set-up:

Output power is measured by connecting a spectrum analyzer to RF output connector of EUT via 30dB Attenuator. With a nominal input power and the amplifier properly adjusted the RF output is measured. The EUT was set to **Operation Mode #1 with configuration Mode #1**. The maximum output power is measured when the Automatic Level Control (ALC) starting to compress the power and hold to a constant level.

```

    graph LR
      VSG[Vector Signal Generator] --- airHost[airHost]
      airHost --- EUT[EUT]
      EUT --- Att[30 dB Attenuator]
      Att --- SA[Spectrum Analyzer]
  
```

Results – Output Power FCC Requirement

Frequency Range (MHz)	Frequency (MHz)	Input Power Trip ALC (dBm)	Output Power (dBm)	Output Power (W)
806 - 816	851.0125	-51.4	37.01	5.02
	856	-51.4	37.18	5.22
	860.9875	-50.8	37.22	5.27
799 - 805	769.0125	-52.9	36.36	4.33
	772	-51.9	36.65	4.62
	774.9875	-50.8	36.26	4.22
450 - 470	450.8125	-51.8	34.65	2.91
	451.85	-52.0	35.3	3.39
	452.8875	-50.8	33.78	2.39

Occupied Bandwidth

Governing Doc	FCC Part 2.2.1049	Room Temperature (°C)			
Test Procedure	ANSI/TIA-603- E-2016; FCC KDB 935210 D05, v01r03	Relative Humidity (%)			
Test Location	Richmond	Barometric Pressure			
Test Engineer		Date	March 7, 2022		
EUT Voltage	<input checked="" type="checkbox"/> +48VDC <input type="checkbox"/> 120VAC @ 60Hz				
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration date	Calibration due
Signal Generator	Keysight	N5172B	MY53050270	Oct 9, 2021	Oct 9, 2023
Spectrum Analyzer	Keysight	N9010A	MY50520285	Oct 11, 2021	Oct 11, 2023
Frequency Range:	<input checked="" type="checkbox"/> 806 MHz – 816 MHz; <input checked="" type="checkbox"/> 799 MHz – 805 MHz; <input checked="" type="checkbox"/> 450 MHz – 470 MHz				
Detector:	<input checked="" type="checkbox"/> Peak				
Type of Facility:	<input checked="" type="checkbox"/> Test bench				
Distance:	<input checked="" type="checkbox"/> Direct				
Arrangement of EUT:	<input checked="" type="checkbox"/> Table-top only <input type="checkbox"/> Floor-standing only <input type="checkbox"/> Rack Mounted				
Output signal has an occupied channel bandwidth less than the designated channel bandwidth on any location on the operating band. <ul style="list-style-type: none"> - C4FM < 12.5 kHz - CQPSK < 6.25 kHz - HDQPSK < 12.5 kHz - 4 kHz FM with 1kHz deviation < 12.5 kHz 					
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

Test setup

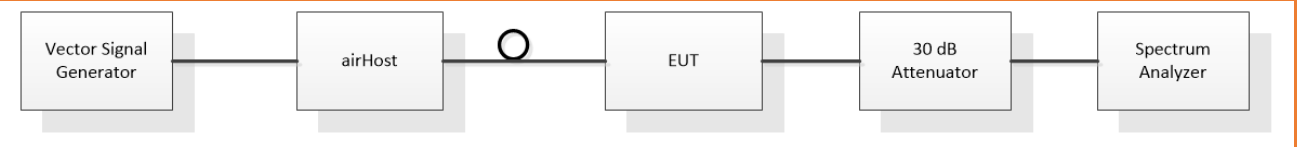
Description of test set-up:

Occupied Bandwidth is measured by connecting a Spectrum Analyzer to the RF output connector via 30dB attenuator. The required measurement resolution bandwidth (RBW) is 1% of the emission bandwidth. 99% energy rule was applied to measure the occupied channel bandwidth. The emission bandwidth is measured as the width of the signal between two frequency points on the channel edge, outside of which the transmission power is attenuated at least 26dB below the transmitter output power

The EUT was set to **Operation Mode #1 with configuration Mode #1**.

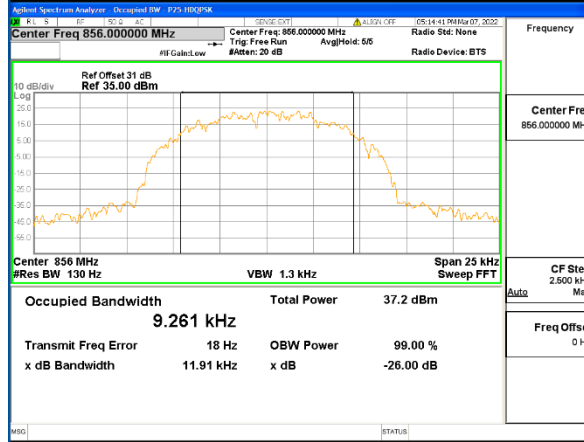
The occupied bandwidth of DL output is measured under one input conditions:

