



### 4.5 Out-of-Band Emission at the Band Edge Measurement

### 4.5.1 Limits of Out-of Band Emission at the Band Edge Measurement

The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be -13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.

#### 4.5.2 Test Instruments

Refer to section 4.5.2.

#### 4.5.3 Test Procedures

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m(below or equal 1GHz) and/or 1.5m(above 1GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power 2.15dBi.
- e. The requirements in 30.203 are expressed in terms of conductive power, and then conducted power will be calculated by EIRP-Array Gain.
- f. Antenna Gain Information at the Band Edge:

The following antenna gain information is provided to demonstrate the antenna performance of the 37~40 GHz band. These antenna gains were subtracted from the measured E.I.R.P levels at lower and upper band edge frequencies to determine an equivalent conductive power that was compared directly with the part 30.203 limits.

Band	260
Frequency (GHz)	Gain (dBi)
37.6	8.07
40	8.88

Band	261
Frequency (GHz)	Gain ( dBi)
27.5	10.33
28.35	9.84

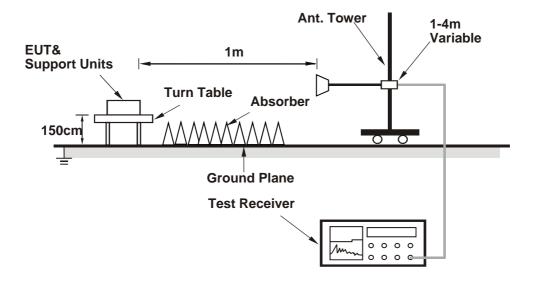
Note: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.



#### 4.5.4 Deviation from Test Standard

No deviation.

## 4.5.5 Test Set Up



For the actual test configuration, please refer to the attached file (Test Setup Photo).

## 4.5.6 EUT Operating Conditions

- a. Connected the Adapter to EUT.
- b. Prepared notebook to act as communication partner and placed it outside of testing area.
- c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- d. The communication partner sent data to EUT by command "PING".

