

Appendix B

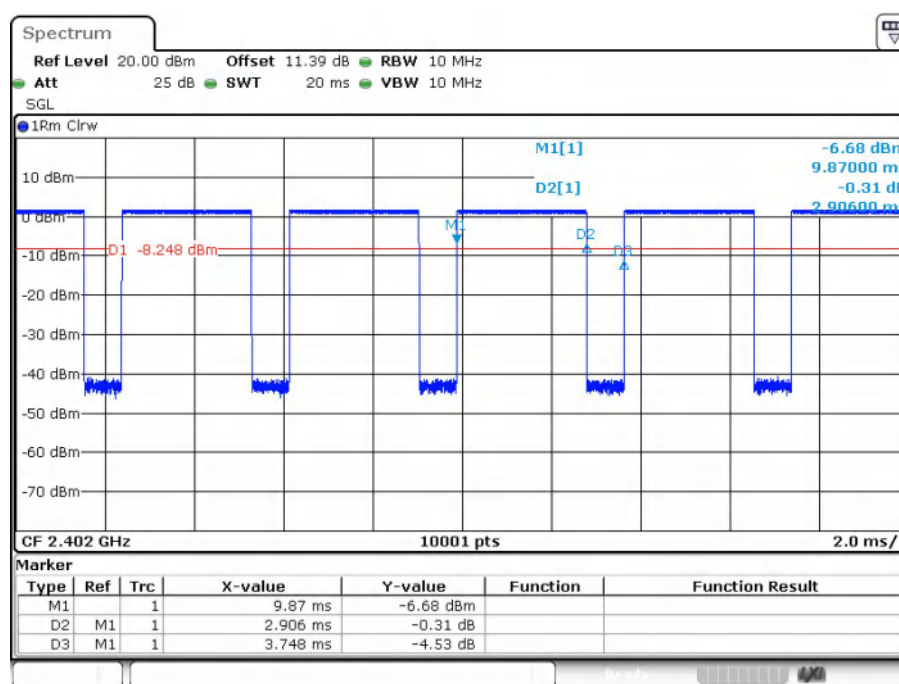
Report No.:	CISRR24092524602
FCC ID:	R56-F44311
Product Name:	Bluetooth noise-cancelling headphones
Model No.:	EH15
Test Engineer:	Mark Fu
Supervised by:	Rory Huang

1) Duty Cycle

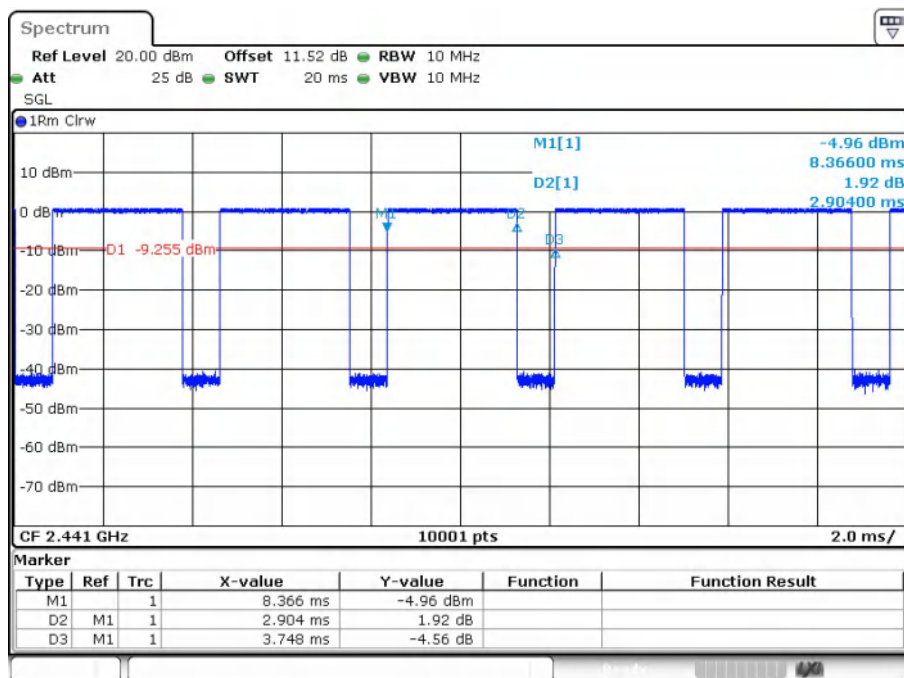
Test Result

Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.906	3.748	77.53	0.7753	1.1053	0.34
		39	2.904	3.748	77.48	0.7748	1.1081	0.34
		78	2.904	3.748	77.48	0.7748	1.1081	0.34
$\pi/4$ DQPSK	2-DH5	0	2.910	3.748	77.64	0.7764	1.0991	0.34
		39	2.912	3.748	77.69	0.7769	1.0963	0.34
		78	2.910	3.748	77.64	0.7764	1.0991	0.34
8DPSK	3-DH5	0	2.914	3.748	77.75	0.7775	1.093	0.34
		39	2.914	3.748	77.75	0.7775	1.093	0.34
		78	2.912	3.748	77.69	0.7769	1.0963	0.34

Test Graphs

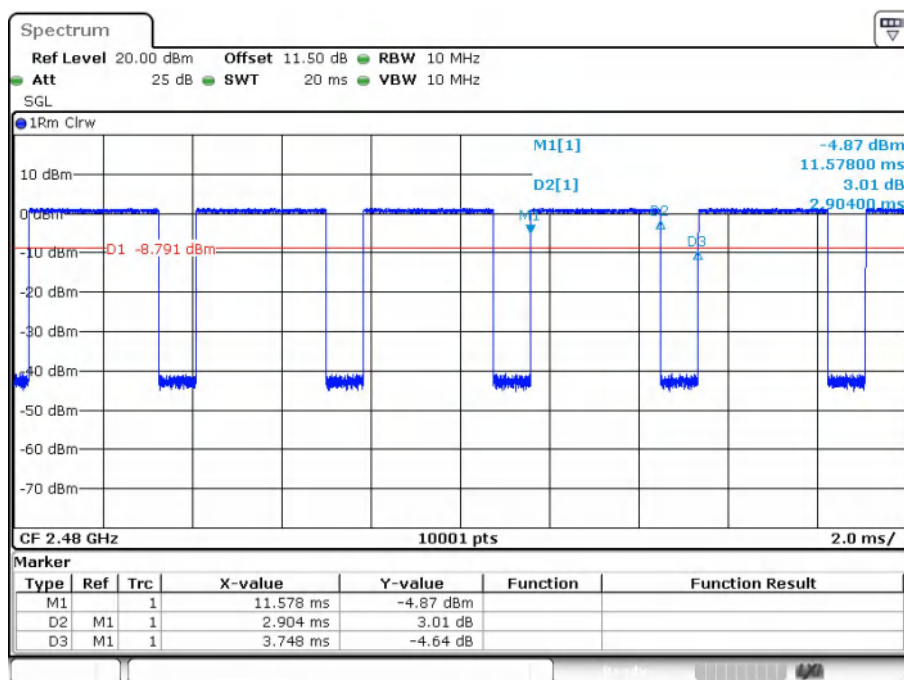


GFSK(DH5)_Channel 0



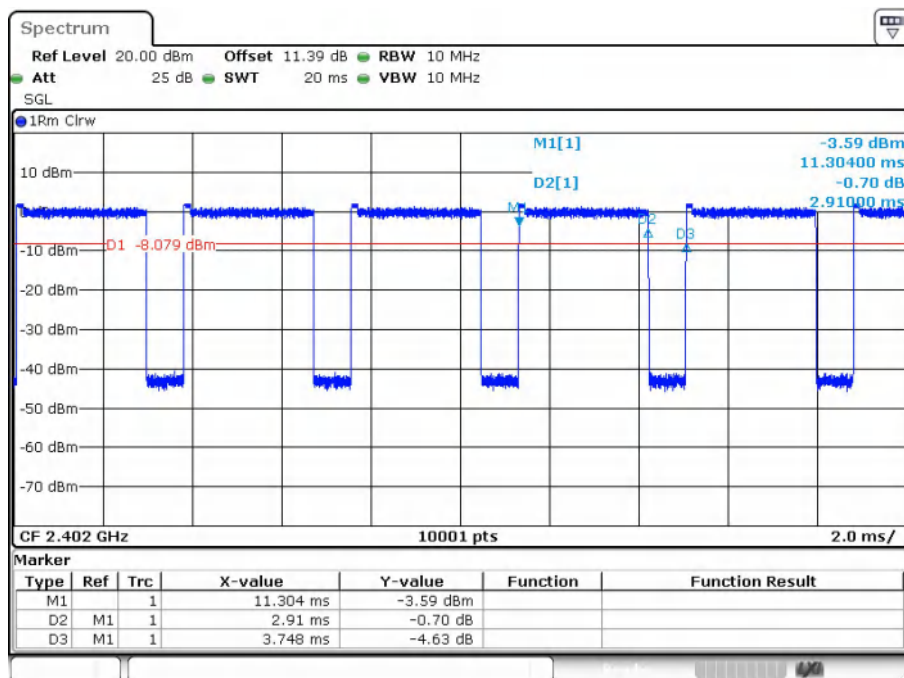
ProjectNo:TWS wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 21:49:37

