For 8DPSK

Channel	Packet	Dwell Time (ms)		Conclusion
39	3DH1	Fig.70	166.400	P
		Fig.71		
	3DH3	Fig.72	282.080	P
		Fig.73		
	3DH5	Fig.74	311.146	P
		Fig.75		

Note: the dwell time is Calculated of the sum of test time about 31.5 seconds.

Equation: dwell time = pusletime *(1600/N)/79*T . N is the number of timeslot; T is the time about 31.5s.

The time of DH5=3.005*(1600/6)/79*31.6=319.519ms.

Conclusion: PASS

Test graphs as below:

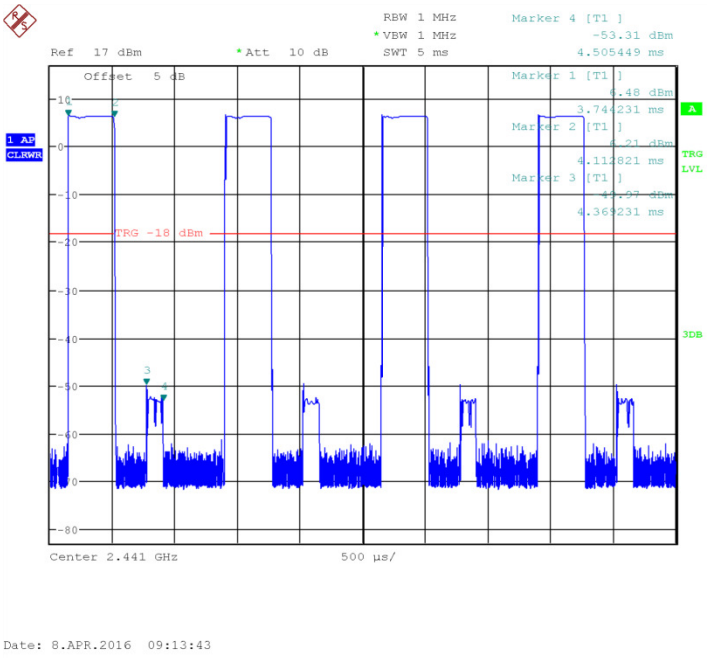

Fig.58 Time of occupancy (Dwell Time): Ch39, Packet DH1

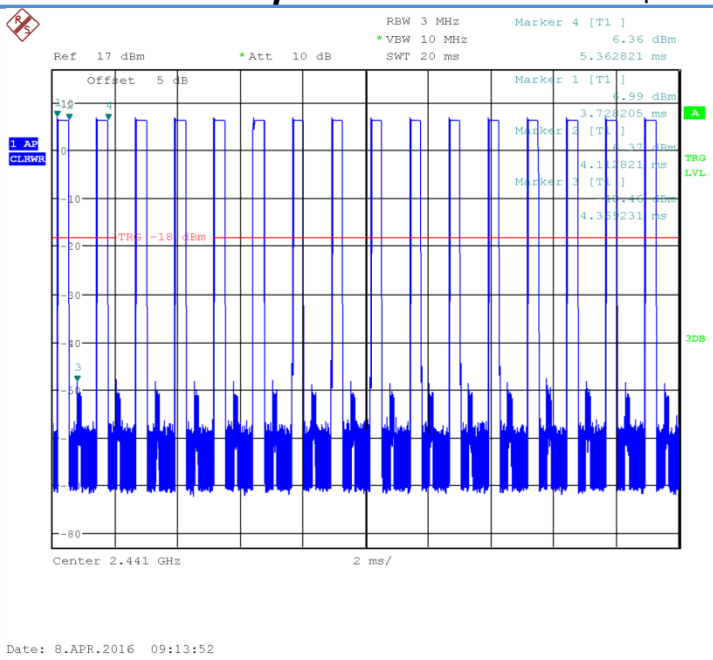

Fig.59 Number of Transmissions Measurement: Ch39, Packet DH1

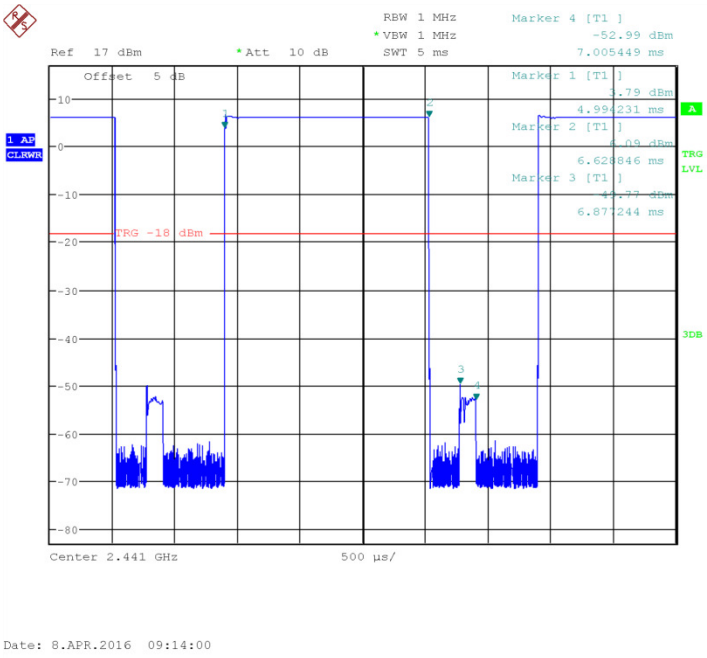