- Nominal: with input 0.5dB below AGC threshold

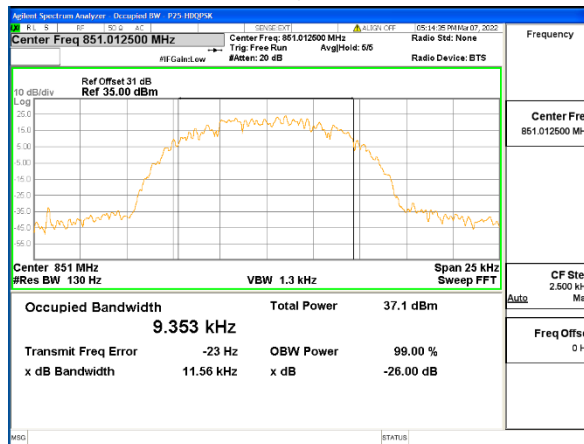


Results

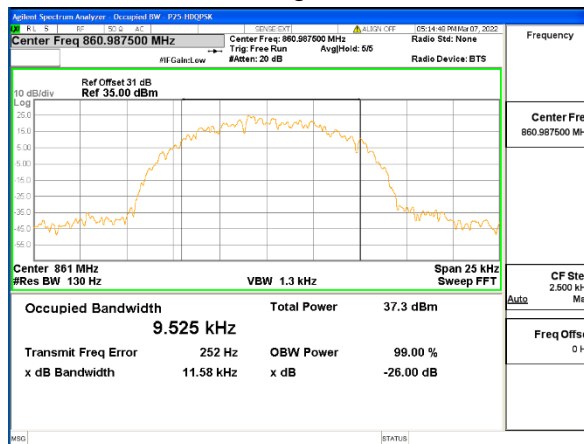
800PS HDQPSK Signal at 856 MHz



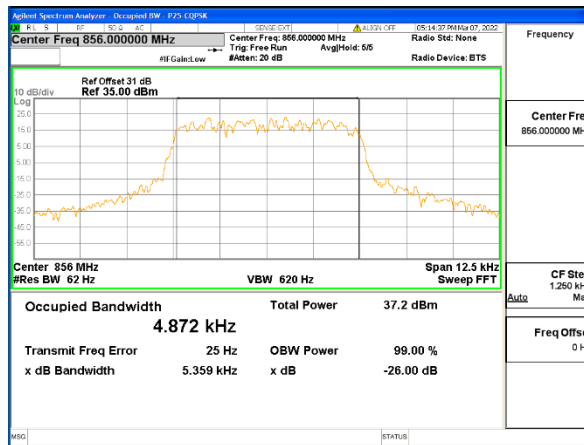
800PS HDQPSK Signal at 851.0125 MHz



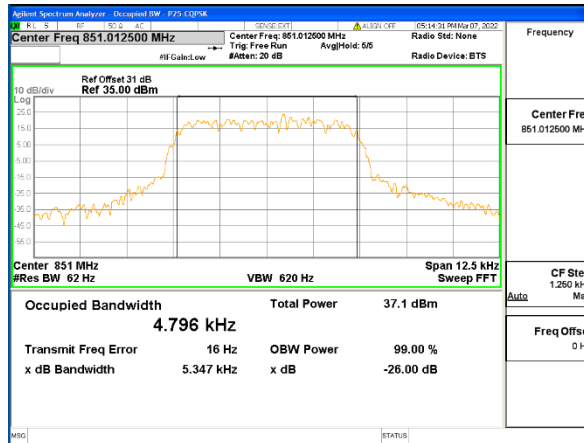
800PS HDQPSK Signal at 860.9875 MHz



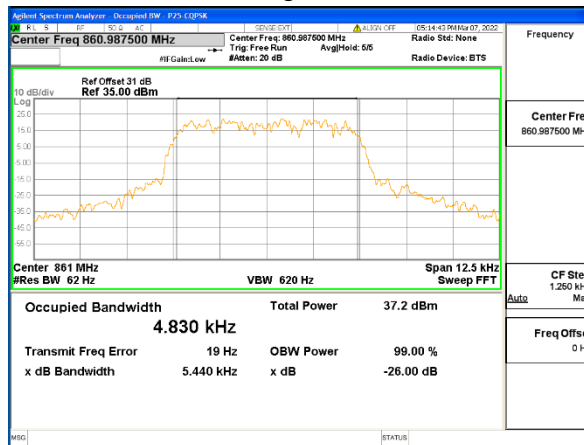
800PS CQPSK Signal at 856 MHz



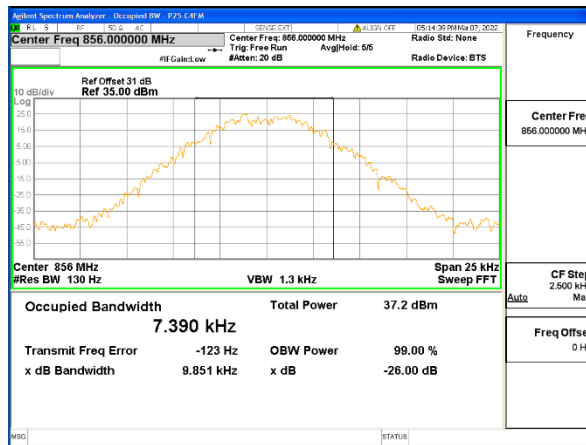
800PS CQPSK Signal at 851.0125 MHz



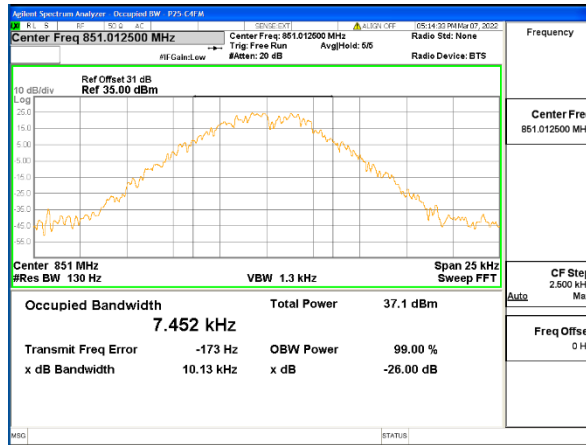
800PS CQPSK Signal at 860.9875 MHz



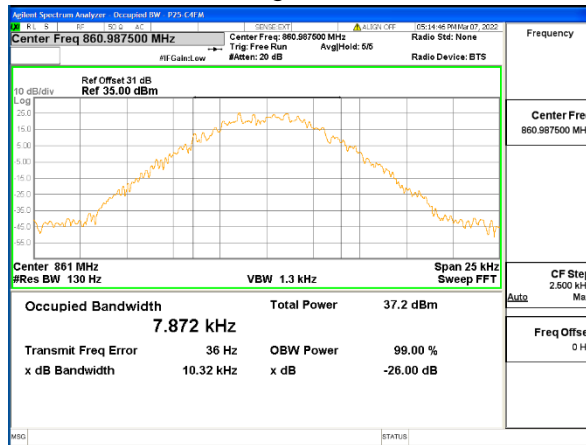
800PS C4FM Signal at 856 MHz



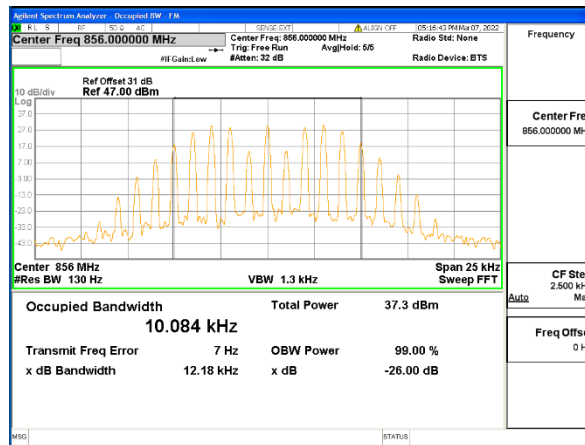
800PS C4FM Signal at 851.0125 MHz



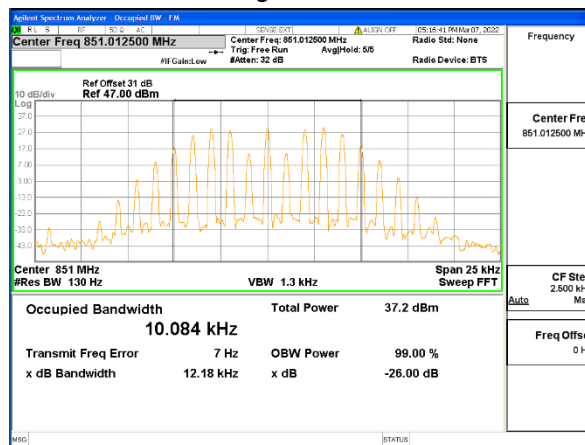
800PS C4FM Signal at 860.9875 MHz



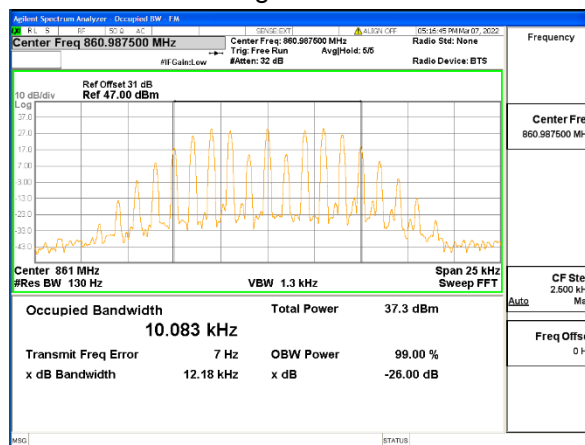
800PS FM Signal at 856 MHz



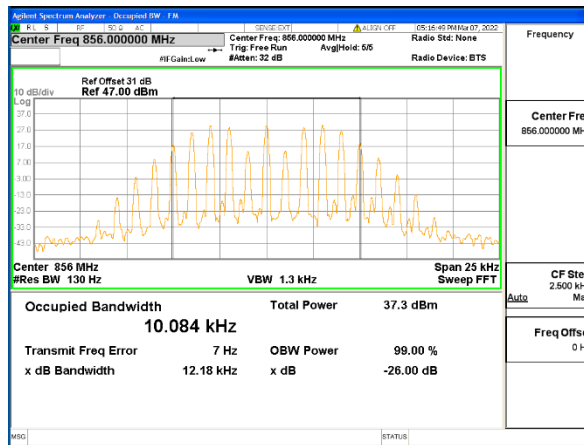
800PS FM Signal at 851.0125 MHz



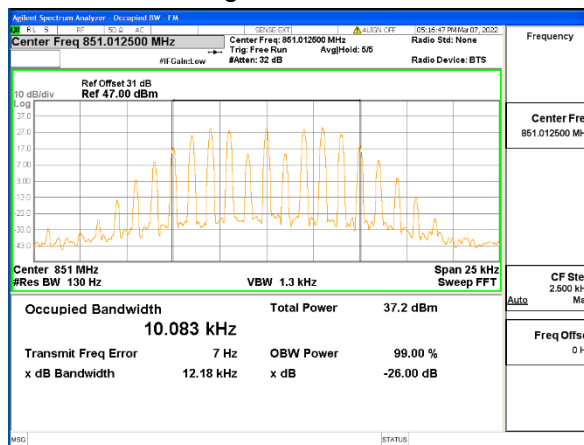
800PS FM Signal at 860.9875 MHz



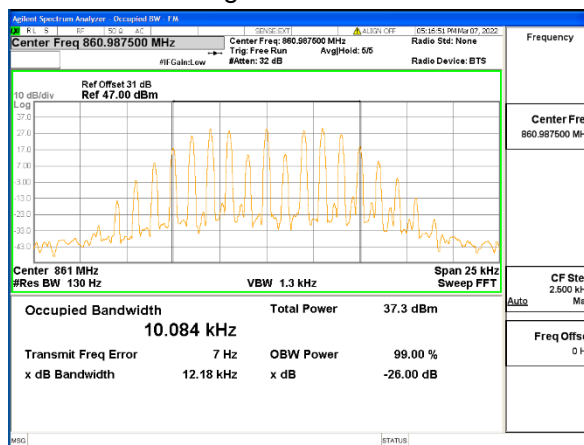
800PS FM Signal at 856 MHz ALC



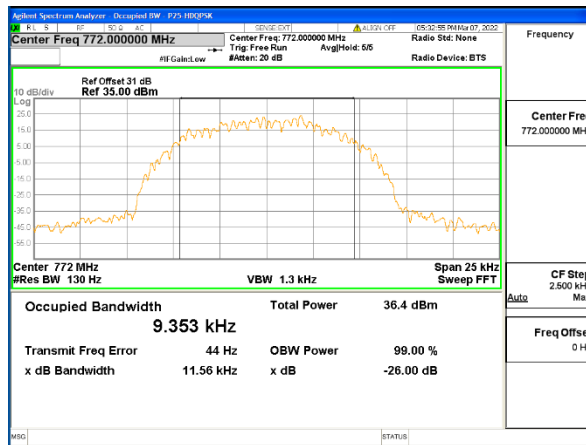
800PS FM Signal at 851.0125 MHz ALC



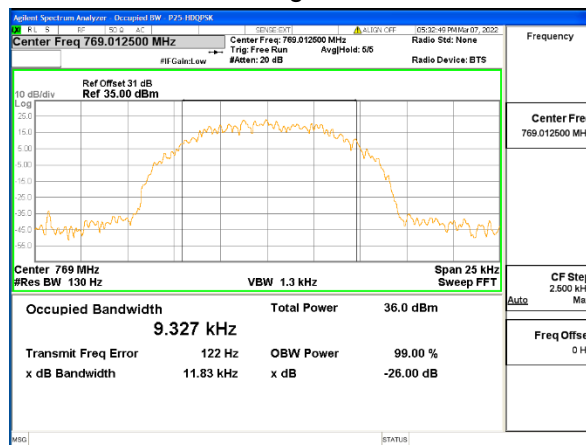
800PS FM Signal at 860.9875 MHz ALC



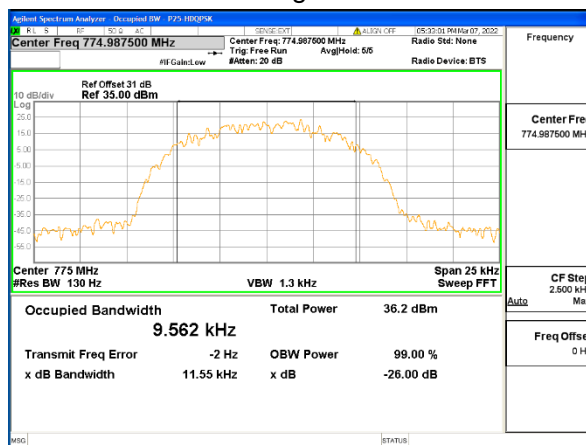