GFSK(DH5)_Channel 39



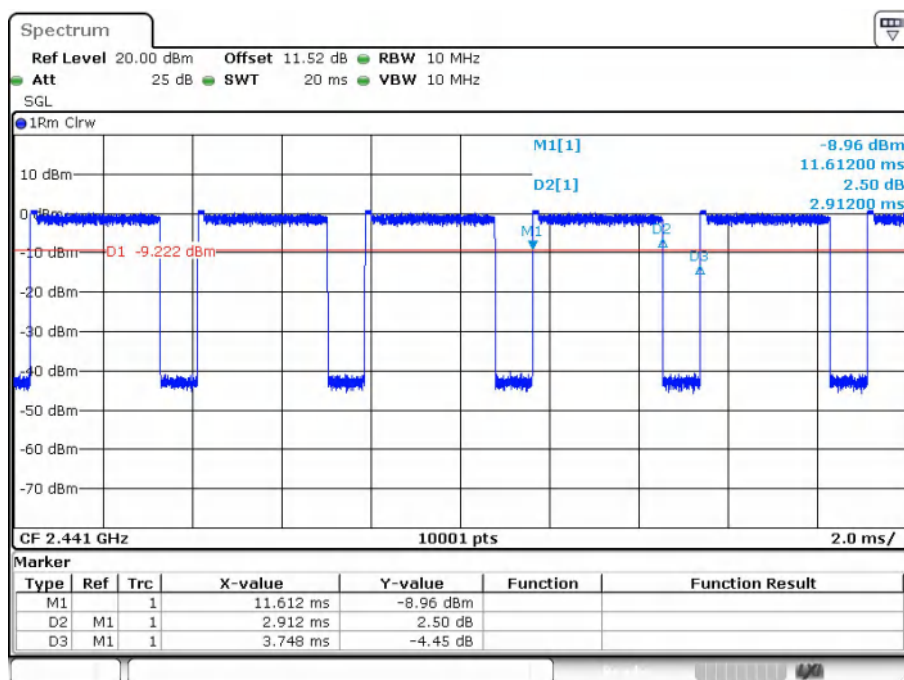
ProjectNo:TWS wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 21:51:33

GFSK(DH5)_Channel 78



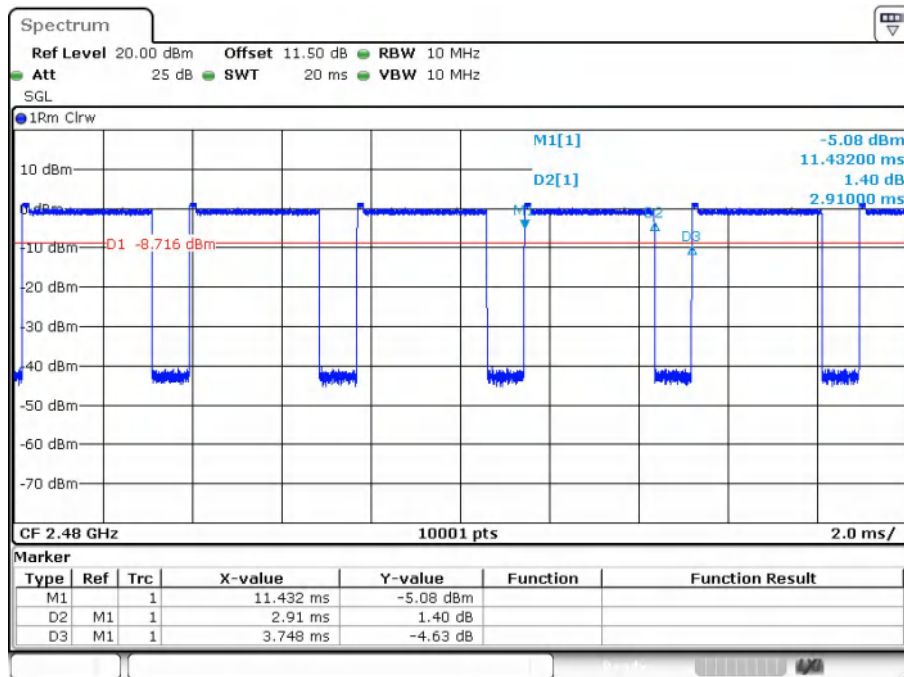
ProjectNo:TWS wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 21:53:41

$\pi/4$ DQPSK(2-DH5)_Channel 0



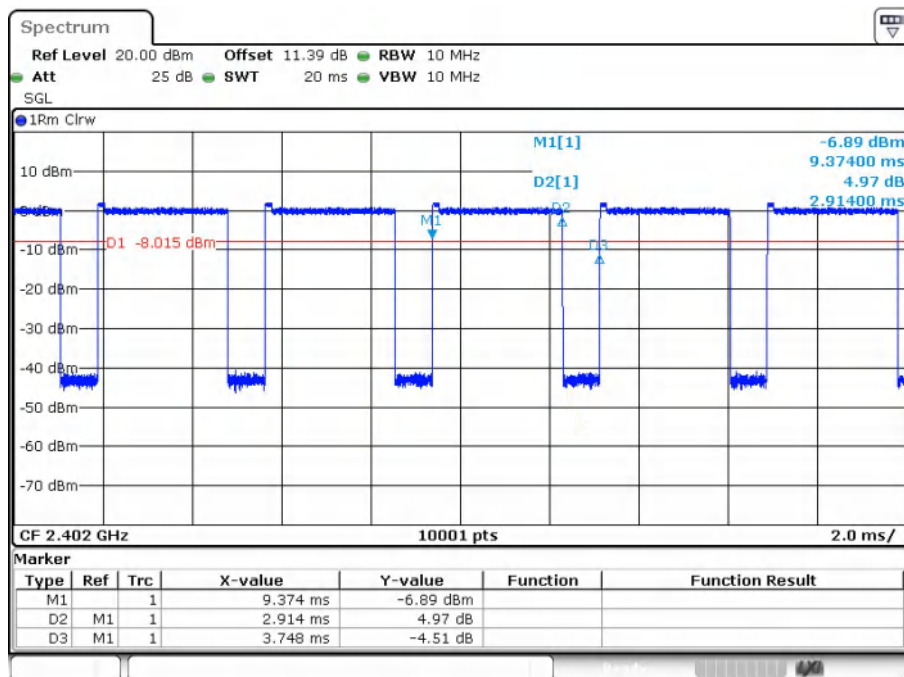
ProjectNo:TWS wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 22:00:28

$\pi/4$ DQPSK(2-DH5)_Channel 39



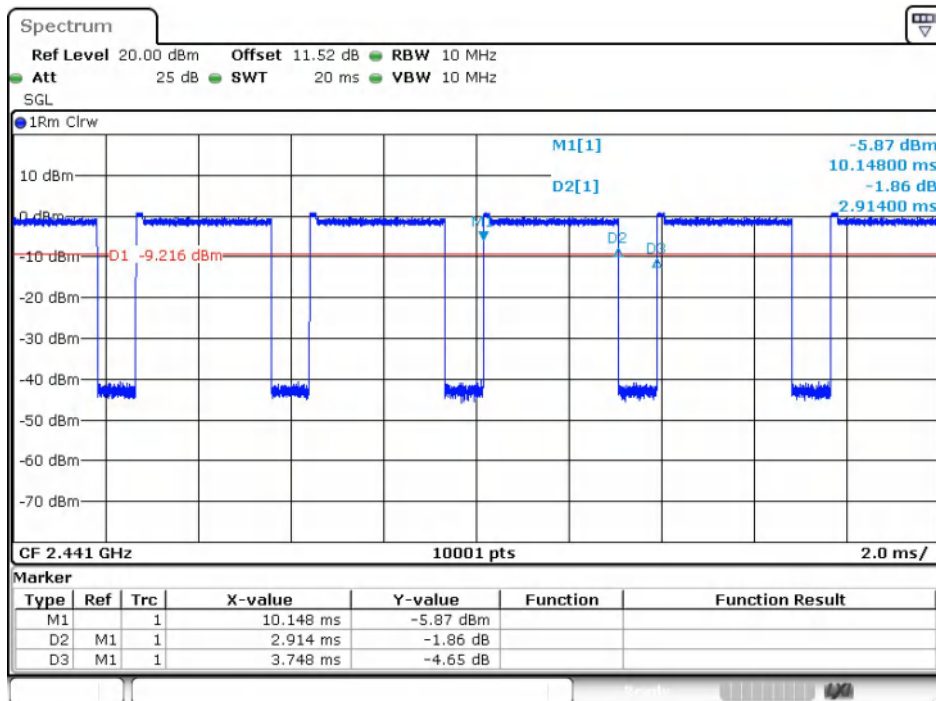
ProjectNo:TWS wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 22:02:34

$\pi/4$ DQPSK(2-DH5)_Channel 78



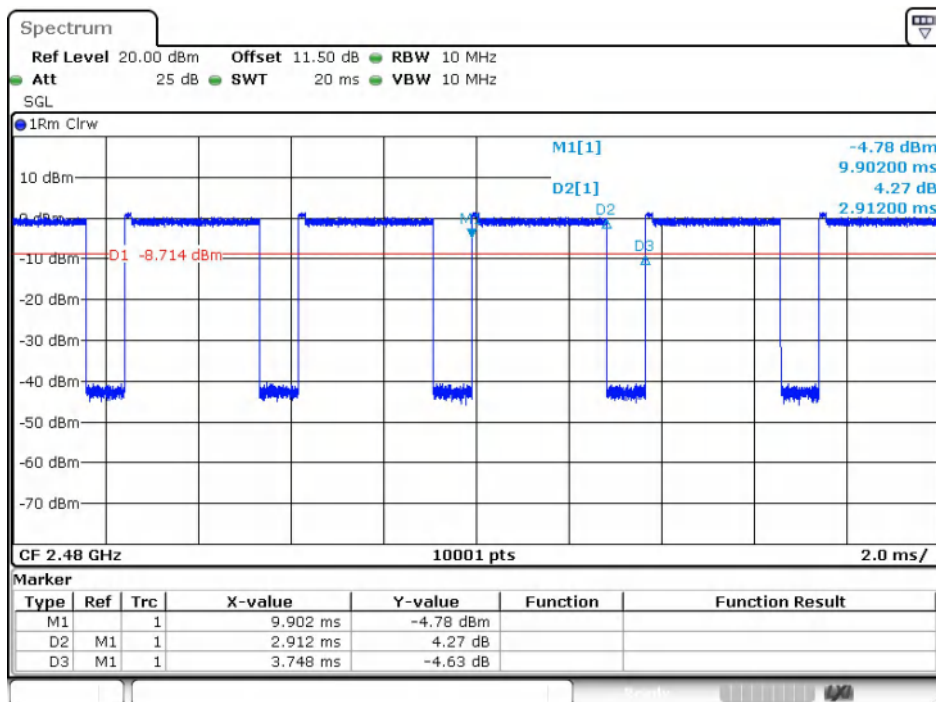
ProjectNo:TWS wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 22:04:49