Fig.60 Time of occupancy (Dwell Time): Ch39, Packet DH3

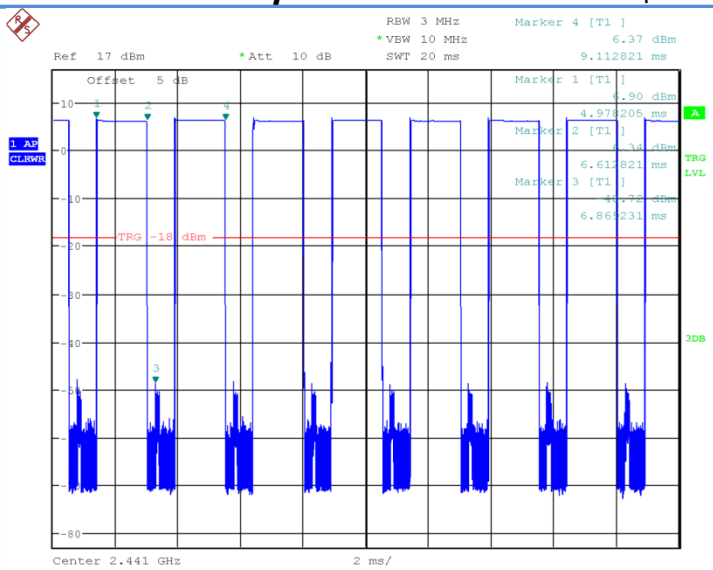

Fig.61 Number of Transmissions Measurement: Ch39, Packet DH3

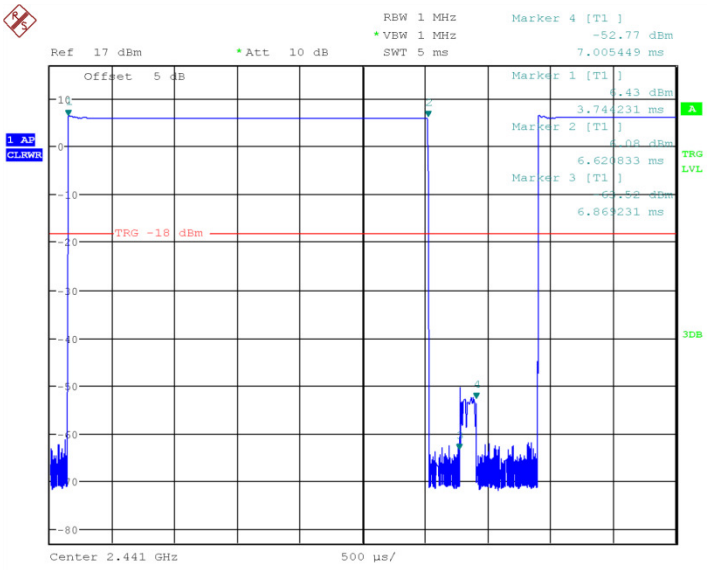

Fig.62 Time of occupancy (Dwell Time): Ch39,Packet DH5

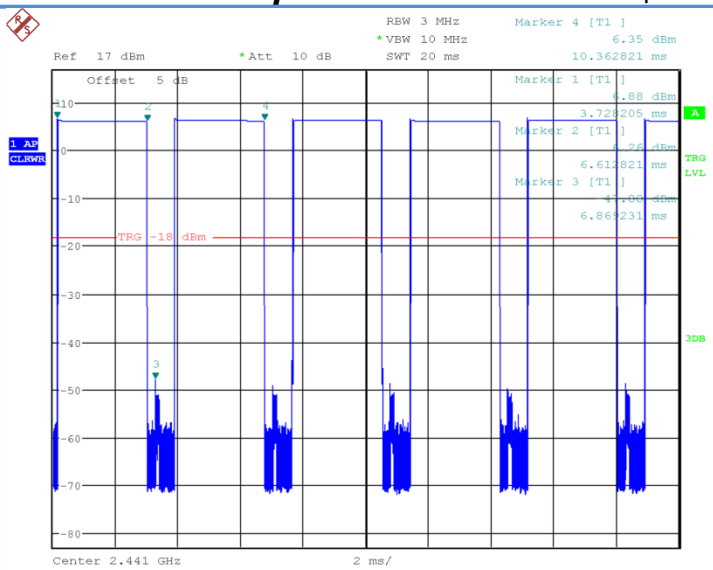

Fig.63 Number of Transmissions Measurement: Ch39, Packet DH5

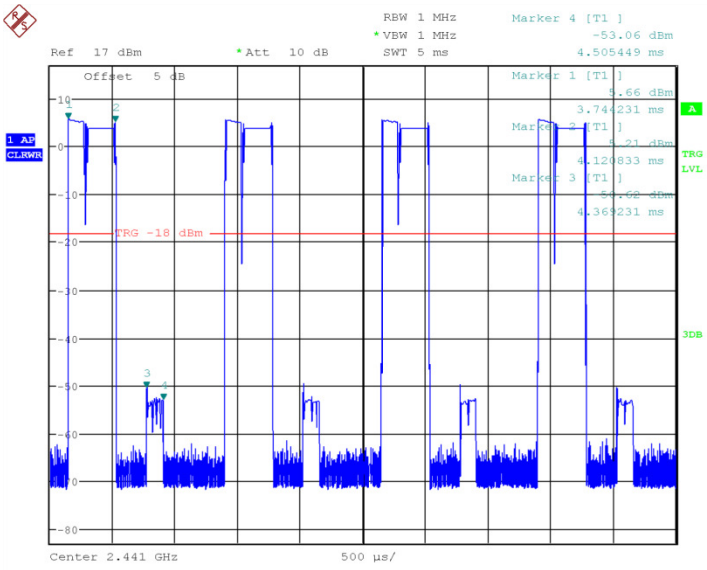

Fig.64 Time of occupancy (Dwell Time): Ch39,Packet 2-DH1

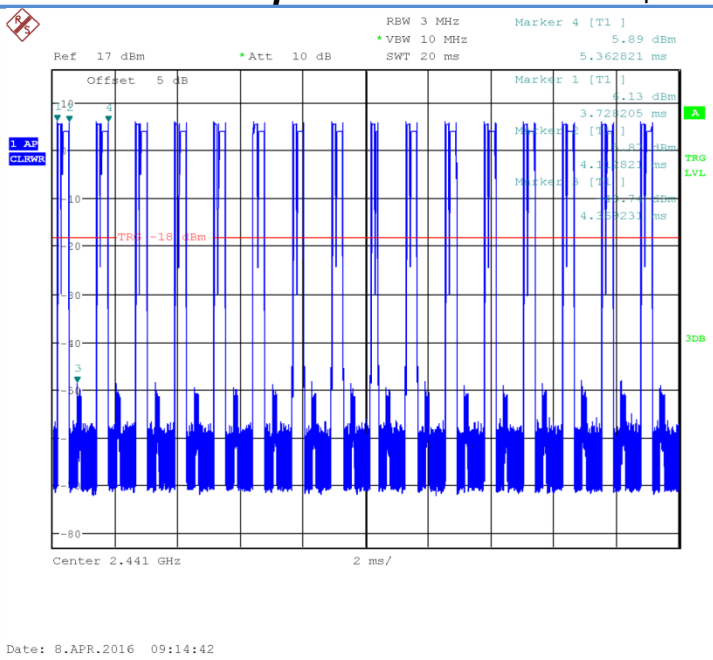

Fig.65 Number of Transmissions Measurement: Ch39, Packet 2-DH1

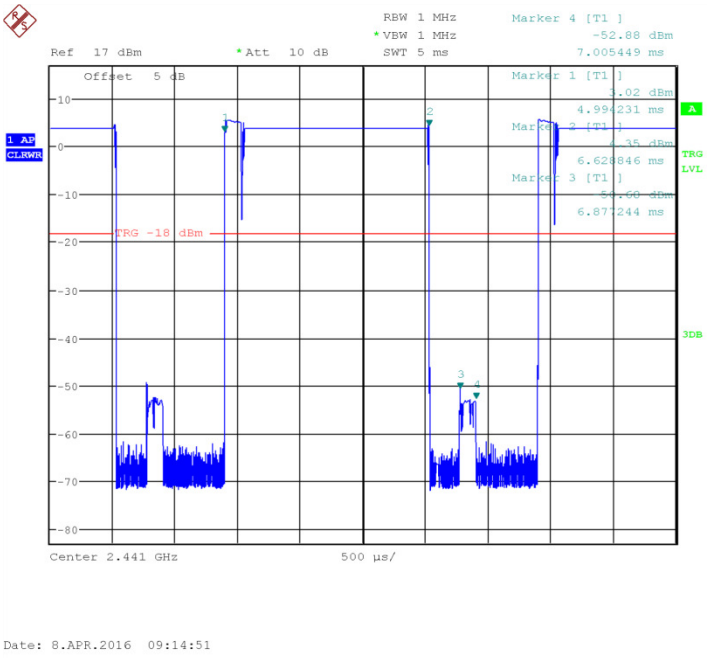

Fig.66 Time of occupancy (Dwell Time): Ch39,Packet 2-DH3

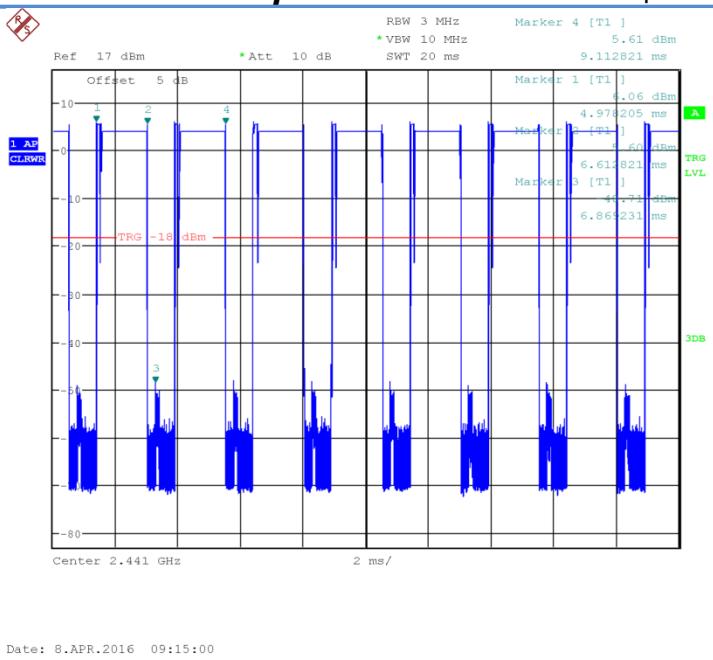

