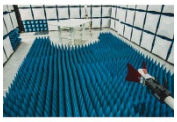
PCTEST
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
http://www.pctest.com



MEASUREMENT REPORT
FCC Part 30 5G mmWave

Applicant Name:
Sony Mobile Communications Inc.
4-12-3 Higashi-Shinagawa
Shinagawa-ku
Tokyo, 140-0002, Japan

Date of Testing:
7/29 - 9/19/2020
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M2007070106-18-R2.PY7

FCC ID:	**PY7-57441Y**
APPLICANT:	**Sony Mobile Communications Inc.**

Application Type:	Certification
EUT Type:	Portable Handset
FCC Classification:	Part 30 Mobile Transmitter (5GM)
FCC Rule Part(s):	30
Test Procedure(s):	ANSI C63.26-2015, KDB 971168 D01 v03r01, KDB 842590 D01 v01r01

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

This revised Test Report (S/N: 1M2007070106-18-R2.FCC Report SNs) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

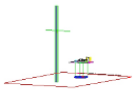
I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Randy Ortanez
President

ACCREDITED
CERT #2041.01

TABLE OF CONTENTS

MEASUREMENT REPORT
FCC Part 30



Antenna	Mode	Bandwidth (MHz)	CCs Active	Band	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
							Max. Power (W)	Max. Power (dBm)		
Ant1	2Tx	100	1	n261	30	27500 - 28350	0.491	26.91	90M8G7D	π/2 BPSK
Ant1	2Tx	100	1	n261	30	27500 - 28350	0.423	26.26	92M9G7D	QPSK
Ant1	2Tx	100	1	n261	30	27500 - 28350	0.330	25.18	93M3W7D	16QAM
Ant1	2Tx	100	1	n261	30	27500 - 28350	0.199	22.99	93M0W7D	64QAM
Ant1	2Tx	100	2	n261	30	27500 - 28350	0.194	22.87	188MG7D	π/2 BPSK
Ant1	2Tx	100	2	n261	30	27500 - 28350	0.195	22.91	191MG7D	QPSK
Ant1	2Tx	100	2	n261	30	27500 - 28350	0.136	21.32	191MW7D	16QAM
Ant1	2Tx	100	2	n261	30	27500 - 28350	0.083	19.19	191MW7D	64QAM
Ant1	2Tx	50	1	n261	30	27500 - 28350	0.319	25.04	45M3G7D	π/2 BPSK
Ant1	2Tx	50	1	n261	30	27500 - 28350	0.324	25.10	45M4G7D	QPSK
Ant1	2Tx	50	1	n261	30	27500 - 28350	0.187	22.73	45M2W7D	16QAM
Ant1	2Tx	50	1	n261	30	27500 - 28350	0.086	19.37	45M5W7D	64QAM
Ant1	2Tx	50	2	n261	30	27500 - 28350	0.032	15.02	95M0G7D	π/2 BPSK
Ant1	2Tx	50	2	n261	30	27500 - 28350	0.039	15.96	94M5G7D	QPSK
Ant1	2Tx	50	2	n261	30	27500 - 28350	0.022	13.49	94M5W7D	16QAM
Ant1	2Tx	50	2	n261	30	27500 - 28350	0.015	11.85	94M9W7D	64QAM

EUT Overview (Ant1 - Band n261)

Antenna	Mode	Bandwidth (MHz)	CCs Active	Band	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
							Max. Power (W)	Max. Power (dBm)		
Ant2	2Tx	100	1	n261	30	27500 - 28350	0.383	25.83	-	π/2 BPSK
Ant2	2Tx	100	1	n261	30	27500 - 28350	0.433	26.36	-	QPSK
Ant2	2Tx	100	1	n261	30	27500 - 28350	0.236	23.72	-	16QAM
Ant2	2Tx	100	1	n261	30	27500 - 28350	0.128	21.07	-	64QAM
Ant2	2Tx	100	2	n261	30	27500 - 28350	0.217	23.37	-	π/2 BPSK
Ant2	2Tx	100	2	n261	30	27500 - 28350	0.219	23.41	-	QPSK
Ant2	2Tx	100	2	n261	30	27500 - 28350	0.114	20.57	-	16QAM
Ant2	2Tx	100	2	n261	30	27500 - 28350	0.100	19.98	-	64QAM
Ant2	2Tx	50	1	n261	30	27500 - 28350	0.446	26.49	-	π/2 BPSK
Ant2	2Tx	50	1	n261	30	27500 - 28350	0.515	27.12	-	QPSK
Ant2	2Tx	50	1	n261	30	27500 - 28350	0.284	24.54	-	16QAM
Ant2	2Tx	50	1	n261	30	27500 - 28350	0.169	22.28	-	64QAM
Ant2	2Tx	50	2	n261	30	27500 - 28350	0.171	22.34	-	π/2 BPSK
Ant2	2Tx	50	2	n261	30	27500 - 28350	0.177	22.47	-	QPSK
Ant2	2Tx	50	2	n261	30	27500 - 28350	0.112	20.48	-	16QAM
Ant2	2Tx	50	2	n261	30	27500 - 28350	0.092	19.64	-	64QAM

EUT Overview (Ant2 - Band n261)

Antenna	Mode	Bandwidth (MHz)	CCs Active	Band	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
							Max. Power (W)	Max. Power (dBm)		
Ant3	2Tx	100	1	n261	30	27500 - 28350	0.652	28.14	-	π/2 BPSK
Ant3	2Tx	100	1	n261	30	27500 - 28350	0.719	28.57	-	QPSK
Ant3	2Tx	100	1	n261	30	27500 - 28350	0.417	26.20	-	16QAM
Ant3	2Tx	100	1	n261	30	27500 - 28350	0.307	24.87	-	64QAM
Ant3	2Tx	100	2	n261	30	27500 - 28350	0.077	18.88	-	π/2 BPSK
Ant3	2Tx	100	2	n261	30	27500 - 28350	0.078	18.91	-	QPSK
Ant3	2Tx	100	2	n261	30	27500 - 28350	0.053	17.22	-	16QAM
Ant3	2Tx	100	2	n261	30	27500 - 28350	0.033	15.14	-	64QAM
Ant3	2Tx	50	1	n261	30	27500 - 28350	0.509	27.07	-	π/2 BPSK
Ant3	2Tx	50	1	n261	30	27500 - 28350	0.530	27.24	-	QPSK
Ant3	2Tx	50	1	n261	30	27500 - 28350	0.282	24.50	-	16QAM
Ant3	2Tx	50	1	n261	30	27500 - 28350	0.229	23.59	-	64QAM
Ant3	2Tx	50	2	n261	30	27500 - 28350	0.075	18.77	-	π/2 BPSK
Ant3	2Tx	50	2	n261	30	27500 - 28350	0.080	19.01	-	QPSK
Ant3	2Tx	50	2	n261	30	27500 - 28350	0.056	17.45	-	16QAM
Ant3	2Tx	50	2	n261	30	27500 - 28350	0.044	16.42	-	64QAM

EUT Overview (Ant3 - Band n261)

Antenna	Mode	Bandwidth (MHz)	CCs Active	Band	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
							Max. Power (W)	Max. Power (dBm)		
Ant4	2Tx	100	1	n261	30	27500 - 28350	0.467	26.69	-	π/2 BPSK
Ant4	2Tx	100	1	n261	30	27500 - 28350	0.468	26.70	-	QPSK
Ant4	2Tx	100	1	n261	30	27500 - 28350	0.303	24.81	-	16QAM
Ant4	2Tx	100	1	n261	30	27500 - 28350	0.183	22.63	-	64QAM
Ant4	2Tx	100	2	n261	30	27500 - 28350	0.041	16.14	-	π/2 BPSK
Ant4	2Tx	100	2	n261	30	27500 - 28350	0.042	16.25	-	QPSK
Ant4	2Tx	100	2	n261	30	27500 - 28350	0.032	15.04	-	16QAM
Ant4	2Tx	100	2	n261	30	27500 - 28350	0.029	14.66	-	64QAM
Ant4	2Tx	50	1	n261	30	27500 - 28350	0.381	25.81	-	π/2 BPSK
Ant4	2Tx	50	1	n261	30	27500 - 28350	0.469	26.71	-	QPSK
Ant4	2Tx	50	1	n261	30	27500 - 28350	0.224	23.50	-	16QAM
Ant4	2Tx	50	1	n261	30	27500 - 28350	0.137	21.37	-	64QAM
Ant4	2Tx	50	2	n261	30	27500 - 28350	0.080	19.05	-	π/2 BPSK
Ant4	2Tx	50	2	n261	30	27500 - 28350	0.086	19.32	-	QPSK
Ant4	2Tx	50	2	n261	30	27500 - 28350	0.059	17.74	-	16QAM
Ant4	2Tx	50	2	n261	30	27500 - 28350	0.032	15.07	-	64QAM

EUT Overview (Ant4 - Band n261)

Antenna	Mode	Bandwidth (MHz)	CCs Active	Band	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
							Max. Power (W)	Max. Power (dBm)		
Ant1	2Tx	100	1	n260	30	37000 - 40000	0.272	24.35	90M5G7D	π/2 BPSK
Ant1	2Tx	100	1	n260	30	37000 - 40000	0.284	24.54	92M8G7D	QPSK
Ant1	2Tx	100	1	n260	30	37000 - 40000	0.178	22.50	92M9W7D	16QAM
Ant1	2Tx	100	1	n260	30	37000 - 40000	0.095	19.80	92M9W7D	64QAM
Ant1	2Tx	100	2	n260	30	37000 - 40000	0.068	18.33	189MG7D	π/2 BPSK
Ant1	2Tx	100	2	n260	30	37000 - 40000	0.067	18.23	191MG7D	QPSK
Ant1	2Tx	100	2	n260	30	37000 - 40000	0.045	16.56	191MW7D	16QAM
Ant1	2Tx	100	2	n260	30	37000 - 40000	0.027	14.32	192MW7D	64QAM
Ant1	SISO	50	1	n260	30	37000 - 40000	0.176	22.45	45M3G7D	π/2 BPSK
Ant1	SISO	50	1	n260	30	37000 - 40000	0.185	22.66	45M4G7D	QPSK
Ant1	SISO	50	1	n260	30	37000 - 40000	0.084	19.23	45M5W7D	16QAM
Ant1	SISO	50	1	n260	30	37000 - 40000	0.050	16.99	45M3W7D	64QAM
Ant1	2Tx	50	2	n260	30	37000 - 40000	0.090	19.55	94M4G7D	π/2 BPSK
Ant1	2Tx	50	2	n260	30	37000 - 40000	0.091	19.61	94M7G7D	QPSK
Ant1	2Tx	50	2	n260	30	37000 - 40000	0.061	17.86	94M5W7D	16QAM
Ant1	2Tx	50	2	n260	30	37000 - 40000	0.038	15.75	95M0W7D	64QAM

EUT Overview (Ant1 - Band n260)

Antenna	Mode	Bandwidth (MHz)	CCs Active	Band	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
							Max. Power (W)	Max. Power (dBm)		
Ant2	2Tx	100	1	n260	30	37000 - 40000	0.455	26.58	-	π/2 BPSK
Ant2	2Tx	100	1	n260	30	37000 - 40000	0.491	26.91	-	QPSK
Ant2	2Tx	100	1	n260	30	37000 - 40000	0.254	24.04	-	16QAM
Ant2	2Tx	100	1	n260	30	37000 - 40000	0.159	22.02	-	64QAM
Ant2	2Tx	100	2	n260	30	37000 - 40000	0.123	20.89	-	π/2 BPSK
Ant2	2Tx	100	2	n260	30	37000 - 40000	0.121	20.83	-	QPSK
Ant2	2Tx	100	2	n260	30	37000 - 40000	0.083	19.20	-	16QAM
Ant2	2Tx	100	2	n260	30	37000 - 40000	0.062	17.90	-	64QAM
Ant2	2Tx	50	1	n260	30	37000 - 40000	0.313	24.96	-	π/2 BPSK
Ant2	2Tx	50	1	n260	30	37000 - 40000	0.176	22.45	-	QPSK
Ant2	2Tx	50	1	n260	30	37000 - 40000	0.084	19.23	-	16QAM
Ant2	2Tx	50	1	n260	30	37000 - 40000	0.050	16.99	-	64QAM
Ant2	2Tx	50	2	n260	30	37000 - 40000	0.065	18.14	-	π/2 BPSK
Ant2	2Tx	50	2	n260	30	37000 - 40000	0.067	18.25	-	QPSK
Ant2	2Tx	50	2	n260	30	37000 - 40000	0.046	16.64	-	16QAM
Ant2	2Tx	50	2	n260	30	37000 - 40000	0.031	14.89	-	64QAM