8DPSK(3-DH5)_Channel 0



Date: 19.OCT.2024 09:03:57

8DPSK(3-DH5)_Channel 39



Date: 19.OCT.2024 09:06:07

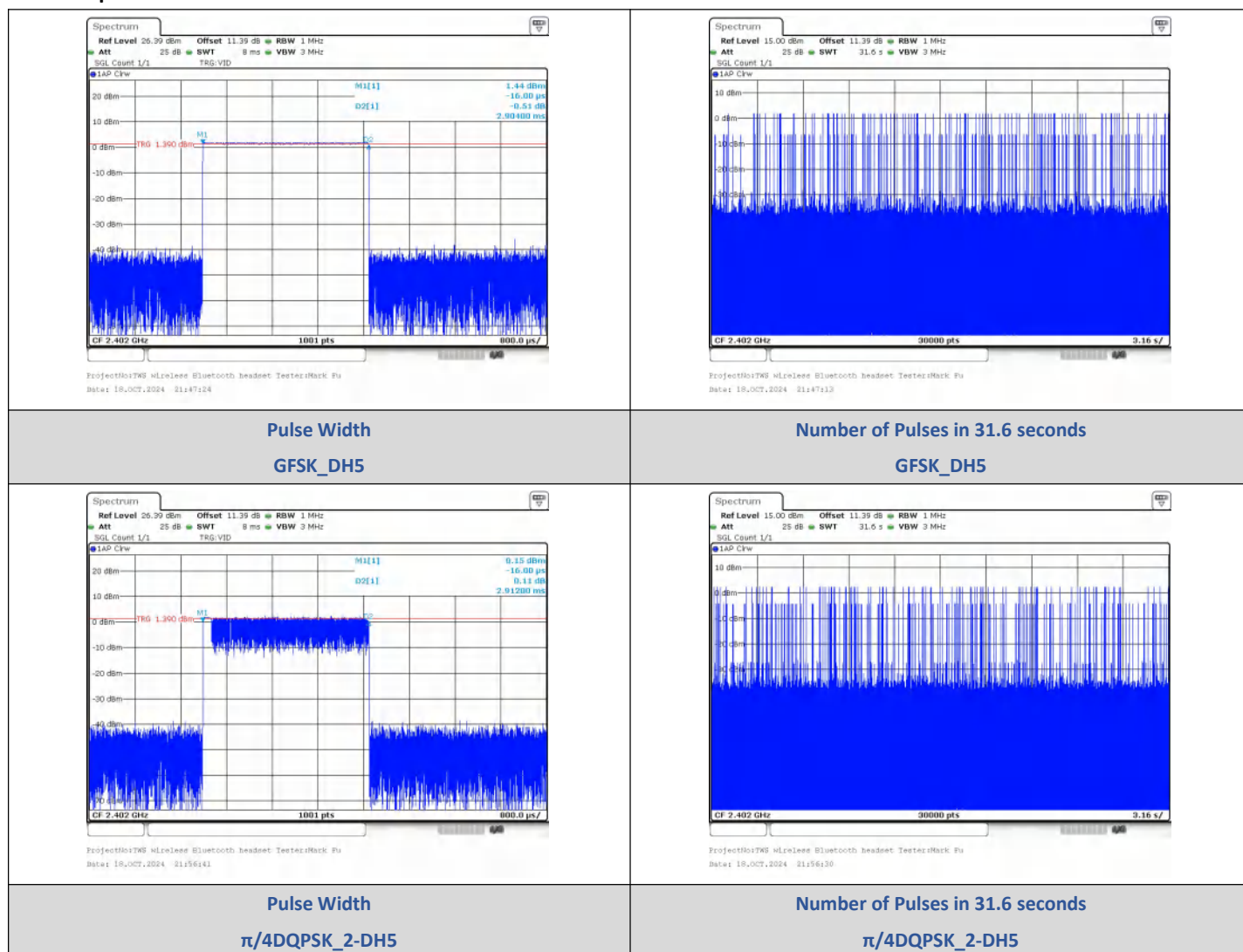
8DPSK(3-DH5)_Channel 78

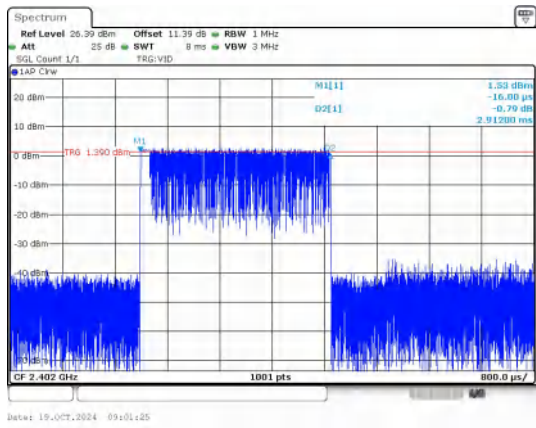
2) Dwell Time

Test Result

Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	CH0 (2402MHz)	2.904	103	299.11	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.912	95	276.64		PASS
8DPSK	3-DH5		2.912	107	311.58		PASS