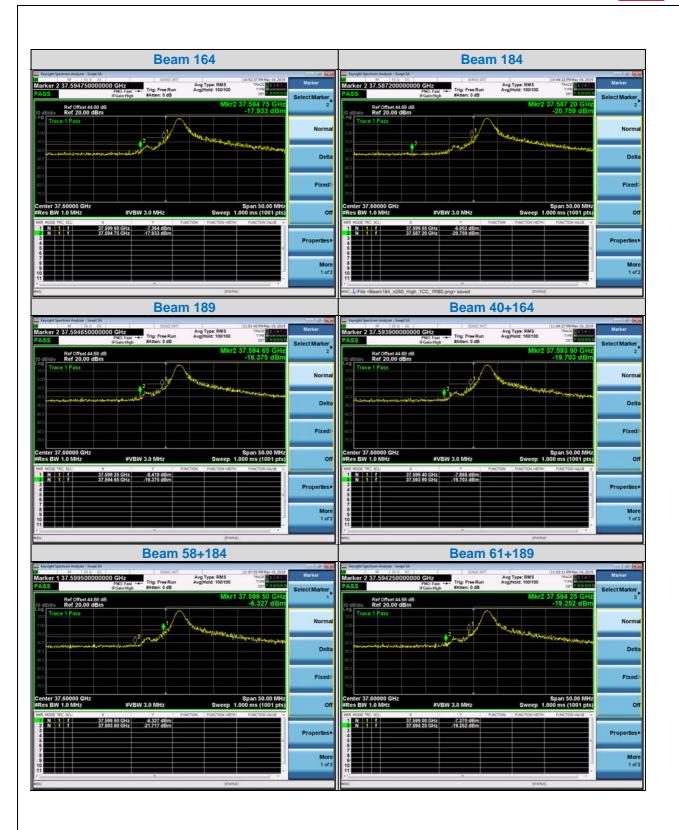


# 4.5.7 Test Results

Lowest-edge

Band		n260		Component Carriers		1CC		
Modulation		QPSK		RB 1RI		1RB0	RB0	
Beam ID	Frequency (GHz)	EIRP Value (dBm)	Array Gain (dBi)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result	
164	37.59960	0.706	8.07	-7.364	-5	-2.364	Pass	
164	37.59475	-9.863	8.07	-17.933	-13	-4.933	Pass	
104	37.59965	2.018	8.07	-6.052	-5	-1.052	Pass	
184	37.58720	-12.689	8.07	-20.759	-13	-7.759	Pass	
189	37.59925	-0.349	8.07	-8.419	-5	-3.419	Pass	
109	37.59465	-8.305	8.07	-16.375	-13	-3.375	Pass	
40+164	37.59940	0.182	8.07	-7.888	-5	-2.888	Pass	
40+164	37.59390	-11.633	8.07	-19.703	-13	-6.703	Pass	
E0   10 <i>1</i>	37.59950	1.743	8.07	-6.327	-5	-1.327	Pass	
58+184	37.59360	-13.647	8.07	-21.717	-13	-8.717	Pass	
61+189	37.59900	0.800	8.07	-7.270	-5	-2.270	Pass	
	37.59425	-11.182	8.07	-19.252	-13	-6.252	Pass	

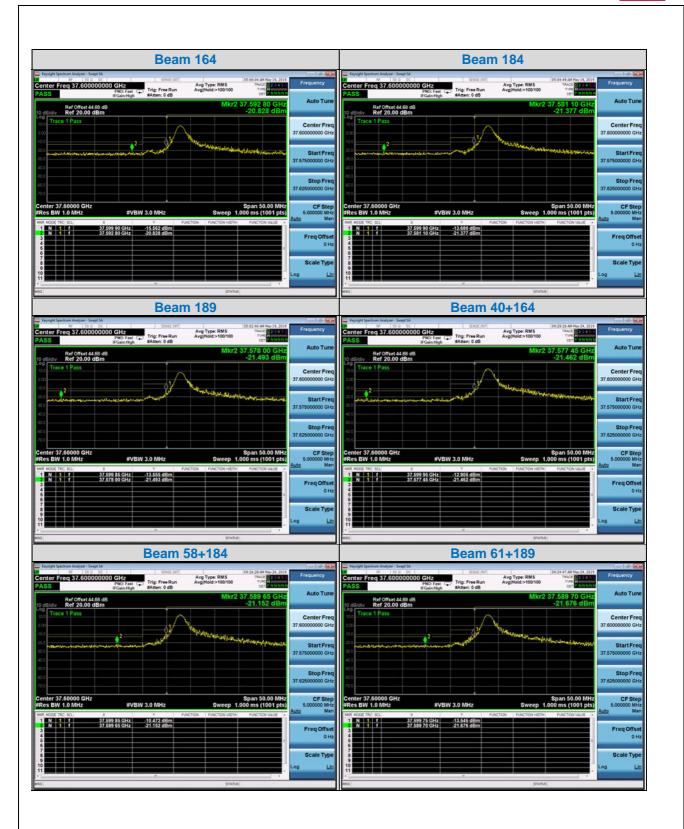






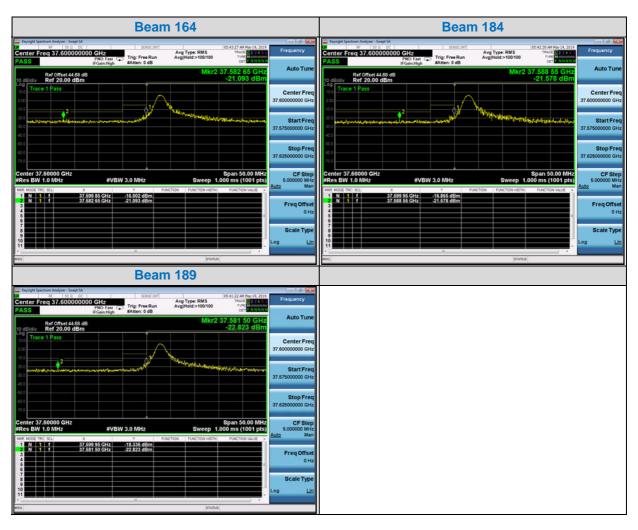
Band	and n260			Component Carriers		2CC		
Modulation		QPSK		RB 1RB0		1RB0		
Beam ID	Frequency (GHz)	EIRP Value (dBm)	Array Gain (dBi)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result	
164	37.59990	-7.492	8.07	-15.562	-5	-10.562	Pass	
104	37.59280	-12.758	8.07	-20.828	-13	-7.828	Pass	
184	37.59990	-5.610	8.07	-13.680	-5	-8.680	Pass	
184	37.58110	-13.307	8.07	-21.377	-13	-8.377	Pass	
189	37.59985	-5.485	8.07	-13.555	-5	-8.555	Pass	
109	37.57800	-13.423	8.07	-21.493	-13	-8.493	Pass	
40+164	37.59995	-4.835	8.07	-12.905	-5	-7.905	Pass	
40+104	37.57745	-13.392	8.07	-21.462	-13	-8.462	Pass	
E0.404	37.59985	-2.402	8.07	-10.472	-5	-5.472	Pass	
58+184	37.58965	-13.082	8.07	-21.152	-13	-8.152	Pass	
61+189	37.59975	-5.475	8.07	-13.545	-5	-8.545	Pass	
	37.58970	-13.606	8.07	-21.676	-13	-8.676	Pass	