EUT Overview (Ant2 - Band n260)

Antenna	Mode	Bandwidth (MHz)	CCs Active	Band	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
							Max. Power (W)	Max. Power (dBm)		
Ant3	2Tx	100	1	n260	30	37000 - 40000	0.340	25.31	-	π/2 BPSK
Ant3	2Tx	100	1	n260	30	37000 - 40000	0.337	25.28	-	QPSK
Ant3	2Tx	100	1	n260	30	37000 - 40000	0.201	23.04	-	16QAM
Ant3	2Tx	100	1	n260	30	37000 - 40000	0.153	21.86	-	64QAM
Ant3	2Tx	100	2	n260	30	37000 - 40000	0.087	19.42	-	π/2 BPSK
Ant3	2Tx	100	2	n260	30	37000 - 40000	0.088	19.43	-	QPSK
Ant3	2Tx	100	2	n260	30	37000 - 40000	0.059	17.71	-	16QAM
Ant3	2Tx	100	2	n260	30	37000 - 40000	0.036	15.56	-	64QAM
Ant3	2Tx	50	1	n260	30	37000 - 40000	0.358	25.54	-	π/2 BPSK
Ant3	2Tx	50	1	n260	30	37000 - 40000	0.449	26.52	-	QPSK
Ant3	2Tx	50	1	n260	30	37000 - 40000	0.216	23.34	-	16QAM
Ant3	2Tx	50	1	n260	30	37000 - 40000	0.121	20.84	-	64QAM
Ant3	2Tx	50	2	n260	30	37000 - 40000	0.080	19.05	-	π/2 BPSK
Ant3	2Tx	50	2	n260	30	37000 - 40000	0.084	19.26	-	QPSK
Ant3	2Tx	50	2	n260	30	37000 - 40000	0.052	17.14	-	16QAM
Ant3	2Tx	50	2	n260	30	37000 - 40000	0.036	15.53	-	64QAM

EUT Overview (Ant3 - Band n260)

Antenna	Mode	Bandwidth (MHz)	CCs Active	Band	FCC Rule Part	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
							Max. Power (W)	Max. Power (dBm)		
Ant4	2Tx	100	1	n260	30	37000 - 40000	0.340	25.32	-	π/2 BPSK
Ant4	2Tx	100	1	n260	30	37000 - 40000	0.367	25.65	-	QPSK
Ant4	2Tx	100	1	n260	30	37000 - 40000	0.211	23.25	-	16QAM
Ant4	2Tx	100	1	n260	30	37000 - 40000	0.118	20.72	-	64QAM
Ant4	2Tx	100	2	n260	30	37000 - 40000	0.216	23.34	-	π/2 BPSK
Ant4	2Tx	100	2	n260	30	37000 - 40000	0.215	23.33	-	QPSK
Ant4	2Tx	100	2	n260	30	37000 - 40000	0.146	21.63	-	16QAM
Ant4	2Tx	100	2	n260	30	37000 - 40000	0.092	19.62	-	64QAM
Ant4	2Tx	50	1	n260	30	37000 - 40000	0.322	25.08	-	π/2 BPSK
Ant4	2Tx	50	1	n260	30	37000 - 40000	0.338	25.29	-	QPSK
Ant4	2Tx	50	1	n260	30	37000 - 40000	0.201	23.04	-	16QAM
Ant4	2Tx	50	1	n260	30	37000 - 40000	0.112	20.48	-	64QAM
Ant4	2Tx	50	2	n260	30	37000 - 40000	0.100	20.02	-	π/2 BPSK
Ant4	2Tx	50	2	n260	30	37000 - 40000	0.101	20.04	-	QPSK
Ant4	2Tx	50	2	n260	30	37000 - 40000	0.066	18.22	-	16QAM
Ant4	2Tx	50	2	n260	30	37000 - 40000	0.042	16.25	-	64QAM

EUT Overview (Ant4 - Band n260)

Note: Due to similar antenna performance from the antennas after thorough investigation, the Occupied Bandwidth was only measured on one antenna for each band.

1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 PCTEST Test Location

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21046, U.S.A.

- PCTEST is an ISO 17025-2005 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.

- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).

- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **SONY Portable Handset FCC ID: PY7-57441Y**. The test data contained in this report pertains only to the emissions due to the EUT's 5G mmWave function.

The EUT contains four patch antennas, referred to herein as Ant1, Ant2, Ant3, and Ant4. Each of the antennas is comprised of two separate antenna feeds - one for horizontal and one for vertical polarization. Only one array antenna can be active at a time.

The EUT supports up to 8CC for DL, and 2CC for UL. For each CC, the EUT supports both 50MHz bandwidth and 100MHz bandwidth. The EUT supports a subcarrier spacing (SCS) of 120kHz with two transmission schemes, CP-OFDM and DFT-s-OFDM, with pi/2-BPSK, QPSK, 16-QAM, and 64-QAM modulations. Different Beam IDs are supported, each corresponding to a different position in space for each antenna. During testing, FTM (Factory Test Mode) was used to operate the transmitter. MIMO/2Tx operation was achieved by enabling two Beam IDs at the same time: one is from the list of H Beam IDs and other is from the list of V Beam IDs.

Test Device Serial No.: 81753, 81795

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1700/1900, WCDMA/HSPA, Multi-band LTE, 5G NR (n5, n66, n2, n260, n261), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, Bluetooth (1x, EDR, LE), NFC,

2.3 Test Configuration

The EUT was tested per the guidance of KDB 842590 D01 v01r01 and ANSI C63.26-2015. See Section 7.0 of this test report for a description of the radiated tests.

EIRP Simulation data for all Beam IDs was used to determine the worst case Beam ID for SISO operation and Beam ID pair for MIMO operation. These Beam ID's were used for final measurements.

All testing was performed using FTM (Factory Test Mode) software at continuous Tx operation. When implemented out in the field, the EUT will operate with a maximum uplink configuration (i.e., a maximum uplink duty cycle of 100%). The FTM software was also used for the EUT operation in the EN-DC mode.

2.4 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the document titled "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services" (ANSI C63.26-2015) and the guidance provided in KDB 842590 D01 v01r01 were used in the measurement of the EUT.

3.2 Radiated Power and Radiated Spurious Emissions

§30.202, §30.203

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary for radiated emissions measurements in the spurious domain. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m for measurements above 1GHz.

Radiated power (EIRP) measurements were performed in a full anechoic chamber (FAC) conforming to the site validation requirements of CISPR 16-1-4. Radiated spurious emission measurements from 30MHz - 18GHz were performed in a semi anechoic chamber (SAC) conforming to the site validation requirements of CISPR 16-1-4. A positioner was used to manipulate the EUT through several positions in space by rotating about the roll axis as shown in the figure below. The positioner was mounted on top of a turntable bringing the total EUT height to 1.5m.

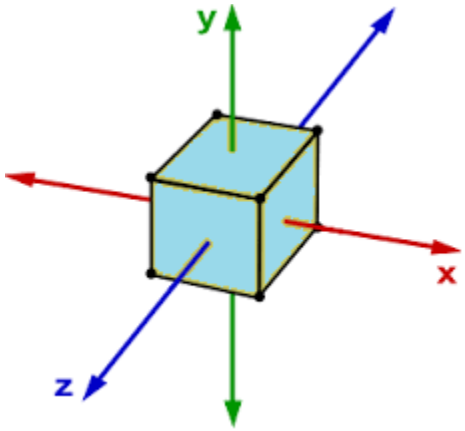


Figure 3-1. Rotation of the EUT Through Three Orthogonal Planes

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable. The measurement antenna is in the far field of the EUT per formula $2D^2/\lambda$ where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, "D" is the largest dimension of the measurement antenna. The EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

Frequency Range (GHz)	Wavelength(cm)	Far Field Distance (m)	Measurement Distance (m)
18-40	0.749	0.54	1.00
40-60	0.500	1.39	1.50
60-90	0.333	0.91	1.00
90-140	0.214	0.58	1.00
140-200	0.150	0.39	1.00

Table 3-1. Far-Field Distance & Measurment Distance per Frequency Range

Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning. It was determined that H=0 degree and V=90 degree are the worst case positions when the EUT was transmitting horizontally and vertically polarized beams, respectively.

The maximized power level is recorded using the spectrum analyzer “Channel Power” function with the integration bandwidth set to the emissions’ occupied bandwidth. The EIRP is calculated from the raw power level measured with the spectrum analyzer using the formulas shown below.

Effective Isotropic Radiated Power Sample Calculation

The measured e.i.r.p is converted to E-field in V/m. Then, the distance correction is applied before converting back to calculated e.i.r.p, as explained in KDB 971168 D01.

Field Strength [dBμV/m] = Measured Value [dBm] + AFCL [dB/m] + 107

= - 32.74 dBm + (40.7dB/m + 8.78dB) + 107 = 123.74dBuV/m

= 10^(123.74/20)/1000000 = 1.54 V/m

e.i.r.p. [dBm] = 10 * log((E-Field*D_m)^2/30) + 30dB

= 10*log((1.54V/m * 1.00m)^2/30) + 30dB

= 18.98 dBm e.i.r.p.

4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to an accredited ISO/IEC 17025 calibration facility. Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	N9030A	50GHz PXA Signal Analyzer	11/22/2019	Annual	11/22/2020	US51350301
Anritsu	MS46322A	Vector Network Analyzer	8/19/2019	Annual	8/19/2020	1521001
OML Inc.	M19RH	WR-19 Horn Antenna, 24dBi, 40 to 60 GHz	9/30/2018	Biennial	9/30/2020	18073001
OML Inc.	M12RH	WR-12 Horn Antenna, 24dBi, 60 to 90 GHz	9/30/2018	Biennial	9/30/2020	18073001
OML Inc.	M08RH	WR-08 Horn Antenna, 24dBi, 90 to 140 GHz	9/30/2018	Biennial	9/30/2020	18073001
OML Inc.	M05RH	WR-05 Horn Antenna, 24dBi, 140 to 220 GHz	9/30/2018	Biennial	9/30/2020	18073001
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	11/1/2019	Annual	11/1/2020	100040
Rohde & Schwarz	TS-PR40	26.5-40 GHz Pre-Amplifier	11/1/2019	Annual	11/1/2020	100037
Rohde & Schwarz	180-442-KF	Horn (Small)	8/21/2018	Biennial	8/21/2020	U157403-01
Sunol	DRH-118	Horn Antenna (1-18GHz)	10/3/2019	Biennial	10/3/2021	A050307
Sunol Science	JB5	Bi-Log Antenna (30M - 5GHz)	7/27/2020	Biennial	7/27/2022	A051107
Virginia Diodes Inc	SAX253	SAX Module (90 - 140GHz)	9/30/2019	Annual	9/30/2020	SAX253
Virginia Diodes Inc	SAX252	SAX Module (60 - 90GHz)	9/30/2019	Annual	9/30/2020	SAX252
Virginia Diodes Inc	SAX254	SAX Module (140 - 220GHz)	9/30/2019	Annual	9/30/2020	SAX254
Virginia Diodes Inc	SAX411	SAX Module (40 - 60GHz)	10/2/2019	Annual	10/2/2020	SAX411

Table 5-1. Test Equipment

Notes:

For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

6.0 SAMPLE CALCULATIONS

Emission Designator

π/2 BPSK/ QPSK Modulation

Emission Designator = 100MG7D

BW = 100 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 102MW7D

BW = 102 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

7.0 TEST RESULTS

7.1 Summary

Company Name: Sony Mobile Communications Inc.