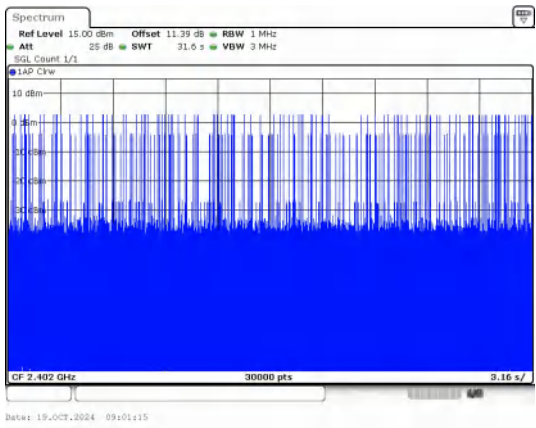
Test Graphs





Pulse Width

8DPSK_3-DH5



Number of Pulses in 31.6 seconds

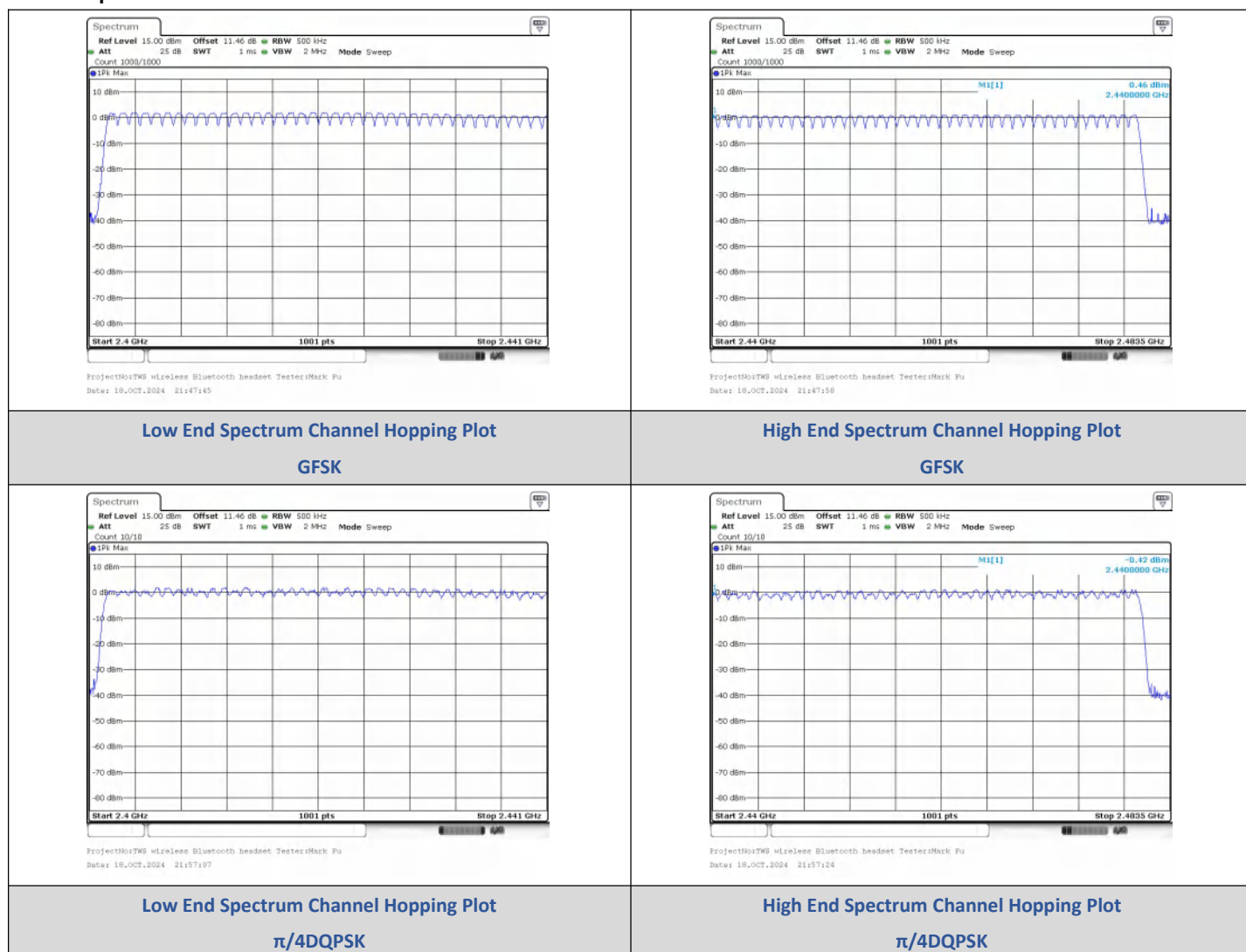
8DPSK_3-DH5

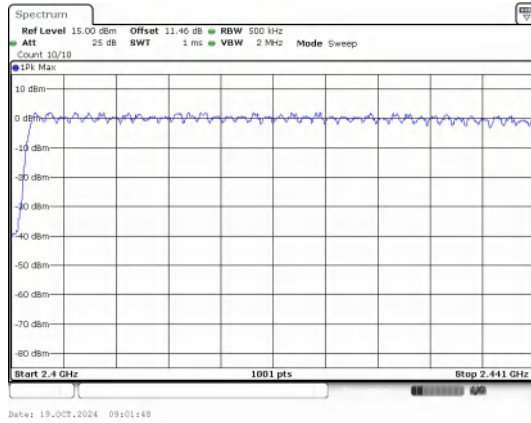
3) Number Of Hopping Channel

Test Result

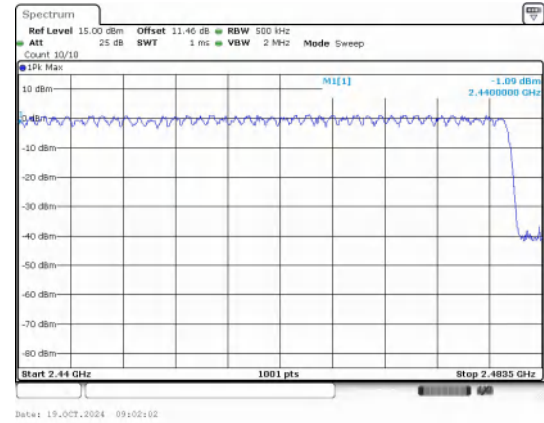
Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

Test Graphs





Low End Spectrum Channel Hopping Plot
8DPSK



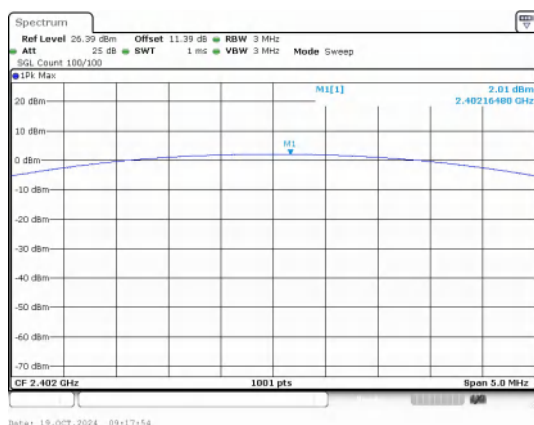
High End Spectrum Channel Hopping Plot
8DPSK

4) Conducted Peak Output Power

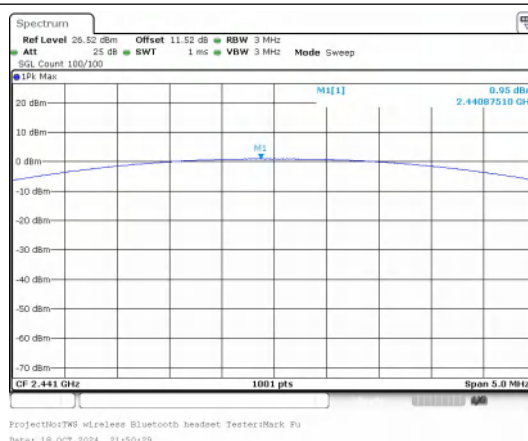
Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	2.01	1.60	≤30	PASS
		39	0.95	1.25		PASS
		78	1.40	1.38		PASS
$\pi/4$ DQPSK	2-DH5	0	2.86	1.93	≤20.97	PASS
		39	1.72	1.49		PASS
		78	2.21	1.66		PASS
8DPSK	3-DH5	0	3.19	2.09		PASS
		39	1.80	1.51		PASS
		78	2.32	1.71		PASS

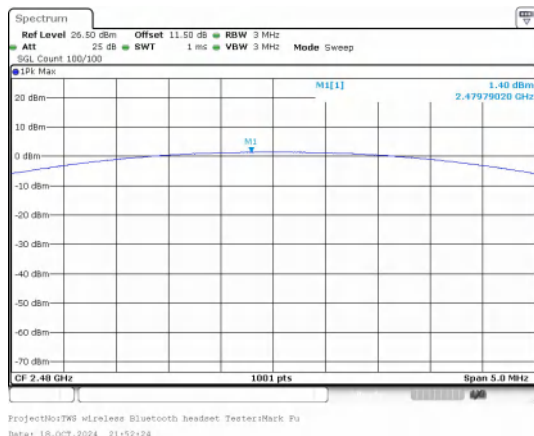
Test Graphs



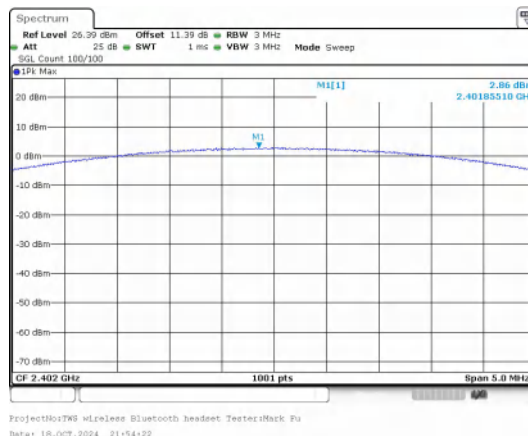
Peak Output Power
GFSK_Channel 0



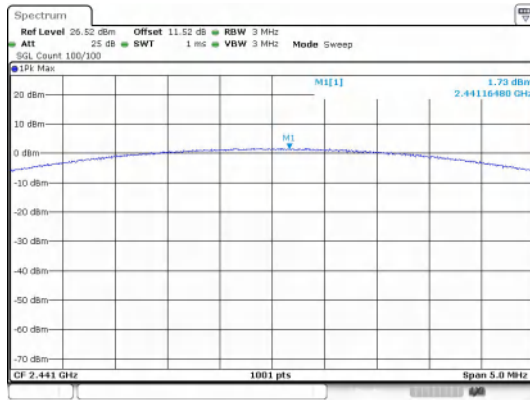
Peak Output Power
GFSK_Channel 39



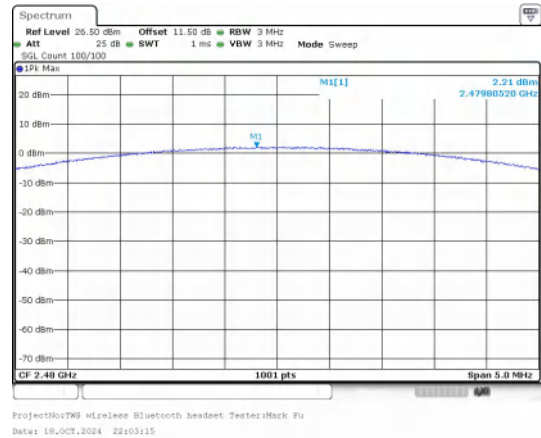
Peak Output Power
GFSK_Channel 78



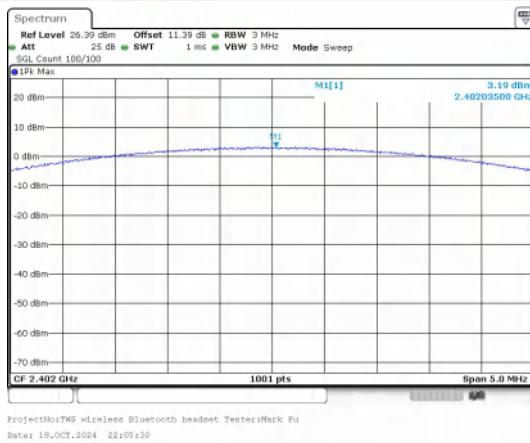
Peak Output Power
 $\pi/4$ DQPSK_Channel 0



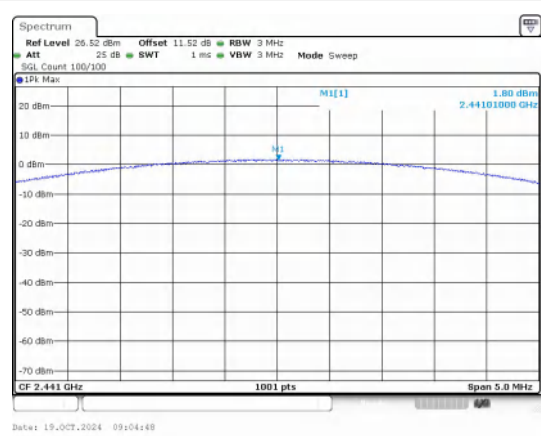
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



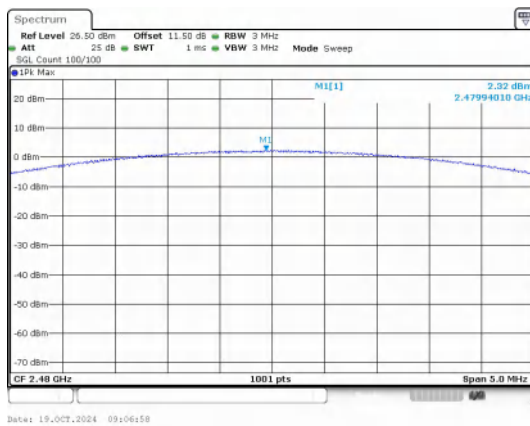
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



