Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# 700PS C4FM Signal at 769.0125 MHz



#### 700PS C4FM K Signal at 774.9875 MHz



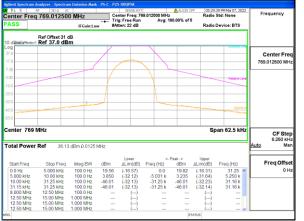
#### 700PS HDQPSK Signal at 772 MHz ALC

Page 43 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# 700PS HDQPSK Signal at 769.0125 MHz ALC



#### 700PS HDQPSK Signal at 774.9875 MHz ALC



#### 700PS CQPSK Signal at 772 MHz ALC

Page 44 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# 700PS CQPSK Signal at 769.0125 MHz ALC



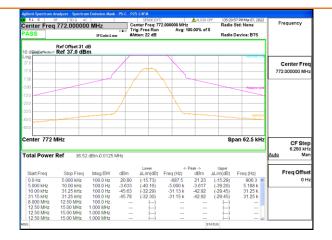
#### 700PS CQPSK Signal at 774.9875 MHz ALC



# 700PS C4FM Signal at 772 MHz ALC

Page 45 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# 700PS C4FM Signal at 769.0125 MHz ALC



#### 700PS C4FM K Signal at 774.9875 MHz ALC



#### 450PS HDQPSK Signal at 451.85 MHz

Page 46 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# State State Influence later and the first of the state of the

#### 450PS HDQPSK Signal at 452.8875 MHz



#### 450PS CQPSK Signal at 451.85 MHz

Page 47 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# ASOPS COOPSK Signal at 450.81250 MHz

#### 450PS CQPSK Signal at 452.8875 MHz

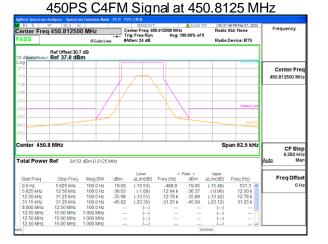


#### 450PS C4FM Signal at 451.85 MHz

Page 48 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1





#### 450PS C4FM K Signal at 452.8875 MHz



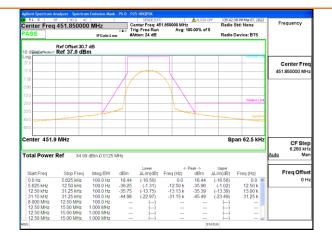
#### 450PS HDQPSK Signal at 451.85 MHz ALC

Page 49 of 87

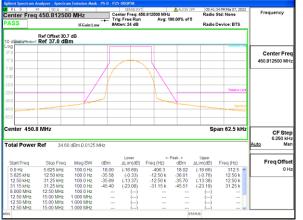
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DCN: 1036, Rev 1

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# 450PS HDQPSK Signal at 450.8125 MHz ALC



#### 450PS HDQPSK Signal at 452.8875 MHz ALC



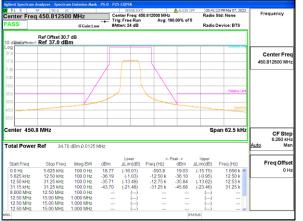
#### 450PS CQPSK Signal at 451.85 MHz ALC

Page 50 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# 450PS CQPSK Signal at 450.8125 MHz ALC



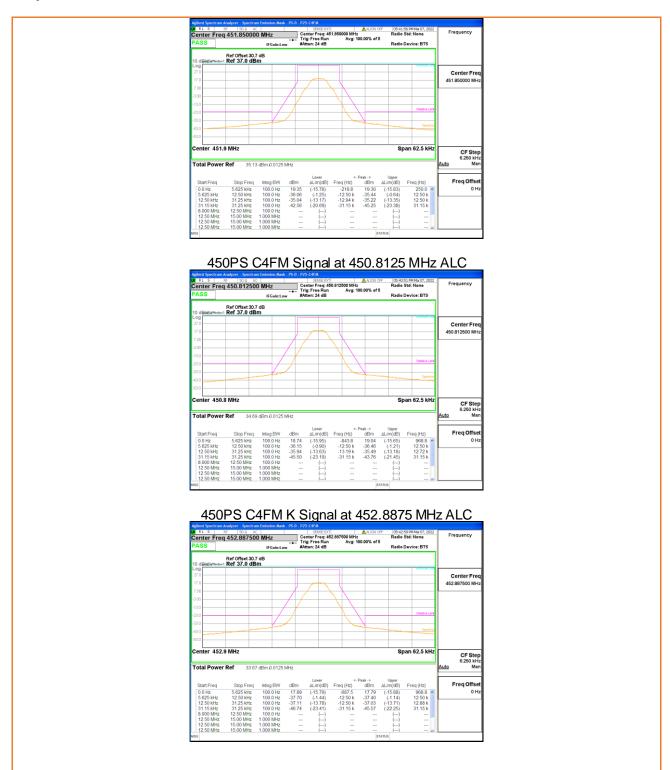
#### 450PS CQPSK Signal at 452.8875 MHz ALC