700PS HDQPSK Signal at 772 MHz



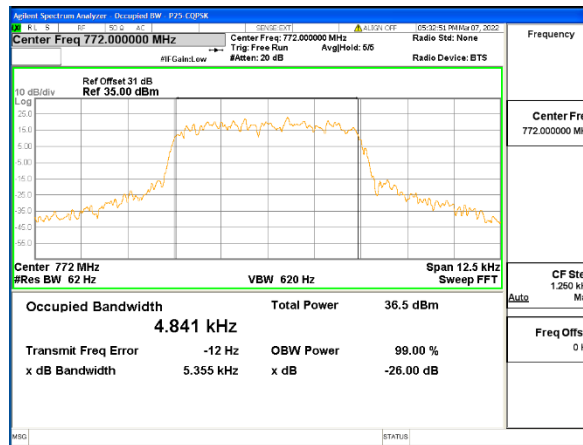
700PS HDQPSK Signal at 769.0125 MHz



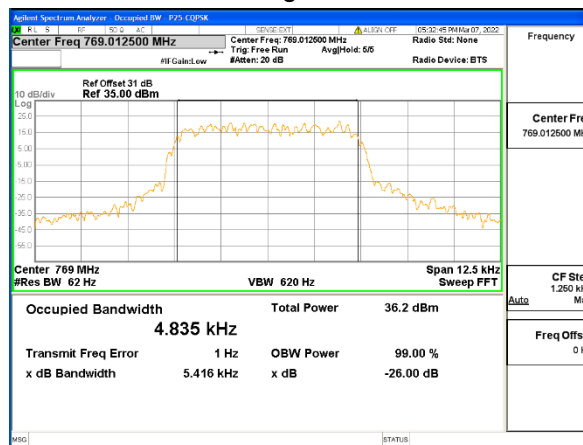
700PS HDQPSK Signal at 774.9875 MHz



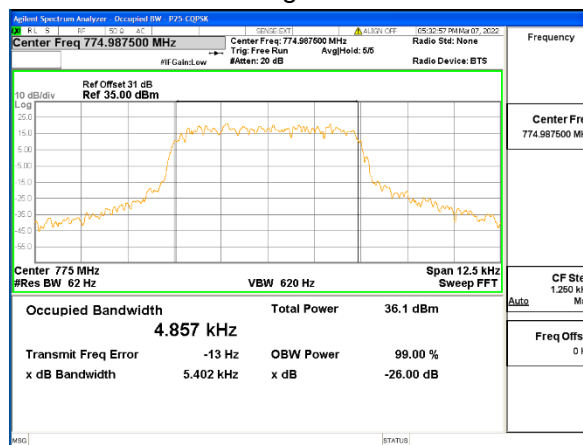
700PS CQPSK Signal at 772 MHz



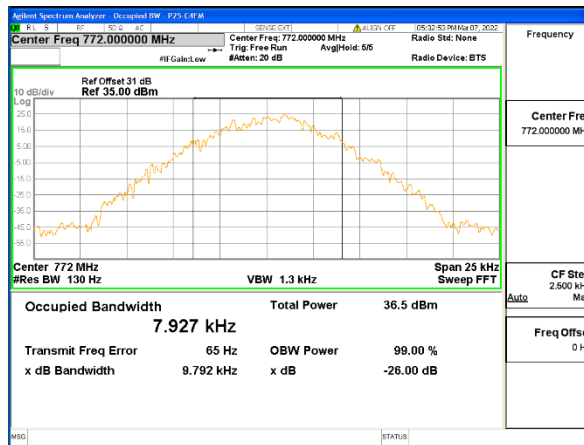
700PS CQPSK Signal at 769.0125 MHz



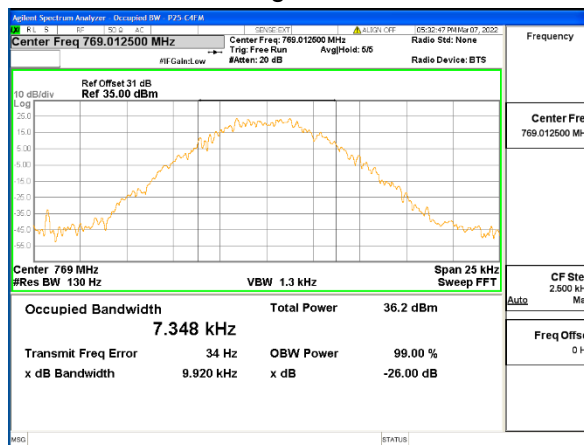
700PS CQPSK Signal at 774.9875 MHz



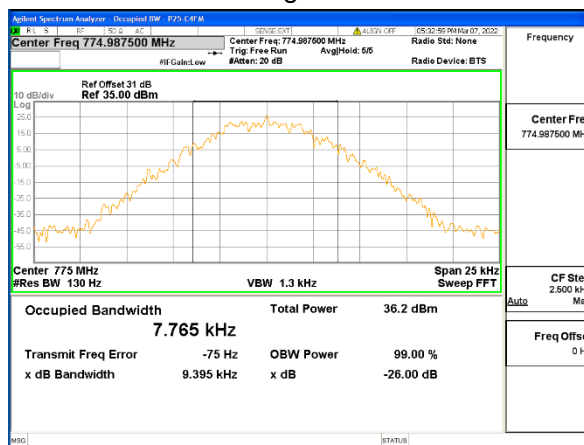
700PS C4FM Signal at 772 MHz



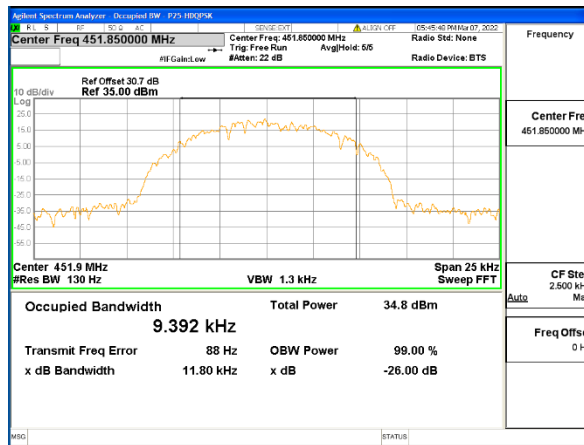
700PS C4FM Signal at 769.0125 MHz



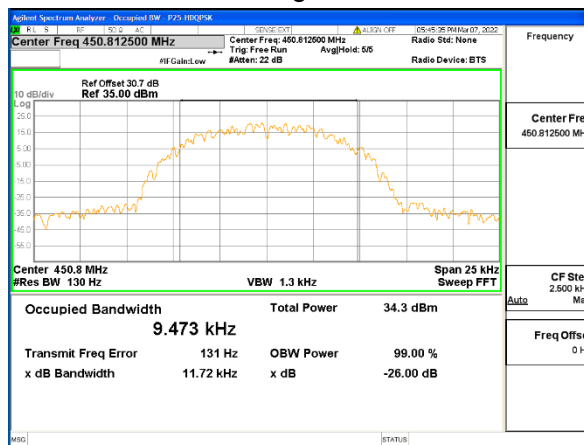
700PS C4FM K Signal at 774.9875 MHz



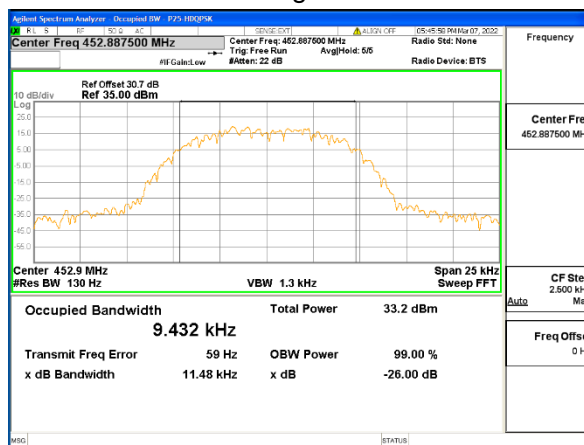
450PS HDQPSK Signal at 451.85 MHz



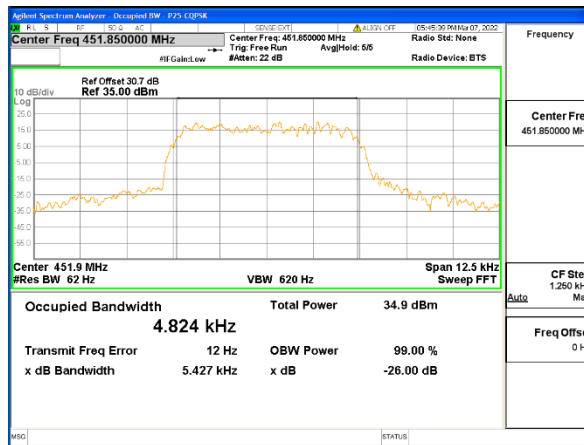
450PS HDQPSK Signal at 450.8125 MHz



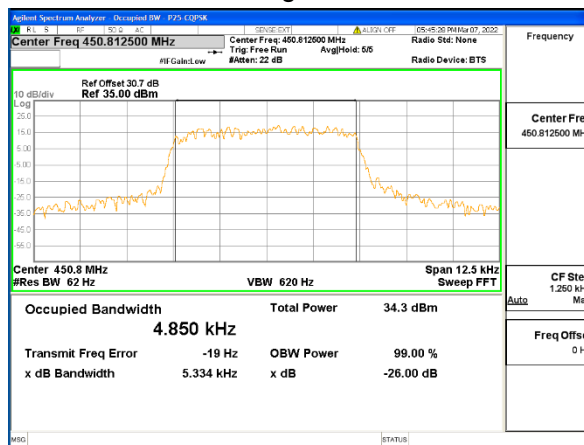
450PS HDQPSK Signal at 452.8875 MHz



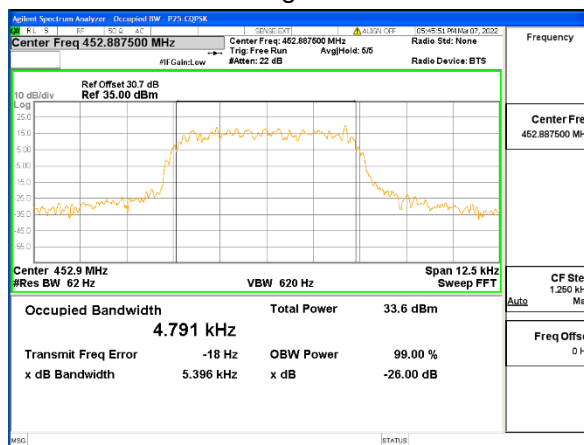
450PS CQPSK Signal at 451.85 MHz



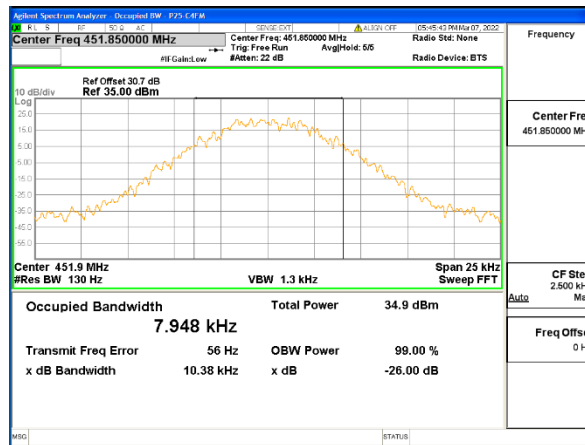
450PS CQPSK Signal at 450.8125 MHz



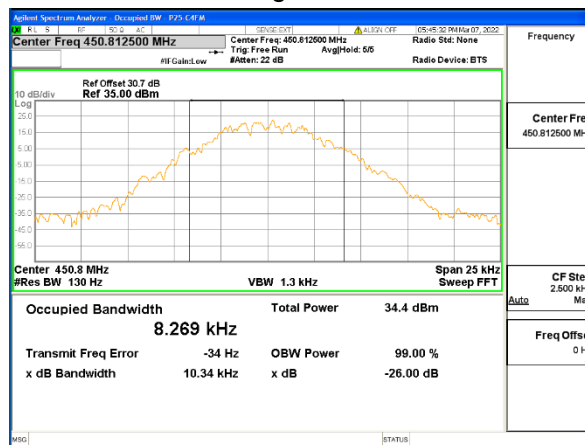
450PS CQPSK Signal at 452.8875 MHz



450PS C4FM Signal at 451.85 MHz



450PS C4FM Signal at 450.8125 MHz



450PS C4FM K Signal at 452.8875 MHz



Out of Band Rejection

Governing Doc	FCC Part 2 2.1046(a) FCC Part 90.219(d)		Room Temperature (°C)		