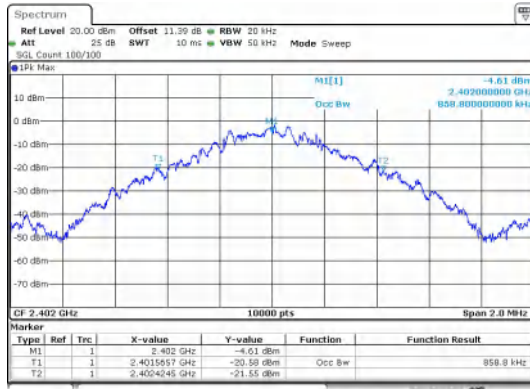
Peak Output Power
8DPSK_Channel 78

5) 99% Bandwidth

Test Result

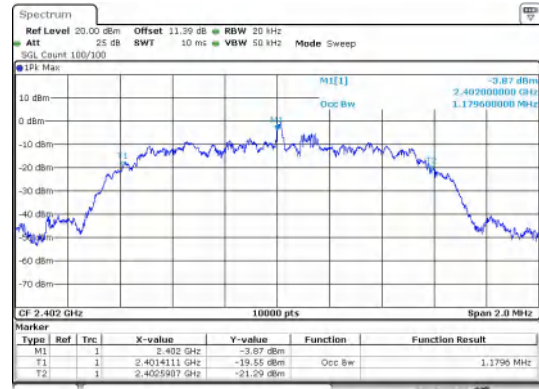
Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.85880
	39	2441	0.86500
	78	2480	0.86340
$\pi/4$ DQPSK	0	2402	1.1796
	39	2441	1.1728
	78	2480	1.1860
8DPSK	0	2402	1.1758
	39	2441	1.1828
	78	2480	1.1840

Test Graphs



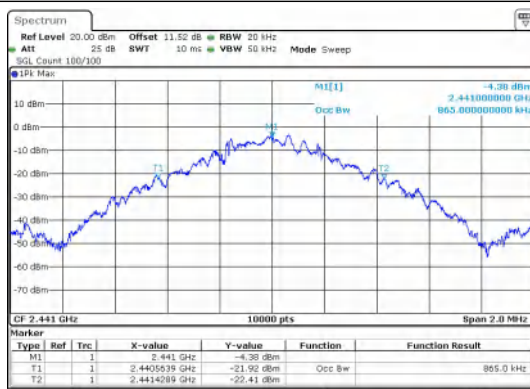
Project:IoT7W5 Wireless Bluetooth headset TesterMark Pu
Date: 18.OCT.2024 21:44:35

GFSK_DH5_Channel 0



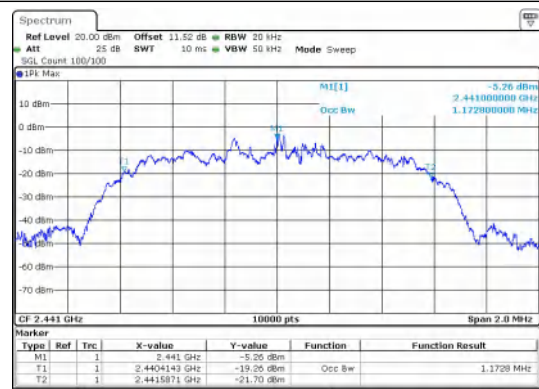
Project:IoT7W5 Wireless Bluetooth headset TesterMark Pu
Date: 18.OCT.2024 21:53:55

$\pi/4$ DQPSK_2-DH5_Channel 0



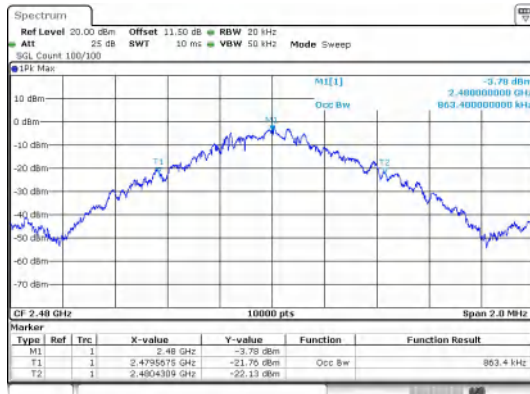
Project:IoT7W5 Wireless Bluetooth headset TesterMark Pu
Date: 18.OCT.2024 21:49:52

GFSK_DH5_Channel 39



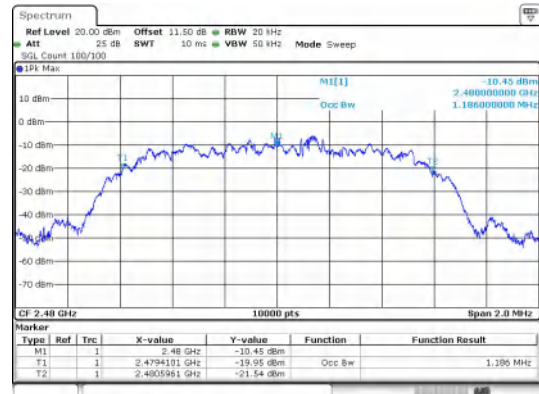
Project:IoT7W5 Wireless Bluetooth headset TesterMark Pu
Date: 18.OCT.2024 22:00:42

$\pi/4$ DQPSK_2-DH5_Channel 39



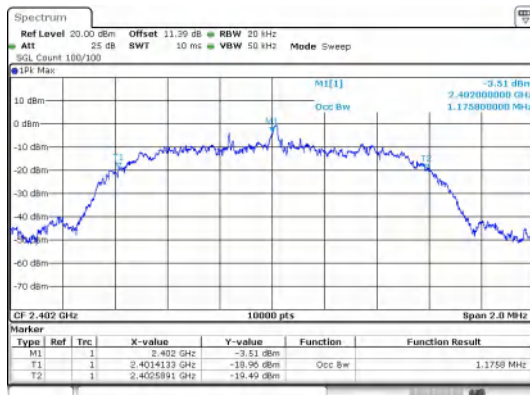
Project:Ho7W9 Wireless Bluetooth headset TesterMark Pu
Date: 19.OCT.2024 21:51:47

GFSK_DH5_Channel 78



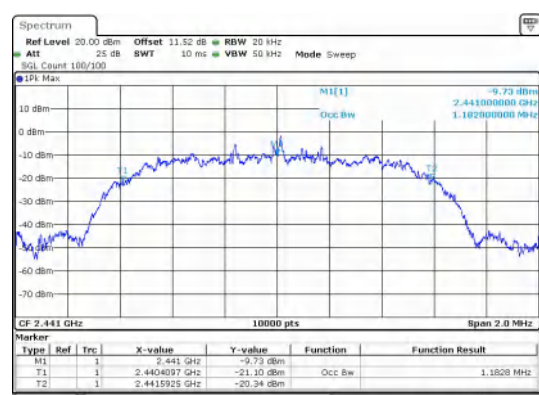
Project:Ho7W9 Wireless Bluetooth headset TesterMark Pu
Date: 19.OCT.2024 22:02:49

$\pi/4$ DQPSK_2-DH5_Channel 78



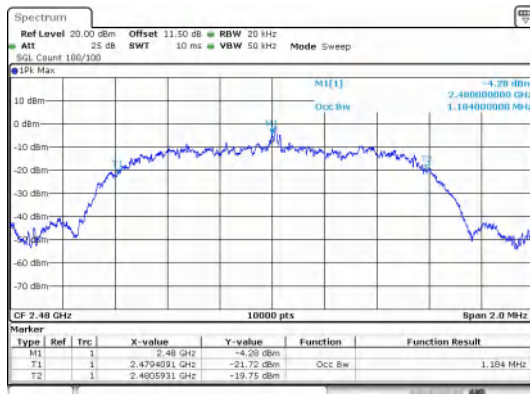
Project:Ho7W9 Wireless Bluetooth headset TesterMark Pu
Date: 19.OCT.2024 22:05:04

8DPSK_3-DH5_Channel 0



Date: 19.OCT.2024 09:10:41

8DPSK_3-DH5_Channel 39



Date: 19.OCT.2024 09:10:41

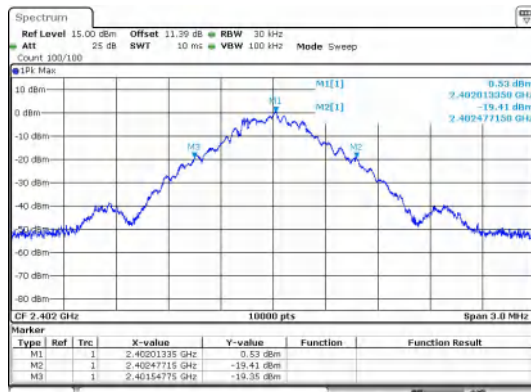
8DPSK_3-DH5_Channel 78

6) 20dB Bandwidth

Test Result

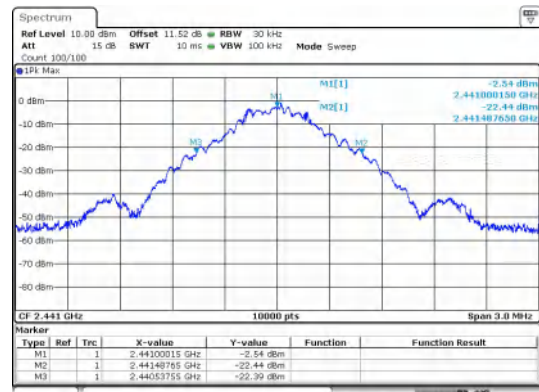
Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9300
	39	2441 MHz	0.9500
	78	2480 MHz	0.9300
$\pi/4$ DQPSK	0	2402 MHz	1.220
	39	2441 MHz	1.230
	78	2480 MHz	1.220
8DPSK	0	2402 MHz	1.250
	39	2441 MHz	1.250
	78	2480 MHz	1.230