FCC ID: PY7-57441Y

FCC Classification: Part 30 Mobile Transmitter (5GM)

Mode(s): TDD

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1049	Occupied Bandwidth	N/A	RADIATED	PASS	Section 7.2
2.1046, 30.202	Equivalent Isotropic Radiated Power	43dBm		PASS	Section 7.3
2.1051, 30.203	Spurious Emissions	-13dBm/MHz for all out-of-band emissions		PASS	Section 7.4
2.1051, 30.203	Out-of-Band Emissions at the Band Edge	-13dBm/MHz for all out-of-band emissions, -5dBm/MHz from the band edge up to 10% of the channel BW		PASS	Section 7.5
2.1055	Frequency Stability	Fundamental emissions stay within authorized frequency block		PASS	Section 7.6

Table 7-1. Summary of Radiated Test Results

Notes:

1) All modes of operation and modulations were investigated. The test results shown in the following sections represent the worst case emissions.
2) Per 2.1057(a)(2), spurious emissions were investigated up to 100GHz for n261 and up to 200GHz for n260.
3) The radiated RF output power and all out-of-band emissions in the spurious domain are evaluated to the EIRP limits.
4) “CC” refers to “Component Carriers”.
5) Beam IDs were chosed based on which Beam ID produces the highest EIRP during EIRP simulation.
6) All testing was performed using FTM (Factory Test Mode) software at continuous Tx operation (100% duty cycle).
7) The CP-OFDM and DFT-s-OFDM transmission schemes were investigated fully for each test type and only the worst case data is included.

7.2 Occupied Bandwidth

§2.1049

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Procedure Used

ANSI C63.26-2015 Section 5.4.3
KDB 842590 D01 v01r01 Section 4.3

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

Test Notes

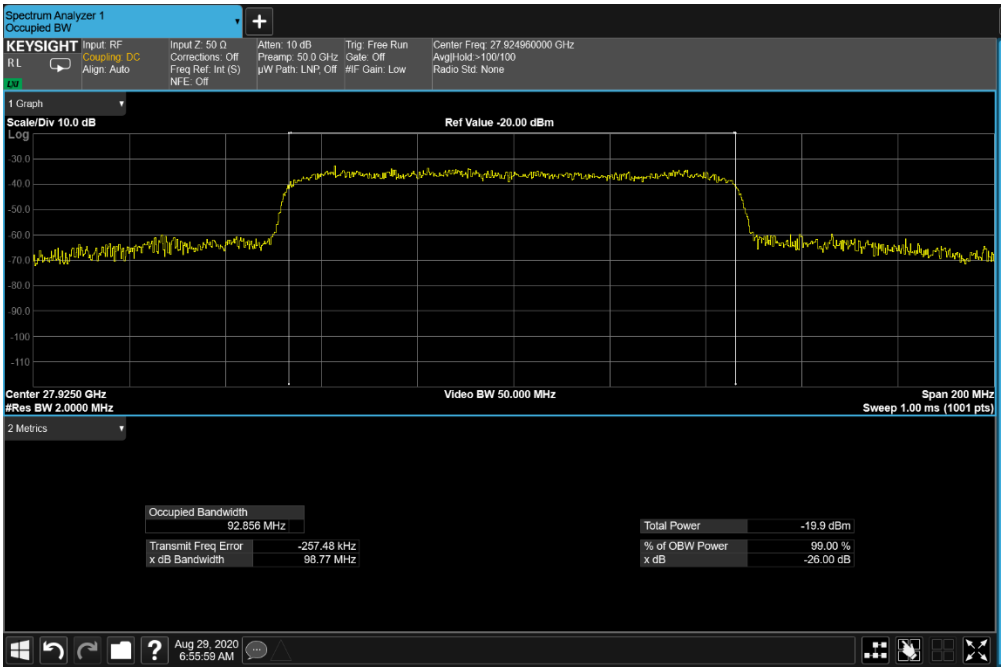
1. The EUT supports CP-OFDM and DFT-s-OFDM. OBW was measured for both waveforms and the worst case has been included in the report.
2. Due to similar antenna performance from both patch antennas, the Occupied Bandwidth was only measured on one antenna for each band.

Band n261

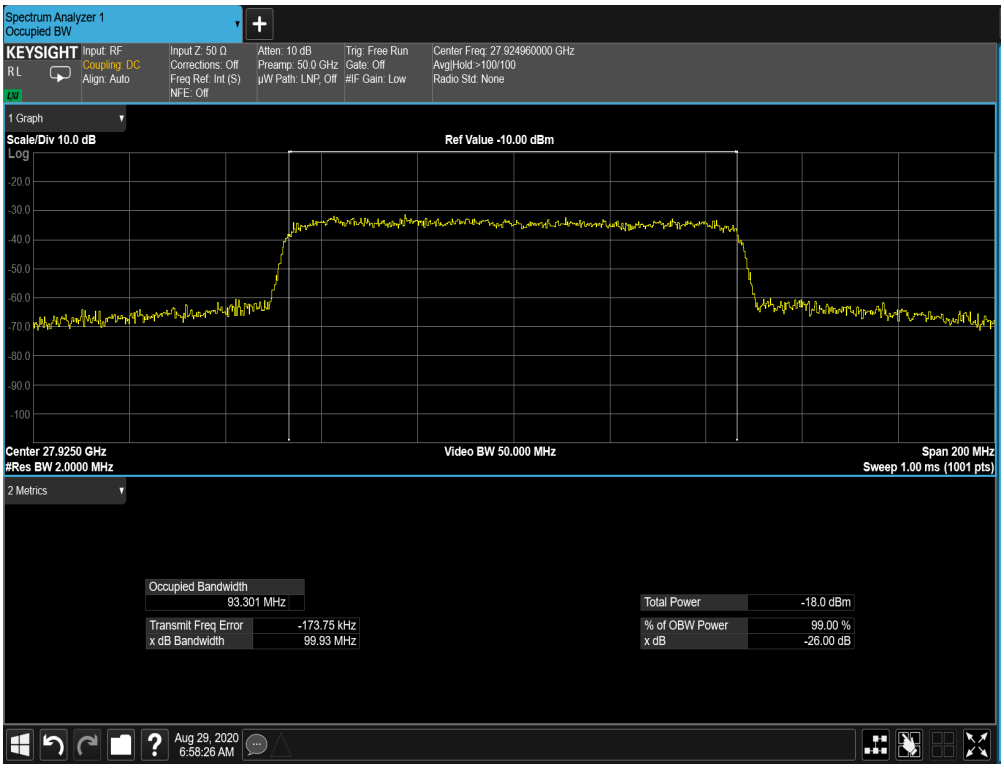
Channel	Bandwidth	CCs Active	Modulation	OBW [MHz]
Mid	100	1	π/2 BPSK	90.78
			QPSK	92.86
			16QAM	93.30
			64QAM	93.04
		2	π/2 BPSK	188.46
			QPSK	191.18
			16QAM	190.60
			64QAM	190.72
	50	1	π/2 BPSK	45.29
			QPSK	45.36
			16QAM	45.19
			64QAM	45.51
		2	π/2 BPSK	95.03
			QPSK	94.52
			16QAM	94.50
			64QAM	94.85

Table 7-2. Summary of Ant 1 Occupied Bandwidths (n261)

Plot 7-1. Ant 1 Occupied Bandwidth Plot (100MHz-1CC – pi/2-BPSK – Mid Channel)

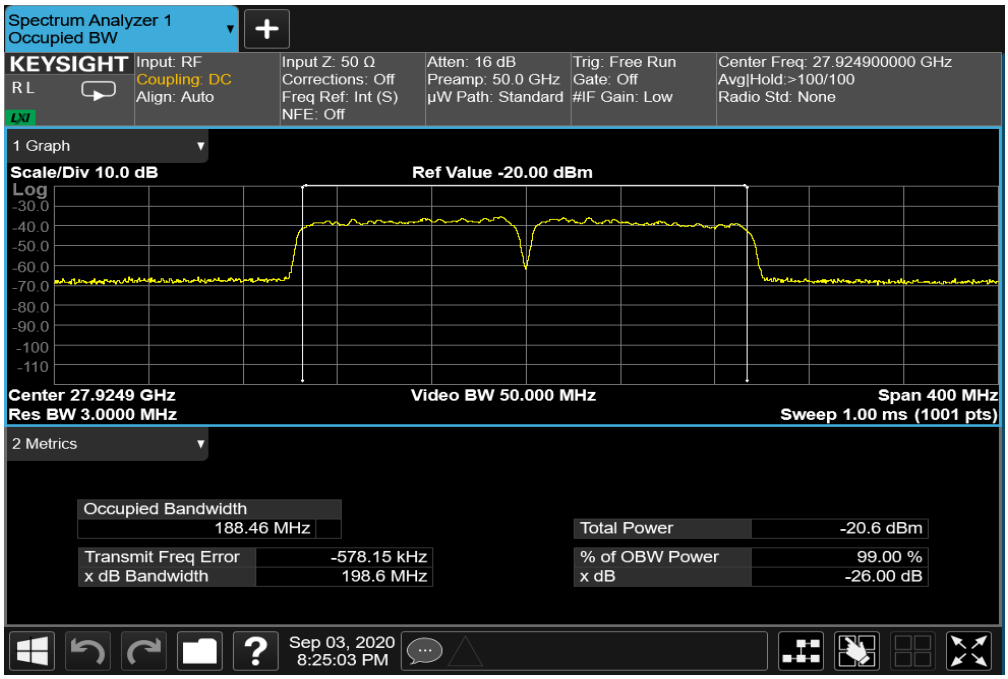


Plot 7-2. Ant 1 Occupied Bandwidth Plot (100MHz-1CC – QPSK – Mid Channel)

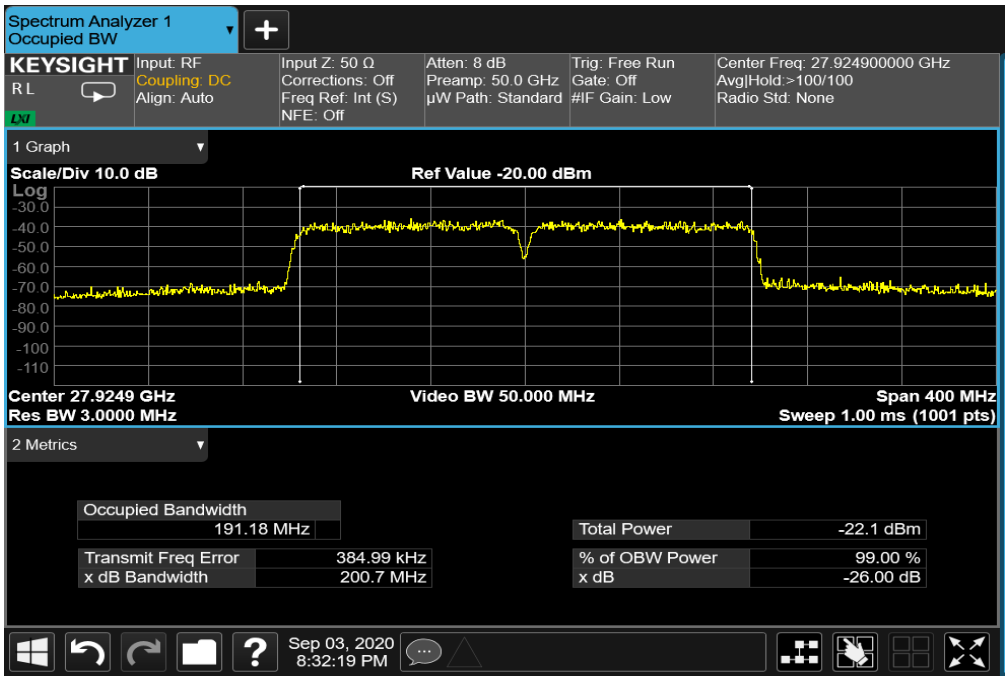


Plot 7-3. Ant 1 Occupied Bandwidth Plot (100MHz-1CC – 16QAM – Mid Channel)

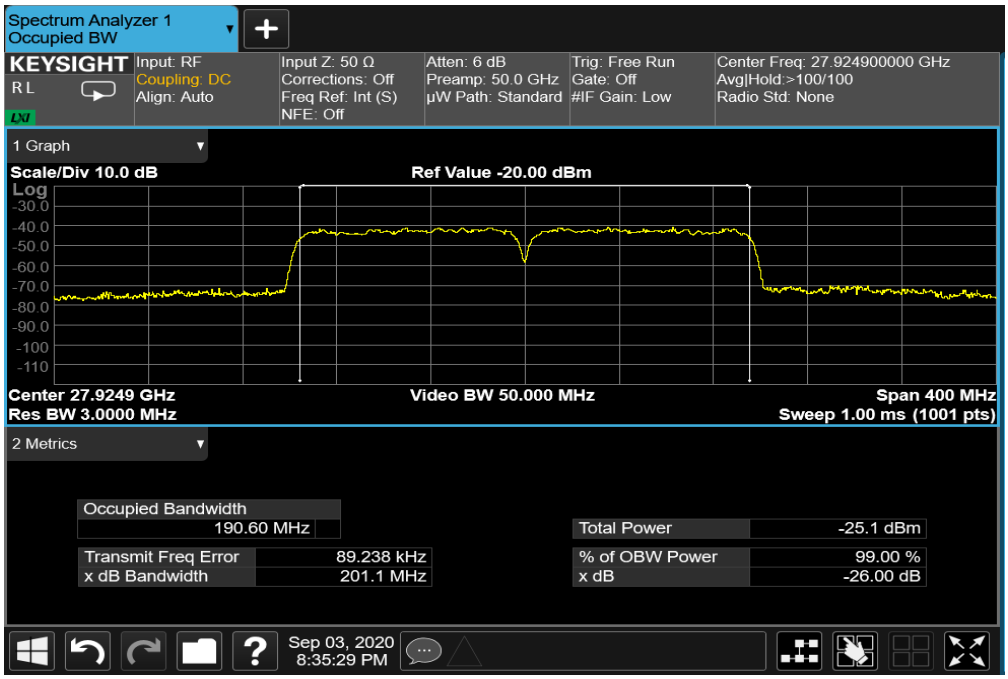
Plot 7-4. Ant 1 Occupied Bandwidth Plot (100MHz-1CC – 64QAM – Mid Channel)