Test Procedure	ANSI/TIA-603- E; FCC KDB 935210 D05, v01r03		Relative Humidity (%)		
Test Location	Richmond		Barometric Pressure		
Test Engineer		Date	March 7, 2022		
EUT Voltage	<input checked="" type="checkbox"/> DC <input type="checkbox"/> 120VAC @ 60Hz				
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration date	Calibration due
Signal Generator	Keysight	N5172B	MY53050270	Oct 9, 2021	Oct 9, 2023
Spectrum Analyzer	Keysight	N9010A	MY50520285	Oct 11, 2021	Oct 11, 2023
Frequency Range:	<input checked="" type="checkbox"/> Product Passband \pm 250%				
Detector:	<input checked="" type="checkbox"/> Peak				
RBW/VBW:	<input checked="" type="checkbox"/> 0.1% of 5 times of passband bandwidth				
Type of Facility:	<input checked="" type="checkbox"/> Tabletop				
Distance:	<input checked="" type="checkbox"/> Direct				
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

Test setup

Description of test set-up:

The procedure used was ANSI/TIA-603-E-2016 and FCC KDB 935210 D05 Indus Booster Basic Meas v01r03. The signal booster was set to maximum gain. A swept CW signal was set to the range of \pm 250 % of the product pass band. The CW amplitude was set to 3 dB below the AGC threshold so that the ALC should not activate throughout the test.

