

## Appendix B: Test Results of Bluetooth

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## Appendix B.1: Test Results of 99% Bandwidth

### BDR mode (GFSK)

FCC Part 47 §15.247 2400-2483.5 MHz 2017

#### Occupied Channel Bandwidth 99% (2402 MHz; -7.500 dBm; 1 MHz; Test Mode)

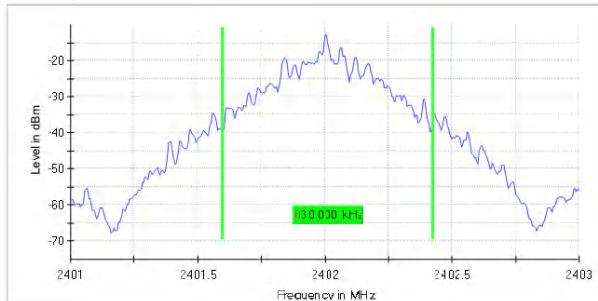
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

##### 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.830000	--	--	2401.597500	2402.427500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS



##### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.08 dB	0.30 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

**Occupied Channel Bandwidth 99% (2441 MHz; -7.500 dBm; 1 MHz;  
Test Mode)**

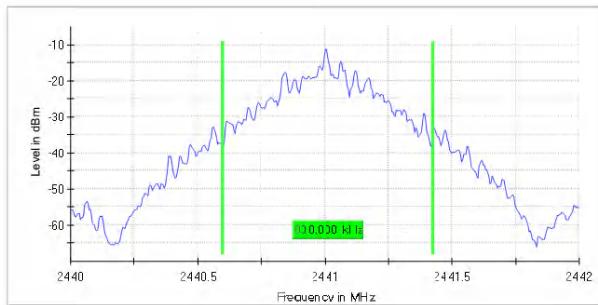
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

**99 % Bandwidth**

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	0.830000	--	--	2440.597500	2441.427500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS



**Measurement**

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.07 dB	0.30 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

**Occupied Channel Bandwidth 99% (2480 MHz; -7.500 dBm; 1 MHz;  
Test Mode)**

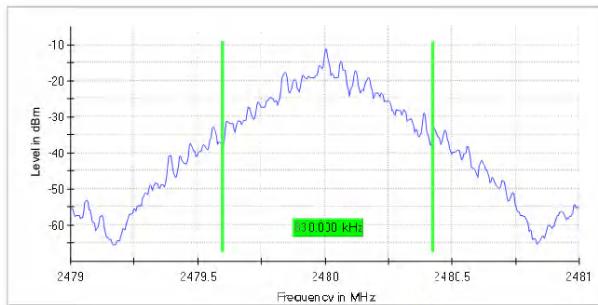
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

**99 % Bandwidth**

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.830000	--	--	2479.597500	2480.427500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS



**Measurement**

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.09 dB	0.30 dB

## EDR mode ( $\pi/4$ -DQPSK)

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Occupied Channel Bandwidth 99% (2402 MHz; -7.500 dBm; 1 MHz; Test Mode)

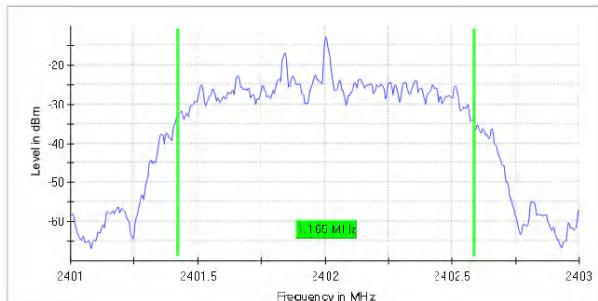
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.165000	--	--	2401.422500	2402.587500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS



#### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.04 dB	0.30 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

**Occupied Channel Bandwidth 99% (2441 MHz; -7.500 dBm; 1 MHz;  
Test Mode)**

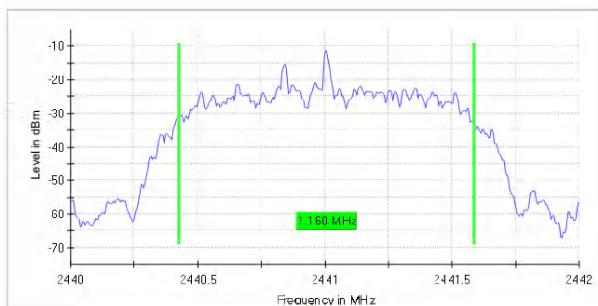
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

**99 % Bandwidth**

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.160000	--	--	2440.427500	2441.587500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS



**Measurement**

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.10 dB	0.30 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

**Occupied Channel Bandwidth 99% (2480 MHz; -7.500 dBm; 1 MHz;  
Test Mode)**

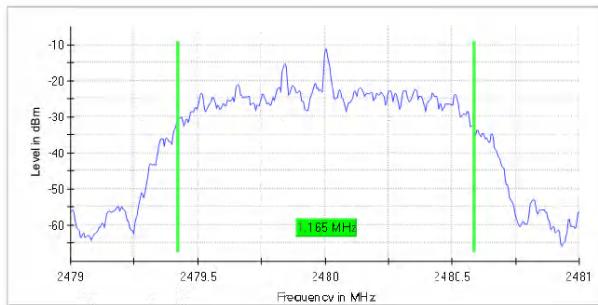
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

**99 % Bandwidth**

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.165000	--	--	2479.422500	2480.587500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS



**Measurement**

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.06 dB	0.30 dB

## Appendix B.2: Test Results of 20dB Bandwidth

### BDR mode (GFSK)

FCC Part 47 §15.247 2400-2483.5 MHz 2017

#### Emission Bandwidth 20 dB (2402 MHz; -7.500 dBm; 1 MHz; Test Mode)

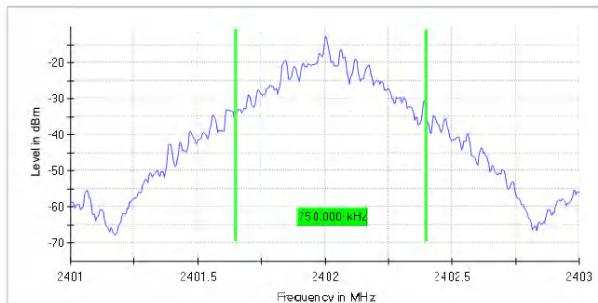
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.750000	--	--	2401.652500	2402.402500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-12.8	PASS



#### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.13 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Emission Bandwidth 20 dB (2441 MHz; -7.500 dBm; 1 MHz; Test Mode)

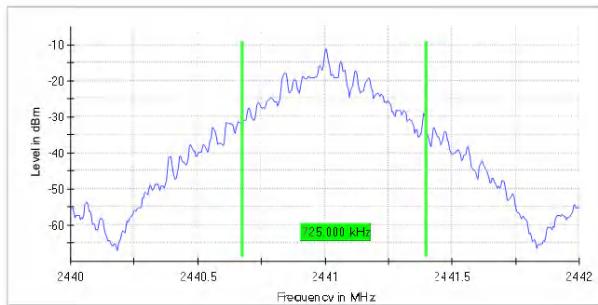
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	0.725000	--	--	2440.677500	2441.402500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-11.2	PASS



#### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 μs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.07 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Emission Bandwidth 20 dB (2480 MHz; -7.500 dBm; 1 MHz; Test Mode)

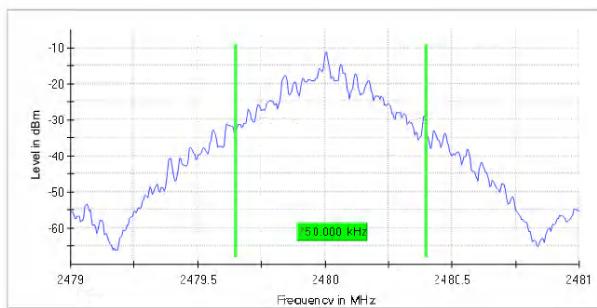
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.750000	--	--	2479.652500	2480.402500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-11.2	PASS



#### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 μs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.01 dB	0.50 dB

## EDR mode ( $\pi/4$ -DQPSK)

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Emission Bandwidth 20 dB (2402 MHz; -7.500 dBm; 1 MHz; Test Mode)

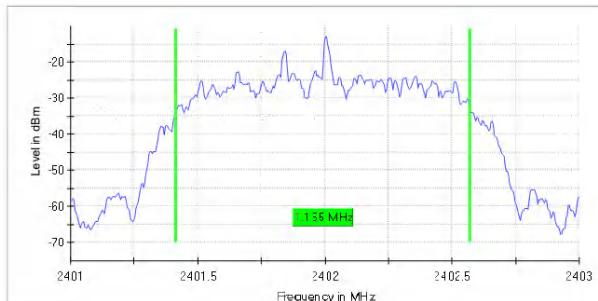
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.155000	--	--	2401.417500	2402.572500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-12.9	PASS



#### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	=> 10.000 kHz
VBW	30.000 kHz	=> 30.000 kHz
SweepPoints	400	~ 400
Sweeptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	8 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.05 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

**Emission Bandwidth 20 dB (2441 MHz; -7.500 dBm; 1 MHz; Test Mode)**

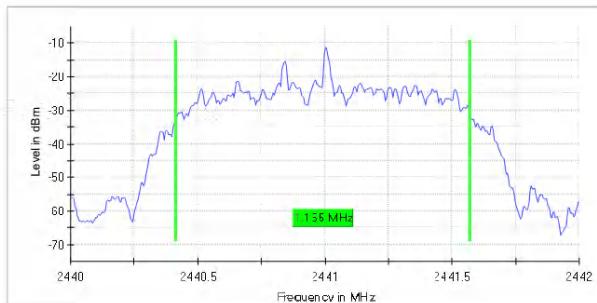
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

