## A.5 TIME OF OCCUPANCY

Test Date	2019/07/30~08/16	Temp./Hum.	23~24°C/52~55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)

#### A.5.1 Time of Occupancy

Mode	Centre Frequency (MHz)	Mode	Each second appearance transmission	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
		DH1	9	0.400	113.760	<400
GFSK	2402	DH3	5	1.660	262.280	<400
		DH5	3	2.910	275.868	<400
Observation Period:				-		
79 channels* DH1 Mode	<b>0.4</b> seconds=	31.6 seconds				
For each second of	9 transmission ap	opearance,the long	gest time of occu	pancy is		
	9 transmission*	31.6 seconds*	<b>0.400</b> ms=	113.760 ms («	<400ms)	
DH3 Mode						
For each second of	5 transmission ap	opearance,the long	gest time of occu	pancy is		
	5 transmission*	31.6 seconds*	<b>1.660</b> ms=	262.280 ms («	<400ms)	
DH5 Mode						
For each second of	3 transmission ap	ppearance, the long	gest time of occu	pancy is		
	3 transmission*	31.6 seconds*	<b>2.910</b> ms=	275.868 ms («	<400ms)	

Mode	Centre Frequency (MHz)	Mode	Each second appearance transmission	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
		DH1	10	0.400	126.400	<400
GFSK	2441	DH3	5	1.660	262.280	<400
		DH5	3	2.910	275.868	<400
Observation Period:						
79 channels*	0.4 seconds=	31.6 seconds				
DH1 Mode						

		10	transmission*	31.6	seconds*	0.400	ms =	126.400	ms (<400ms)
DH3 Mode									
	For each second of	5	transmission ap	ppeara	nce,the long	gest time	ofoco	cupancy is	
		5	transmission*	31.6	seconds*	1.660	ms =	262.280	ms (<400ms)
DH5 Mode									
	For each second of	3	transmission ap	opeara	nce,the long	gest time	ofoco	cupancy is	
		3	transmission*	31.6	seconds*	2.910	ms=	275.868	ms (<400ms)

For each second of 10 transmission appearance, the longest time of occupancy is

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Mode	С	Centre Frequency (MHz)	Mode	Each second appearance transmission	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
			DH1	10	0.400	126.400	<400
GFSK		2480	DH3	5	1.660	262.280	<400
			DH5	2	2.910	183.912	<400
Observation Period:							
79 DHI M. I.	channels* 0	<b>).4</b> seconds=	31.6 seconds				
<b>DHI Mode</b> For each	second of 1	<ul><li>10 transmission ap</li><li>10 transmission*</li></ul>	ppearance,the lon <b>31.6</b> seconds*	gest time of occu <b>0.400</b> ms=	126.400 ms (	<400ms)	
DH3 Mode For each	second of	<ul><li>5 transmission ap</li><li>5 transmission*</li></ul>	opearance,the lon <b>31.6</b> seconds*	gest time of occu <b>1.660</b> ms=	1pancy is 262.280 ms (	<400ms)	
DH5 Mode For each	second of	<ul><li>2 transmission ap</li><li>2 transmission*</li></ul>	ppearance,the lon <b>31.6</b> seconds*	gest time of occu <b>2.910</b> ms=	1pancy is 183.912 ms (	<400ms)	

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Mode	Centre Frequency (MHz)	Mode	Each second appearance transmission	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
		3DH1	10	0.400	126.400	<400
8-DPSK	2402	3DH3	5	1.660	262.280	<400
		3DH5	2	2.910	183.912	<400
Observation Period:						
<b>79</b> channels*	<b>0.4</b> seconds=	31.6 seconds				
3DH1 Mode						
For each second of	10 transmission ap	ppearance,the long	gest time of occu	pancy is		
	10 transmission*	31.6 seconds*	<b>0.400</b> ms=	126.400 ms («	<400ms)	
3DH3 Mode						
For each second of	5 transmission ap	ppearance,the long	gest time of occu	ipancy is		
	5 transmission*	31.6 seconds*	1.660 ms=	262.280 ms («	<400ms)	
3DH5 Mode						
For each second of	2 transmission ap	ppearance,the long	gest time of occu	ipancy is		
	2 transmission*	31.6 seconds*	<b>2.910</b> ms=	183.912 ms (	<400ms)	

Mode	Centre Frequency (MHz)	Mode	Each second appearance transmission	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
		3DH1	10	0.410	129.560	<400
8-DPSK	2441	3DH3	5	1.660	262.280	<400
		3DH5	2	2.910	183.912	<400
Observation Period:						
<b>79</b> channels*	<b>0.4</b> seconds=	31.6 seconds				
3DH1 Mode						
For each second of	10 transmission ap	ppearance,the lon	gest time of occu	ipancy is		
	10 transmission*	31.6 seconds*	<b>0.410</b> ms=	129.560 ms («	<400ms)	

3DH3 Mode

For each second of 5 transmission appearance, the longest time of occupancy is 5 transmission\* 31.6 seconds\* 1.660 ms= 262.280 ms (<400ms) 3DH5 Mode For each second of 2 transmission appearance, the longest time of occupancy is 2 transmission\* 31.6 seconds\* 2.910 ms= 183.912 ms (<400ms)