#### 450PS C4FM Signal at 451.85 MHz ALC

Page 51 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# Input/output Power and Amplifier/Booster Gain

#### Page 52 of 87

Governing Doc	FCC Part 90.21	9		Room Temperature (°C)		
Test Procedure	ANSI/TIA-603- E D05, v01r03	E; FCC KDB 93	35210	Relativ	e Humidity (%)	
Test Location	Richmond			Barom	etric Pressure	
Test Engineer	Jeremy Lee			Date		March 7, 2022
EUT Voltage	⊠ DC		] 12	OVAC @	0 60Hz	
Test Equipment Used	Manufacturer Model Identifier Calibration date					Calibration due
Signal Generator	Keysight	N5172B MY5305027 Oct 9, 2			Oct 9, 2021	Oct 9, 2023
Spectrum Analyzer	Keysight N9010A MY50			)52028	Oct 11, 2021	Oct 11, 2023
Span:	🛛 Max Gain F	requency ± 150	00kHz			
Detector:	⊠ Peak					
RBW/VBW:	⊠ 100k Hz/ 30	0 kHz				
Type of Facility:	🛛 Tabletop					
Distance:	⊠ Direct					
Maximum booster gain is 46.9 dB.						
Compliant 🛛	Compliant 🛛 Non-Compliant 🗆 Not Applicable 🗆					

#### 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 v01r02:. A CW tone was input at the frequency where the system gain is the maximum in the pass band, with the nominal input power level. The spectrum analyzer was connected to the output RF port via a 50 Ohm 30 dB attenuator. The maximum hold trace and peak detector was used to capture the output power. The output power minus the input power equals to the booster gain in dB.

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

Generator Attenuator Analyzer
-------------------------------

#### Page 53 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1

#### Results

Test Band	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Gain (dB)
800PS	856	-51.4	37.2	88.6
700PS	772	-51.9	36.7	88.6
UHF PS	451.85	-52	35.3	87.3

Page 54 of 87

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DCN: 1036, Rev 1

Governing Doc	FCC Part 90.219	I	Room Temperatu				
Test Procedure	ANSI/TIA-603- E 935210 D05, v01		Relative Humidity	/ (%)			
Test Location	Richmond		Barometric Press	sure (kPa)			
Test Engineer	Jeremy Lee		Date		March 7, 2022		
EUT Voltage	⊠ DC		120VAC @ 60	Hz			
Test Equipment Used	Manufacturer	Model	Serial Number	Calibration	Calibration due		
Signal Generator	Keysight	N5172B	MY53050270	Oct 9, 2021	Oct 9, 2023		
Spectrum Analyzer	Keysight	Oct 11, 2021	Oct 11, 2023				
Frequency Range:	⊠ Max Gain Frequency ± 50kHz						
Detector:	🛛 Average	⊠ Average					
RBW/VBW:	⊠ 100/910Hz						
Type of Facility:	⊠ Tabletop						
Distance:	⊠ Direct						
On 700 Band, 800 band and UHF band: The intermodulation product of 2 tone is below the -13dBm emission limit with input power - 0.5dBm below AGC threshold - 2 dB AGC threshold - 3 dB above AGC threshold							
Compliant 🖂	Non-C	Compliant 🗆	Not	Applicable 🗆			

# Out-Of-Band / Out-Of-Block Intermodulation and Spurious Emissions

Page 55 of 87

#### Test setup

Description of test set-up:

The procedure used was ANSI/TIA-603-E-2016. Two tones (CW) method was used. The input power to the amplifier was set at maximum drive level by combining the two tones. The two tones were chosen in such a way (1) the third order intermodulation product frequencies are located within the pass band of the DUT and (2) they produce the worst-case emissions out of band. All signals were modulated.