Test Graphs



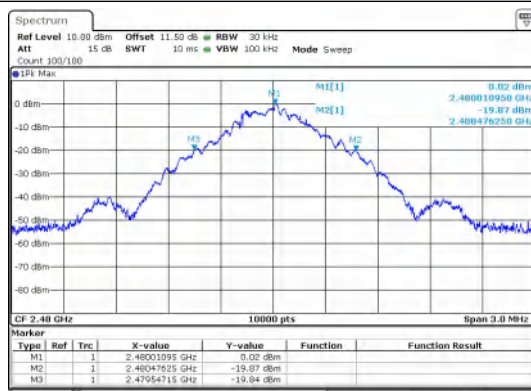
Project:017W5 Wireless Bluetooth headset TesterMark Pu
Date: 18.OCT.2024 21:44:51

GFSK_DH5_Channel 0



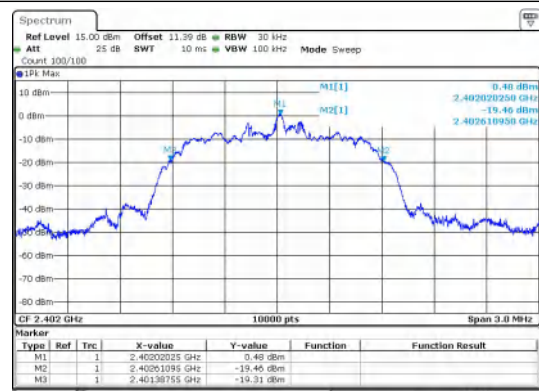
Project:017W5 Wireless Bluetooth headset TesterMark Pu
Date: 18.OCT.2024 21:50:14

GFSK_DH5_Channel 39



Project:017W5 Wireless Bluetooth headset TesterMark Pu
Date: 18.OCT.2024 21:52:09

GFSK_DH5_Channel 78

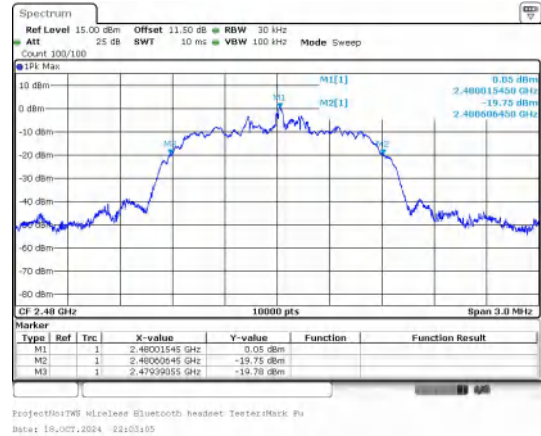


Project:017W5 Wireless Bluetooth headset TesterMark Pu
Date: 18.OCT.2024 21:54:11

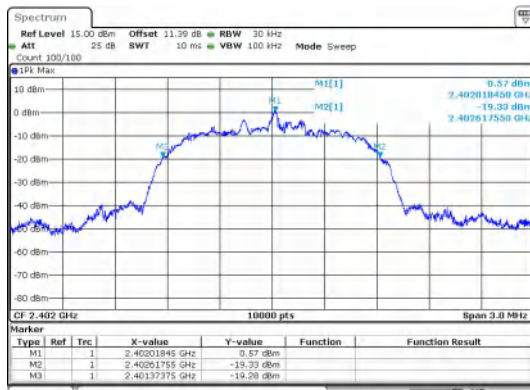
$\pi/4$ DQPSK_2-DH5_Channel 0



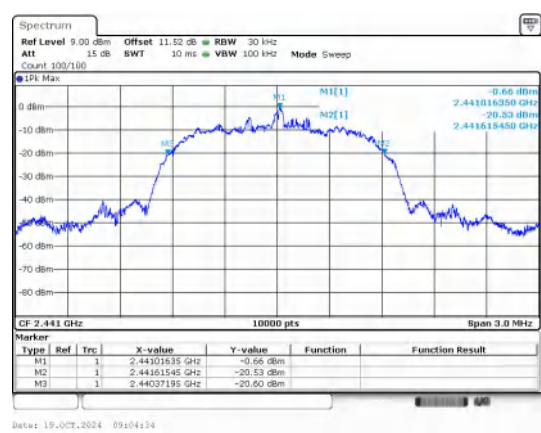
$\pi/4$ DQPSK_2-DH5_Channel 39



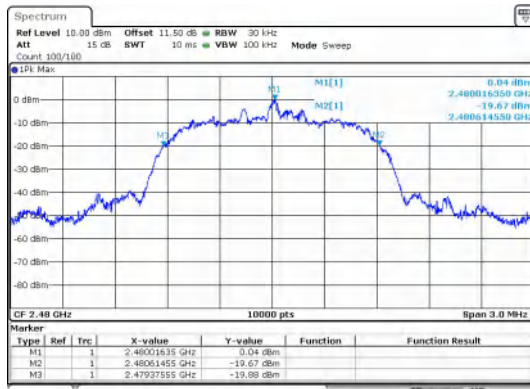
$\pi/4$ DQPSK_2-DH5_Channel 78



8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



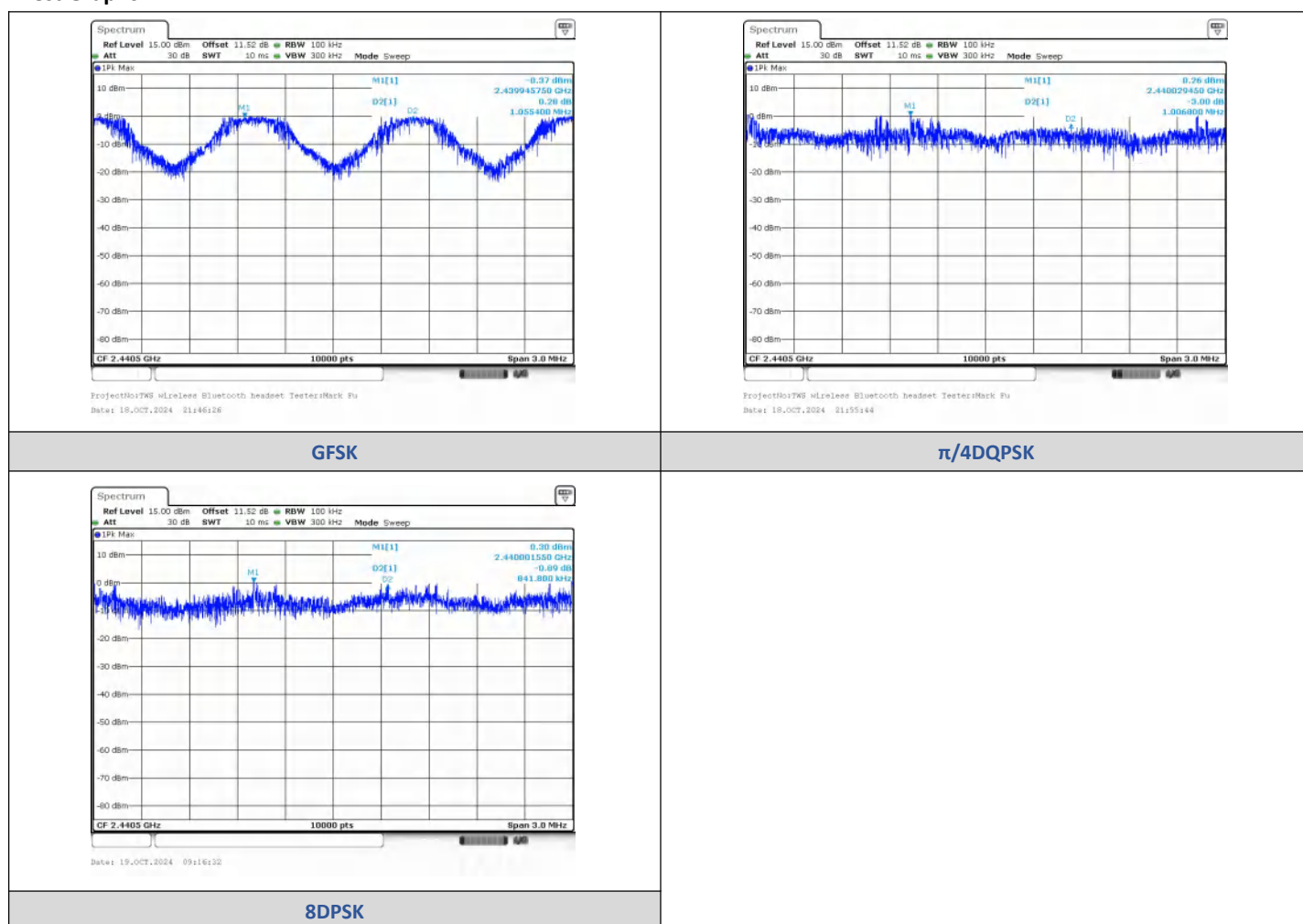
8DPSK_3-DH5_Channel 78

7) Carrier Frequencies Separation

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH5	2439.9457	2441.0012	1.0554	0.950	PASS
$\pi/4$ DQPSK	2-DH5	2440.0294	2441.0363	1.0068	0.813	PASS
8DPSK	3-DH5	2440.0015	2440.8434	0.8418	0.833	PASS