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Mode	Centre Frequency (MHz)	Mode	Each second appearance transmission	Time of Occupancy (ms)	Maximum accumulated Time of Occupancy (ms)	Limit (ms)
		3DH1	10	0.410	129.560	<400
8-DPSK	2480	3DH3	5	1.660	262.280	<400
		3DH5	2	2.910	183.912	<400
Observation Period:						
79 channels*	<b>0.4</b> seconds=	<b>31.6</b> seconds				
For each second of	<b>10</b> transmission ap	ppearance,the long	gest time of occu	ipancy is		
	10 transmission*	<b>31.6</b> seconds*	<b>0.410</b> ms=	129.560 ms (·	<400ms)	
For each second of	<ul><li>5 transmission aj</li><li>5 transmission*</li></ul>	ppearance,the long <b>31.6</b> seconds*	gest time of occu <b>1.660</b> ms=	1pancy is 262.280 ms (-	<400ms)	
3DH5 Mode						
For each second of	<ul><li>2 transmission ap</li><li>2 transmission*</li></ul>	<b>31.6</b> seconds*	$\begin{array}{c} \text{gest time of occu}\\ \textbf{2.910}  \text{ms}= \end{array}$	1pancy is 183.912 ms (•	<400ms)	

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### A.6 NUMBER OF HOPPING CHANNELS

Test Date	2019/07/30	Temp./Hum.	23°C/55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)

Ν	Iode: GFSK			Mo	de: 8-DPSK	<u> </u>
Spectrum Analyzer 1 Scuppied BW Swept SA KEYSIGHT Input RF Counting DC Countrolson: C0 Augur AuroNo RF Freq Ref. Int (5)	Spectrum Analyzer 3 Swept SA         Spectrum Analyzer 3 Swept SA           B         PNO: Fast         Avg Type: Log Power Angledia-100100         1         2           Galar, Coll         Avg Type: Log Power (Figura Coll         Trg. Pree Run         W         W           Sp Track, Coll         Trg. Pree Run         N         W         P         N	yzer 4 + + 3 4 5 6 W W W W N N N N	Spectrum Analyzer 1 Occupied BW KEYSIGHT Input. RF Coupling, DC Align: Auto/No RF	Spectrum Analyzer 2 Swept SA Input Z: 50 0 Correctors: Off Freq Ref: Int (S)	Spectrum Analyzer 3 Swept SA PNO: Fast Avg Type: Log-Pox Gate: Off AvgIHold>100/10 IF Gain: Low Trig: Free Run Sig Track: Off	Spectrum Analyzer 4         +           Swept SA         •           M         W         W           M         W         W           P         N         N
1 Spectrum V Scale/Div 10 dB	Ref Lvi Offset 3.69 dB Ref Level 23.69 dBm	Mkr2 2.483 6 GHz -50.27 dBm	1 Spectrum V Scale/Div 10 dB		Ref Lvi Offset 3.69 dB Ref Level 23.69 dBm	Mkr2 2.483 6 GHz -53.92 dBm
100 100 101 102 103 103 103 104 105 105 105 105 105 105 105 105			13.7 3.69 -6.3 -16.3 -26.3 -36.3 -46.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -6.3 -7.5 -7	anangan ng	4	C(1-12)37.865
Center 2.44100 GHz #Res BW 100 kHz	#Video BW 300 kHz	Span 100.0 MHz #Sweep 10.0 ms (1001 pts)	Center 2.44100 GHz #Res BW 100 kHz		#Video BW 300 kHz	Span 100.0 MHz Sweep 1.00 ms (1001 pts)
S Maker Table         V           I         N of a Trace         2.399 9 GHz           I         I         I           I         I         I           I         I         I           I         I         I           I         I         I           I         I         I           I         I         I	Y Function Function Width 469.67 dBm -50.27 dBm	Function Value	S Marker Tible	X 2.399 9 GHz 2.483 6 GHz Jul 30, 2019	Y Function -62.66 dBm -63.92 dBm	Function Wildth Function Value
The number hoppi	ng channel is 79.		The numb	er hoppin	g channel is	s 79.

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## A.7 MAXIMUM PEAK OUTPUT POWER

Test Date	2019/07/30	Temp./Hum.	23°C/55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)

#### A.7.1 Maximum Peak Output Power

Mode	Centre Frequency	Maximum Peal	Limit	
Widde	(MHz)	dBm	W	Linnt
	2402	12.28	0.017	
GFSK	2441	12.17	0.016	
	2480	12.06	0.016	21dBm
	2402	9.80	0.010	(0.125W)
8-DPSK	2441	9.45	0.009	
	2480	9.19	0.008	

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#### A.7.2 Measurement Plots



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## A.8 EMISSION LIMITATIONS MEASUREMENT

Test Date	2019/07/30	Temp./Hum.	23°C/55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)

#### A.8.1 Band Edge



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#### A.8.2 Spurious Emission

Test Date	2019/07/30	Temp./Hum.	23°C/55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)
Mode	GFSK	Frequency	2402MHz



Note: All results have been included cable loss.

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Test Date	2019/07/30	Temp./Hum.	23°C/55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)
Mode	GFSK	Frequency	2441MHz



Note: All results have been included cable loss.

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Test Date	2019/07/30	Temp./Hum.	23°C/55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)
Mode	GFSK	Frequency	2480MHz



Note: All results have been included cable loss.

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Test Date	2019/07/30	Temp./Hum.	23°C/55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)
Mode	8-DPSK	Frequency	2402MHz



Note: All results have been included cable loss.

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Test Date	2019/07/30	Temp./Hum.	23°C/55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)
Mode	8-DPSK	Frequency	2441MHz



Note: All results have been included cable loss.

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Test Date	2019/07/30	Temp./Hum.	23°C/55%
Cable Loss	3.69dB	Test Voltage	DC 3.8V (Via Battery)
Mode	8-DPSK	Frequency	2480MHz



Note: All results have been included cable loss.

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# APPENDIX B

## **TEST PHOTOGRAPHS**

(Model: T32MZ)

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