Based on FCC KDB 935210 D05 Indus Booster Basic Meas v01r03: 2019, the two tone was located on either side of the maximum gain frequence in the passing band, and separated with the available spacing, which is 12.5kHz.

Measurements were performed with modulated -tone at identical input amplitude which produced integrated maximum rated output power.

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



Page 56 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1

#### Results



Page 57 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# Page 58 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



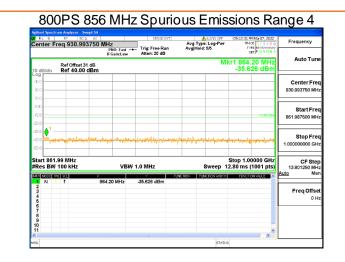
Page 59 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# Page 60 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



#### 800PS 856 MHz Spurious Emissions Range 5

RL S RF 50 Q AC		SENSE EXT	ALIGN OFF	05:13:32 PMMar 07, 2022	
enter Freq 4.8049375	00 GHz PNO: Close -+	Trig: Free Run	Avg Type: Log-Pwr Avg Hold: 5/5	TRACE 1 2 3 4 5 6 TYPE Mithodology	Frequency
Ref Offset 31 dB	IFGain:Low	Atten: 20 dB	N	ter NNNNN Akr1 6.258 GHz -19.679 dBm	Auto Tur
					Center Fre 4.804937500 GH
10			1	1000 00m	Start Fre 1.00000000 Gi
0 <b>4 M<sup>4</sup>/M 10 M</b>	to Malina have	and a formed a farmed a farmed as a	n fan de senten van de sens de	he and the second second second	Stop Fre 8.609875000 Gi
art 1.000 GHz tes BW 1.0 MHz	VBW	50 MHz		Stop 8.610 GHz 2.73 ms (1001 pts)	CF Ste 760.987500 M Auto M
E MODE TRO SCL N 1 f 3 4 5 5	8.258 GHz	-19.679 dBm	NCTION FUNCTION WIDTH		Freq Offs
7 3 9					
1		U.		×	
2			STATUS	3	

# 800PS 851.0125 MHz Spurious Emissions Range 1

Frequency	05:12:19 PMMar 07, 2022	ALIGN OFF		SENSE:EXT		RF 50 0 🔥 DC	RLS
Frequency	TYPE M thorstool	e:Log-Pwr 1:5/5	Avg Typ Avg Hol	Trig: Free Run Atten: 20 dB	PNO: Close ++-	req 79.500 kHz	Center Fi
Auto Tu	r1 103.893 kHz -46.702 dBm	Mk				Ref Offset 31 dB Ref 40.00 dBm	0 dB/div
Center Fr							og 10.0
79.500 k							0.0
Start Fr							.00
9.000 k	-10.00 dBn						1.0
Stop Fr							.0
150.000 k	ana mana ana		•	h-1 - 00 - 10-			1.0
CF Ste	Stop 150.00 kHz	v vs i vi	nter me				art 9.00
14.100 ki Auto M	30.2 ms (1001 pts)		FUNCTION		VBW 1		Res BW
				46.702 dBm	3.893 kHz	f 10	1 N 1 2 3
Freq Offs							3 4 5 7
							5
							3
	>			U			1
	DC Coupled	STATUS					G

Page 61 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



Page 62 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



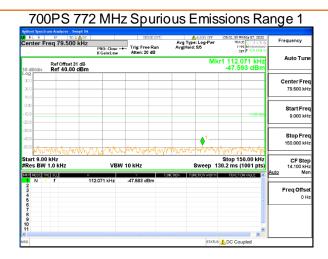
# Page 63 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# Page 64 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