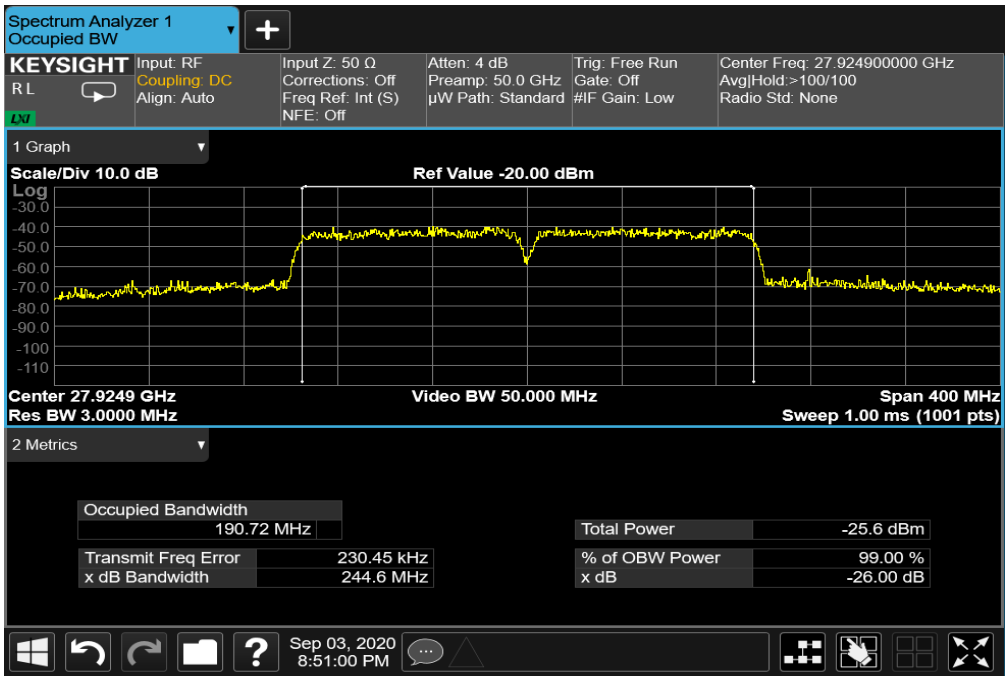
Plot 7-5. Ant 1 Occupied Bandwidth Plot (100MHz-2CC – pi/2-BPSK – Mid Channel)



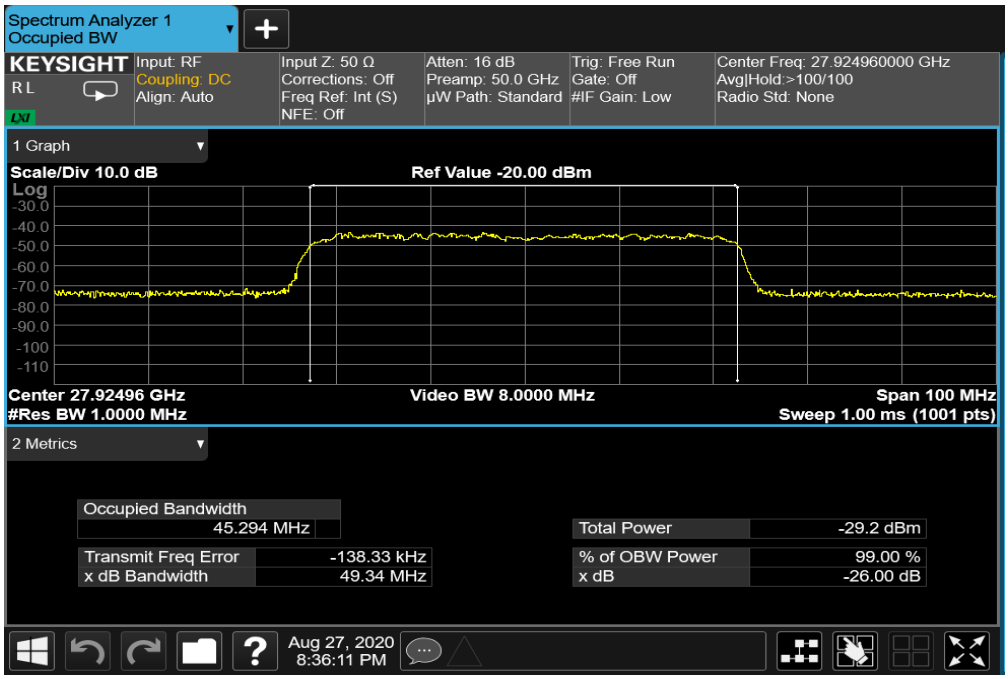
Plot 7-6. Ant 1 Occupied Bandwidth Plot (100MHz-2CC – QPSK – Mid Channel)



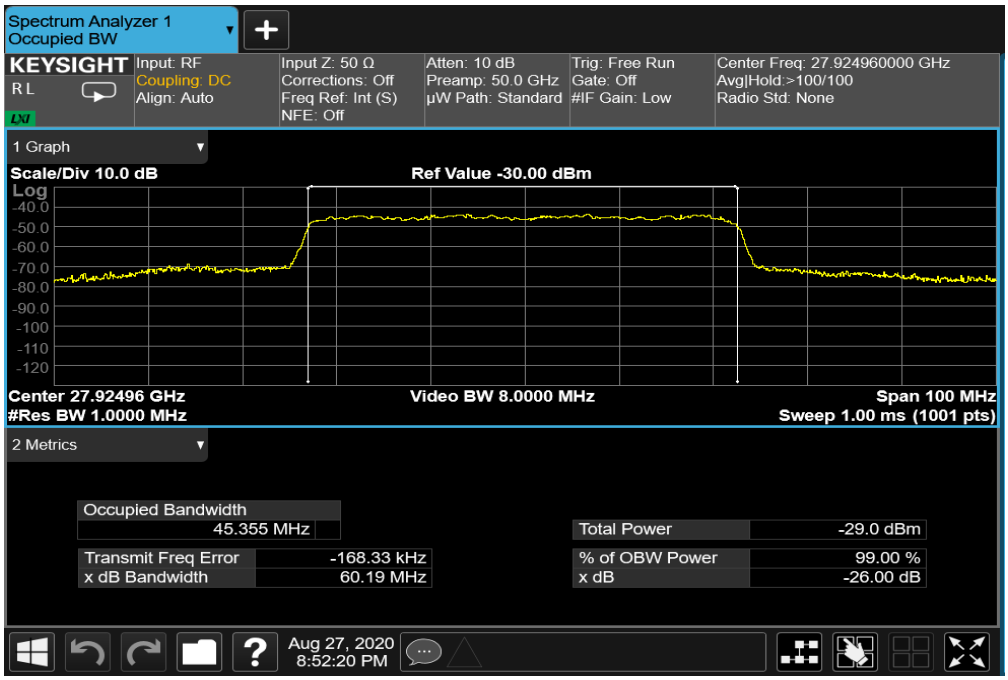
Plot 7-7. Ant 1 Occupied Bandwidth Plot (100MHz-2CC – 16QAM – Mid Channel)



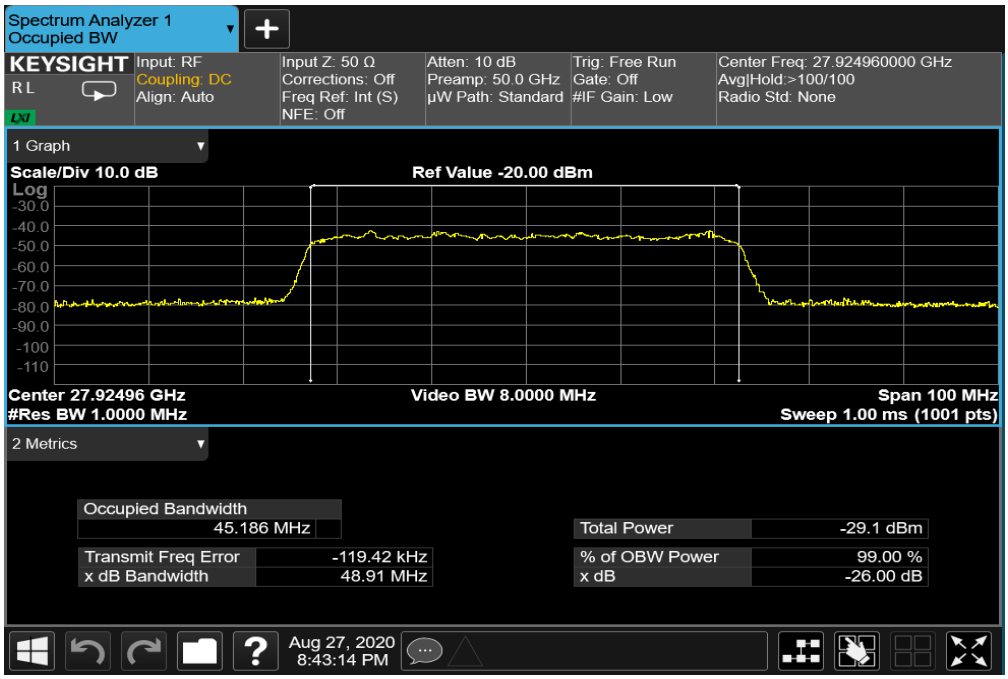
Plot 7-8. Ant 1 Occupied Bandwidth Plot (100MHz-2CC – 64QAM – Mid Channel)



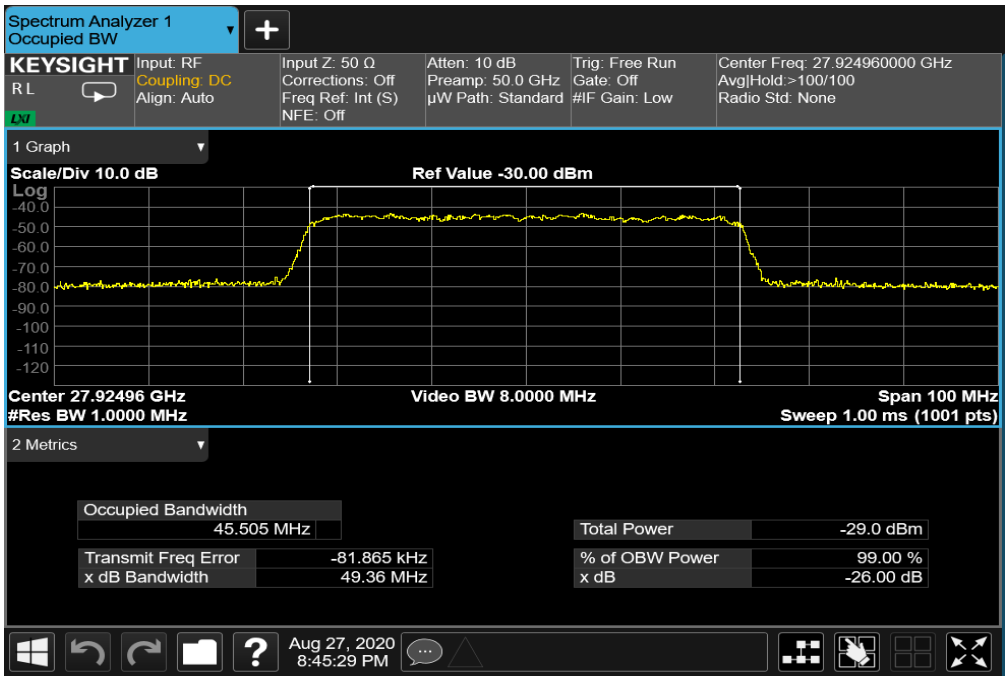
Plot 7-9. Ant 1 Occupied Bandwidth Plot (50MHz-1CC – pi/2-BPSK – Mid Channel)