**20 dB Bandwidth**

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2441.000000	1.155000	--	--	2440.417500	2441.572500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2441.000000	-11.3	PASS



**Measurement**

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44200 GHz	2.44200 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.00 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Emission Bandwidth 20 dB (2480 MHz; -7.500 dBm; 1 MHz; Test Mode)

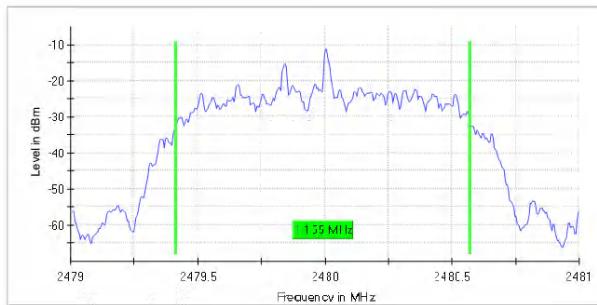
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### 20 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	1.155000	--	--	2479.417500	2480.572500

(continuation of the "20 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-11.2	PASS



#### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
Sweptime	189.648 μs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.03 dB	0.50 dB

## Appendix B.3: Test Results of Carrier Frequency Separation

### BDR mode (GFSK)

FCC Part 47 §15.247 2400-2483.5 MHz 2017

#### Carrier Frequency Separation (2402 MHz; -7.500 dBm; 1 MHz; Test Mode)

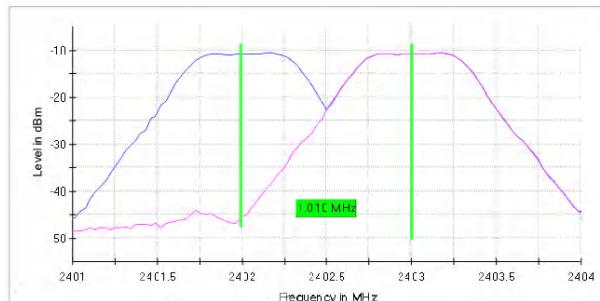
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2402.000000	1.009900	0.500000	--	2401.995050	2403.004950

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS



#### Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.00 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.04 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Carrier Frequency Separation (2441 MHz; -7.500 dBm; 1 MHz; Test Mode)

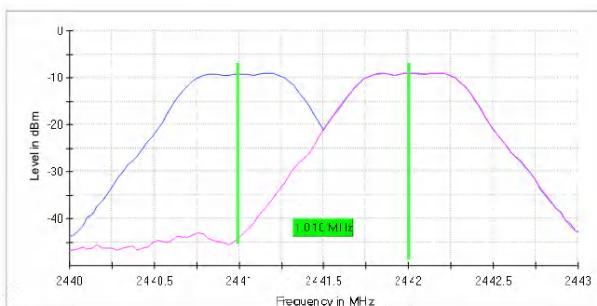
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2441.000000	1.009900	0.483333	--	2440.995050	2442.004950

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS



#### Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.01 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.00 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Carrier Frequency Separation (2480 MHz; -7.500 dBm; 1 MHz; Test Mode)

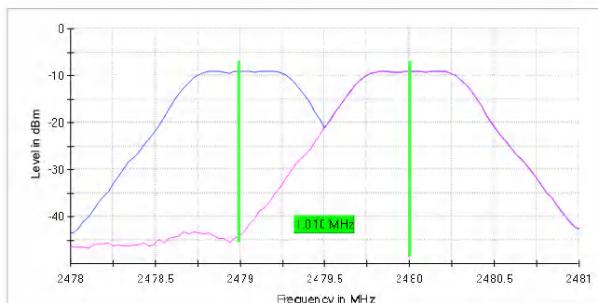
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2480.000000	1.009900	0.500000	--	2478.995050	2480.004950

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS



#### Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.09 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	15 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.00 dB	0.50 dB

**EDR mode ( $\pi/4$ -DQPSK)**

FCC Part 47 §15.247 2400-2483.5 MHz 2017

**Carrier Frequency Separation (2402 MHz; -7.500 dBm; 1 MHz; Test Mode)**

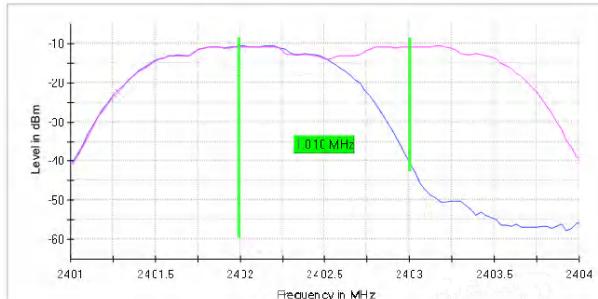
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

**Result**

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2402.000000	1.009900	0.770000	--	2401.995050	2403.004950

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS

**Measurement 1**

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.10 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40400 GHz	2.40400 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.03 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

**Carrier Frequency Separation (2441 MHz; -7.500 dBm; 1 MHz; Test Mode)**

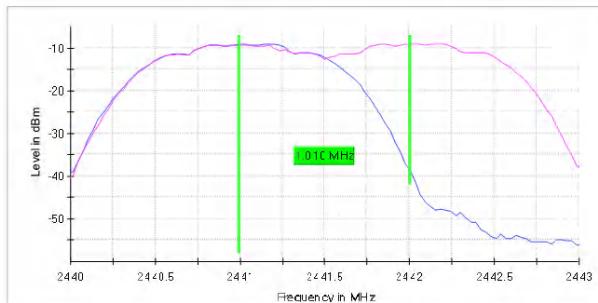
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

**Result**

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2441.000000	1.009900	0.770000	--	2440.995050	2442.004950

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2441.000000	PASS

**Measurement 1**

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.10 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.44000 GHz	2.44000 GHz
Stop Frequency	2.44300 GHz	2.44300 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.00 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Carrier Frequency Separation (2480 MHz; -7.500 dBm; 1 MHz; Test Mode)

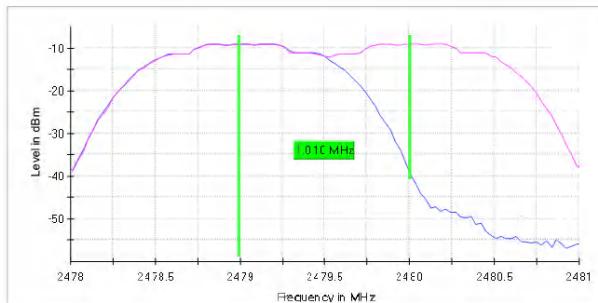
Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Frequency Separation (MHz)	Limit Min (MHz)	Limit Max (MHz)	Center Frequency low Channel (MHz)	Center Frequency high Channel (MHz)
2480.000000	1.009900	0.770000	--	2478.995050	2480.004950

(continuation of the "Result" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS



#### Measurement 1

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.00 dB	0.50 dB

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement 2

Setting	Instrument Value	Target Value
Start Frequency	2.47800 GHz	2.47800 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	3.000 MHz	3.000 MHz
RBW	300.000 kHz	<= 300.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	101	~ 10
Sweeptime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	10 / 10	10
Max Stable Difference	0.01 dB	0.50 dB

## Appendix B.4: Test Results of Number of Hopping Frequency

### BDR mode (GFSK)

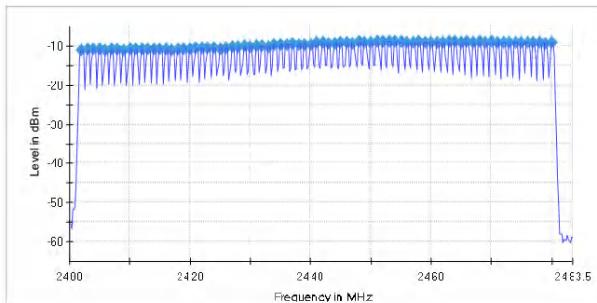
FCC Part 47 §15.247 2400-2483.5 MHz 2017

#### Hopping Frequencies (frequency independent; -7.500 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a),(g), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Channels

Channels	Limit Min	Limit Max	Result
79	15	--	PASS



#### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	200.000 kHz	<= 299.000 kHz
VBW	200.000 kHz	>= 200.000 kHz
SweepPoints	418	~ 418
Sweptime	1.060 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	39 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.33 dB	0.50 dB

## EDR mode ( $\pi/4$ -DQPSK)

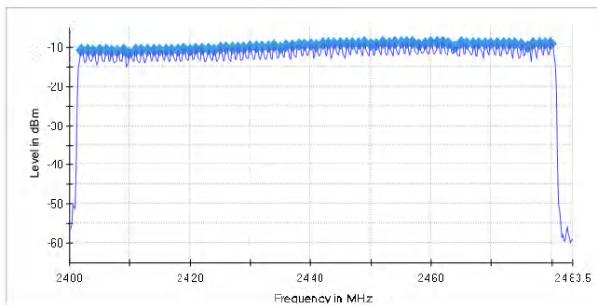
FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Hopping Frequencies (frequency independent; -7.500 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a),(g), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Channels

Channels	Limit Min	Limit Max	Result
79	15	--	PASS



#### Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40000 GHz	2.40000 GHz
Stop Frequency	2.48350 GHz	2.48350 GHz
Span	83.500 MHz	83.500 MHz
RBW	200.000 kHz	<= 299.000 kHz
VBW	200.000 kHz	>= 200.000 kHz
SweepPoints	418	~ 418
Sweptime	1.060 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	104 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.34 dB	0.50 dB