#### 700PS 772 MHz Spurious Emissions Range 2

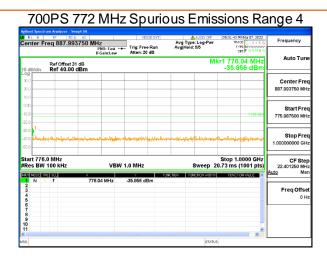
gilont Spectrum Analyzer -					
	D & 🔥 DC	SENSE EXT	ALIGN OFF	05:31:41 PMMar 07, 2022	Frequency
enter Freq 15.07	5000 MHz PNO: Fast + IFGain:Low	Trig: Free Run Atten: 20 dB	Avg Type: Log-Pwr Avg Hold: 5/5	TRACE 1 2 3 4 5 6 TYPE M MMMMMMM DET P N N N H N	
Ref Offset 0 dB/div Ref 40.0				Mkr1 150 kHz -39.754 dBm	Auto Tun
og					Center Fre
20.0					15.075000 MH
10.0					
10.0				1000 00+	Start Fre
20.0				1000 000	150.000 kH
0.0 1					Stop Fre
10.0	الجهالية والمروية المالي والمحالية والمحالية والمحالية المحالية والمحالية والمحالية والمحالية والمحالية والمحال		and the second of the	معامدهم والمسالية	30.000000 MH
tart 150 kHz	other lade a select disc	and a real free shift on real an and	and a second state of the second s	Stop 30.00 MHz	CF Ste
Res BW 10 kHz	VBW	/ 100 kHz		75.5 ms (1001 pts)	2.985000 MH Auto Ma
NE MODE TRC SCL	× 150 kHz	-39.754 dBm	NCTION FUNCTION WIDTH	FUNCTION WALLIE	Auto me
2 3 4 5					Freq Offs 0 H
6					
8					
10					
		0		>	
16			STATUS	DC Coupled	

# 700PS 772 MHz Spurious Emissions Range 3

Frequency	05:31:42 PMMar 07, 2022	ALIGN OFF		SENSE:EXT		RF 50 G	RLS
	TRACE 1 2 3 4 5 6 TYPE M International DET P N N N N N	npe:Log-Pwr ld:5/5	Avg T Avg He	Trig: Free Run Atten: 20 dB	PNO: Close IFGain:Low	req 399.0062	enter Fi
Auto Tur	lkr1 766.5 MHz -27.365 dBm	М				Ref Offset 31 d Ref 40.00 dB	) dB/div
Center Fre							0g 10.0
399.006250 Mi							0.0
Start Fre							.00
30.000000 Mi							0.0
Stop Fre	م مراجع المراجع من المراجع من المراجع الم						
768.012500 Mi	Askenbergen funderskaliger	tergid in gettigt of the	and the second	iyadatini,inadogtiditatila	Khra,inglingu,sulfaninghi,	handreder og for som	0.0 <b></b>
CF Ste 73.801250 M	Stop 768.0 MHz 8.13 ms (1001 pts)	Sweep 6		.0 MHz	VBW	MHz 100 kHz	tart 30.0 Res BW
Auto Ma	EUNCTION VALUE	FUNCTION WIDTH	FUNCTION	27.365 dBm	× 766.5 MHz	RC SCL	E MODE TE
Freq Offs				27.303 0.511	700.0 MP12		2
01							4 5 6 7
							7 8 9
							9 0 1
	>	STATUS		U. C.			6

Page 65 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



#### 700PS 772 MHz Spurious Emissions Range 5

Ref Offset 31 dB  Avg Type: Log-Per Mic Guide Comment (Count Comment (Count Comment (Count Comment (Count Comment (Count Comment))  Avg Type: Log-Per Mig Type: Log-Per Mig Type: Log-Per (Count Comment)  Tree Frequency (Count Comment)    No EBION (Count Comment)  Ref Offset 31 dB (Count Comment)  Mikr1 5.880 GHz (Count Comment)  Aug Type: Log-Per (Count Comment)  Count C	gilont Spectrum Analyzer - Swept SA					
Center / 104, 9/07/07/07/07/07/07/07/07/07/07/07/07/07/	RLS RF SOO AC		SENSE:EXT	ALIGN OFF	05:31:44 PM Mar 07, 2022	Frequency
Ber Offset 31 dB  MKR 10.880 GF2    Gelder  -19.743 dBm	enter Fred 4.374937500	PNO: Close +++		Avg Hold: 5/5	TYPE M MANAGAMAN	
310	0 dB/div Ref 40.00 dBm			N		Auto Tun
200  4.374337500 G    200  4.374337500 G    200  5.500 GHz    200 </td <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>Center Fre</td>	-					Center Fre
StartFr  StartFr    1.000000000000000000000000000000000000	0.0					4.374937500 GH
000  000000000000000000000000000000000000						
20					10.00 KDm	Start Fre 1.00000000 GH
01  1	20.0	hospilitary	10 mar a stand of the	and the state of t	mon concerned as a second	
Image: Start 1.000 GHz  Stop 7.750 GHz  7.748675000 GHz    Tatt 1.000 GHz  Stop 7.750 GHz  Stop 7.750 GHz    Res BW 10.0 MHz  VBW 50 MHz  Sweep 11.27 ms (100 Hz)    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750 GHz    Image: Stop 7.750 GHz  -19.749 dBm  Faktor of a stop 7.750			Howe and the second second			Stop Fre
N  f  5.880 GHz  -19.74 gB/200 GHz  FUNCTION OF CONTROL						7.749875000 GH
N  I  Sp80 GHz  -19.749 dBm  F204100 F2041000 F20410000 F204100000000000000000000000000000000000		VBW 5	0 MHz	Sweep 1	Stop 7.750 GHz 1.27 ms (1001 pts)	CF Ste 674.987500 MH
2 Freq Offs 4 0 7 0 7 1 8 0 1 0 7 0 7 0 7 0 7 0 7 0 7 0 7 0 7		6 000 CU*				<u>Auto</u> Ma
	3 4	5.000 GHz	19.749 dBm			Freq Offs
	6					
	8					
	IŌ				-	
IG STATUS			0		8	