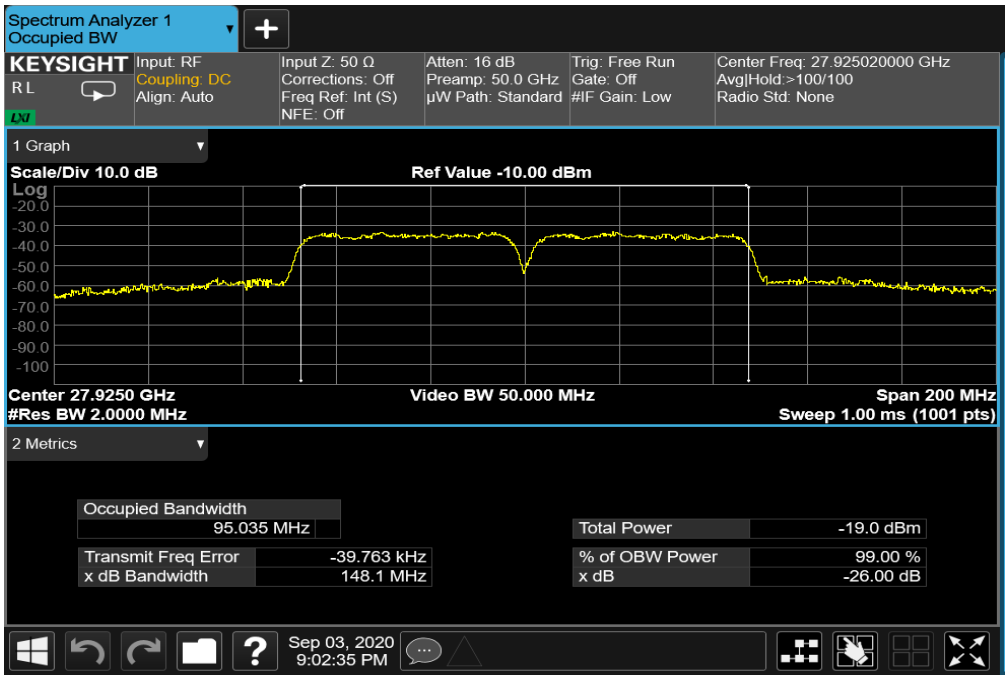
Plot 7-10. Ant 1 Occupied Bandwidth Plot (50MHz-1CC – QPSK – Mid Channel)



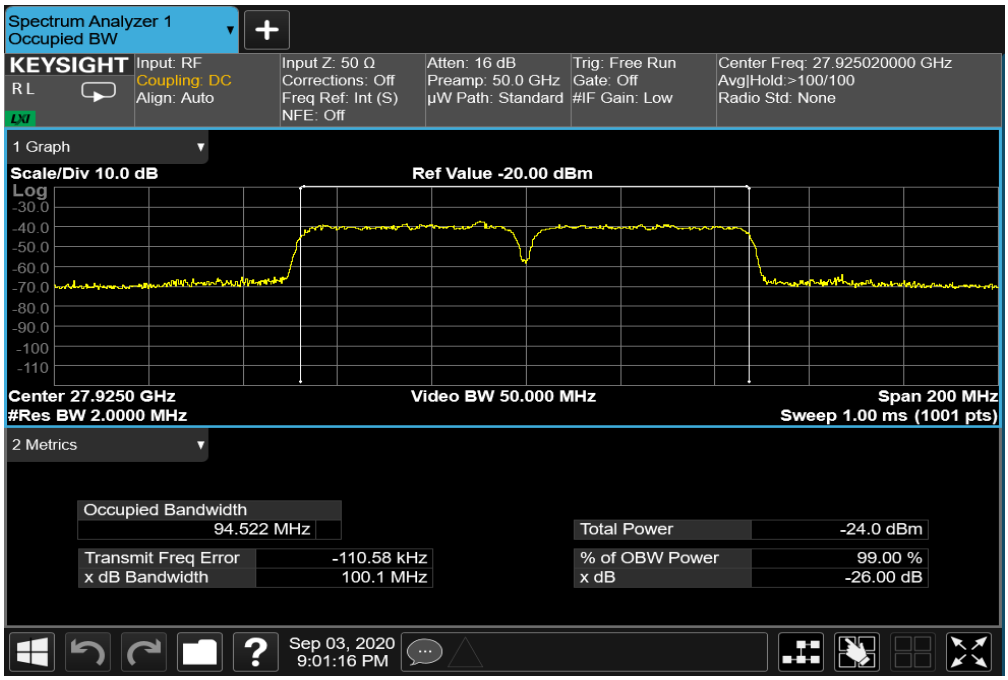
Plot 7-11. Ant 1 Occupied Bandwidth Plot (50MHz-1CC – 16QAM – Mid Channel)



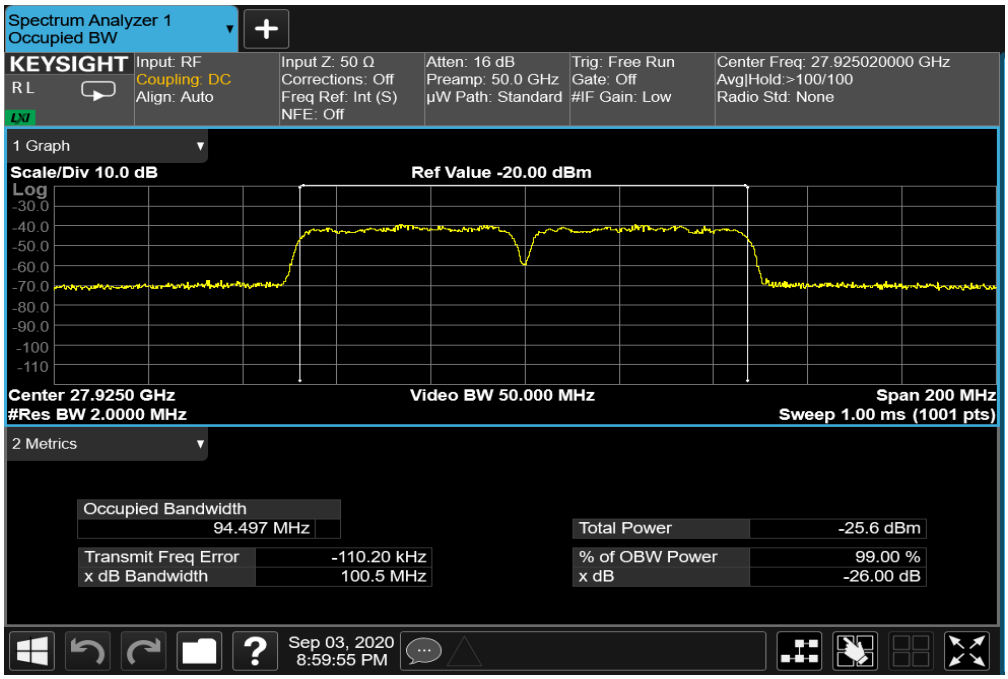
Plot 7-12. Ant 1 Occupied Bandwidth Plot (50MHz-1CC – 64QAM – Mid Channel)



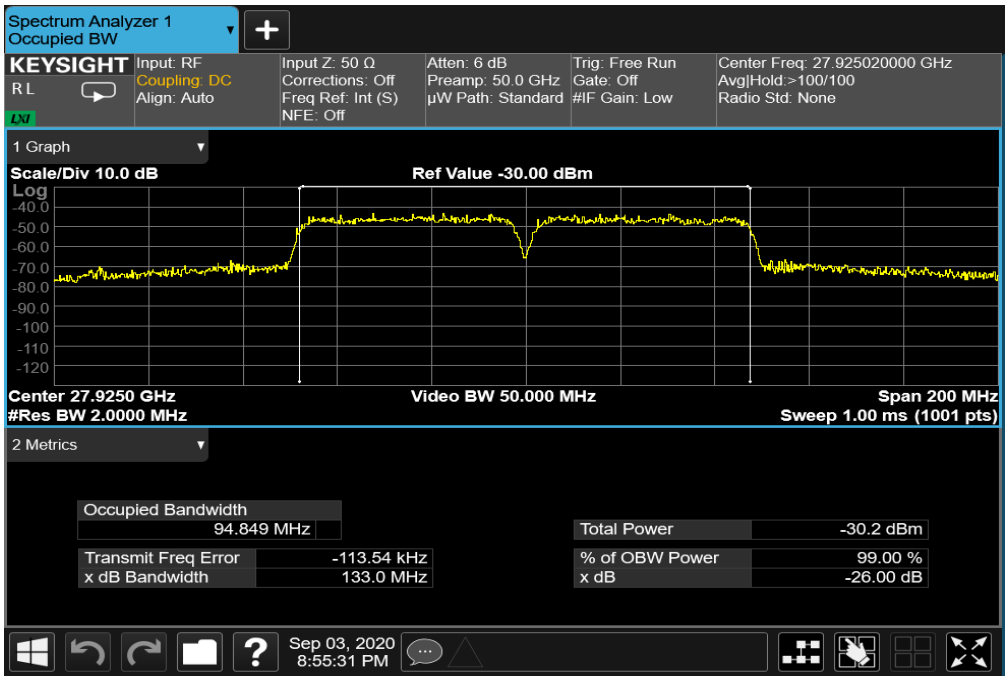
Plot 7-13. Ant 1 Occupied Bandwidth Plot (50MHz-2CC – pi/2-BPSK – Mid Channel)



Plot 7-14. Ant 1 Occupied Bandwidth Plot (50MHz-2CC – QPSK – Mid Channel)



Plot 7-15. Ant 1 Occupied Bandwidth Plot (50MHz-2CC – 16QAM – Mid Channel)

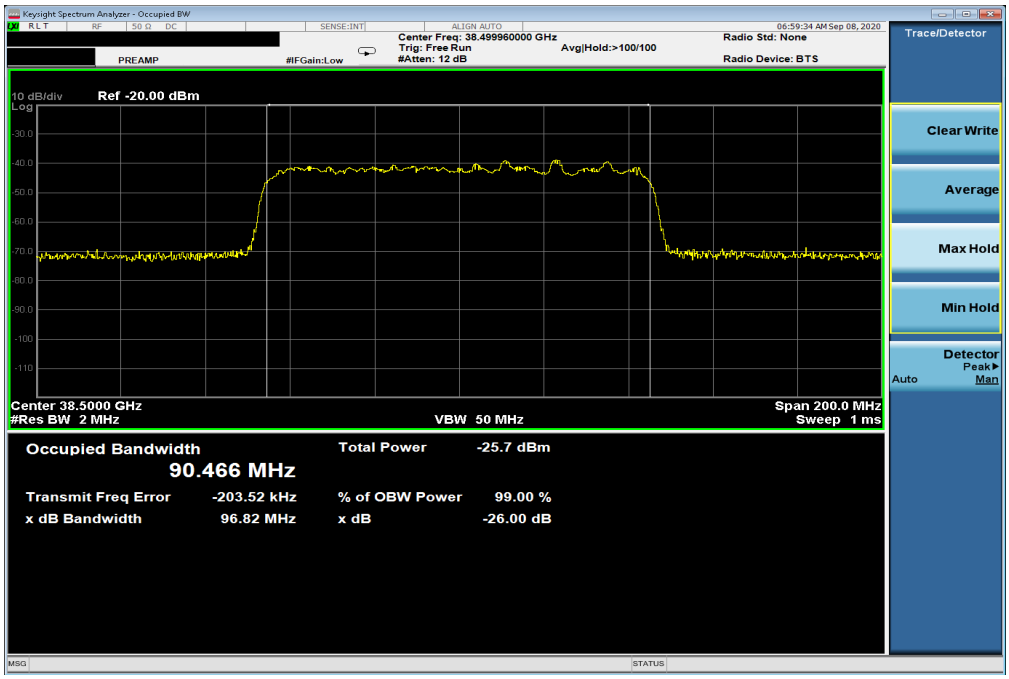


Plot 7-16. Ant 1 Occupied Bandwidth Plot (50MHz-2CC – 64QAM – Mid Channel)