## Appendix B.5: Test Results of Time of Occupancy

### BDR mode (GFSK)

FCC Part 47 §15.247 2400-2483.5 MHz 2017

#### Time of Channel Occupancy (2441 MHz; -7.500 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	319	139.070	-27.5

#### Periode

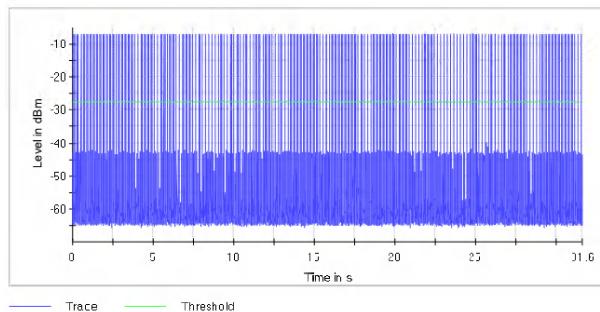
Min (ms)	Max (ms)	Mean (ms)
2.500	192.500	98.756

#### Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.43	0.44	400.000	0.000	0.435

#### DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.430	0.440	0.435



FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

### OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 μs	1.000 μs
Detector	RMS	RMS

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Time of Channel Occupancy(2) (2441 MHz; -7.500 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	152	262.110	-27.5

#### Periode

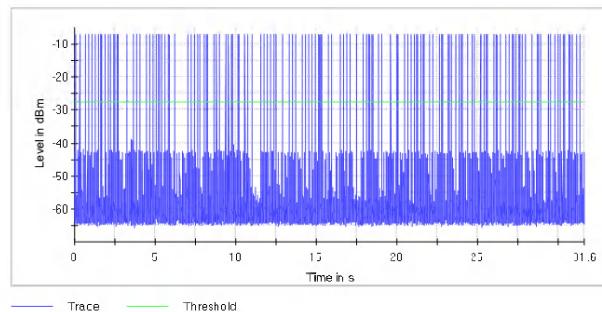
Min (ms)	Max (ms)	Mean (ms)
15.000	779.980	205.608

#### Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
1.690	3.380	400.000	0.000	1.713

#### DwellTime

Min (ms)	Max (ms)	Mean (ms)
1.690	4.190	1.724



FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

### OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 μs	1.000 μs
Detector	RMS	RMS

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Time of Channel Occupancy(3) (2441 MHz; -7.500 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	104	308.630	-27.5

#### Periode

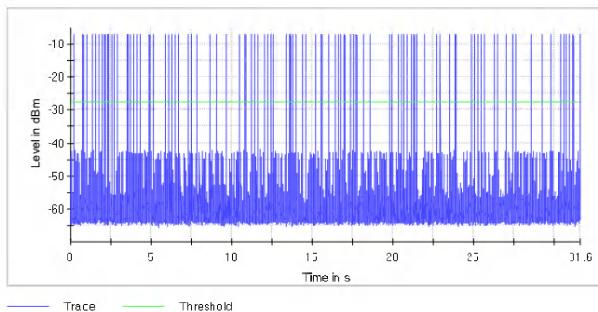
Min (ms)	Max (ms)	Mean (ms)
30.000	1199.970	300.576

#### Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.930	2.940	400.000	0.000	2.939

#### DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.930	2.940	2.939



FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

### OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 μs	1.000 μs
Detector	RMS	RMS

## EDR mode ( $\pi/4$ -DQPSK)

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Time of Channel Occupancy (2441 MHz; -7.500 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	317	141.710	-27.5

#### Periode

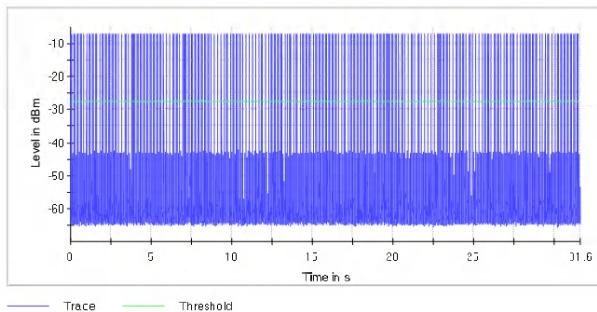
Min (ms)	Max (ms)	Mean (ms)
7.500	196.250	99.404

#### Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
0.43	0.88	400.000	0.000	0.446

#### DwellTime

Min (ms)	Max (ms)	Mean (ms)
0.440	1.690	0.451



FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

### OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 μs	1.000 μs
Detector	RMS	RMS

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Time of Channel Occupancy(2) (2441 MHz; -7.500 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	164	279.800	-27.5

#### Periode

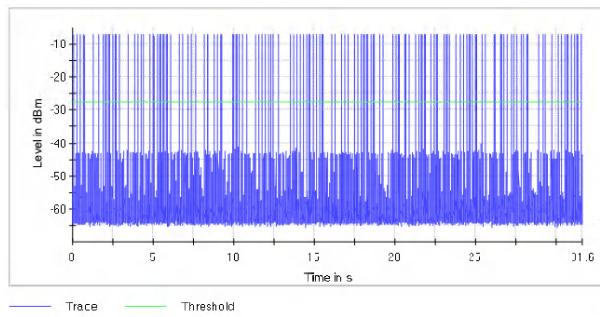
Min (ms)	Max (ms)	Mean (ms)
15.000	764.980	191.943

#### Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
1.690	1.700	400.000	0.000	1.696

#### DwellTime

Min (ms)	Max (ms)	Mean (ms)
1.690	1.700	1.696



FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

### OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 μs	1.000 μs
Detector	RMS	RMS

FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Time of Channel Occupancy(3) (2441 MHz; -7.500 dBm; 1 MHz)

Test according to FCC title 47 part 15 §15.247(a), KDB 558074 D01 DTS Meas Guidance v04 and ANSI C63.10-2013

#### Result

DUT Frequency (MHz)	Result	Number of Hops	Average time of occupancy (ms)	Threshold (dBm)
2441.000000	PASS	119	353.200	-27.5

#### Periode

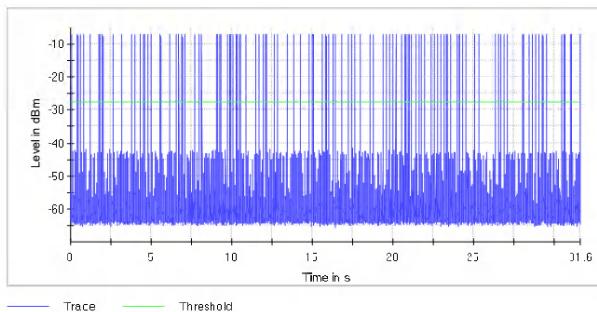
Min (ms)	Max (ms)	Mean (ms)
26.240	1031.220	263.034

#### Transmit Time per Hop

Min (ms)	Max (ms)	Limit Max for Max (ms)	Limit Min for Max (ms)	Mean (ms)
2.940	2.950	400.000	0.000	2.943

#### DwellTime

Min (ms)	Max (ms)	Mean (ms)
2.940	2.950	2.944



FCC Part 47 §15.247 2400-2483.5 MHz 2017

### Measurement

Setting	Instrument Value	Target Value
Center Frequency	2.44100 GHz	2.44100 GHz
Span	ZeroSpan	ZeroSpan
RBW	500.000 kHz	~ 500.000 kHz
VBW	1.000 MHz	~ 1.500 MHz
SweepPoints	30001	~ 30001
Sweeptime	31.600 s	31.600 s
Reference Level	-20.000 dBm	-20.000 dBm
Attenuation	0.000 dB	0.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	1	1
Filter	Channel	Channel
Trace Mode	Clear Write	Clear Write
Sweeptype	Sweep	AUTO
Preamp	off	off
Trigger	External	External
Trigger Offset	0.000 s	0.000 s

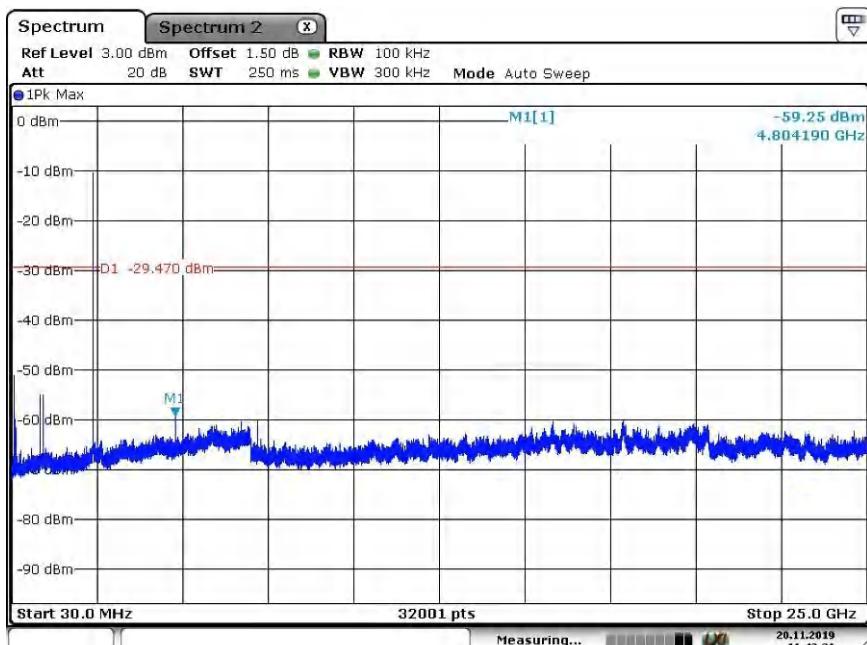
### OSP

Setting	Instrument Value	Target Value
Measurement Time	31.600 s	31.600 s
Tracepoints	31600000	31600000
Time resolution	1.000 μs	1.000 μs
Detector	RMS	RMS