Fig.67 Number of Transmissions Measurement: Ch39, Packet 2-DH3

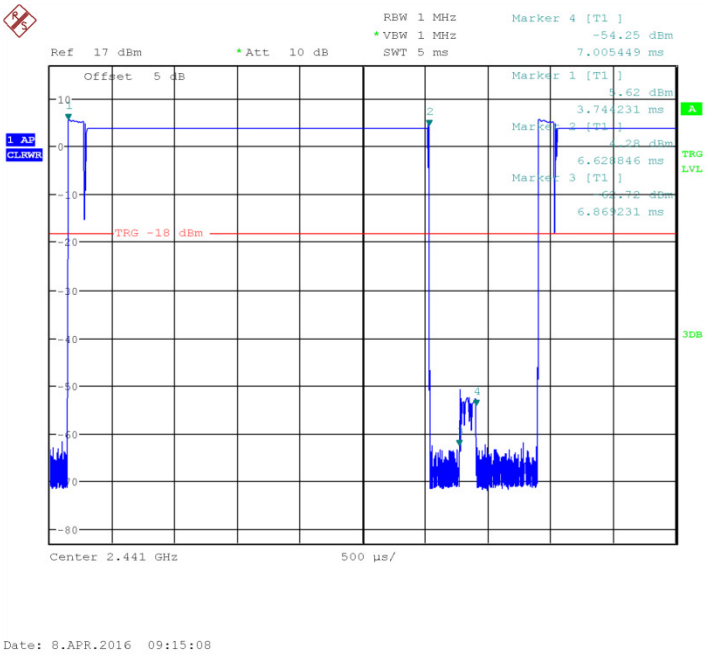

Fig.68 Time of occupancy (Dwell Time): Ch39,Packet 2-DH5

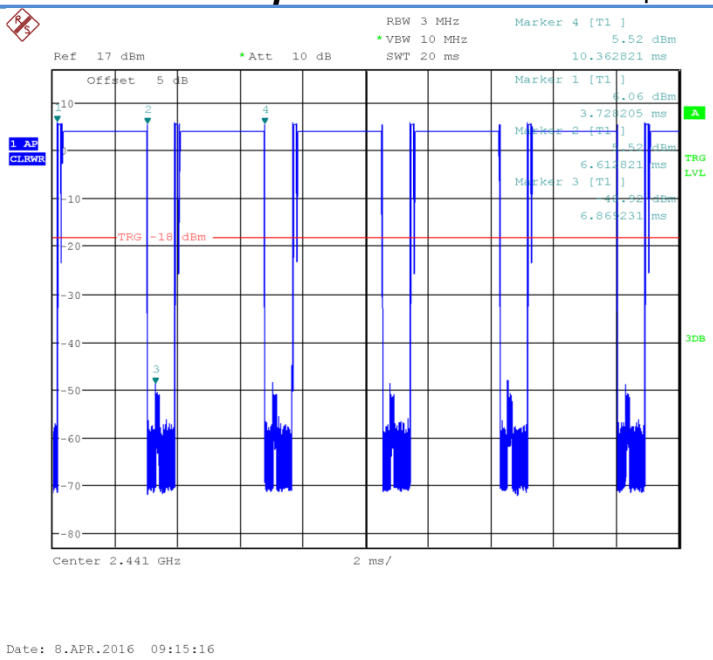

Fig.69 Number of Transmissions Measurement: Ch39, Packet 2-DH5

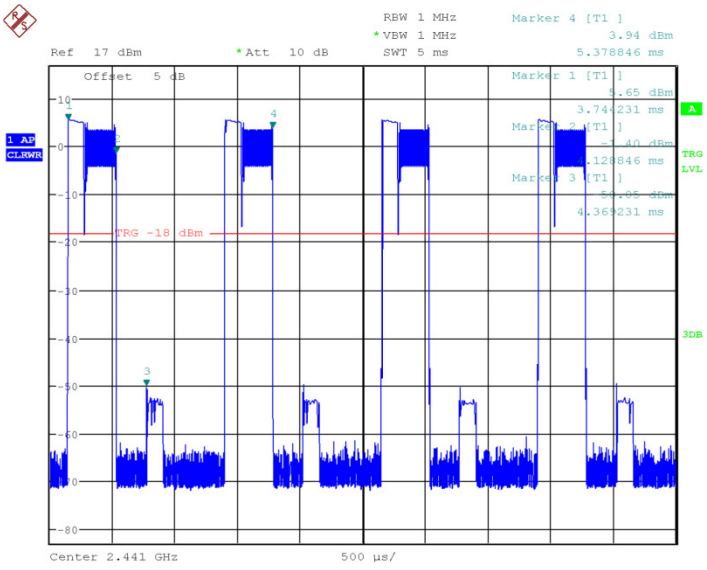

Fig.70 Time of occupancy (Dwell Time): Ch39,Packet 3-DH1

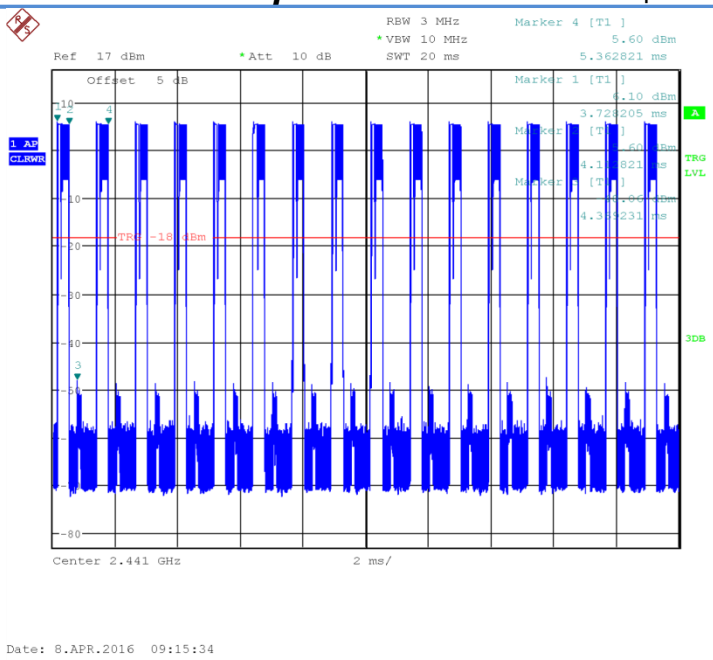

Fig.71 Number of Transmissions Measurement: Ch39, Packet 3-DH1

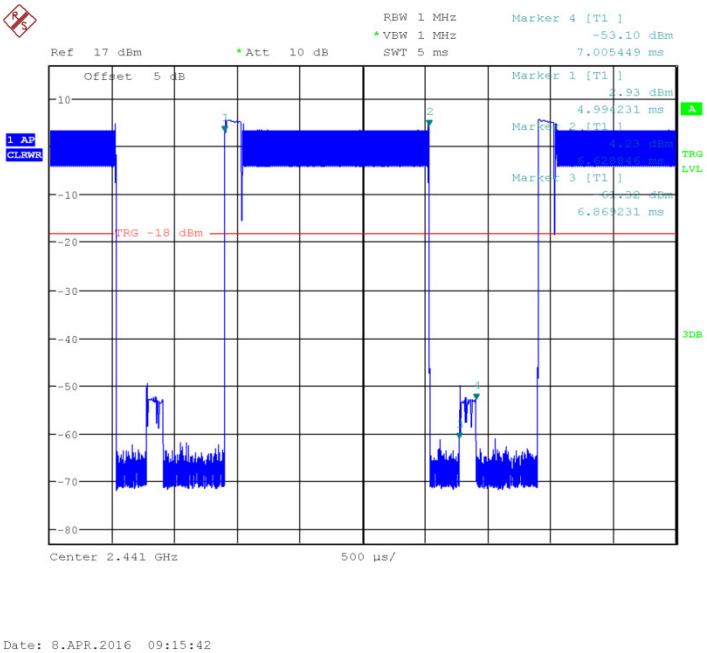

Fig.72 Time of occupancy (Dwell Time): Ch39,Packet 3-DH3

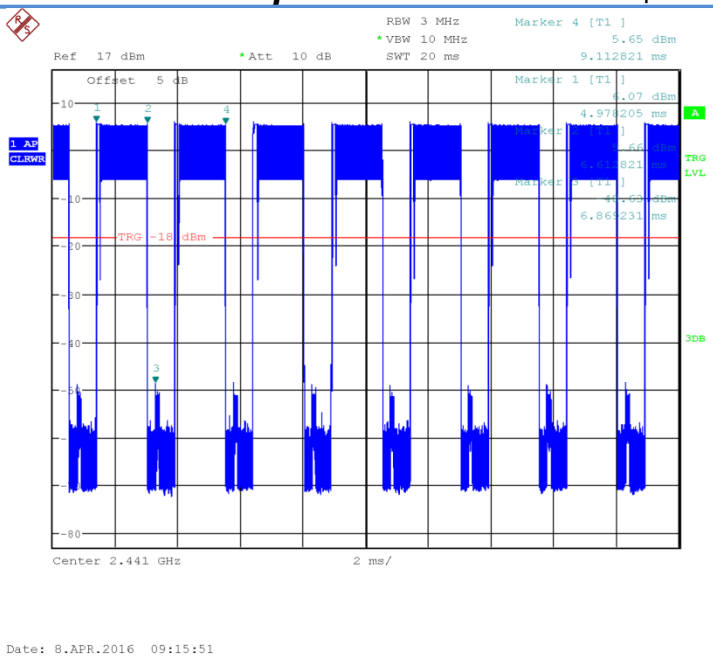

Fig.73 Number of Transmissions Measurement: Ch39, Packet 3-DH3

