

Report No.: WSCF1511017

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Channel: 39



Modulation Standard: π/4-DQPSK (2Mbps)

Channel: 78



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Modulation Standard: 8DPSK (3Mbps)

Channel: 00



Modulation Standard: 8DPSK (3Mbps)

Channel: 39



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Modulation Standard: 8DPSK (3Mbps)

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## 14. Band Edges Measurement

#### 14.1 Test Limit

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

#### 14.2 Test Procedure

- a. The transmitter output was connected to the spectrum analyzer via a low lose cable.
- b. Set both RBW and VBW of spectrum analyzer to 100 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- c. The band edges was measured and recorded.

## 14.3 Test Setup Layout



#### 14.4 Test Result and Data

Test Date: Dec. 18, 2015 Temperature: 20 °C Atmospheric pressure: 1010 hPa Humidity: 60 %

Modulation Type	Channel	Frequency	Max. Value in frequency(MHz)	Max. Value (dBm)
GFSK	00	2402	2400.00	-33.83
(1Mbps)	78	2480	24750.00	-43.10
π/4-DQPSK	00	2402	2399.65	-35.96
(2Mbps)	78	2480	24775.00	-42.23
8DPSK	00	2402	2399.65	-34.93
(3Mbps)	78	2480	24750.00	-42.62

Remark: Hopping on and Hopping off mode all have been tested, only worse case (hopping off mode ) is reported.

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Modulation Standard: GFSK (1Mbps) Channel: 00





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Modulation Standard: GFSK (1Mbps)

Channel: 78





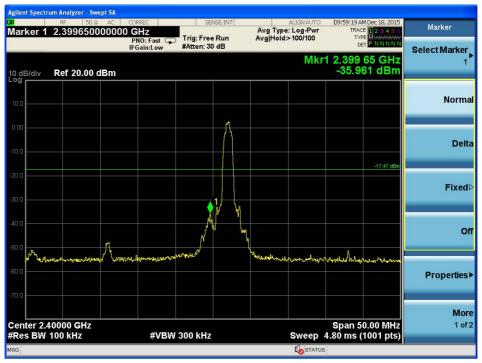
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Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Channel: 00





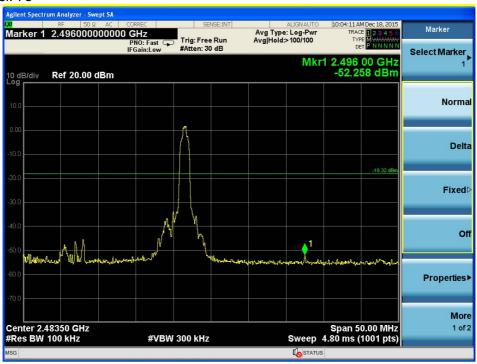
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Channel: 78





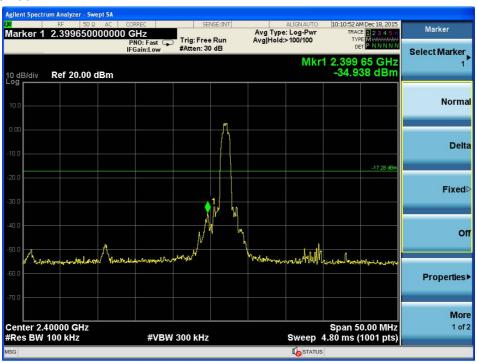
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Modulation Standard: 8DPSK (3Mbps)

Channel: 00





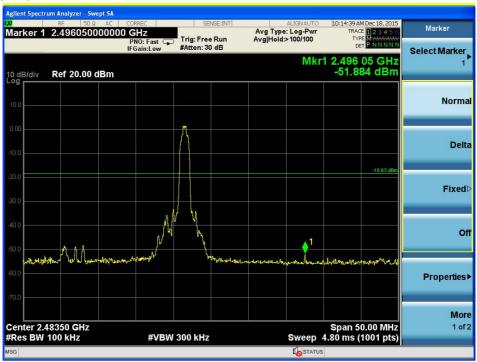
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Modulation Standard: 8DPSK (3Mbps)

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#### 14.5 Restrict Band Emission Measurement Data

Test Date: Dec. 21, 2015 Temperature: 20 °C Atmospheric pressure: 1010 hPa Humidity: 68 %