## Appendix B.6: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

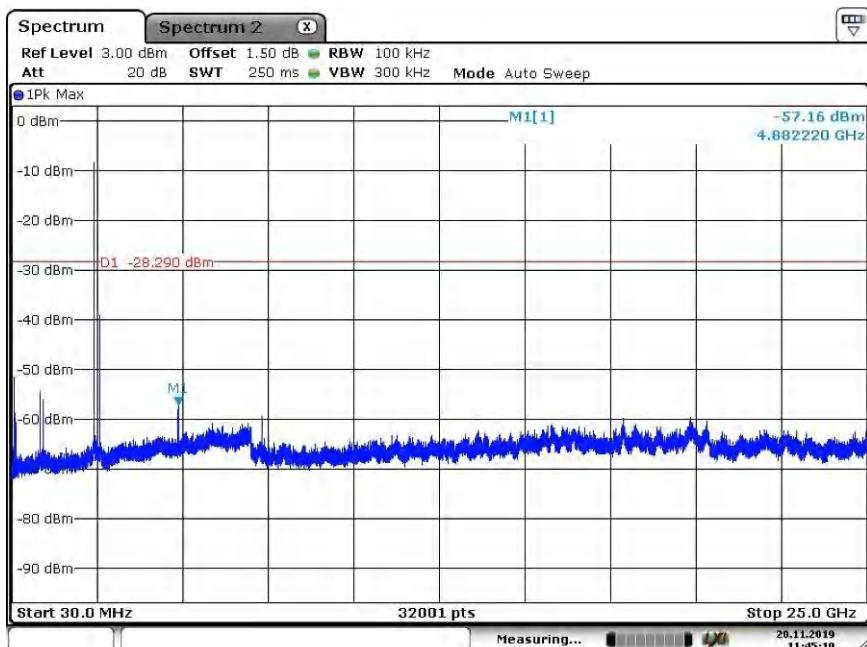
### BDR mode (GFSK)