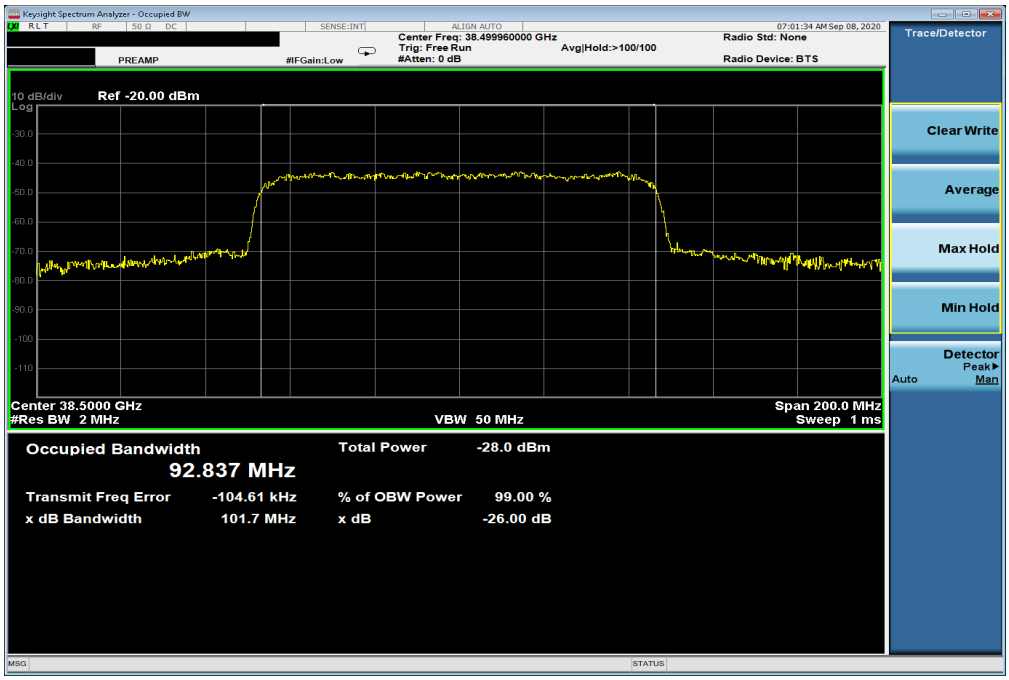
Band n260

Channel	Bandwidth	CCs Active	Modulation	OBW [MHz]
Mid	100	1	π/2 BPSK	90.47
			QPSK	92.84
			16QAM	92.86
			64QAM	92.87
		2	π/2 BPSK	189.22
			QPSK	191.08
			16QAM	191.36
			64QAM	192.15
	50	1	π/2 BPSK	45.28
			QPSK	45.35
			16QAM	45.54
			64QAM	45.30
		2	π/2 BPSK	94.44
			QPSK	94.67
			16QAM	94.46
			64QAM	95.04

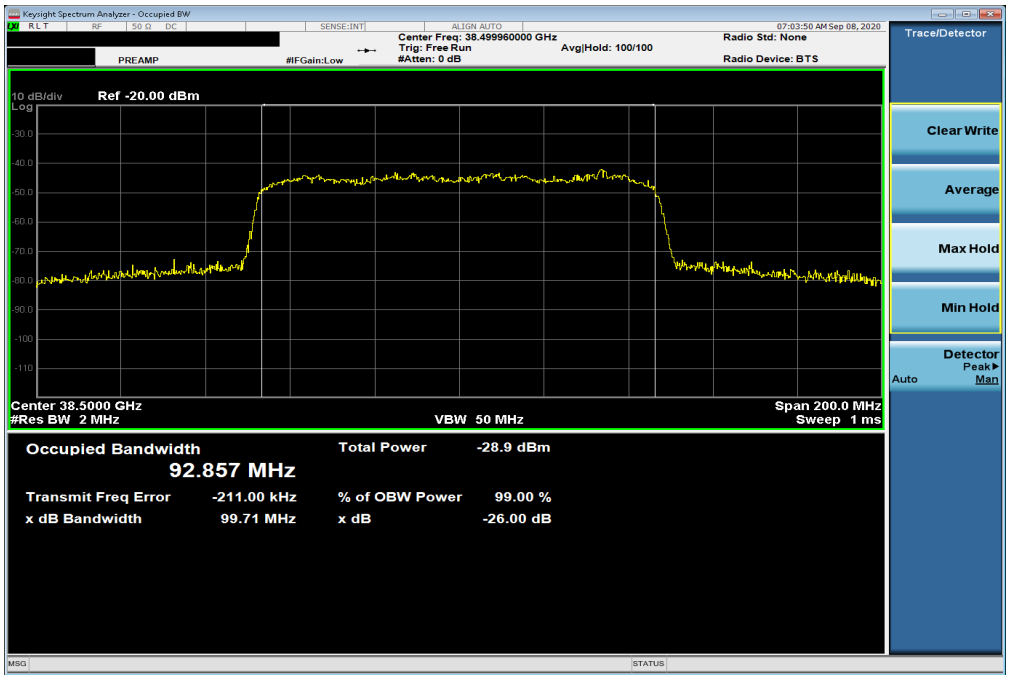
Table 7-3. Summary of Ant 1 Occupied Bandwidths (n260)



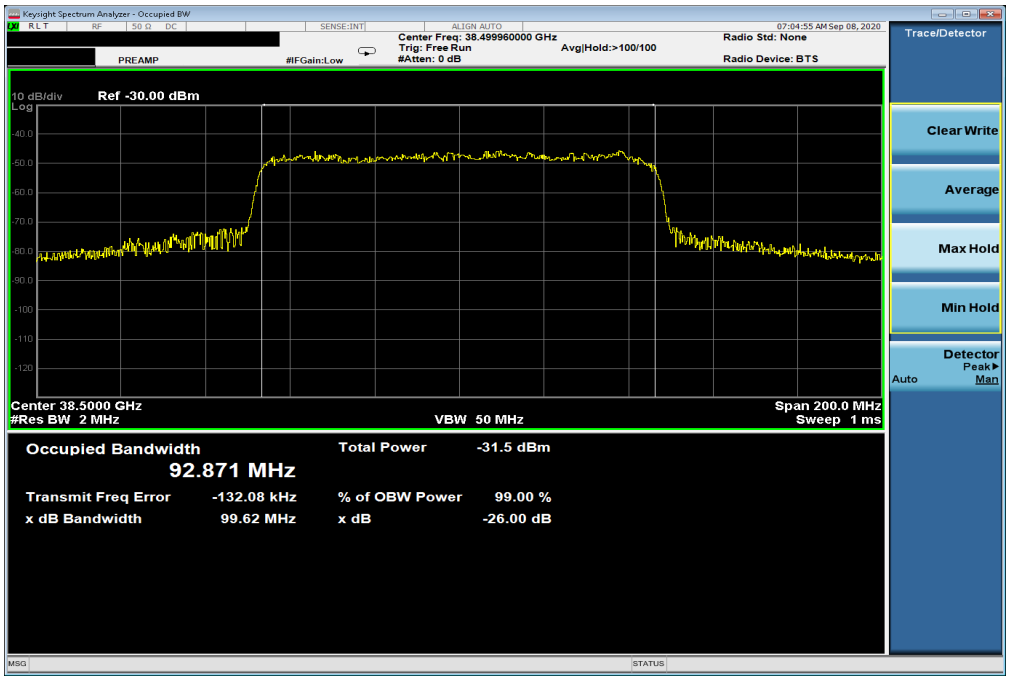
Plot 7-17. Ant 1 Occupied Bandwidth Plot (100MHz-1CC – pi/2-BPSK – Mid Channel)



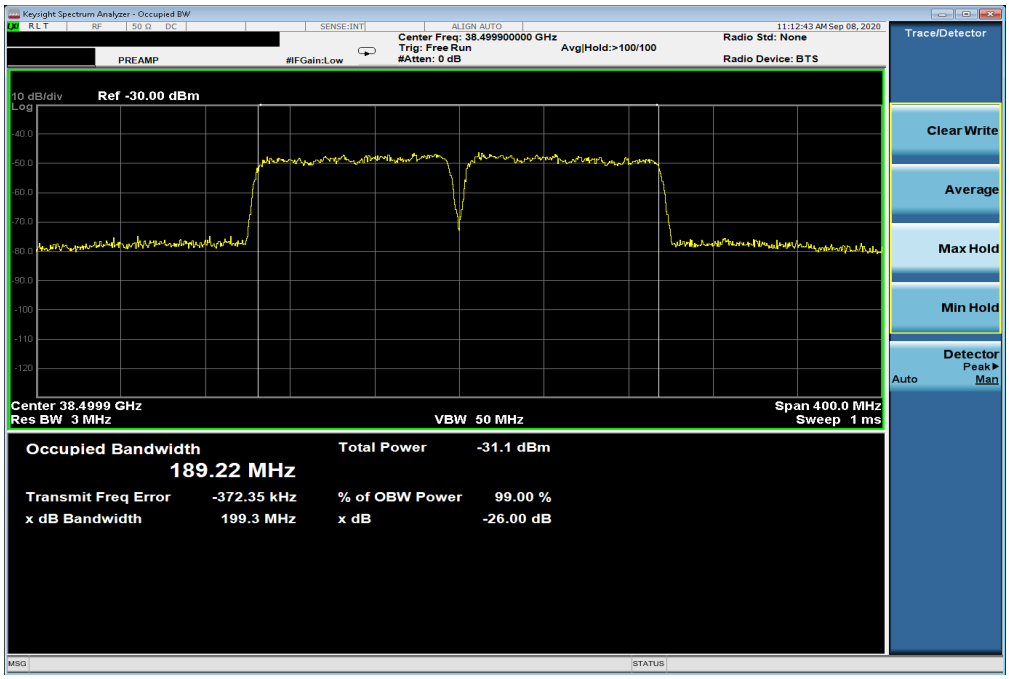
Plot 7-18. Ant 1 Occupied Bandwidth Plot (100MHz-1CC – QPSK – Mid Channel)



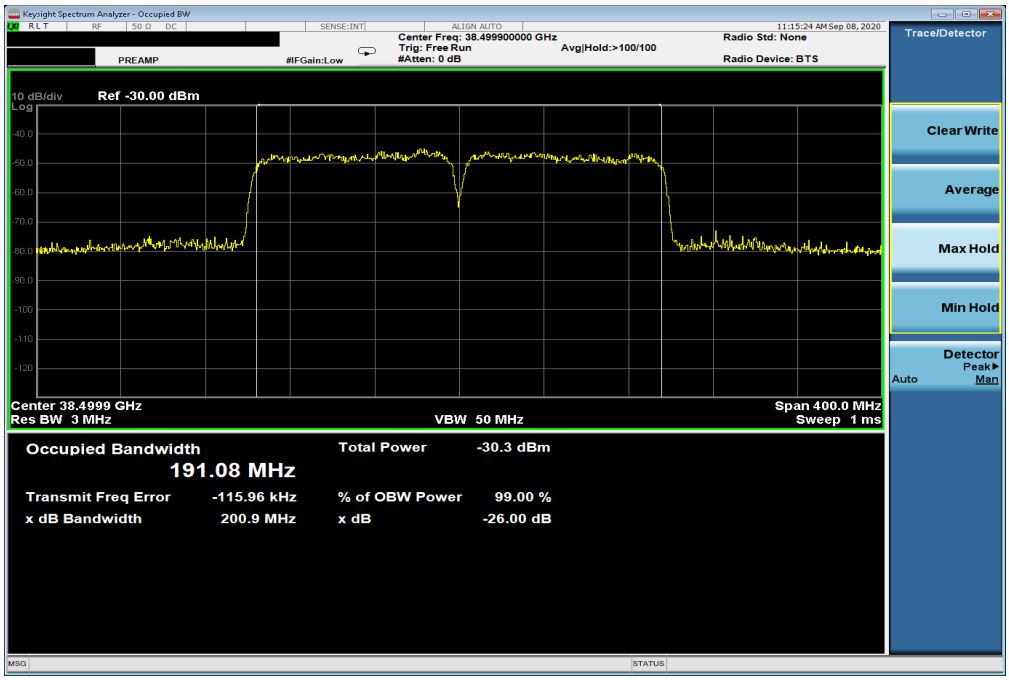
Plot 7-19. Ant 1 Occupied Bandwidth Plot (100MHz-1CC – 16QAM – Mid Channel)