After the max-hold sweep trace was completed, a marker was set to the peak amplitude, and a 20dB bandwidth was measured between two additional markers fall 20 dB from the peak.

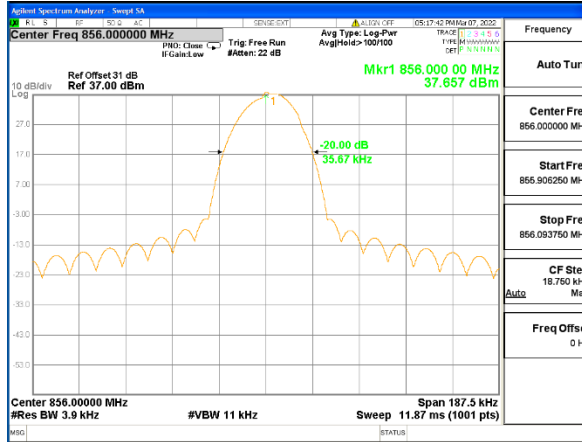
The EUT was set to **Operation Mode #1 with configuration Mode #1.**

```

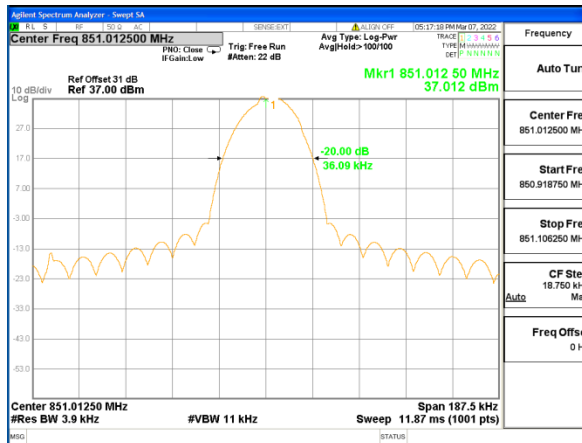
    graph LR
        A[Vector Signal Generator] --- B[airHost]
        B --- C(( ))
        C --- D[EUT]
        D --- E[30 dB Attenuator]
        E --- F[Spectrum Analyzer]
    
```