Low Channel



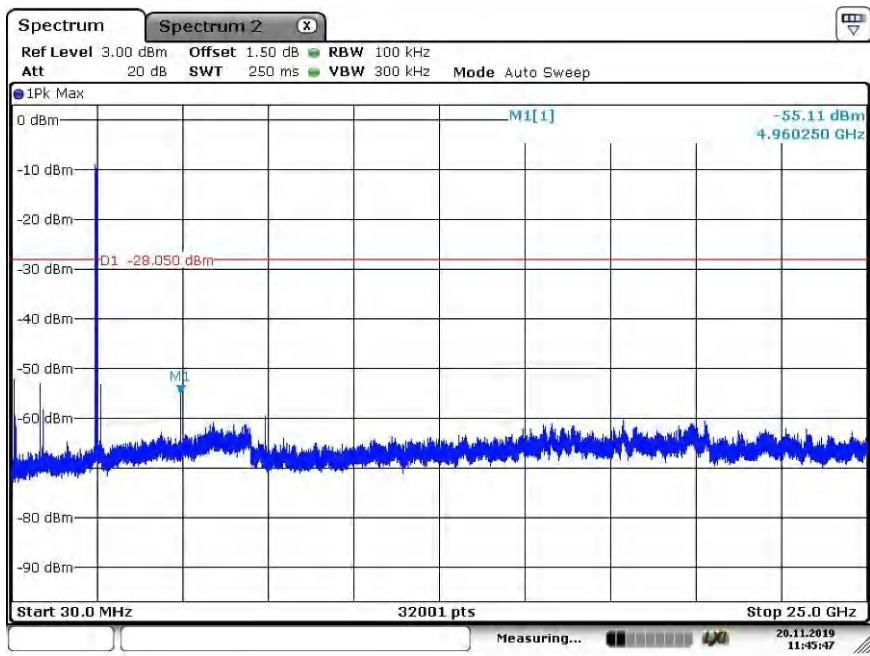
Date: 20.NOV.2019 11:43:21

Middle Channel



Date: 20.NOV.2019 11:43:10

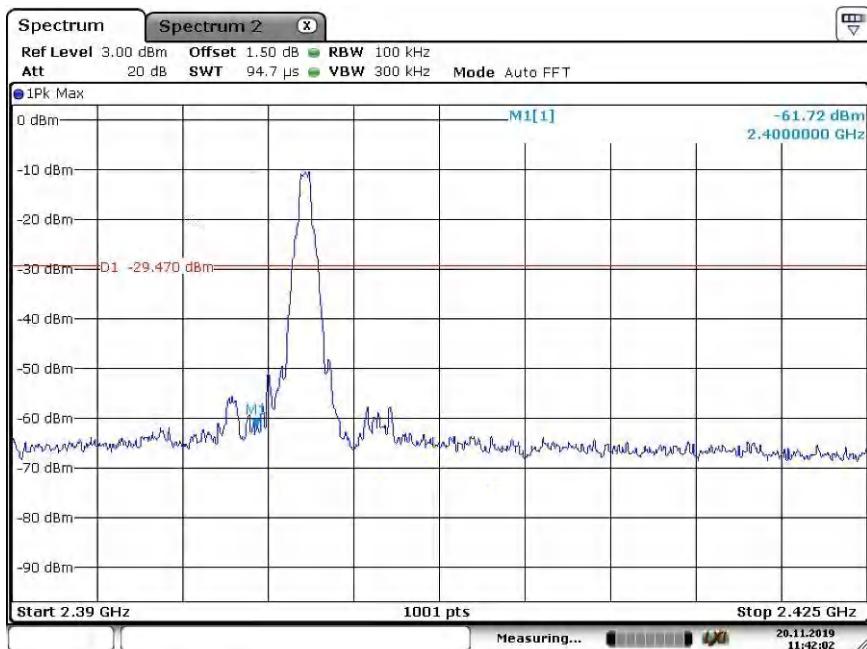
### High Channel



Date: 20.NOV.2019 11:45:17

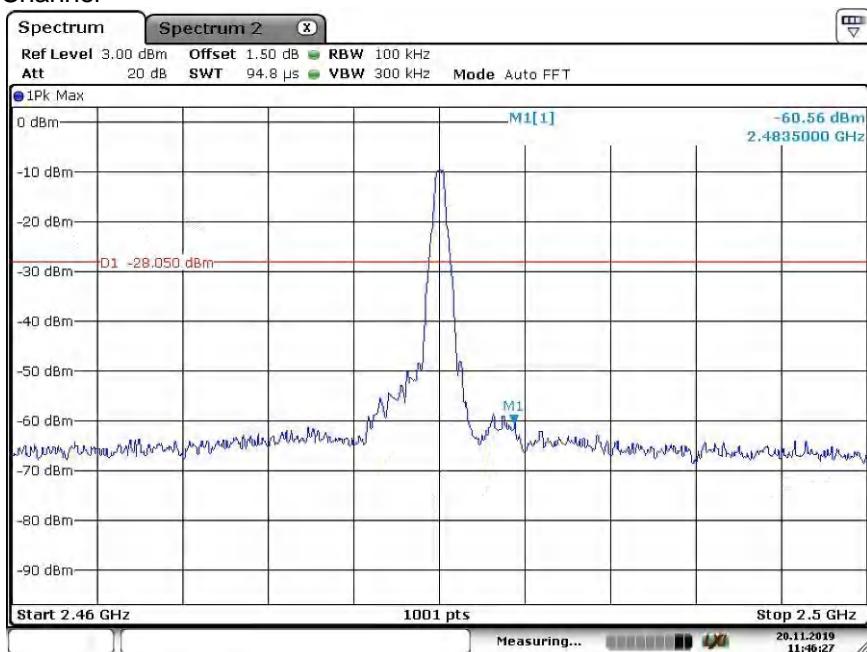
20.11.2019  
11:45:47

### Band Edge, Low Channel



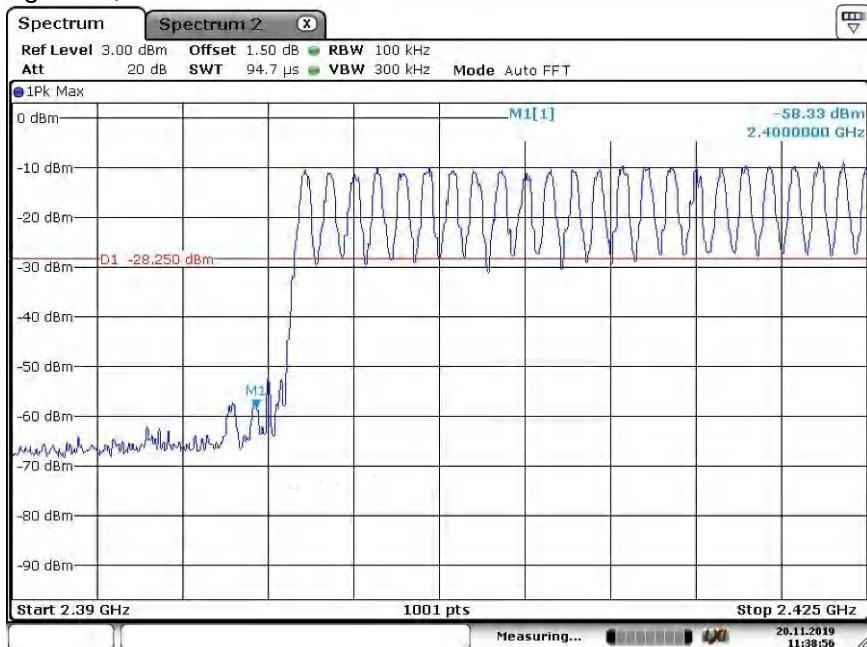
Date: 20.NOV.2019 11:42:02

### Band Edge, High Channel



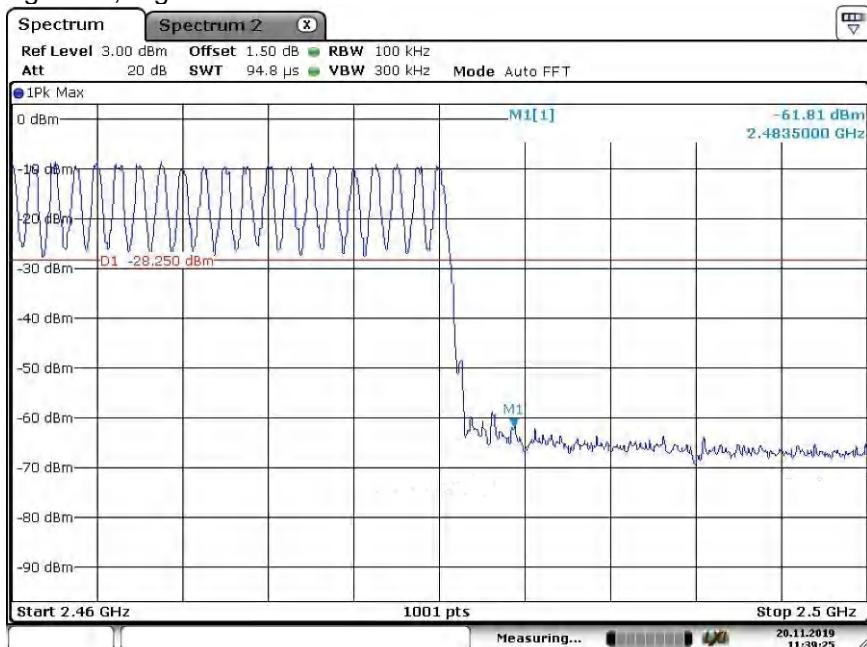
Date: 20.NOV.2019 11:46:27

Band Edge, Hopping Mode, Low Channel



Date: 20.NOV.2019 11:38:56

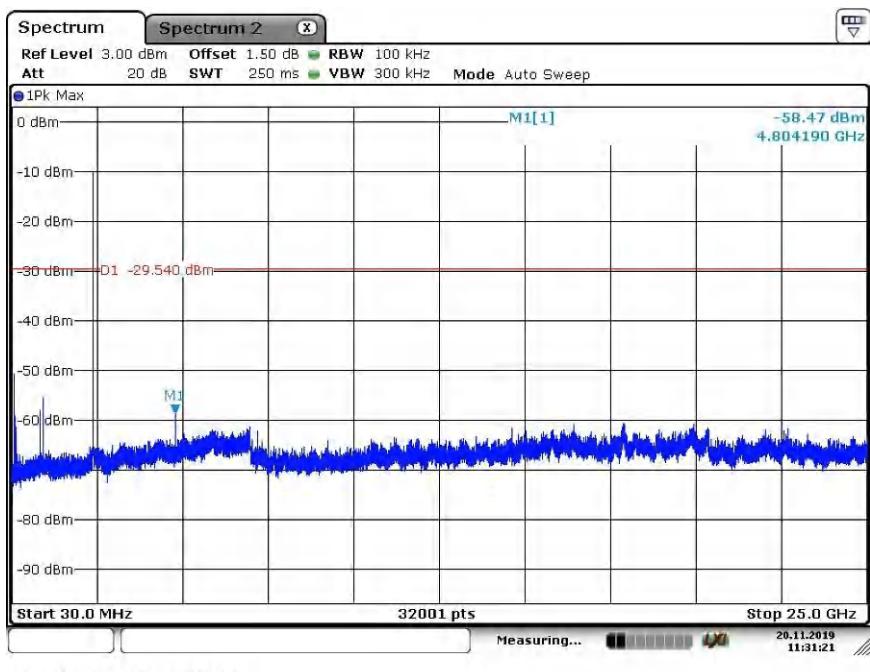
Band Edge, Hopping Mode, High Channle



Date: 20.NOV.2019 11:39:25

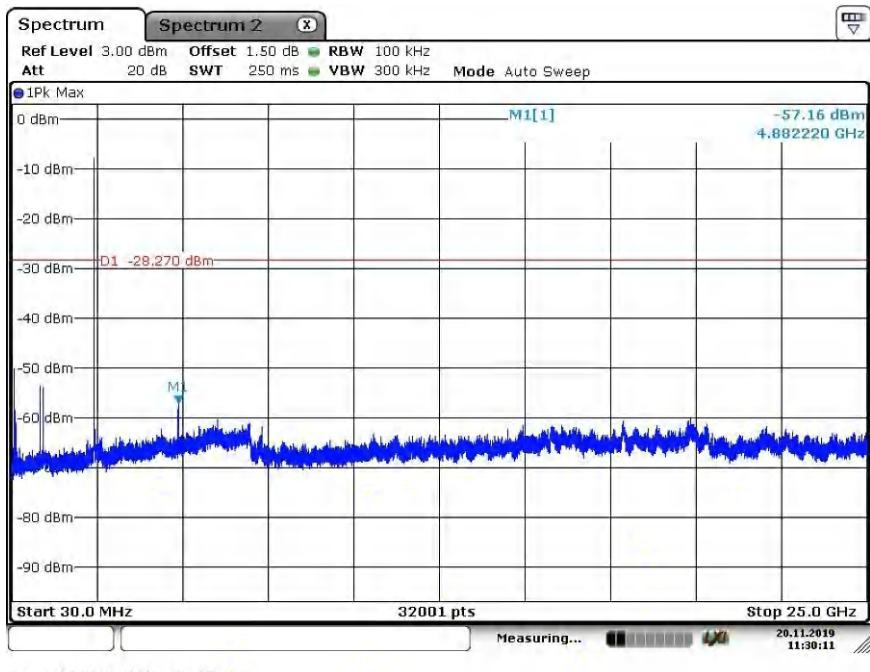
### EDR mode ( $\pi/4$ -DQPSK)