# 700PS 769.0125 MHz Spurious Emissions Range 1

RLS RF 50 Q 🔥 DC		SENSE:EXT	ALIGN OFF	05:31:32 PMMar 07, 2022	Frequency
Center Freq 79.500 kHz	PNO: Close +++ IFGain:Low	Trig: Free Run Atten: 20 dB	Avg Type: Log-Pwr Avg Hold: 5/5	TRACE 1 2 3 4 5 6 TYPE MINNYMM DET PINNINN	
Ref Offset 31 dB 0 dB/div Ref 40.00 dBm			Mk	r1 101.214 kHz -48.220 dBm	Auto Tun
og 30.0					Center Fre
10.0					79.500 kH
1.00				-1000 40m	Start Fre
20.0					9.000 kH
0.0			1		Stop Fre
50.0 while with when white for	man	W WWWWW	www.h.w	muution V maaa	150.000 kł
tart 9.00 kHz Res BW 1.0 kHz	VBW 1	0 kHz	Sweep 1	Stop 150.00 kHz 30.2 ms (1001 pts)	CF Ste 14.100 kF
RE MODE TRC SCL X	01.214 kHz	48.220 dBm	NCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma
2					Freq Offs
4 5 6 7				-	01
7 8 9 10					
11					
36		U. C.	STATUS	DC Coupled	
1					

Page 66 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



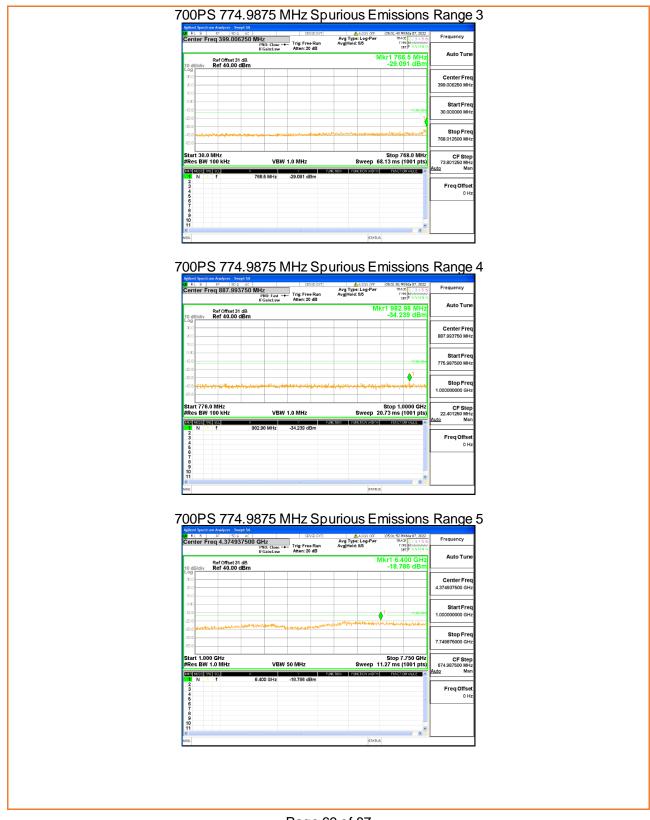
# Page 67 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# Page 68 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# Page 69 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# Page 70 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



Page 71 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# Page 72 of 87

Client: Dali Wireless, Inc. Report No.: 20.01.20808 Revision No.: 1



# Page 73 of 87