Results

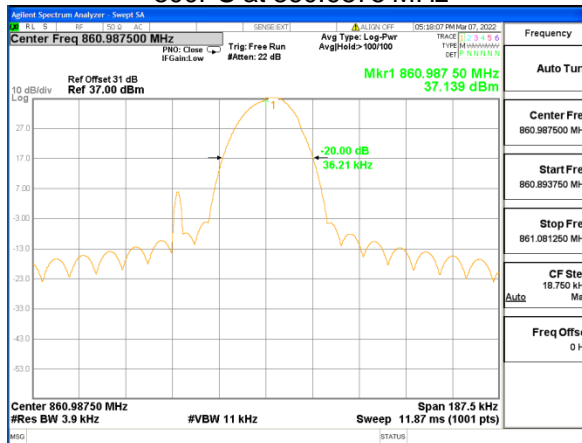
800PS at 856 MHz



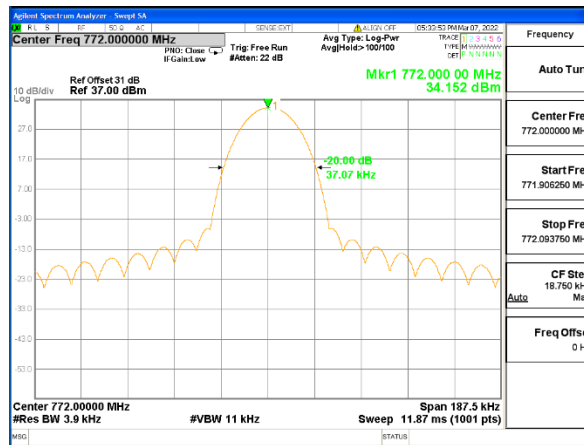
800PS at 851.0125 MHz



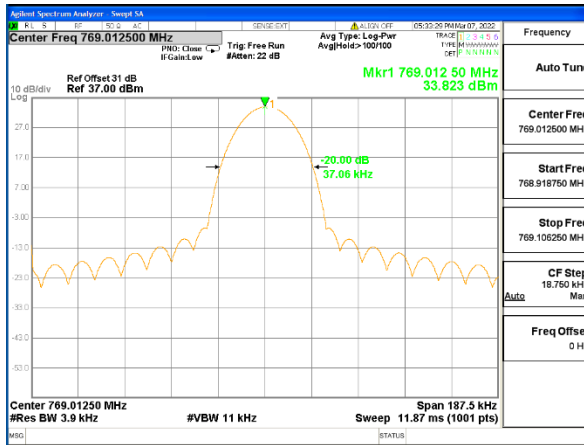
800PS at 860.9875 MHz



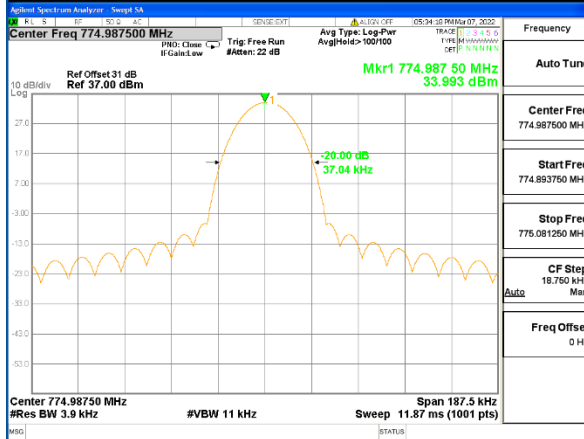
700PS at 772 MHz



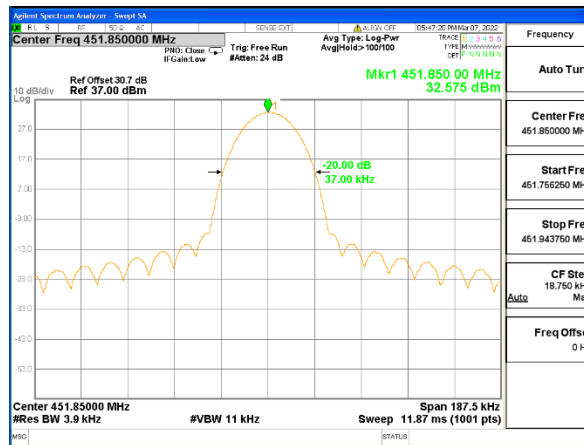
700PS at 769.0125 MHz



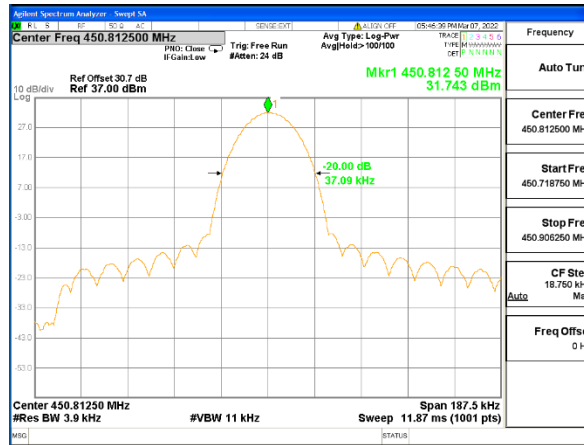
700PS at 774.9875 MHz



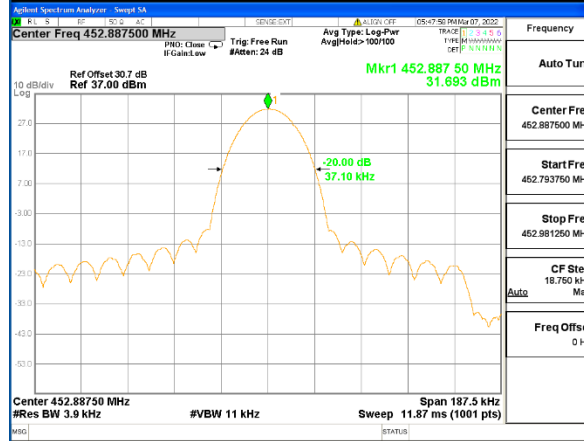
450PS at 451.85 MHz



450PS at 450.8125 MHz



450PS at 452.8875 MHz



Input-Versus-Output Signal Comparison

Governing Doc	FCC Part 90.210 (j) (h) (g) (c) (d) and (e)		Room Temperature (°C)		
Test Procedure	ANSI/TIA-603- E; FCC KDB 935210 D05, v01r03		Relative Humidity (%)		
Test Location	Richmond		Barometric Pressure (kPa)		
Test Engineer	Jeremy Lee		Date	Mar 7, 2022	
EUT Voltage	<input checked="" type="checkbox"/> DC <input type="checkbox"/> 120VAC @ 60Hz				
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration date	Calibration due
Signal Generator	Keysight	N5172B	MY53050270	Oct 9, 2021	Oct 9, 2023
Spectrum Analyzer	Keysight	N9010A	MY50520285	Oct 11, 2021	Oct 11, 2023
Frequency Range:	<input checked="" type="checkbox"/> 851 MHz – 861 MHz <input checked="" type="checkbox"/> 769 MHz – 775 MHz <input checked="" type="checkbox"/> 450MHz – 470MHz				
Detector:	<input checked="" type="checkbox"/> Peak				
RBW/VBW:	<input checked="" type="checkbox"/> 100 Hz				
Type of Facility:	<input checked="" type="checkbox"/> Testbench				
Distance:	<input checked="" type="checkbox"/> direct connect				
Arrangement of EUT:	<input checked="" type="checkbox"/> Table-top only <input type="checkbox"/> Floor-standing only <input type="checkbox"/> Rack Mounted				
Signal of all types of modulation is contained within the emission mask.					
Compliant <input checked="" type="checkbox"/> Non-Compliant <input type="checkbox"/> Not Applicable <input type="checkbox"/>					

Test setup

Description of test set-up:

Spectrum Emission Mask is measured by connecting a Spectrum Analyzer to the RF output connector. The input power was adjusted to produce maximum output power on the antenna port. The reference level was measured with integrated BW of the designated channel BW. The emission was measured with RBW 100 Hz.

The EUT was set to **Operation Mode #1 with configuration Mode #1.**

```

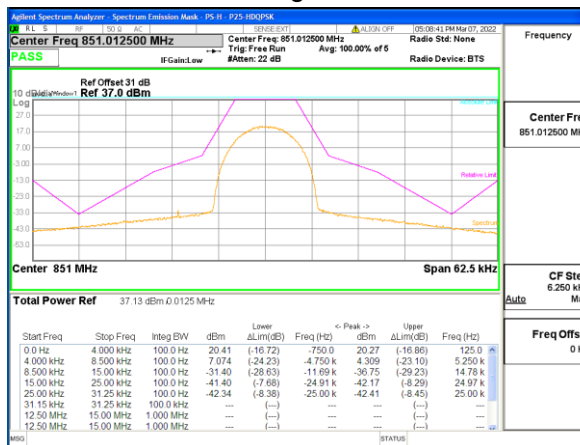
    graph LR
      A[Vector Signal Generator] --- B[airHost]
      B --- C(( ))
      C --- D[EUT]
      D --- E[30 dB Attenuator]
      E --- F[Spectrum Analyzer]
  