Low Channel



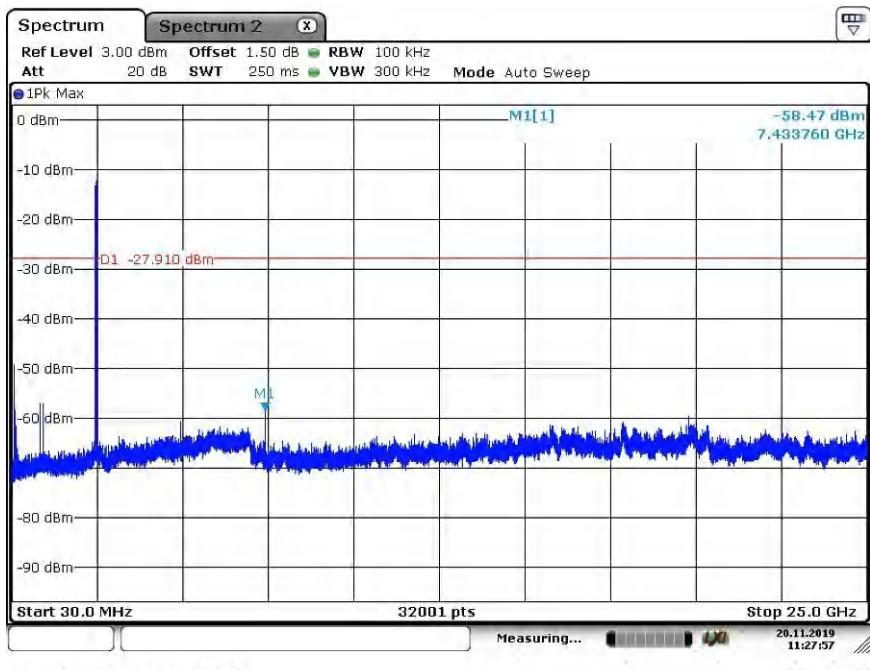
Date: 20.NOV.2019 11:31:21

Middle Channel

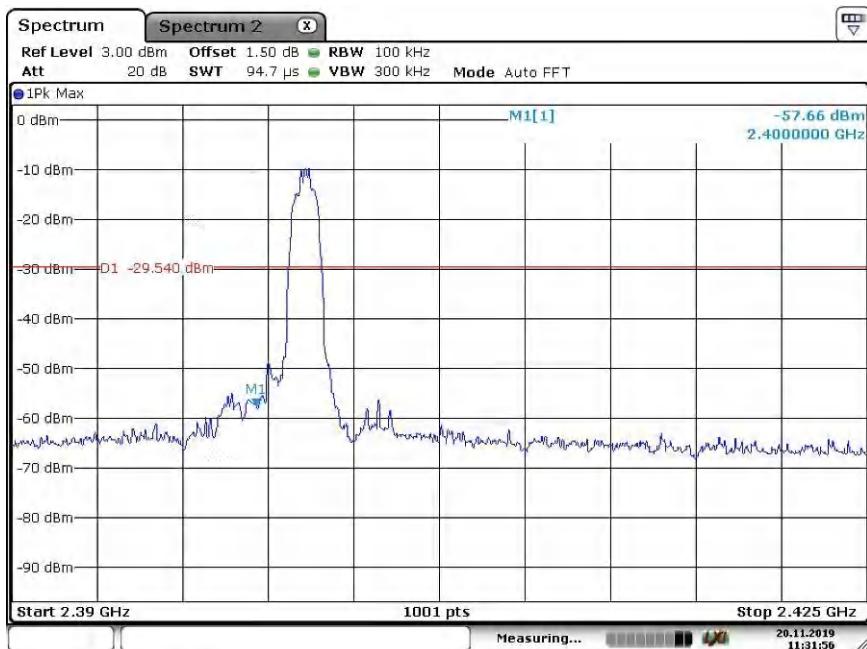


Date: 20.NOV.2019 11:30:11

High Channel

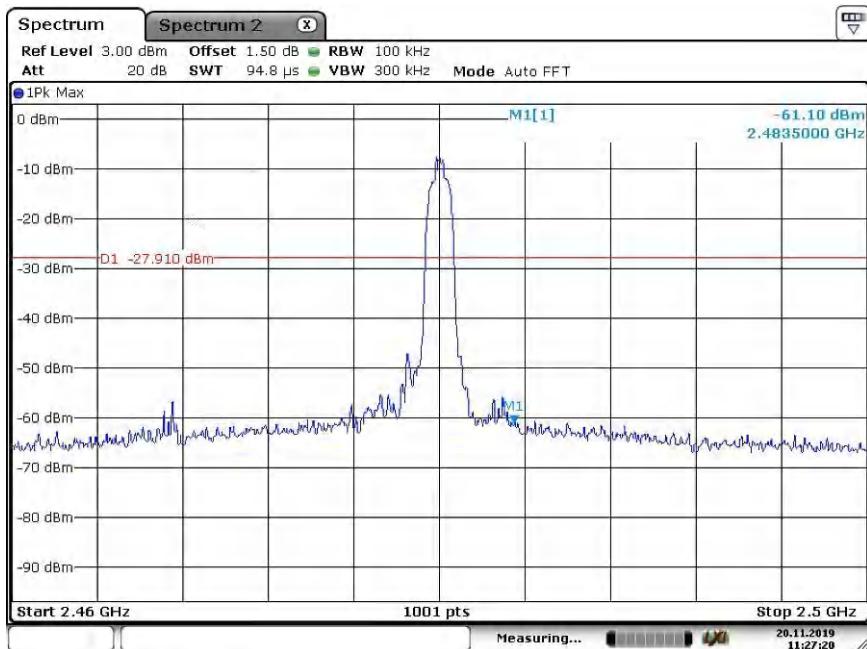


### Band Edge, Low Channel



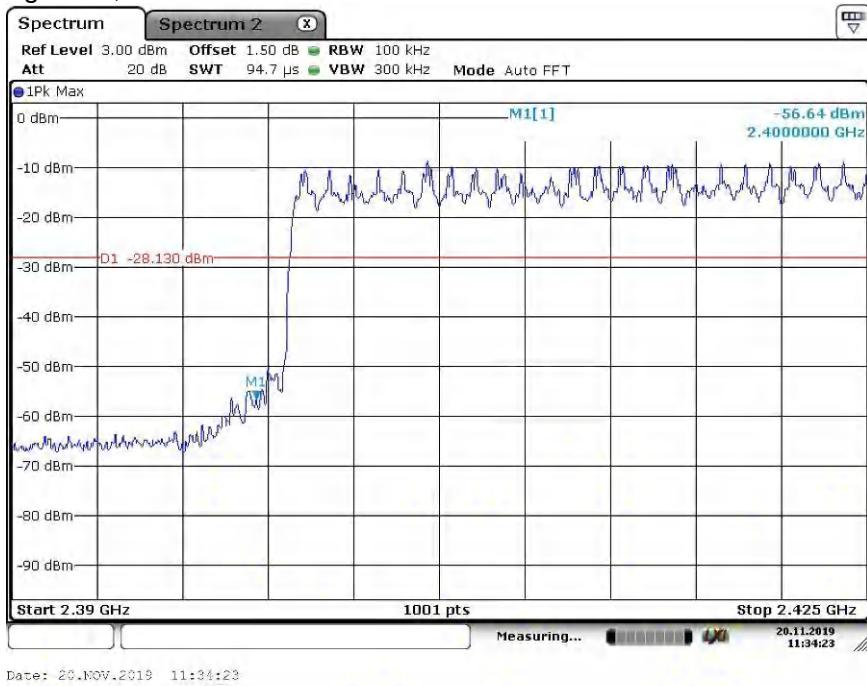
Date: 20.NOV.2019 11:31:56

### Band Edge, High Channel



Date: 20.NOV.2019 11:27:20

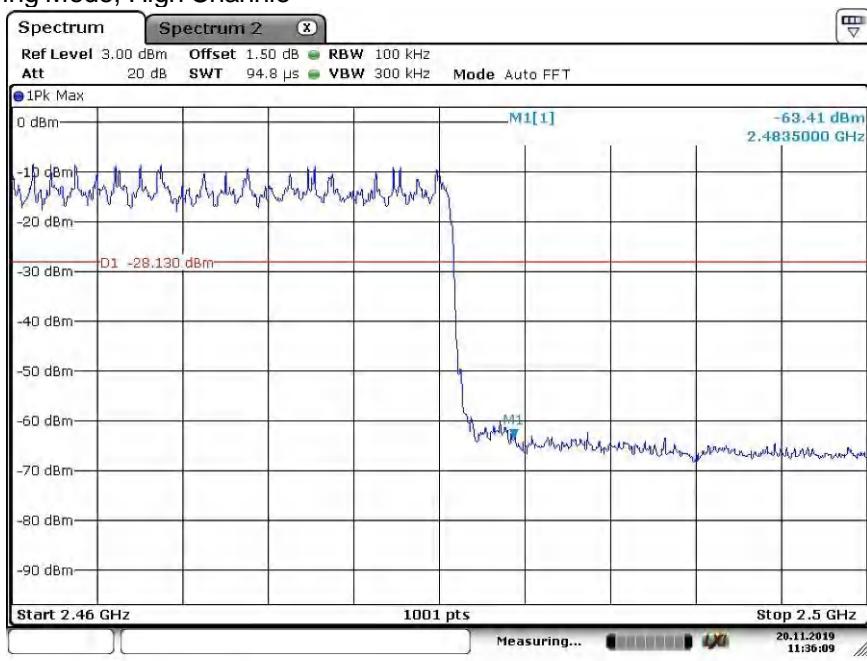
### Band Edge, Hopping Mode, Low Channel



Date: 20.NOV.2019 11:34:23

20.11.2019  
11:34:23

### Band Edge, Hopping Mode, High Channle



Date: 20.NOV.2019 11:36:09

20.11.2019  
11:36:09

Note: Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

## Appendix B.7: Test Results of Radiated Spurious Emissions

Note: This testing was carried out on different modulations, but only the worst case (GFSK) was presented in this report.

30MHz - 1GHz

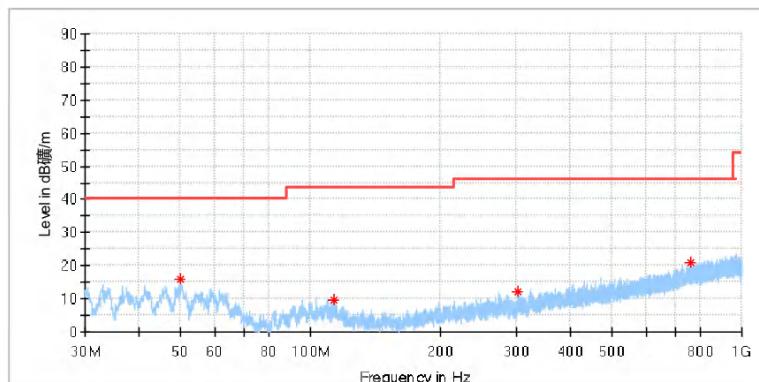
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
TestMode: TX\_Low Channel  
Test Voltage:: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	DET 2 (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.933500	15.93	---	40.00	24.07	100.0	H	356.0	-18.6
113.565500	9.72	---	43.50	33.78	100.0	H	0.0	-19.9
303.152000	12.03	---	46.00	33.97	100.0	H	26.0	-16.6
760.264500	21.05	---	46.00	24.95	100.0	H	17.0	-7.4

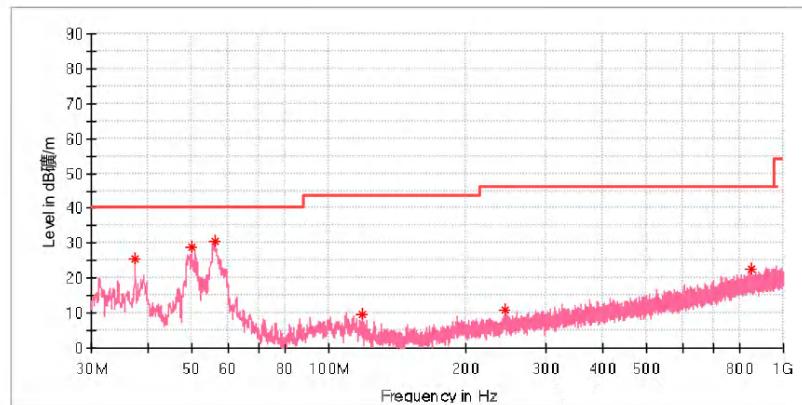
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_Low Channel  
Test Voltage:: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	DET 2 (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.469000	25.47	--	40.00	14.53	100.0	V	334.0	-21.3
49.982000	28.90	--	40.00	11.10	100.0	V	302.0	-18.6
55.996000	30.48	--	40.00	9.52	100.0	V	0.0	-18.8
118.755000	9.77	--	43.50	33.73	100.0	V	189.0	-20.8
244.855000	10.86	--	46.00	35.14	100.0	V	196.0	-17.9
847.661500	22.72	--	46.00	23.28	100.0	V	106.0	-5.9

