

Appendix A. Test Data

Maximum Conducted Output Power Measurement									
Test Mode	Frequency (MHz)	Packet Type	Average Power		Peak Power		Power Limit	RF Power setting in Test Software	Test Software Version
			dBm	W	dBm	W	W		
BT_GFSK	2402	DH1	6.94	0.0049	7.11	0.00514	<0.125	Default	Randora R22 19.3201
		DH3	6.95	0.0050	7.12	0.00515	<0.125	Default	
		DH5	6.97	0.0050	7.14	0.00518	<0.125	Default	
	2441	DH1	5.94	0.0039	6.09	0.00406	<0.125	Default	
		DH3	5.95	0.0039	6.10	0.00407	<0.125	Default	
		DH5	5.96	0.0039	6.13	0.00410	<0.125	Default	
	2480	DH1	4.38	0.0027	4.53	0.00284	<0.125	Default	
		DH3	4.39	0.0027	4.54	0.00284	<0.125	Default	
		DH5	4.40	0.0028	4.55	0.00285	<0.125	Default	
BT_π/4-DQPSK	2402	2DH1	6.22	0.0042	8.63	0.00729	<0.125	Default	
		2DH3	6.24	0.0042	8.68	0.00738	<0.125	Default	
		2DH5	6.39	0.0044	8.71	0.00743	<0.125	Default	
	2441	2DH1	5.24	0.0033	8.22	0.00664	<0.125	Default	
		2DH3	5.26	0.0034	8.25	0.00668	<0.125	Default	
		2DH5	5.39	0.0035	8.29	0.00675	<0.125	Default	
	2480	2DH1	3.66	0.0023	6.61	0.00458	<0.125	Default	
		2DH3	3.70	0.0023	6.65	0.00462	<0.125	Default	
		2DH5	3.84	0.0024	6.69	0.00467	<0.125	Default	
BT_8DPSK	2402	3DH1	6.23	0.0042	8.88	0.00773	<0.125	Default	
		3DH3	6.25	0.0042	8.94	0.00783	<0.125	Default	
		3DH5	6.40	0.0044	8.98	0.00791	<0.125	Default	
	2441	3DH1	5.25	0.0033	8.48	0.00705	<0.125	Default	
		3DH3	5.27	0.0034	8.52	0.00711	<0.125	Default	
		3DH5	5.41	0.0035	8.58	0.00721	<0.125	Default	
	2480	3DH1	3.67	0.0023	6.87	0.00486	<0.125	Default	
		3DH3	3.71	0.0023	6.91	0.00491	<0.125	Default	
		3DH5	3.85	0.0024	6.95	0.00495	<0.125	Default	

Note: The relevant measured result has the offset with cable loss already.

20 dB Emission Bandwidth and 99 % Occupied Bandwidth Measurement			
Test Mode	Frequency (MHz)	20 dB RF Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)
BT_GFSK	2402	0.950	0.855
	2441	0.946	0.849
	2480	0.945	0.847
BT_8DPSK	2402	1.306	1.216
	2441	1.306	1.184
	2480	1.305	1.185

Carrier Frequency Separation Measurement			
Test Mode	Frequency (MHz)	Measurement (MHz)	Limit (MHz)
BT_GFSK	2402	0.994	≥ 0.633
	2441	1.318	≥ 0.630
	2480	1.000	≥ 0.630
BT_8DPSK	2402	0.994	≥ 0.871
	2441	1.010	≥ 0.871
	2480	1.002	≥ 0.870

Time of Occupancy (Dwell Time) Measurement		
Test Mode	Average Time of Occupancy (Dwell Time) Measurement	
	DH1	
BT_GFSK	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$800/79CH = 10.13 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 10.13 = 320.108 \text{ (times)}$
	Each Channel Dwell Times (2)	0.430 ms
	Dwell Times on Cycle (1) * (2)	137.646 ms
	Limit (msec)	≤ 400
	DH3	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$400/79CH = 5.06 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 5.06 = 159.896 \text{ (times)}$
	Each Channel Dwell Times (2)	1.690 ms
	Dwell Times on Cycle (1) * (2)	270.224 ms
	Limit (msec)	≤ 400
	DH5	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$266.7/79CH = 3.38 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 3.38 = 106.808 \text{ (times)}$
	Each Channel Dwell Times (2)	2.940 ms
	Dwell Times on Cycle (1) * (2)	314.016 ms
	Limit (msec)	≤ 400

Test Mode	Average Time of Occupancy (Dwell Time) Measurement	
	3DH1	
BT_8DPSK	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$800/79CH = 10.13 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 10.13 = 320.108 \text{ (times)}$
	Each Channel Dwell Times (2)	0.420 ms
	Dwell Times on Cycle (1) * (2)	134.445 ms
	Limit (msec)	≤ 400
	3DH3	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$400/79CH = 5.06 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 5.06 = 159.896 \text{ (times)}$
	Each Channel Dwell Times (2)	1.680 ms
	Dwell Times on Cycle (1) * (2)	268.625 ms
	Limit (msec)	≤ 400
	3DH5	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$266.7/79CH = 3.38 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 3.38 = 106.808 \text{ (times)}$
	Each Channel Dwell Times (2)	2.925 ms
	Dwell Times on Cycle (1) * (2)	312.413 ms
	Limit (msec)	≤ 400

Duty Cycle						
Band	Frequency (MHz)	On time (ms)	On+off time (ms)	Duty cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
BLE 1M	2402	0.415	0.625	66.400	1.778	2.410

Maximum Conducted Output Power Measurement								
Test Mode	Frequency (MHz)	Average Power		Peak Power		Power Limit	RF Power setting in Test Software	Test Software Version
		dBm	W	dBm	W	dBm		
BLE 1M	2402	-0.25	0.0009	0.01	0.0010	30.00	Default	Randora R22 19.3201
BLE 1M	2440	-0.81	0.0008	-0.62	0.0009	30.00	Default	
BLE 1M	2480	-1.94	0.0006	-1.77	0.0007	30.00	Default	

Note: The relevant measured result has the offset with cable loss already.

6 dB Bandwidth and 99 % Occupied Bandwidth				
Test mode	Frequency	99 % Occupied Bandwidth	6 dB Bandwidth	6 dB Limit
	(MHz)	(MHz)	(kHz)	(kHz)
BLE 1M	2402	1.029	674.2000	≥ 500
BLE 1M	2440	1.030	673.0000	≥ 500
BLE 1M	2480	1.032	670.2000	≥ 500

Maximum Power Density Measurement			
Test mode	Frequency	Reading	Limit
	(MHz)	(dBm/3 kHz)	(dBm/3 kHz)
BLE 1M	2402	-15.970	≤ 8
BLE 1M	2440	-16.330	≤ 8
BLE 1M	2480	-17.090	≤ 8