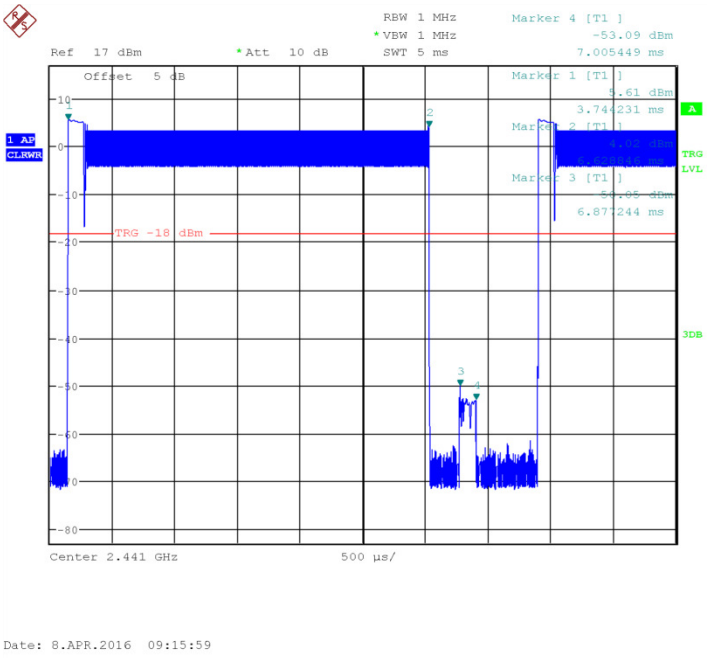

Fig.74 Time of occupancy (Dwell Time): Ch39,Packet 3-DH5

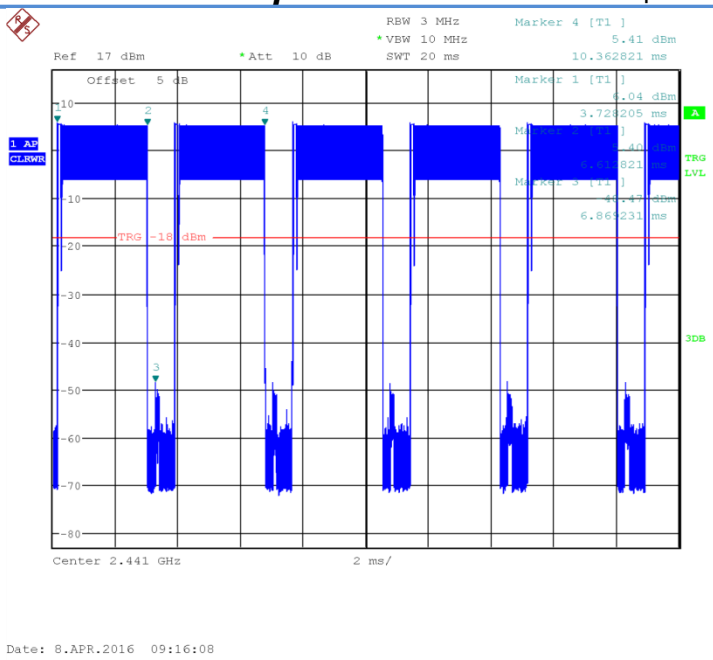

Fig.75 Number of Transmissions Measurement: Ch39, Packet 3-DH5

6.6. 20dB Bandwidth

6.6.1 Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (a) (1)	N/A

6.6.2 Test procedures

The measurement is according to ANSI C63.10 clause 7.8.7

1. Connect the EUT through cable and divide with CBT32 and spectrum analyzer.
2. Enable the EUT transmit maximum power.
3. Set the spectrum analyzer as
4. Span: two or five times of OBW
5. RBW= 1% to 5% of the OBW; VBW≥3RBW; Max Hold.
6. Select the max peak, and N DB DOWN=20dB.
7. Record the results.