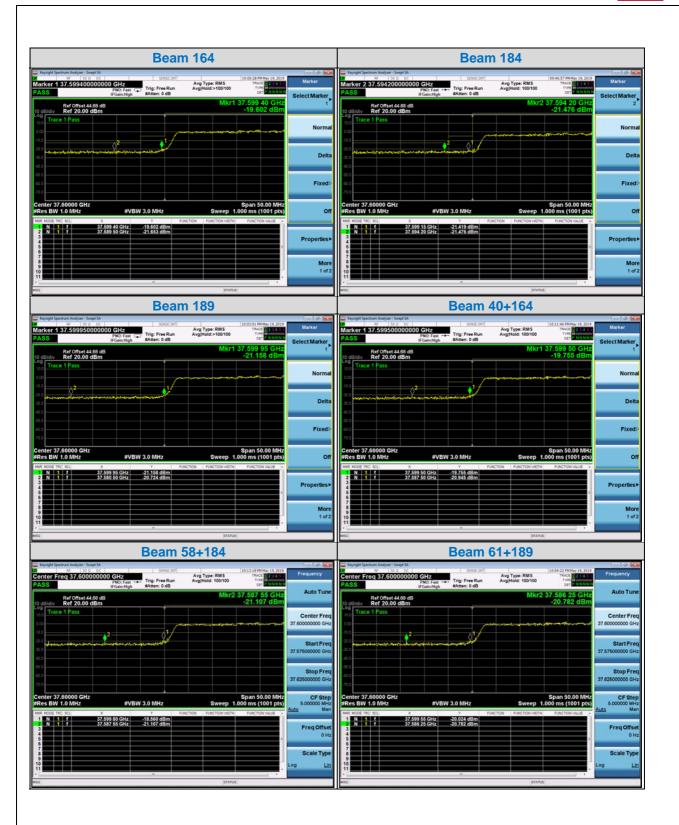
Band	Band n260		Component Carriers		4CC		
Modulation		QPSK		RB		1RB0	
Beam ID	Frequency (GHz)	EIRP Value (dBm)	Array Gain (dBi)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
164	37.59985	-7.932	8.07	-16.002	-5	-11.002	Pass
	37.58265	-13.023	8.07	-21.093	-13	-8.093	Pass
104	37.59995	-8.795	8.07	-16.865	-5	-11.865	Pass
184	37.58855	-13.508	8.07	-21.578	-13	-8.578	Pass
189	37.59995	-10.266	8.07	-18.336	-5	-13.336	Pass
	37.58150	-14.753	8.07	-22.823	-13	-9.823	Pass





BAND	BAND n260			Component C	Carriers	1CC	
MODULATIO	N	QPSK		RB 66RB			
Beam ID	Frequency (GHz)	EIRP Value (dBm)	Array Gain (dBi)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
164	37.59940	-11.532	8.07	-19.602	-5	-14.602	Pass
104	37.58950	-13.583	8.07	-21.653	-13	-8.653	Pass
184	37.59915	-13.349	8.07	-21.419	-5	-16.419	Pass
104	37.59420	-13.406	8.07	-21.476	-13	-8.476	Pass
189	37.59950	-13.089	8.07	-21.159	-5	-16.159	Pass
109	37.58050	-12.654	8.07	-20.724	-13	-7.724	Pass
40+164	37.59950	-11.685	8.07	-19.755	-5	-14.755	Pass
40+164	37.58750	-12.875	8.07	-20.945	-13	-7.945	Pass
E0 : 10 /	37.59980	-10.490	8.07	-18.560	-5	-13.560	Pass
58+184	37.58755	-13.037	8.07	-21.107	-13	-8.107	Pass
61+189	37.59955	-11.954	8.07	-20.024	-5	-15.024	Pass
017109	37.58625	-12.712	8.07	-20.782	-13	-7.782	Pass