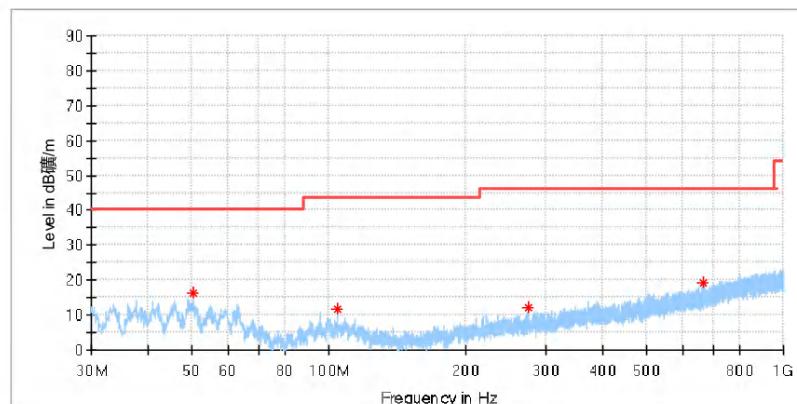
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_High Channel  
Test Voltage:: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	DET 2 (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
50.224500	16.52	--	40.00	23.48	100.0	H	181.0	-18.6
104.593000	11.59	--	43.50	31.91	100.0	H	131.0	-19.1
274.973500	12.22	--	46.00	33.78	100.0	H	181.0	-17.2
667.775000	19.44	--	46.00	26.56	100.0	H	181.0	-9.0

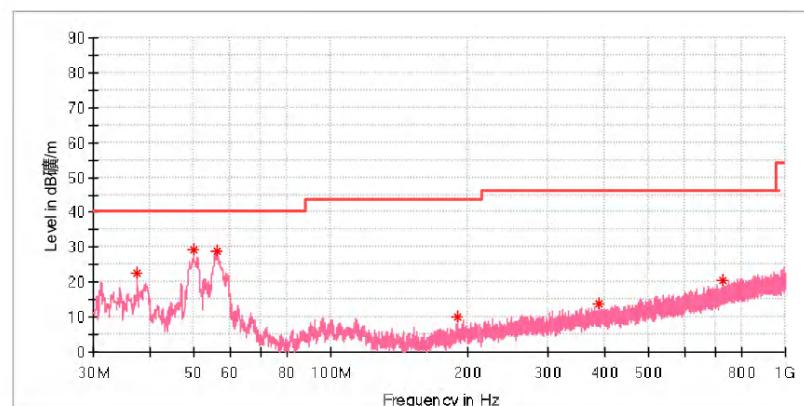
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_High Channel  
Test Voltage:: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	DET 2 (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
37.469000	22.62	--	40.00	17.38	100.0	V	172.0	-21.3
49.982000	29.49	--	40.00	10.51	100.0	V	79.0	-18.6
55.996000	28.81	--	40.00	11.19	100.0	V	147.0	-18.8
189.953000	10.01	--	43.50	33.49	100.0	V	31.0	-19.9
389.142500	13.63	--	46.00	32.37	100.0	V	326.0	-14.4
729.709500	20.57	--	46.00	25.43	100.0	V	180.0	-7.9

1GHz - 18GHz

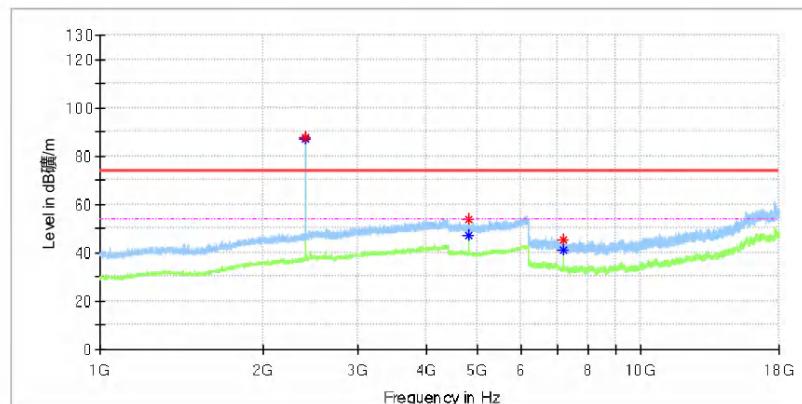
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_Low Channel  
Test Voltage: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2402.000000	--	87.20	54.00	-33.20	100.0	H	225.0	7.0
2402.000000	87.77	--	74.00	-13.77	100.0	H	225.0	7.0
4801.000000	--	47.41	54.00	6.59	100.0	H	343.0	13.6
4802.500000	53.63	--	74.00	20.37	100.0	H	349.0	13.6
7199.558333	--	41.03	54.00	12.97	100.0	H	71.0	8.8
7199.558333	45.64	--	74.00	28.36	100.0	H	71.0	8.8

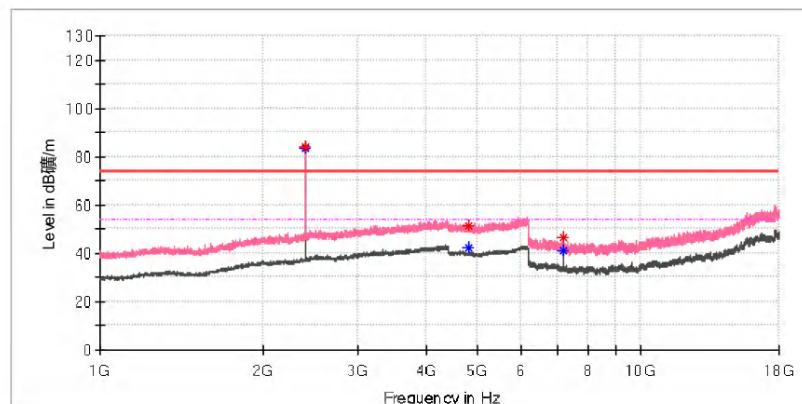
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_Low Channel  
Test Voltage:: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2402.000000	--	83.50	54.00	-29.50	100.0	V	352.0	7.0
2402.000000	84.17	--	74.00	-10.17	100.0	V	352.0	7.0
4803.500000	51.56	--	74.00	22.44	100.0	V	47.0	13.6
4804.000000	--	42.44	54.00	11.56	100.0	V	69.0	13.6
7199.558333	46.26	--	74.00	27.74	100.0	V	243.0	8.8
7200.050000	--	41.08	54.00	12.92	100.0	V	259.0	8.8

## Middle Channel

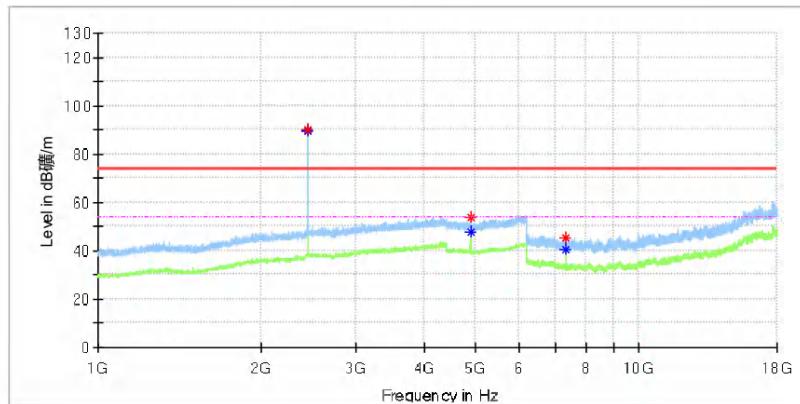
Test

1 / 1

# Test Report

## EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_Mid Channel  
Test Voltage: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



## Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2441.000000	90.13	--	74.00	-16.13	100.0	H	164.0	7.4
2441.000000	--	89.42	54.00	-35.42	100.0	H	164.0	7.4
4878.500000	53.87	--	74.00	20.13	100.0	H	343.0	13.4
4879.000000	--	47.73	54.00	6.27	100.0	H	343.0	13.4
7316.575000	--	40.58	54.00	13.42	100.0	H	63.0	8.2
7316.575000	45.33	--	74.00	28.67	100.0	H	63.0	8.2