Measurement Result:

For GFSK

Channel	20dB Bandwidth (MHz)		Conclusion
0	Fig.76	1.029	P
39	Fig.77	1.029	P

78	Fig.78	1.029	P

For π/4 DQPSK

Channel	20dB Bandwidth (MHz)		Conclusion
0	Fig.79	1.091	P
39	Fig.80	1.091	P
78	Fig.81	1.087	P

For 8DPSK

Channel	20dB Bandwidth (MHz)		Conclusion
0	Fig.82	1.192	P
39	Fig.83	1.192	P
78	Fig.84	1.192	P

Conclusion: PASS

Test graphs as below:

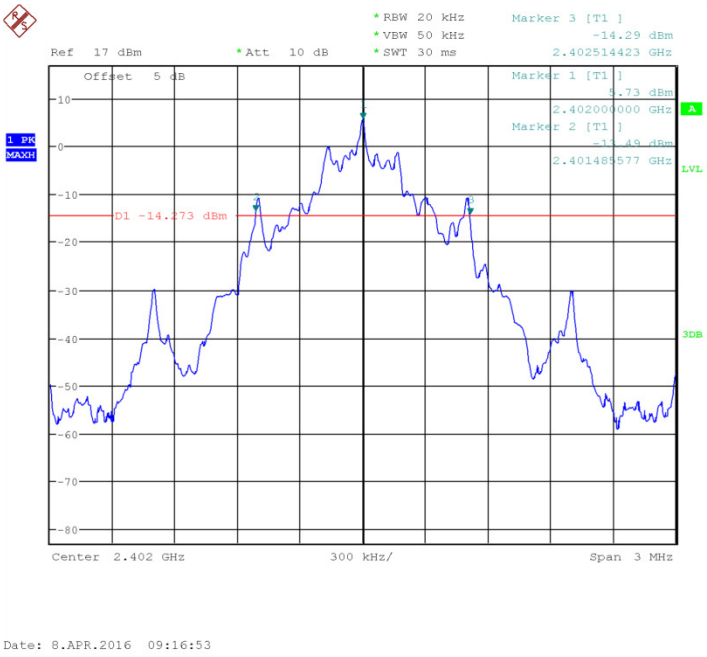

Fig.76 20dB Bandwidth: GFSK, Ch0

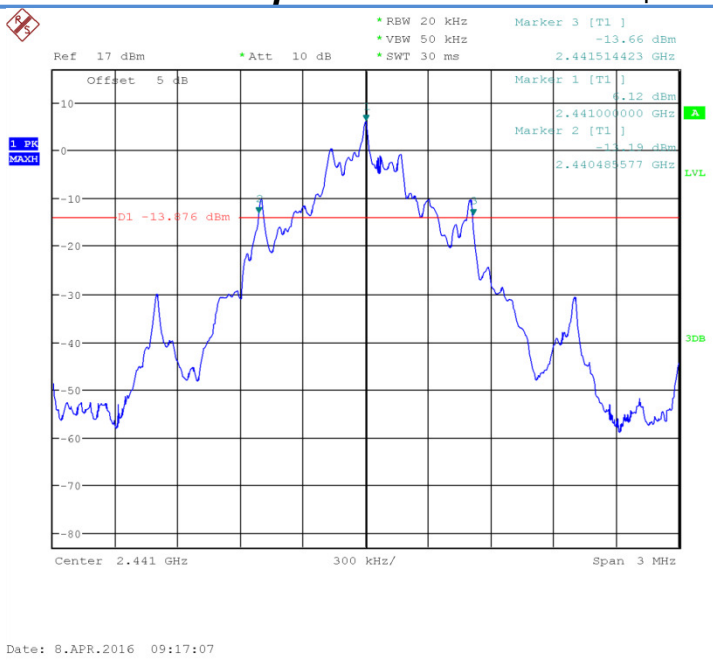

Fig.77 20dB Bandwidth: GFSK, Ch39

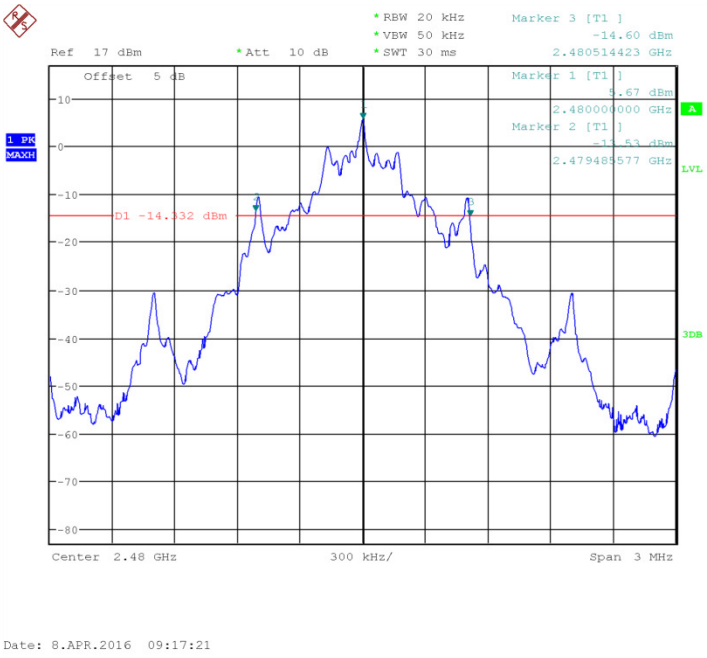

Fig.78 20dB Bandwidth: GFSK, Ch78

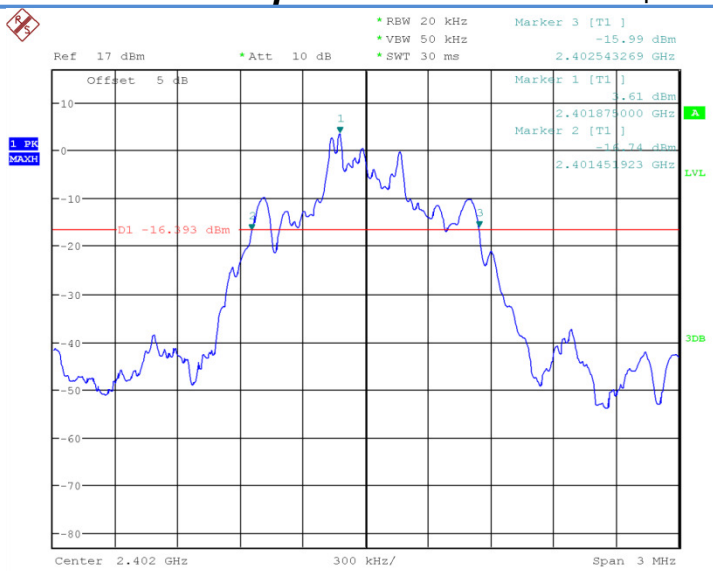