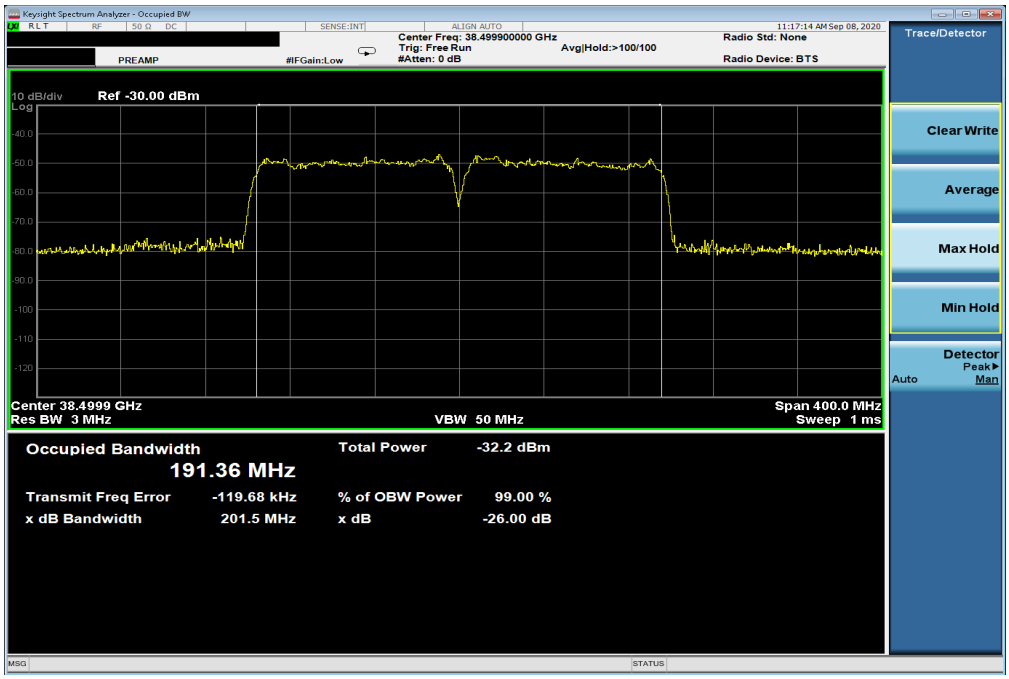
Plot 7-20. Ant 1 Occupied Bandwidth Plot (100MHz-1CC – 64QAM – Mid Channel)



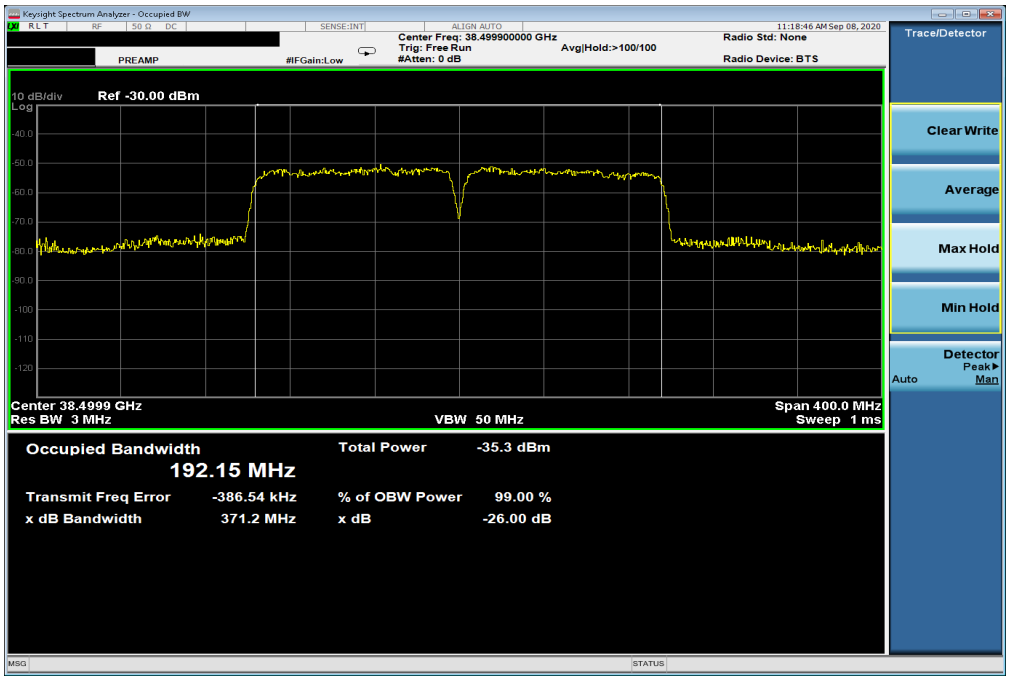
Plot 7-21. Ant 1 Occupied Bandwidth Plot (100MHz-2CC – pi/2-BPSK – Mid Channel)



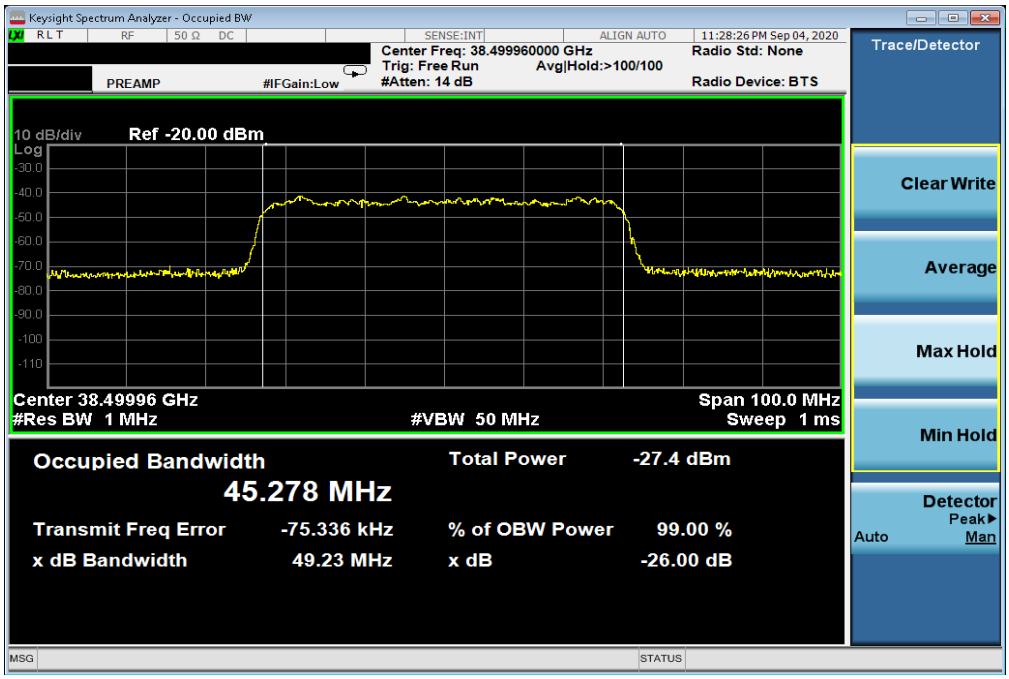
Plot 7-22. Ant 1 Occupied Bandwidth Plot (100MHz-2CC – QPSK – Mid Channel)



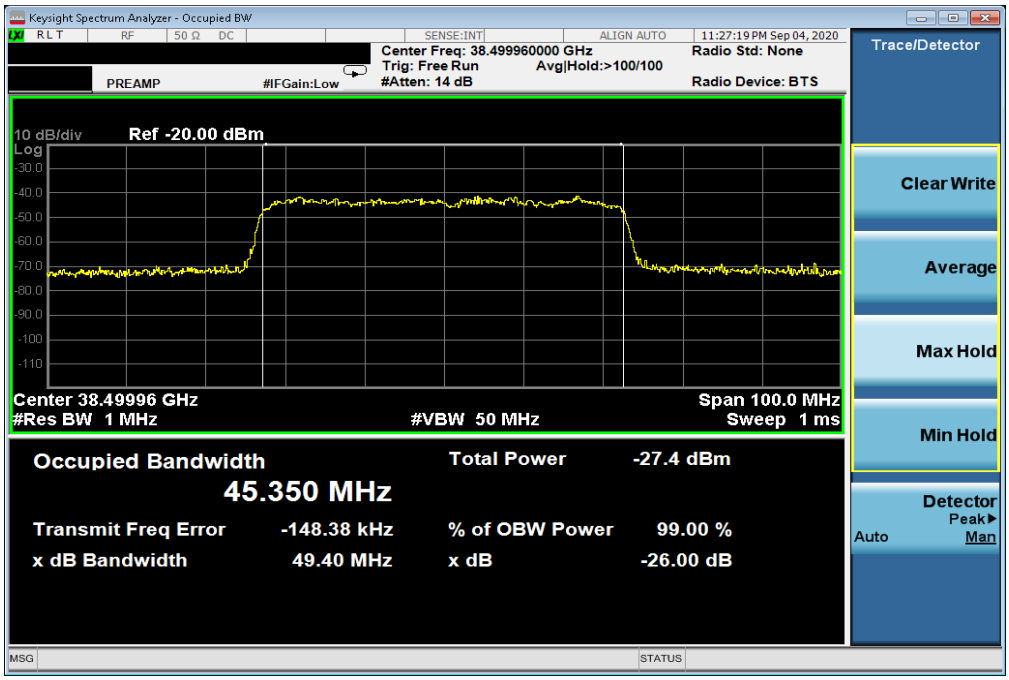
Plot 7-23. Ant 1 Occupied Bandwidth Plot (100MHz-2CC – 16QAM – Mid Channel)



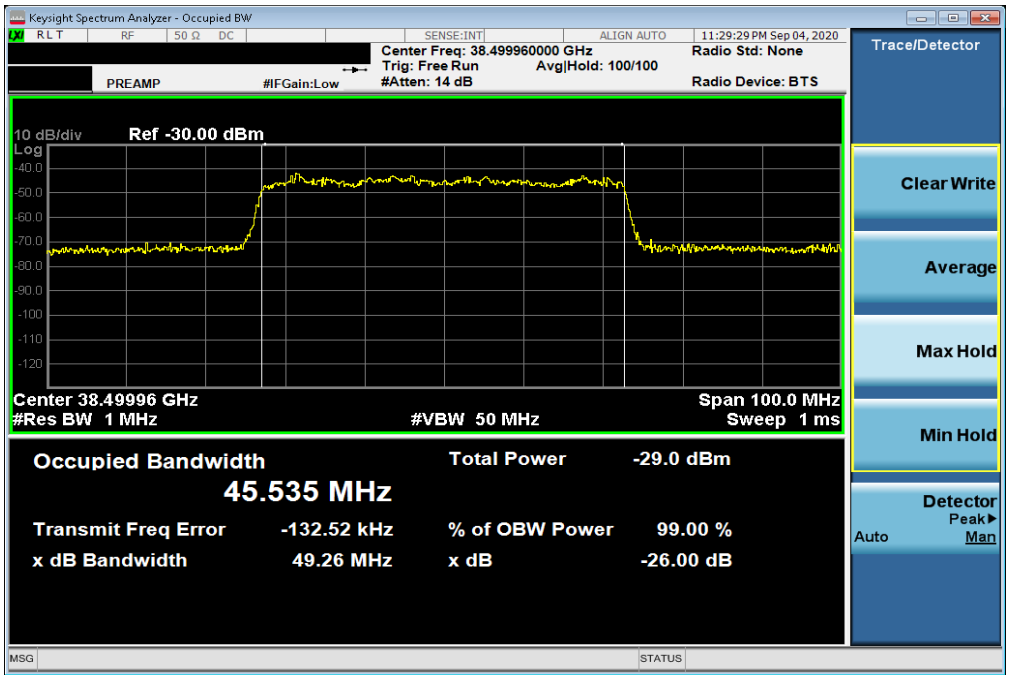
Plot 7-24. Ant 1 Occupied Bandwidth Plot (100MHz-2CC – 64QAM – Mid Channel)