Test Graphs



8) Conducted Out Of Band Emission

Test Result

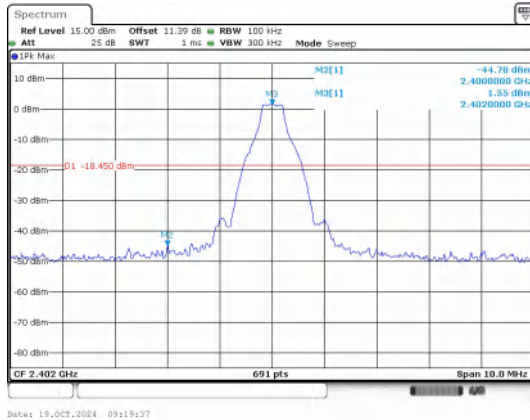
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-47.105	-18.45	-28.655	PASS
			4803.85	-35.694	-18.45	-17.244	PASS
		39	4882.09	-41.679	-19.51	-22.169	PASS
		78	2483.50	-48.497	-19.05	-29.447	PASS
			4960.33	-42.694	-19.05	-23.644	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-46.986	-18.29	-28.696	PASS
			4803.85	-39.358	-18.29	-21.068	PASS
		39	4882.09	-46.140	-19.43	-26.710	PASS
		78	2483.50	-49.727	-18.96	-30.767	PASS
			4960.33	-41.926	-18.96	-22.966	PASS
8DPSK	3-DH5	0	2400.00	-47.529	-18.24	-29.289	PASS
			4804.68	-37.302	-18.24	-19.062	PASS
		39	4882.09	-46.710	-19.6	-27.110	PASS
		78	2483.50	-49.834	-19.16	-30.674	PASS
			4960.33	-47.081	-19.16	-27.921	PASS

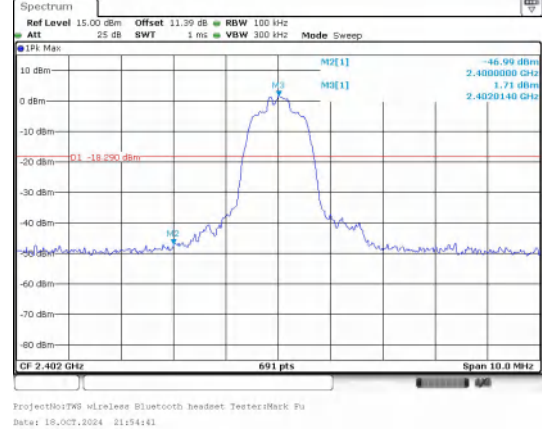
Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2397.44	-43.795	-19.01	-24.785	PASS
			2400.00	-46.620	-19.01	-27.610	PASS
			2483.50	-49.795	-19.2	-30.595	PASS
$\pi/4$ DQPSK	2-DH5		2398.18	-45.420	-20.32	-25.100	PASS
			2400.00	-50.208	-20.32	-29.888	PASS
			2483.50	-48.339	-18.93	-29.409	PASS
8DPSK	3-DH5		2396.96	-46.615	-18.27	-28.345	PASS
			2400.00	-50.787	-18.27	-32.517	PASS
			2483.50	-49.573	-19.63	-29.943	PASS

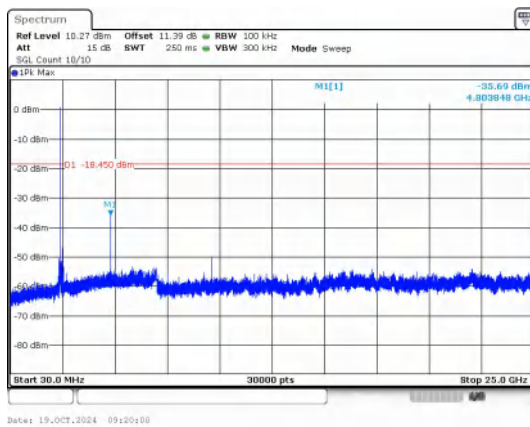
Test Graphs



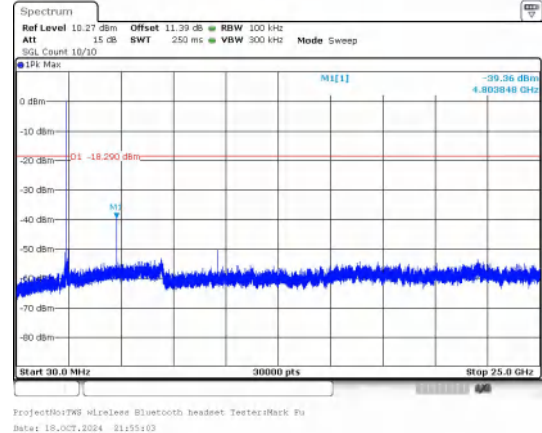
Out Of Band Emission
GFSK_DH5_Channel 0



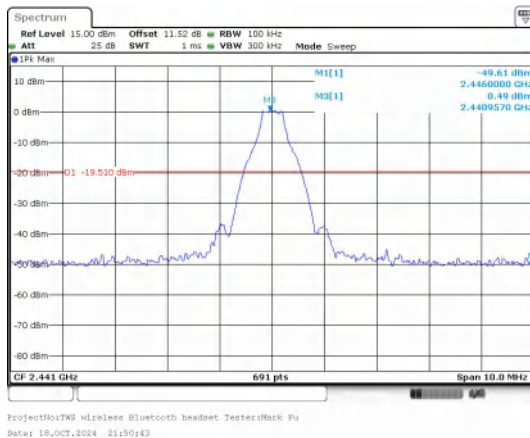
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 0



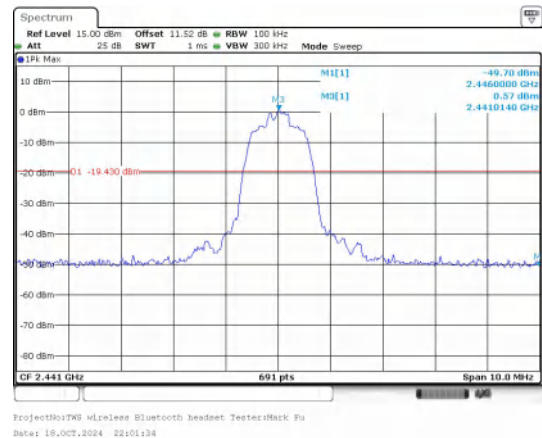
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0



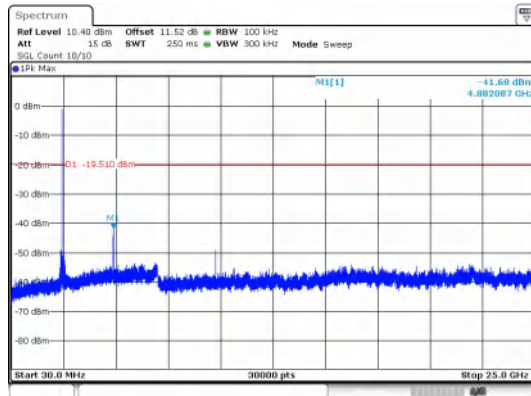
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 0



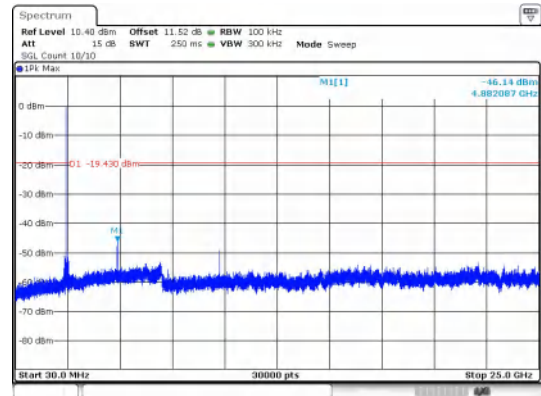
Out Of Band Emission
GFSK_DH5_Channel 39



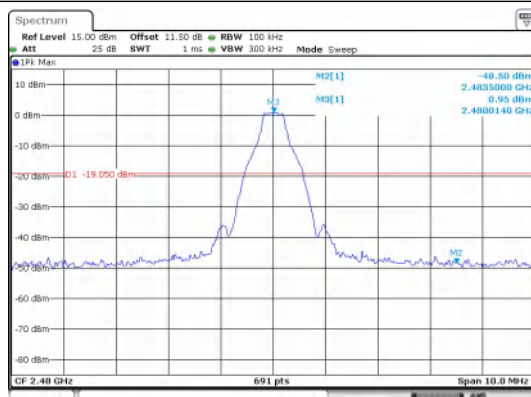
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 39



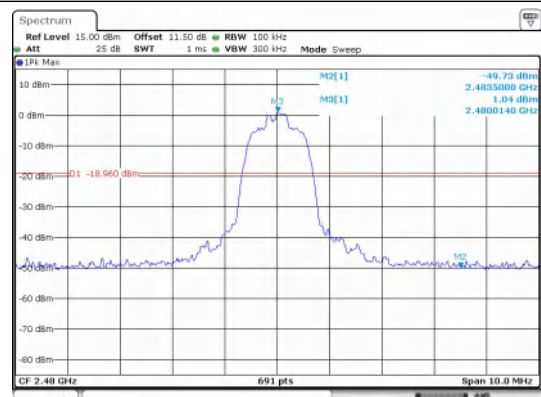
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



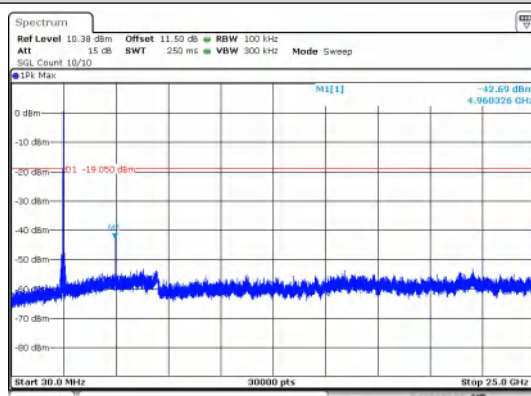
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39



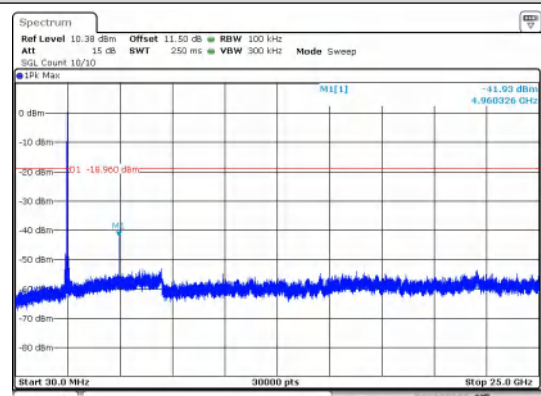
Out Of Band Emission
GFSK_DH5_Channel 78