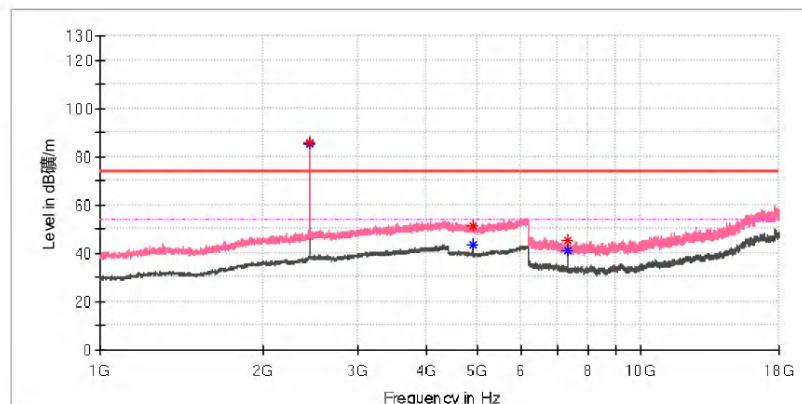
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_Mid Channel  
Test Voltage:: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2441.000000	--	85.32	54.00	-31.32	100.0	V	247.0	7.4
2441.000000	85.94	--	74.00	-11.94	100.0	V	247.0	7.4
4879.000000	--	43.32	54.00	10.68	100.0	V	344.0	13.4
4882.000000	51.31	--	74.00	22.69	100.0	V	74.0	13.4
7316.575000	--	41.15	54.00	12.85	100.0	V	138.0	8.2
7316.575000	45.45	--	74.00	28.55	100.0	V	138.0	8.2

High Channel

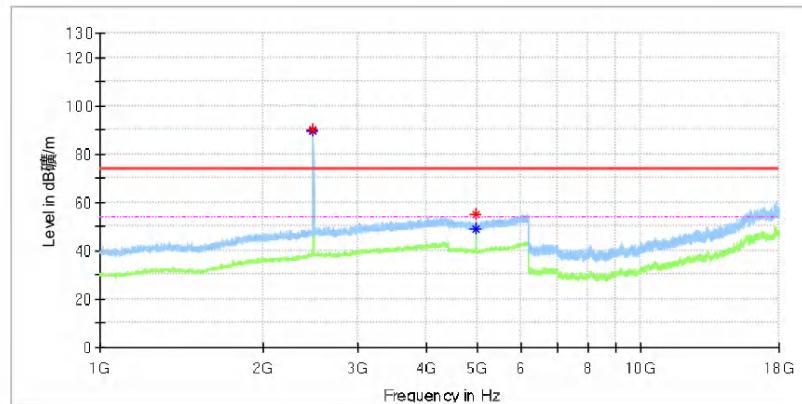
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX, High Channel  
Test Voltage: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2480.000000	---	89.56	54.00	-35.56	100.0	H	176.0	7.4
2480.000000	90.04	---	74.00	-16.04	100.0	H	176.0	7.4
4957.000000	---	49.07	54.00	4.93	100.0	H	350.0	13.2
4959.500000	54.85	---	74.00	19.15	100.0	H	62.0	13.2

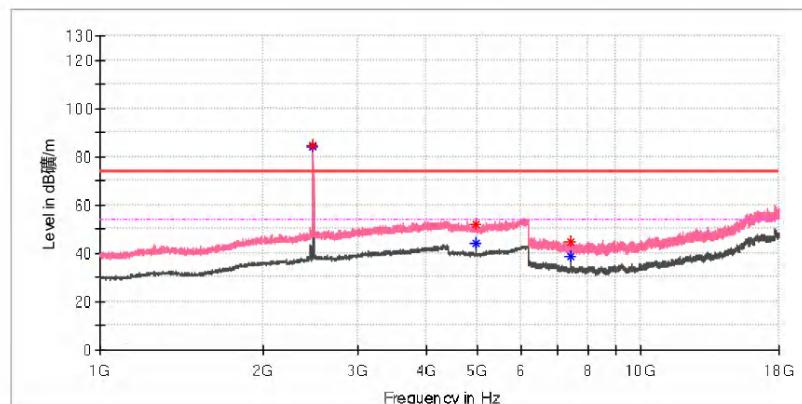
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_High Channel  
Test Voltage:: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2480.000000	--	84.22	54.00	-30.22	100.0	V	50.0	7.4
2480.000000	84.60	--	74.00	-10.60	100.0	V	50.0	7.4
4959.500000	51.90	--	74.00	22.10	100.0	V	38.0	13.2
4960.000000	--	44.12	54.00	9.88	100.0	V	177.0	13.2
7433.591667	44.49	--	74.00	29.51	100.0	V	147.0	8.4
7434.083333	--	38.66	54.00	15.34	100.0	V	164.0	8.4

## Appendix B.8: Test Results of Radiated Emissions in Restricted Bands

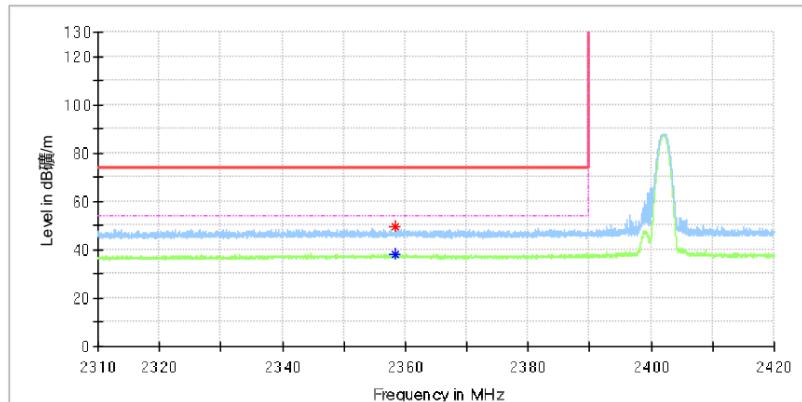
Test

1 / 1

### Test Report

#### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_Low Channel  
Test Voltage:: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



#### Critical\_Freqs

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2358.367647	--	37.95	54.00	16.05	100.0	H	87.0	6.9
2358.400000	49.63	--	74.00	24.37	100.0	H	295.0	6.9

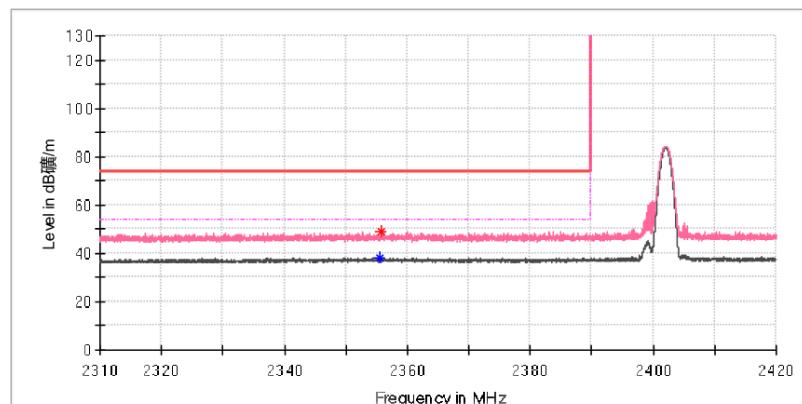
Test

1 / 1

## Test Report

### EUT Information

EUT Name: Bluetooth Headset  
Model: PMK WIRELESS EARBUDS  
Test Mode: TX\_Low Channel  
Test Voltage:: Fully charged battery  
Remark: Temp:23; Humi:49%  
Test Standard: FCC 15.247  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2355.472059	--	38.19	54.00	15.81	100.0	V	186.0	6.9
2355.747059	48.90	--	74.00	25.10	100.0	V	12.0	6.9

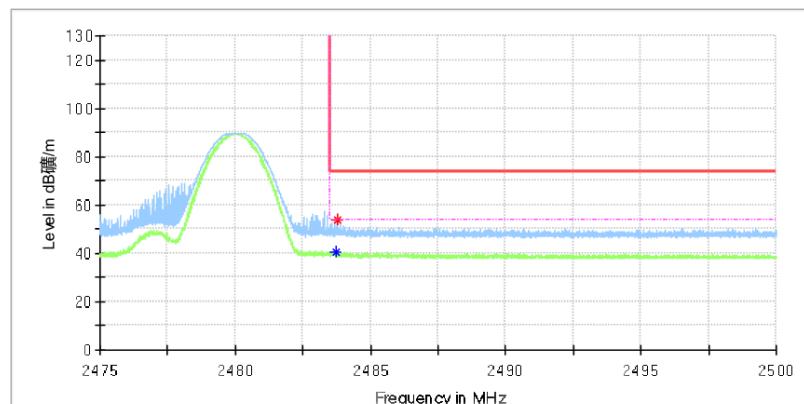
Test

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Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.750000	--	40.51	54.00	13.49	100.0	H	205.0	7.4
2483.757353	53.66	--	74.00	20.34	100.0	H	173.0	7.4

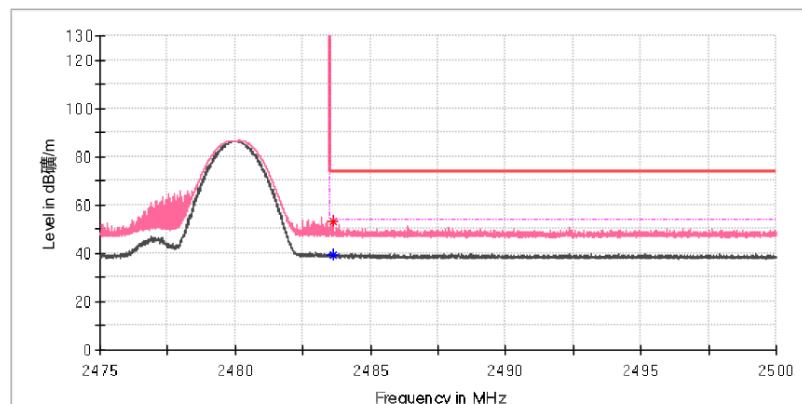
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2483.632353	53.07	--	74.00	20.93	100.0	V	36.0	7.4
2483.643382	--	39.58	54.00	14.42	100.0	V	105.0	7.4