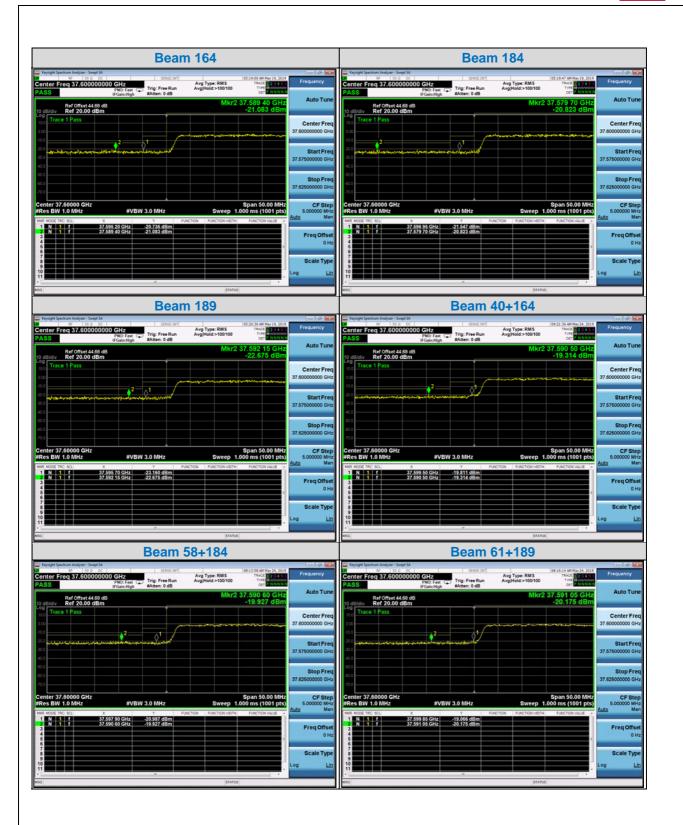






BAND		n260		Component Carriers		2CC	
MODULATIO	N	QPSK		RB	66RB		
Beam ID	Frequency (GHz)	EIRP Value (dBm)	Array Gain (dBi)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
164	37.59520	-12.666	8.07	-20.736	-5	-15.736	Pass
104	37.58940	-13.013	8.07	-21.083	-13	-8.083	Pass
184	37.59695	-13.477	8.07	-21.547	-5	-16.547	Pass
104	37.57970	-12.753	8.07	-20.823	-13	-7.823	Pass
189	37.59570	-15.090	8.07	-23.160	-5	-18.160	Pass
109	37.59215	-14.605	8.07	-22.675	-13	-9.675	Pass
40+164	37.59950	-11.741	8.07	-19.811	-5	-14.811	Pass
40+104	37.59050	-11.244	8.07	-19.314	-13	-6.314	Pass
E0   104	37.59790	-12.917	8.07	-20.987	-5	-15.987	Pass
58+184	37.59060	-11.857	8.07	-19.927	-13	-6.927	Pass
04 : 400	37.59985	-10.996	8.07	-19.066	-5	-14.066	Pass
61+189	37.59105	-12.105	8.07	-20.175	-13	-7.175	Pass







BAND		n260		Component Carriers		4CC	
MODULATIO	N	QPSK		RB		66RB	
Beam ID	Frequency (GHz)	EIRP Value (dBm)	Array Gain (dBi)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
164	37.59895	-12.608	8.07	-20.678	-5	-15.678	Pass
164	37.58260	-11.528	8.07	-19.598	-13	-6.598	Pass
184	37.59985	-12.586	8.07	-20.656	-5	-15.656	Pass
104	37.58505	-12.550	8.07	-20.620	-13	-7.620	Pass
189	37.59620	-11.873	8.07	-19.943	-5	-14.943	Pass
	37.59170	-12.768	8.07	-20.838	-13	-7.838	Pass