```


Results

800PS HDQPSK Signal at 856 MHz



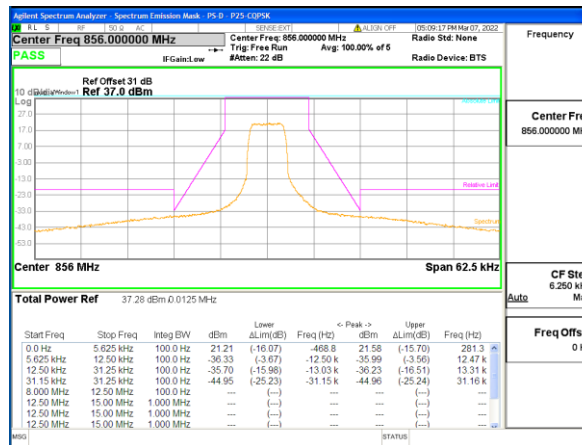
800PS HDQPSK Signal at 851.0125 MHz



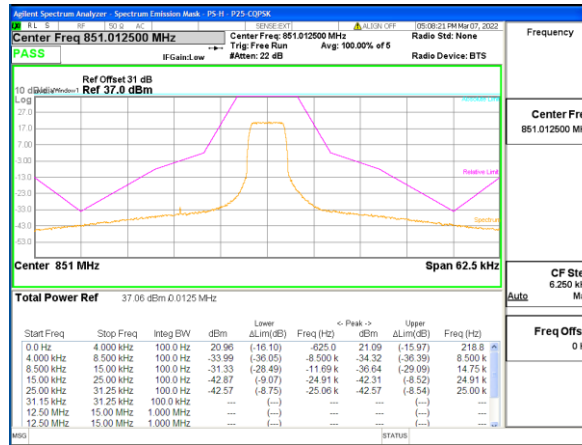
800PS HDQPSK Signal at 860.9875 MHz



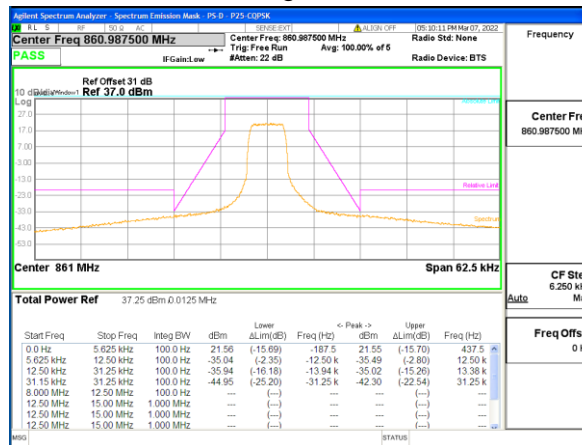
800PS CQPSK Signal at 856 MHz



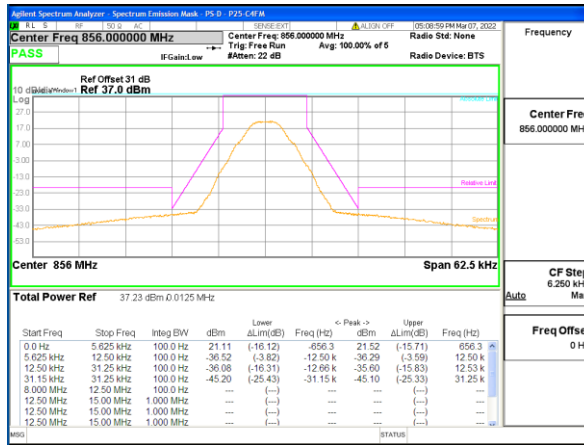
800PS CQPSK Signal at 851.0125 MHz



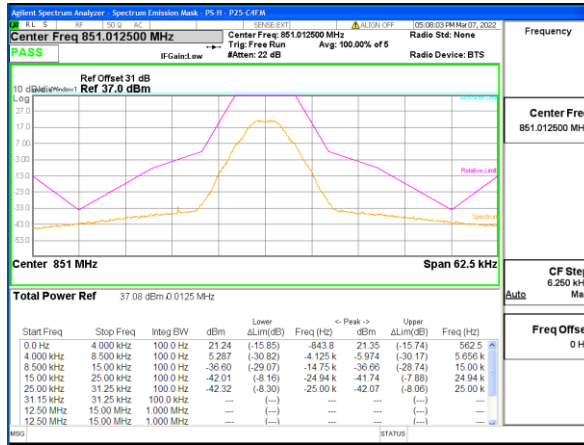
800PS CQPSK Signal at 860.9875 MHz



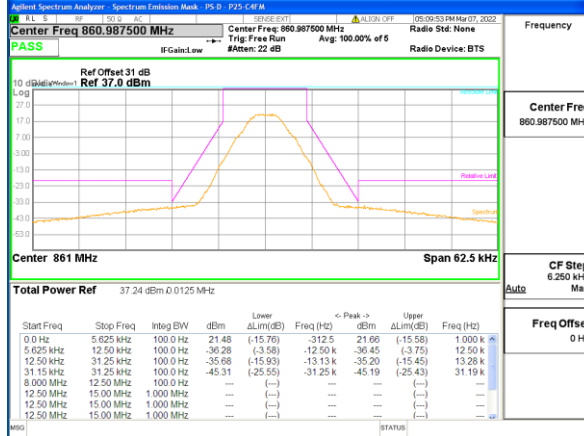
800PS C4FM Signal at 856 MHz



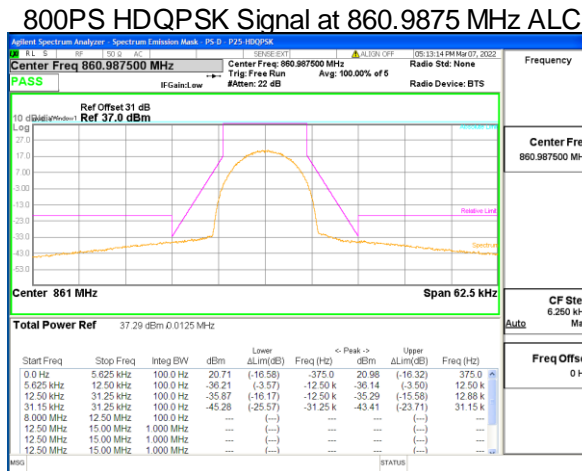
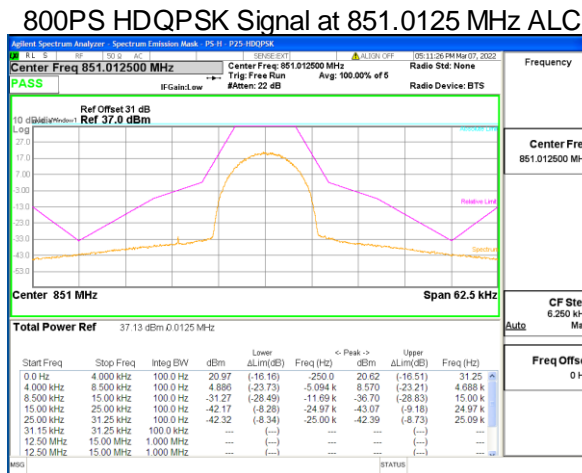
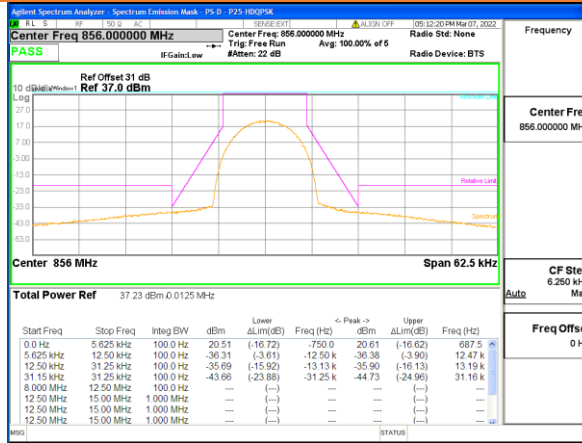
800PS C4FM Signal at 851.0125 MHz