Fig.79 20dB Bandwidth: π/4 DQPSK, Ch0

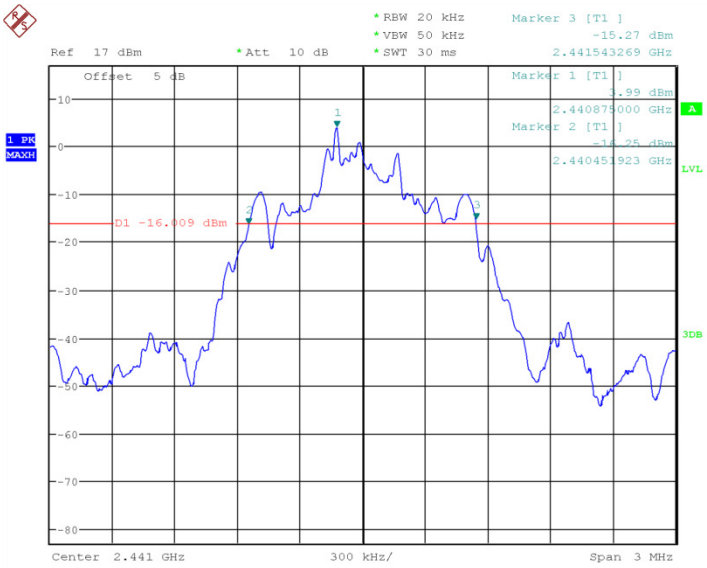

Fig.80 20dB Bandwidth: π/4 DQPSK, Ch39

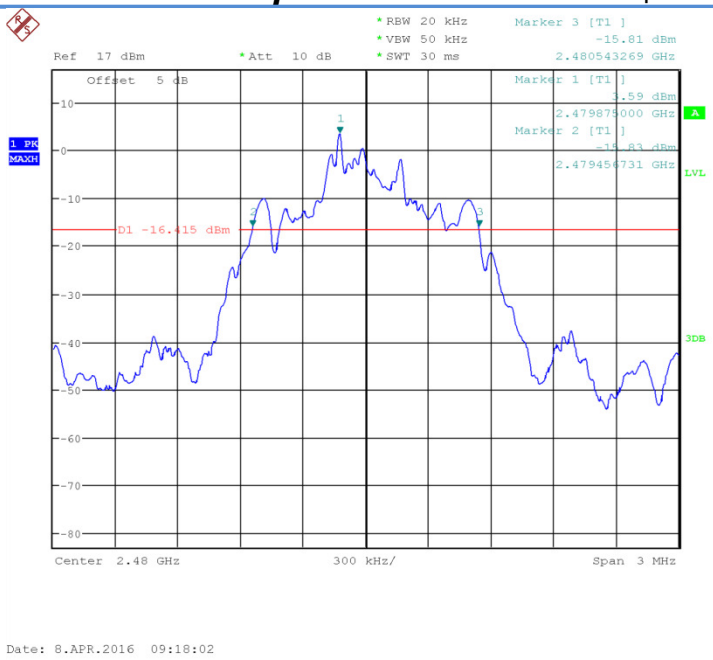

Fig.81 20dB Bandwidth: π/4 DQPSK, Ch78

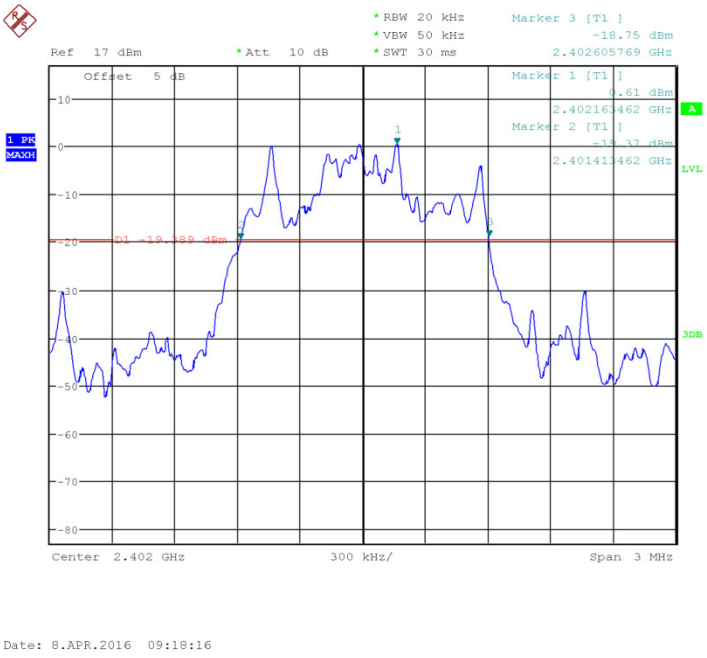

Fig.82 20dB Bandwidth: 8DPSK, Ch0

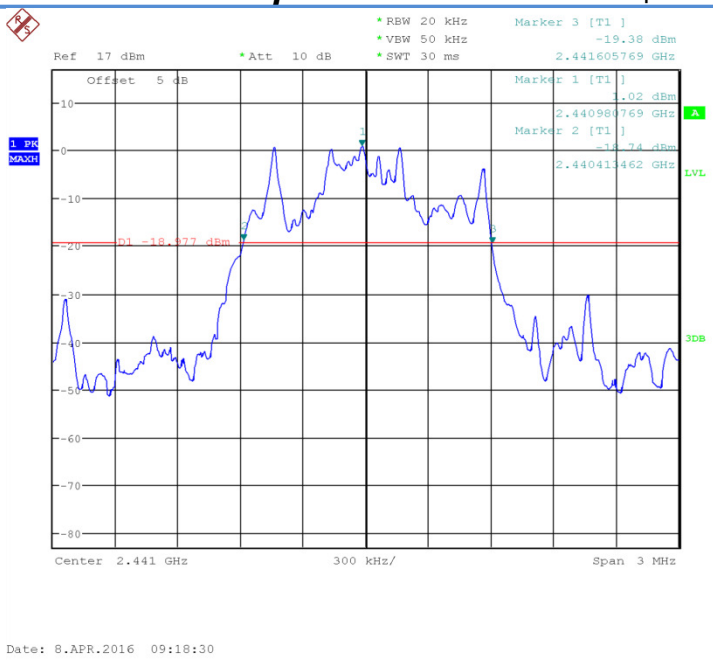

Fig.83 20dB Bandwidth: 8DPSK, Ch39

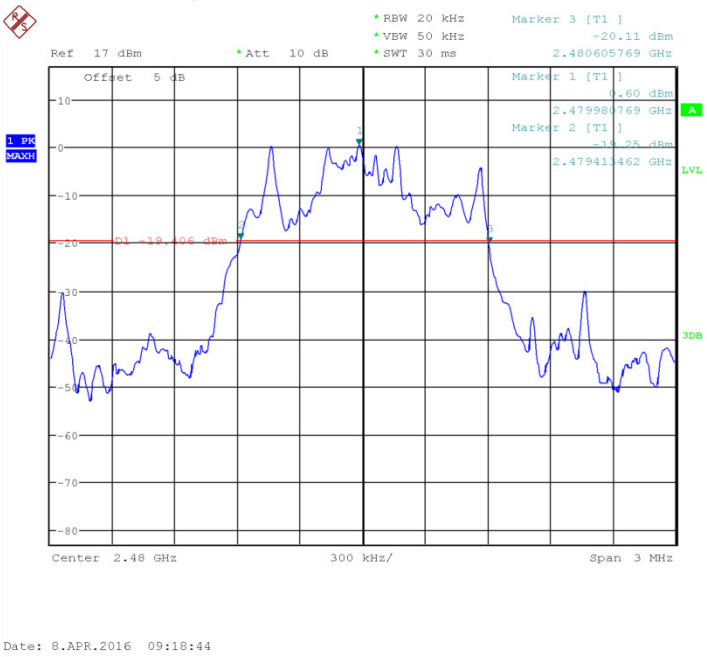

Fig.84 20dB Bandwidth: 8DPSK, Ch78

6.7. Carrier Frequency Separation

6.7.1 Measurement Limit:

Standard	Limit (KHz)
FCC 47 CFR Part 15.247 (a) (1)	Over 25KHz or (2/3)*20dB bandwidth

6.7.2 Test procedures

The measurement is according to ANSI C63.10 clause 7.8.2.