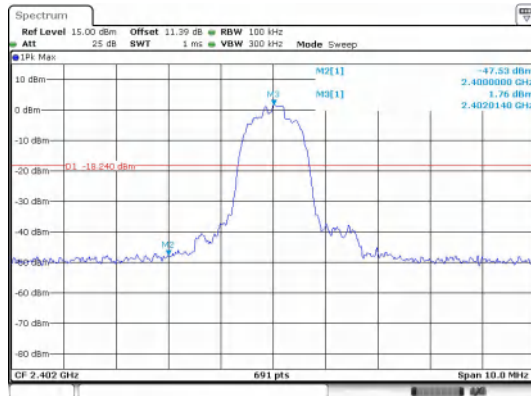
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78



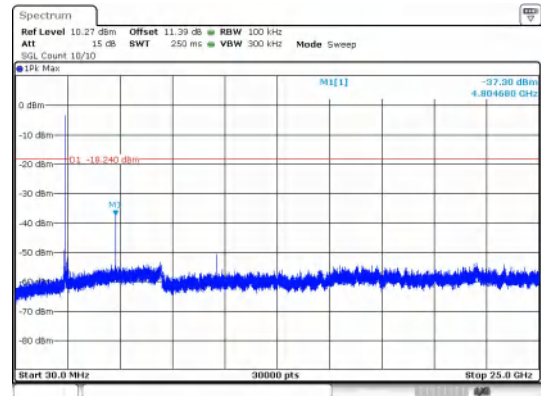
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78



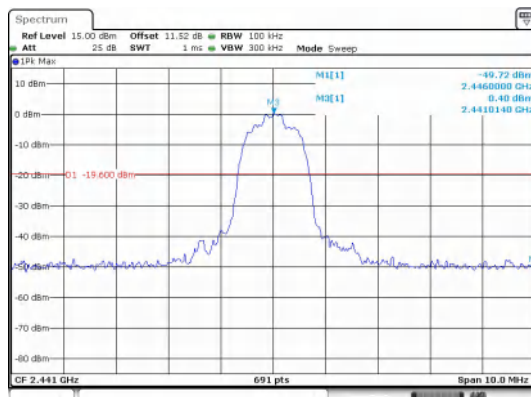
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78



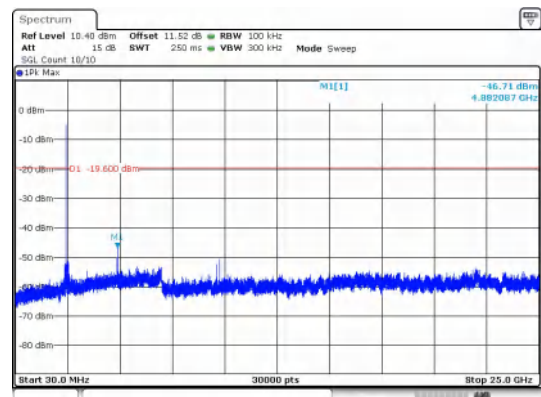
Out Of Band Emission
8DPSK_3-DH5_Channel 0



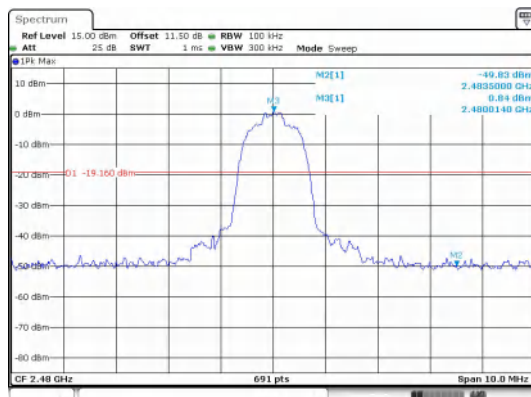
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



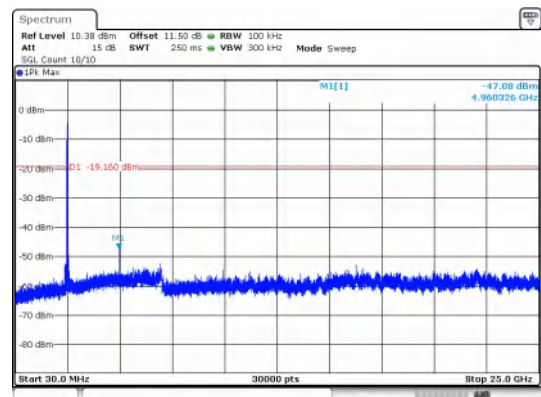
Out Of Band Emission
8DPSK_3-DH5_Channel 39



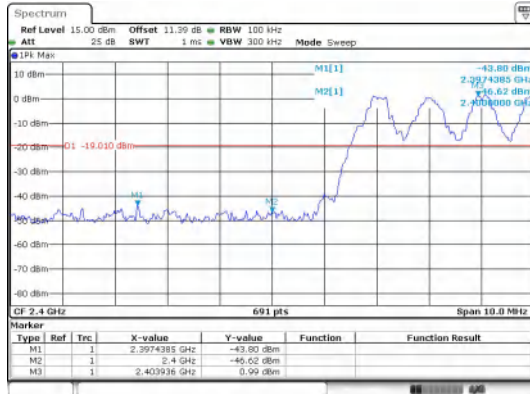
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



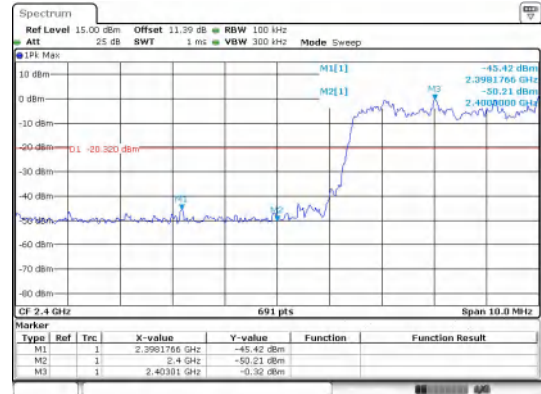
Out Of Band Emission
8DPSK_3-DH5_Channel 78



30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



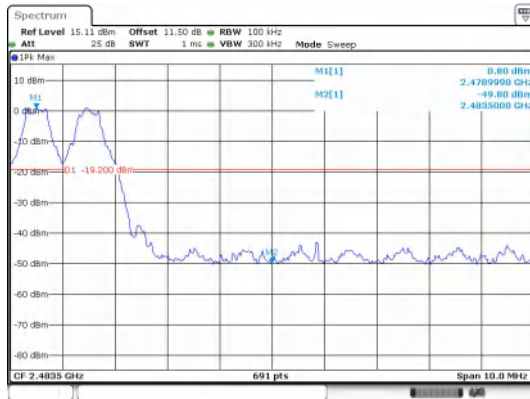
Project:R07W3 Wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 21:48:29



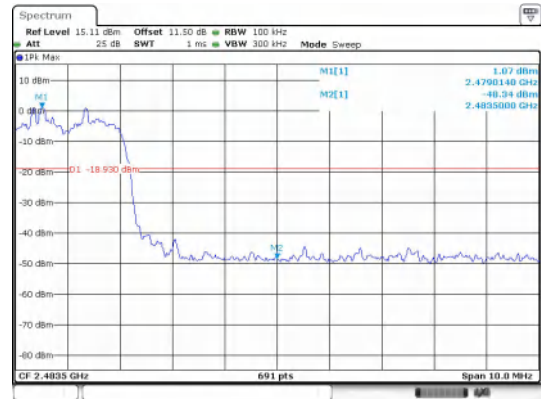
Project:R07W3 Wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 21:58:10

Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping

Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



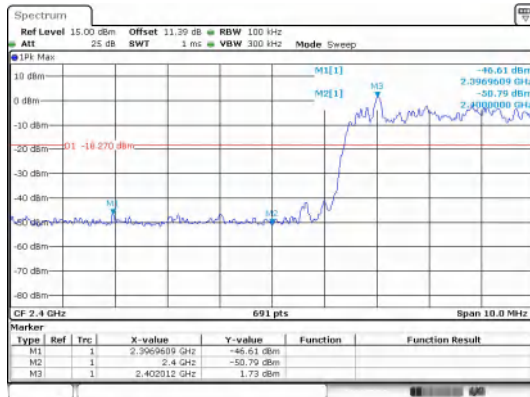
Project:R07W3 Wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 21:49:07



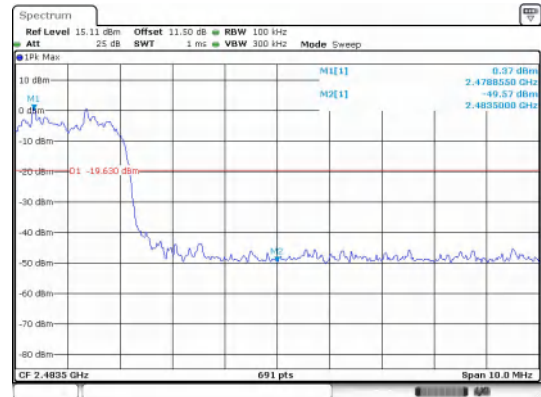
Project:R07W3 Wireless Bluetooth headset Tester:Mark Fu
Date: 18.OCT.2024 21:59:14

Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping

Out Of Band Emission(Right)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



Date: 19.OCT.2024 09:02:29



Date: 19.OCT.2024 09:03:20

Out Of Band Emission(Left)
8DPSK_3-DH5_Channel Hopping

Out Of Band Emission(Right)
8DPSK_3-DH5_Channel Hopping