800PS C4FM K Signal at 860.9875 MHz



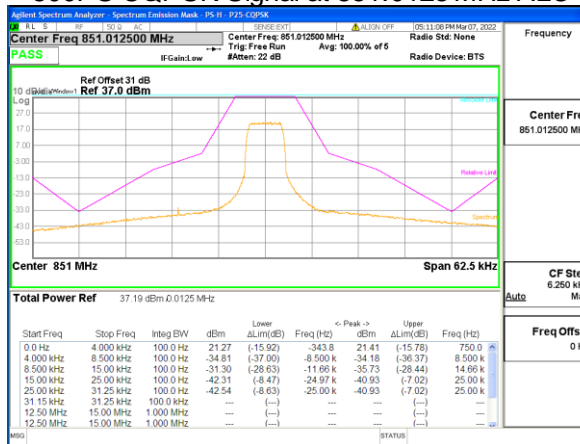
800PS HDQPSK Signal at 856 MHz ALC



800PS CQPSK Signal at 856 MHz ALC



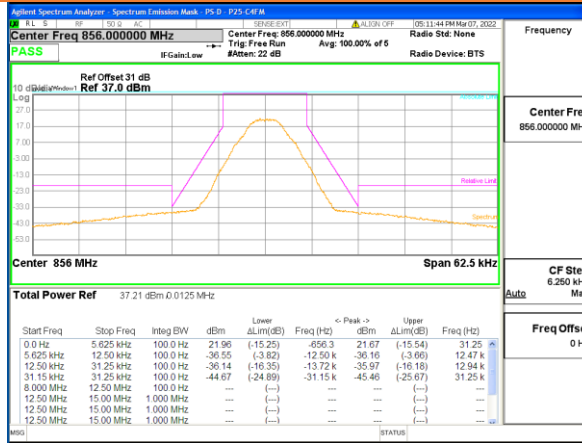
800PS CQPSK Signal at 851.0125 MHz ALC



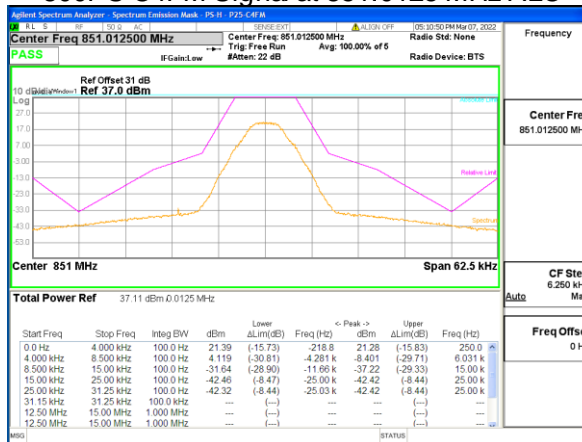
800PS CQPSK Signal at 860.9875 MHz ALC



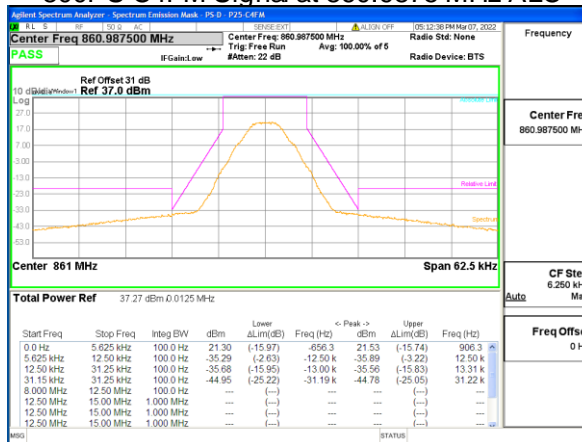
800PS C4FM Signal at 856 MHz ALC



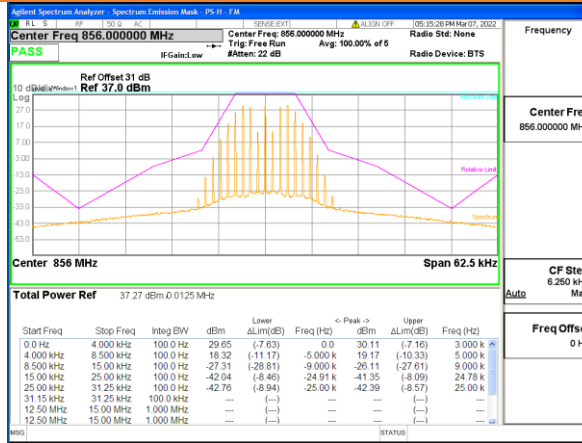
800PS C4FM Signal at 851.0125 MHz ALC



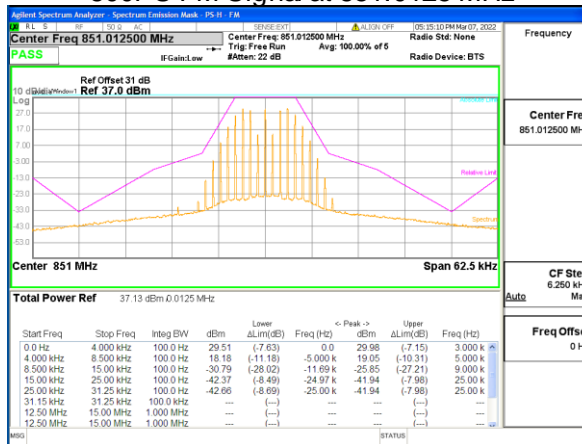
800PS C4FM Signal at 860.9875 MHz ALC



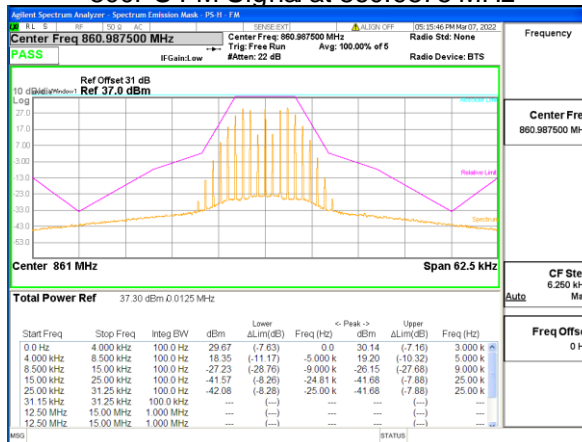
800PS FM Signal at 856 MHz



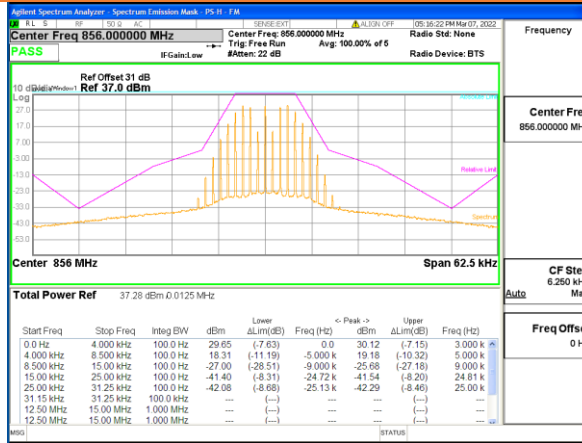
800PS FM Signal at 851.0125 MHz



800PS FM Signal at 860.9875 MHz



800PS FM Signal at 856 MHz ALC



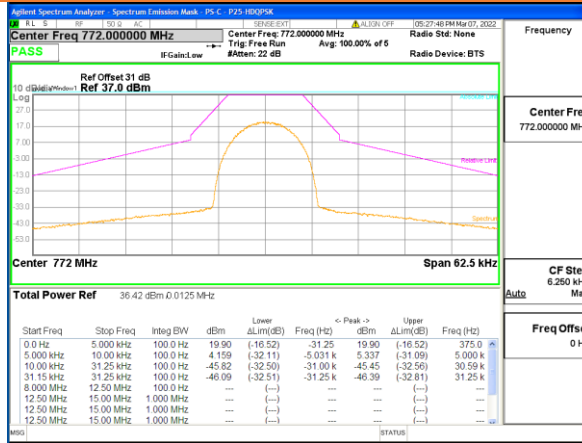
800PS FM Signal at 851.0125 MHz ALC



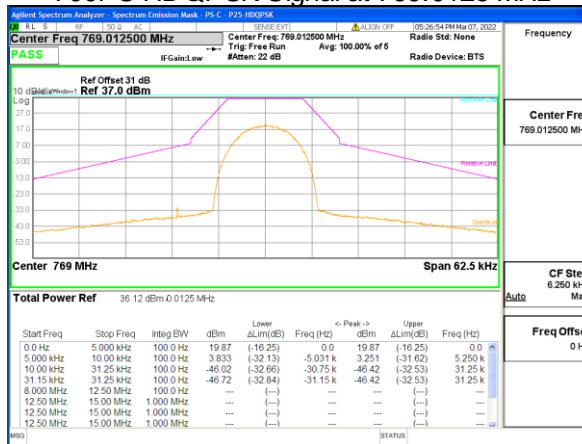
800PS FM Signal at 860.9875 MHz ALC



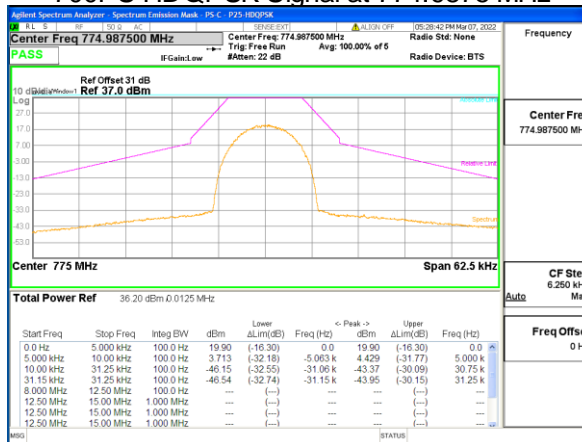
700PS HDQPSK Signal at 772 MHz



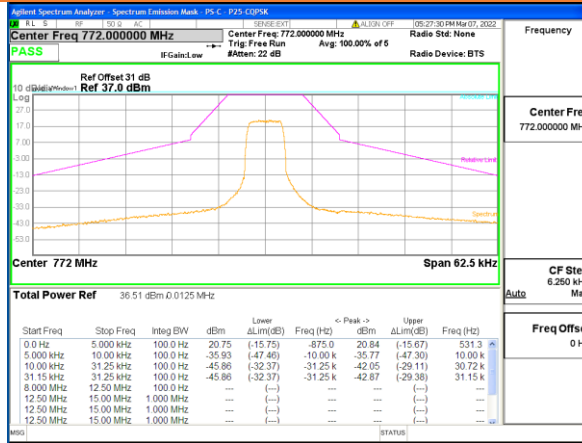
700PS HDQPSK Signal at 769.0125 MHz



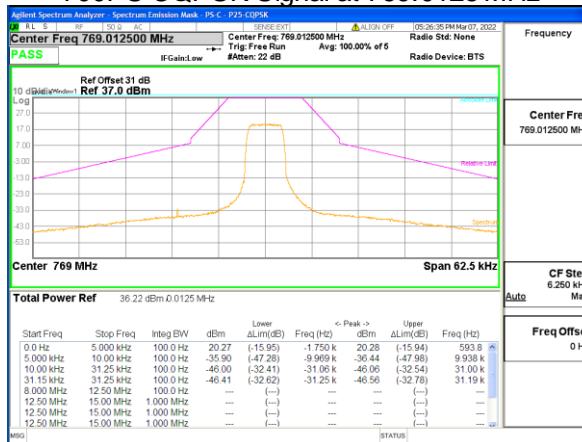
700PS HDQPSK Signal at 774.9875 MHz



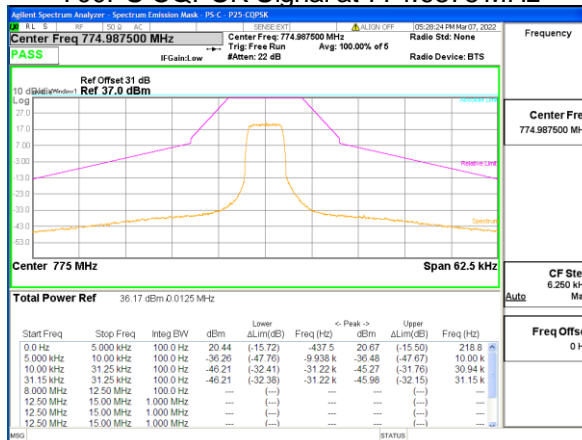
700PS CQPSK Signal at 772 MHz



700PS CQPSK Signal at 769.0125 MHz



700PS CQPSK Signal at 774.9875 MHz



700PS C4FM Signal at 772 MHz