Modulation Standard: GFSK (1Mbps) Memo: Z axis

Channel 0 Fundamental Frequency: 2402 MHz										
Frequency Ant-Pol (MHz) H/V		Meter Reading (dBuV/m)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit@3m (dBuV/m)		Margin (dB)	Table (Deg.)	Ant High
, ,		(ubuv/iii)	(ub)	,		Peak	Ave.	, ,	` 0,	(m)
2389.33	Н	64.32	-15.81	48.51	Peak	74	54	-25.49	161	1.50
	Н				Ave	74	54			
2388.03	V	65.39	-15.82	49.57	Peak	74	54	-24.43	182	1.50
	V				Ave	74	54			
Channel 78	annel 78 Fundamental Frequency: 2480 MHz									
2483.63	Н	73.56	-15.56	58.10	Peak	74	54	-15.90	159	1.50
2484.01	Н	54.89	-15.56	39.43	Ave	74	54	-14.57	159	1.50
2483.59	V	73.34	-15.46	57.88	Peak	74	54	-16.12	175	1.50
2483.96	V	54.70	-15.46	39.24	Ave	74	54	-14.76	175	1.50

### Notes:

- 1. Result = Meter Reading + Factor
- 2. Factor = Antenna Factor + Cable Loss Amplifier
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1GHz.
- 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz Peak detector for Average Value at frequency above 1GHz
- 5. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
- 6. Where limits are specified for both average and peak detector functions, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

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Test Date: Dec. 21, 2015 Temperature: 20 °C Atmospheric pressure: 1010 hPa Humidity: 68 %

Modulation Standard:  $\pi/4$ -DQPSK (2Mbps)

Channel 0 Fundamental Frequency: 2402 MHz										
Frequency (MHz)			I Reading I Factor		Remark	Limit@3m (dBuV/m)		Margin (dB)	Table (Deg.)	Ant High
, ,		(dbd v/iii)	(db)			Peak	Ave.	` ,		(m)
2389.98	Н	66.97	-15.80	51.17	Peak	74	54	-22.83	158	1.50
	Н				Ave	74	54			
2339.95	V	65.35	-15.99	49.36	Peak	74	54	-24.64	177	1.50
	V				Ave	74	54			
Channel 78	Channel 78 Fundamental Frequency: 2480 MHz									
2483.61	Н	63.50	-15.46	48.04	Peak	74	54	-25.96	159	1.50
	Н				Ave	74	54			
2498.77	V	65.47	-15.39	50.08	Peak	74	54	-23.92	177	1.50
	V				Ave	74	54			

### Notes:

- 1. Result = Meter Reading + Factor
- 2. Factor = Antenna Factor + Cable Loss Amplifier
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1GHz.
- 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz Peak detector for Average Value at frequency above 1GHz
- 5. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
- 6. Where limits are specified for both average and peak detector functions, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

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Test Date: Dec. 21, 2015

Temperature: 20 °C

Atmospheric pressure: 1010 hPa

Humidity: 68 %

Modulation Standard: 8DPSK (3Mbps)

Channel 0 Fundamental Frequency: 2402 MHz										
Frequency Ant-Pol (MHz) H/V		Meter Reading (dBuV/m)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit@3m (dBuV/m)		Margin (dB)	Table (Deg.)	Ant High
, ,		(dbdv/iii)	(ub)	,		Peak	Ave.	, ,	` ,	(m)
2363.01	Н	64.57	-15.91	48.66	Peak	74	54	-25.34	168	1.50
	Н				Ave	74	54			
2376.03	V	61.46	-15.87	45.59	Peak	74	54	-28.41	185	1.50
	V				Ave	74	54			
Channel 78 Fundamental Frequency: 2480 MHz										
2489.59	Н	62.81	-15.42	47.39	Peak	74	54	-26.61	163	1.50
	Н				Ave	74	54			
2498.22	V	65.37	-15.39	49.98	Peak	74	54	-24.02	182	1.50
	V				Ave	74	54			

### Notes:

- 1. Result = Meter Reading + Factor
- 2. Factor = Antenna Factor + Cable Loss Amplifier
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1GHz.
- 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz Peak detector for Average Value at frequency above 1GHz
- 5. All emissions as described above were determining by rotating the EUT through three orthogonal axes to maximizing the emissions if the EUT belongs to hand-held or body-worn devices.
- 6. Where limits are specified for both average and peak detector functions, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

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## 15. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 - 0.11000	16.42000 - 16.42300	399.9 – 410.0	4.500 - 5.150
0.49500 - 0.505**	16.69475 - 16.69525	608.0 - 614.0	5.350 - 5.460
2.17350 - 2.19050	16.80425 - 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 - 25.67000	1300.0 – 1427.0	8.025 - 8.500
4.17725 – 4.17775	37.50000 - 38.25000	1435.0 – 1626.5	9.000 - 9.200
4.20725 – 4.20775	73.00000 - 74.60000	1645.5 – 1646.5	9.300 - 9.500
6.21500 - 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 - 6.26825	108.00000 - 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 - 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 - 8.29400	149.90000 - 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 - 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 - 8.38675	156.70000 - 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 - 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 - 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 - 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 - 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

<sup>\*\*:</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

### 15.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

~End of test report~

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