1. Connect the EUT through cable and divide with CBT32 and spectrum analyzer.
2. Enable the EUT transmit in hopping mode.
3. Span: Wide enough to capture the peaks of two adjacent channels.
4. RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
5. Video (or average) bandwidth (VBW) ≥ RBW.
6. Sweep: Auto.
7. Detector function: Peak.
8. Trace: Max hold.
9. Allow the trace to stabilize.

6.7.3 Measurement Result:

For GFSK

Channel	Carrier separation (KHz)		Conclusion
39	Fig.85	1004.8077	P

For π/4 DQPSK

Channel	Carrier separation (KHz)		Conclusion
39	Fig.86	980.7692	P

For 8DPSK

Channel	Carrier separation (KHz)		Conclusion
39	Fig.87	975.9615	P

Conclusion: PASS

Test graphs as below:

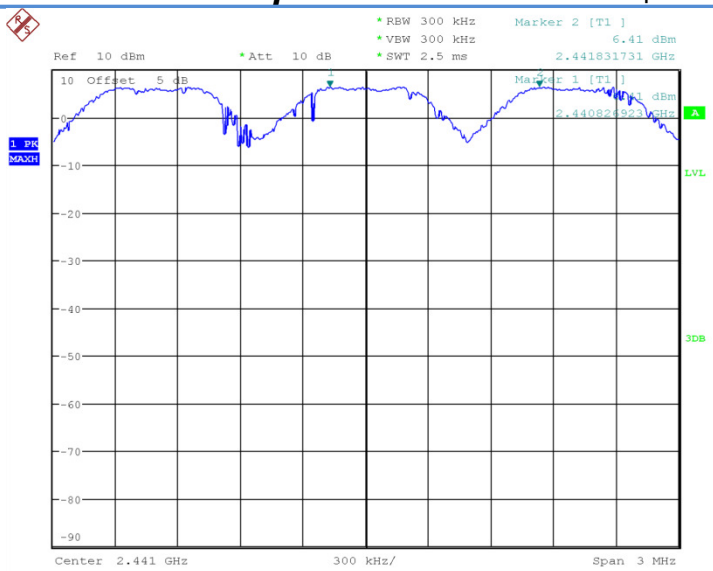

Fig.85 Carrier separation measurement: GFSK, Ch39

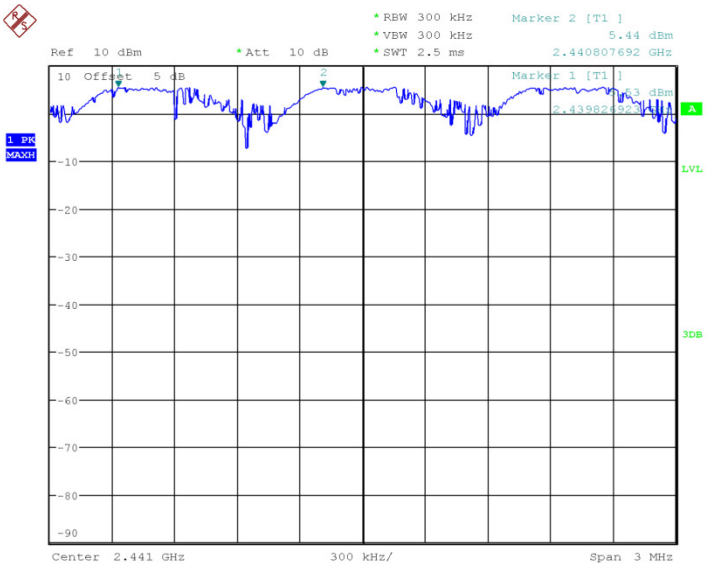

Fig.86 Carrier separation measurement: π/4 DQPSK, Ch39

Fig.87 Carrier separation measurement: 8DPSK, Ch39

6.8. Number Of Hopping Channels

6.8.1 Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (a)(1)(iii)	At least 15 non-overlapping channels

6.8.2 Test procedure

The measurement is according to ANSI C63.10 clause 7.8.3.

1. Connect the EUT through cable and divide with CBT32 and spectrum analyzer.
2. Enable the EUT transmit in hopping mode.
3. Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
4. RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
5. VBW ⩾ RBW.
6. Sweep: Auto.
7. Detector function: Peak.
8. Trace: Max hold.
9. Allow the trace to stabilize.
10. Record the test rsults.

6.8.3 Measurement Result:

For GFSK

Channel	Number of hopping channels		Conclusion
0~39	Fig.88	79	P
40~78	Fig.89		P

For π/4 DQPSK

Channel	Number of hopping channels		Conclusion
0~39	Fig.90	79	P
40~78	Fig.91		P

For 8DPSK

Channel	Number of hopping channels		Conclusion
0~39	Fig.92	79	P
40~78	Fig.93		P

Conclusion: PASS

Test graphs as below:

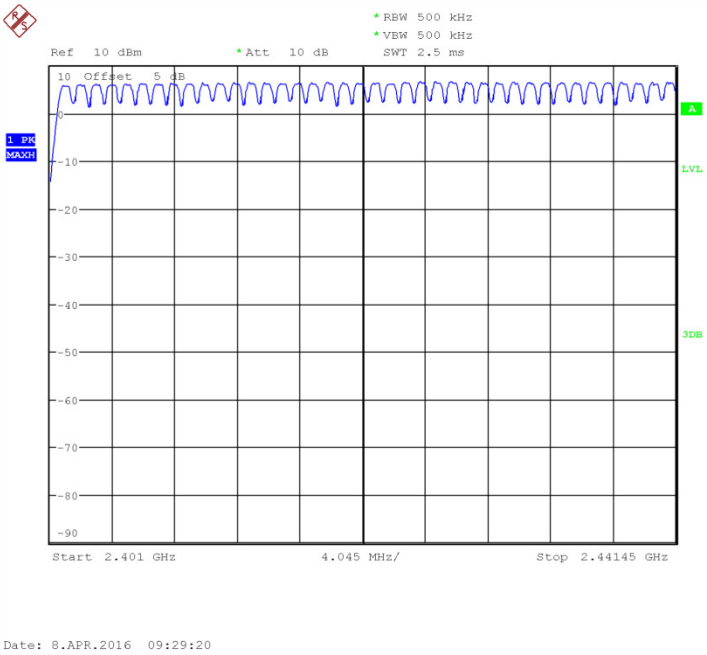

Fig.88 Number of hopping frequency: GFSK, Ch0~39

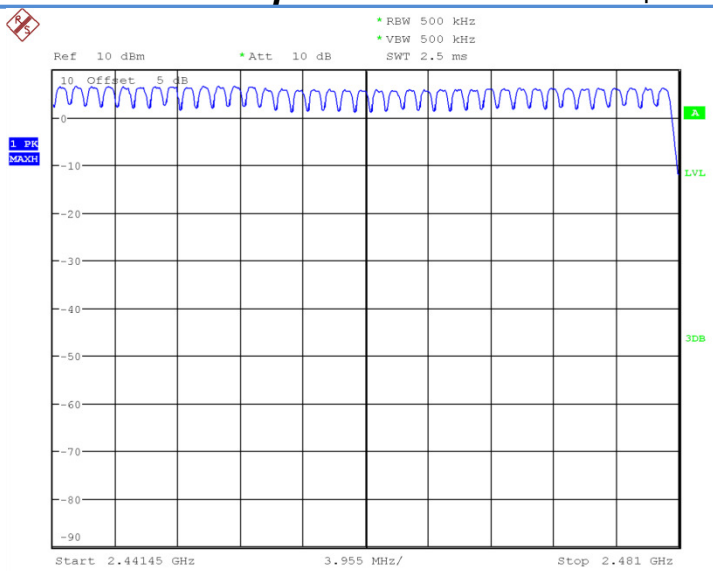

Fig.89 Number of hopping frequency: GFSK, Ch40~78

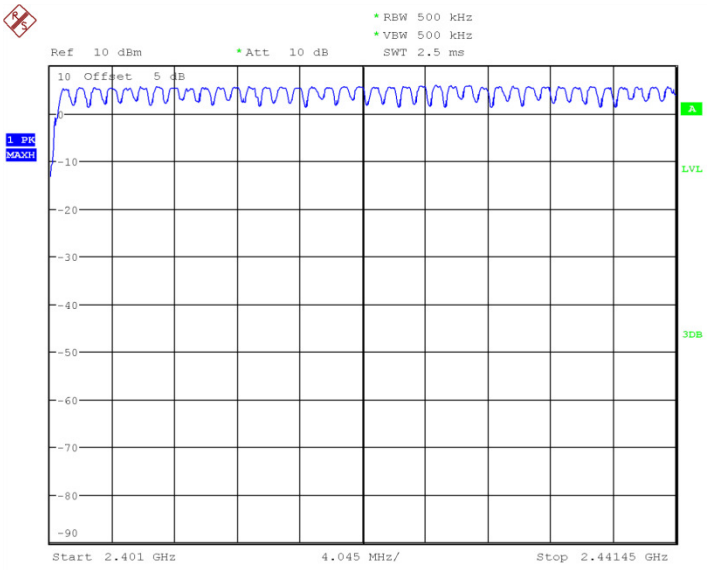

Fig.90 Number of hopping frequency: π/4 DQPSK, Ch0~39

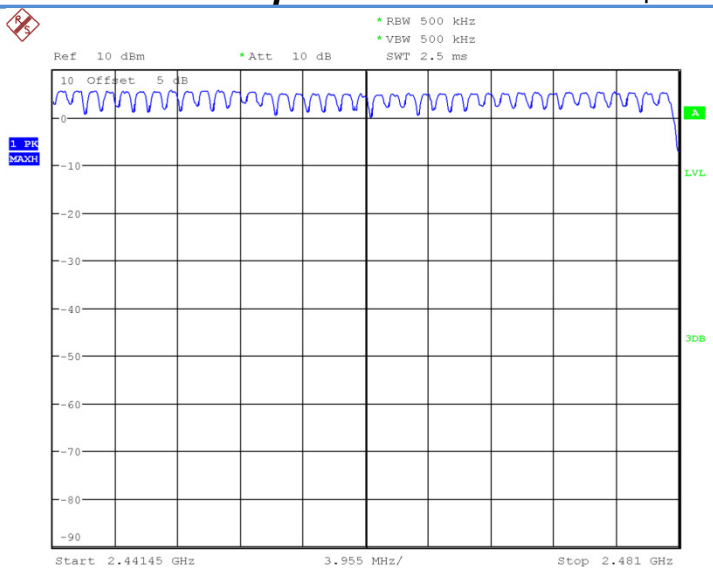

Fig.91 Number of hopping frequency: π/4 DQPSK, Ch40~78

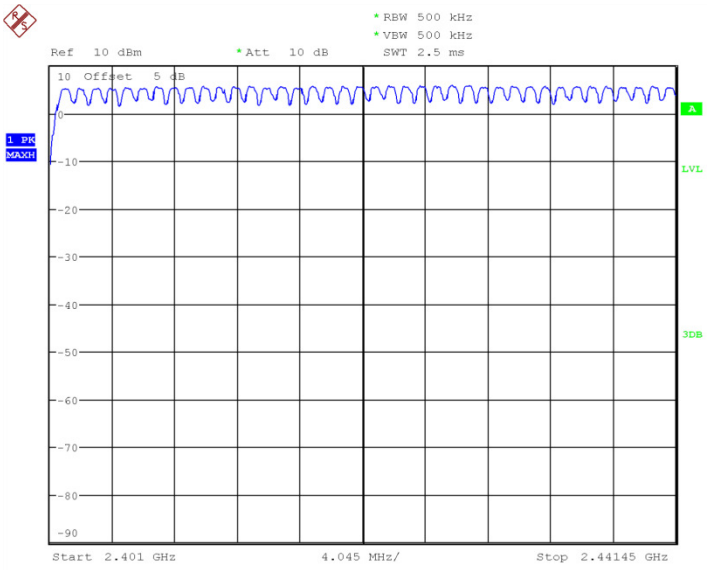

Fig.92 Number of hopping frequency: 8DPSK, Ch0~39

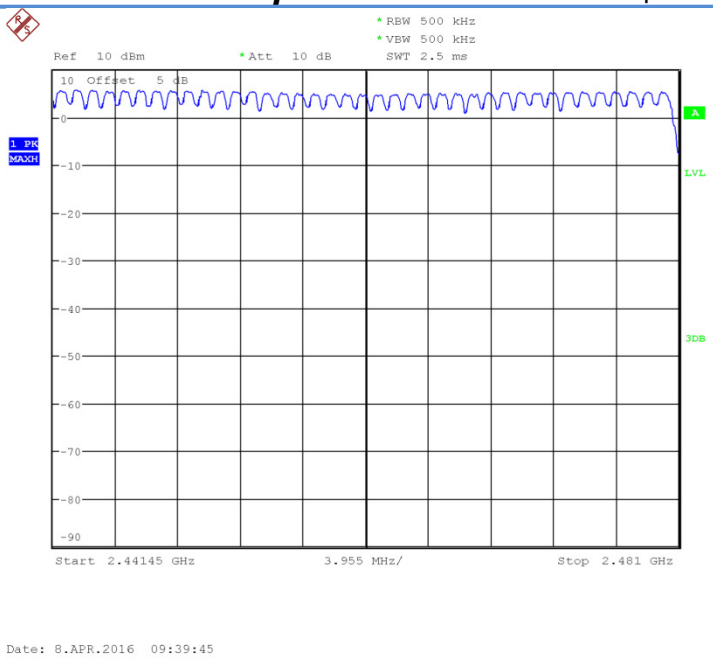

Fig.93 Number of hopping frequency: 8DPSK, Ch40~78

7. Test Equipments and Ancillaries Used For Tests

The test equipments and ancillaries used are as follows.

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Date	Cal.interval
1	Vector Signal Analyser	FSQ26	101096	Rohde&Schwarz	2015-05-13	1
2	Bluetooth Tester	CBT32	100785	Rohde&Schwarz	2015-05-13	1
3	DC Power Supply	ZUP60-14	LOC-220Z006-0007	TDL-Lambda	2015-05-13	1

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Date	Cal.interval
1	Universal Radio Communicati	CMU200	123126	R&S	2015-05-13	1
2	Test Receiver	ESU40	100307	R&S	2015-05-13	1
3	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2014-11-05	3
4	Double Ridged Guide Antenna	ETS-3117	00135885	ETS	2014-05-06	3
5	2-Line V-Network	ENV216	101380	R&S	2015-05-13	1

Anechoic chamber

Fully anechoic chamber by Frankonia German.

8. Test Environment

Shielding Room1 (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. =30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Fully-anechoic chamber1 (6.8 meters×3.08 meters×3.53 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

Fully-anechoic chamber2 (Tapered Section: 8.75 meters×3.66 meters×3.66 meters, Rectangular Section: 7.32 meters×3.97 meters×3.66 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %

Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 30MHz to 40000MHz

ANNEX A. Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

************End The Report************