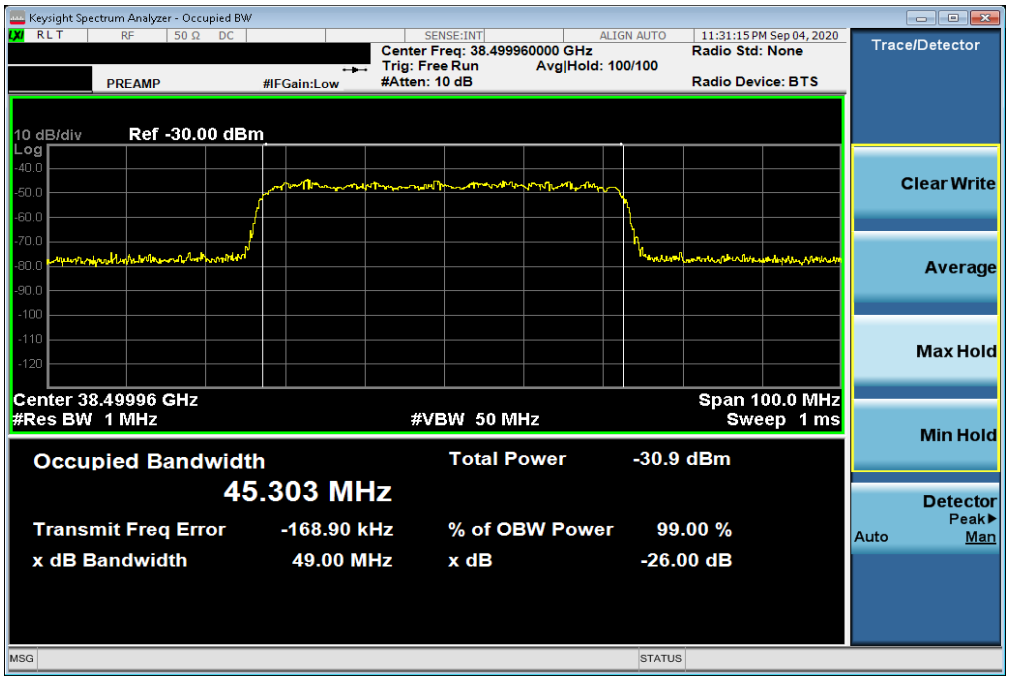
Plot 7-25. Ant 1 Occupied Bandwidth Plot (50MHz-1CC – pi/2-BPSK – Mid Channel)



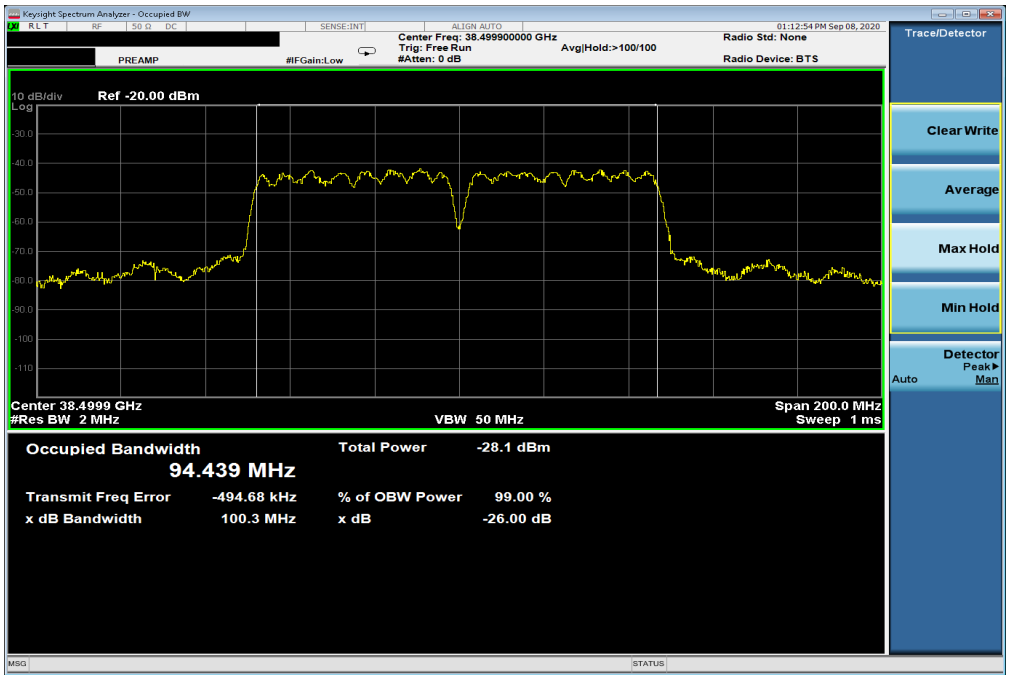
Plot 7-26. Ant 1 Occupied Bandwidth Plot (50MHz-1CC – QPSK – Mid Channel)



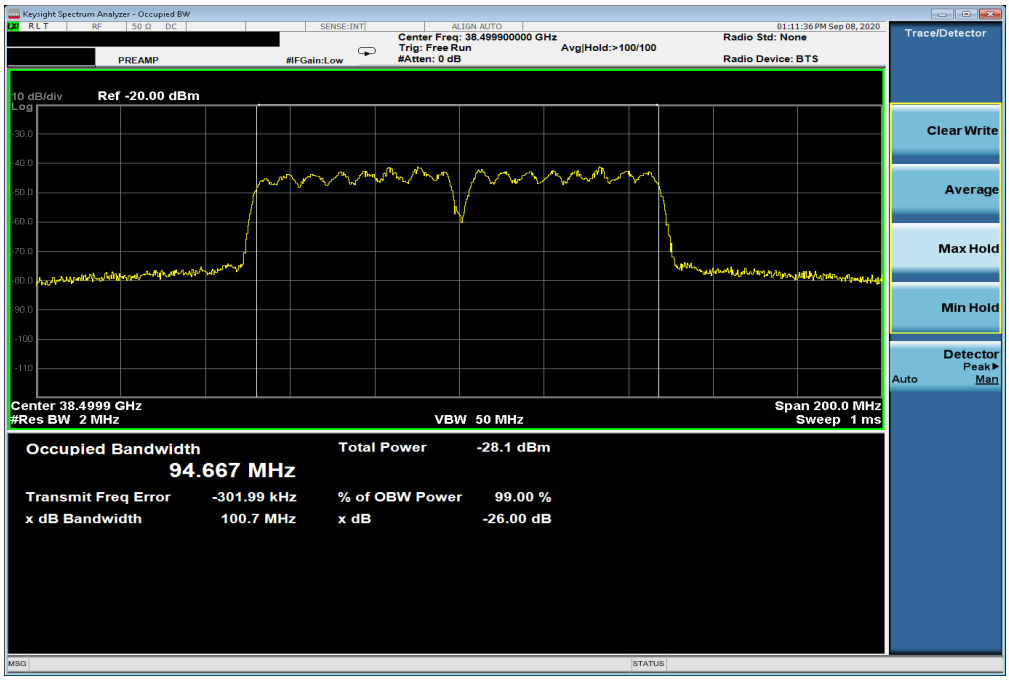
Plot 7-27. Ant 1 Occupied Bandwidth Plot (50MHz-1CC – 16QAM – Mid Channel)



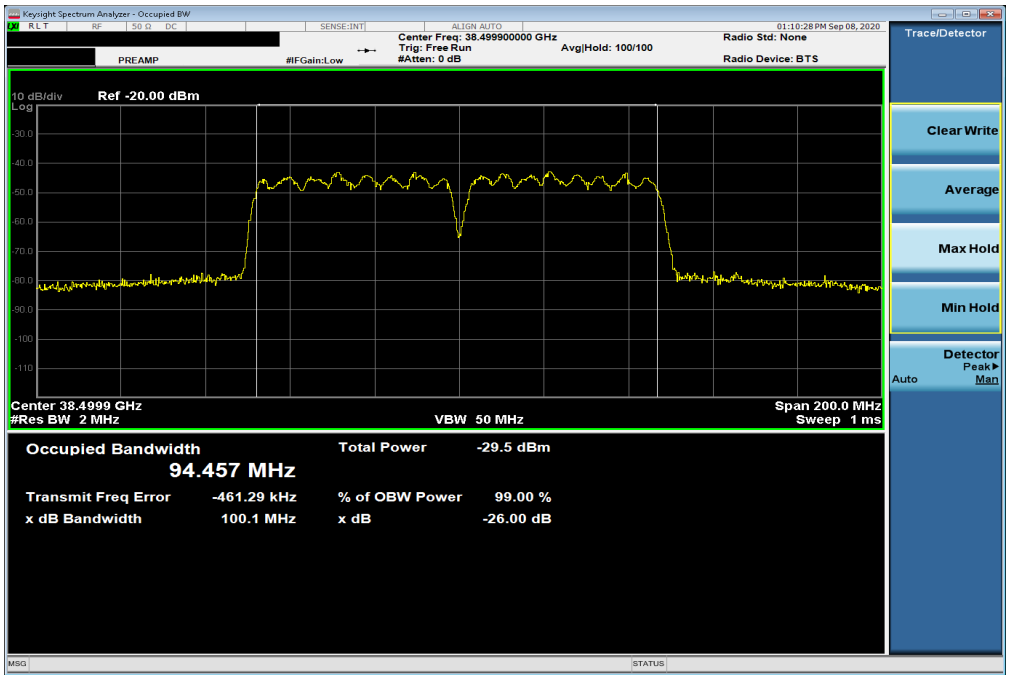
Plot 7-28. Ant 1 Occupied Bandwidth Plot (50MHz-1CC – 64QAM – Mid Channel)



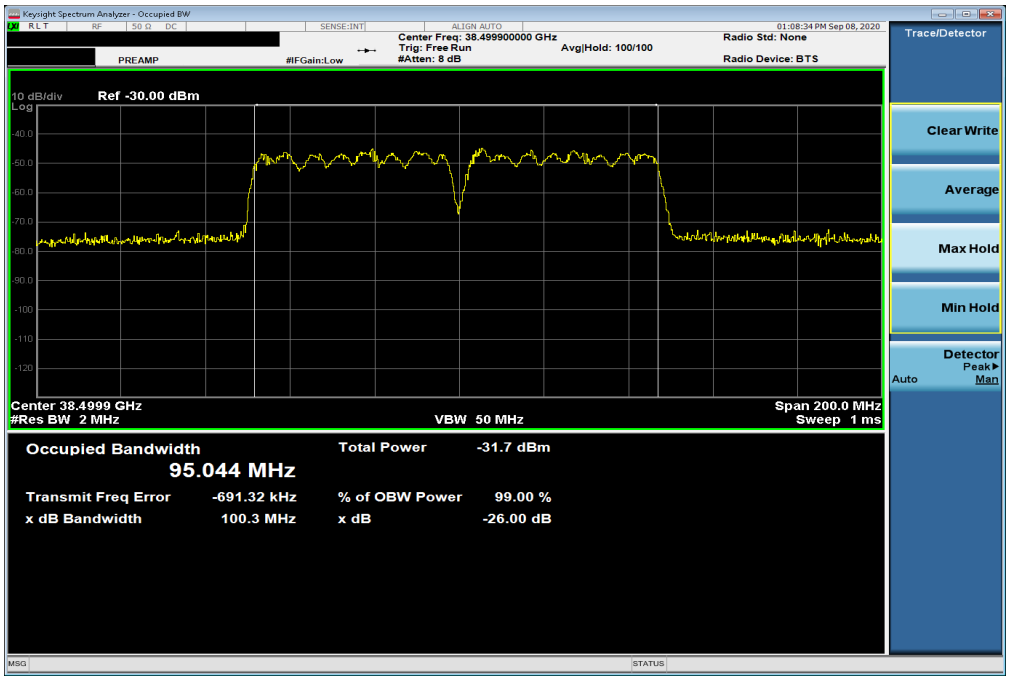
Plot 7-29. Ant 1 Occupied Bandwidth Plot (50MHz-2CC – pi/2-BPSK – Mid Channel)



Plot 7-30. Ant 1 Occupied Bandwidth Plot (50MHz-2CC – QPSK – Mid Channel)



Plot 7-31. Ant 1 Occupied Bandwidth Plot (50MHz-2CC – 16QAM – Mid Channel)



Plot 7-32. Ant 1 Occupied Bandwidth Plot (50MHz-2CC – 64QAM – Mid Channel)

7.3 Equivalent Isotropic Radiated Power

§2.1046, §30.202

Test Overview

Equivalent Isotropic Radiated Power (EIRP) measurements are performed using broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

The average power of the sum of all antenna elements is limited to a maximum EIRP of +43 dBm.

Test Procedures Used

ANSI C63.26-2015 Section 5.2.4.4.1
KDB 842590 D01 v01r01 Section 4.2

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW ≥ 3 x RBW
4. Span = 2x to 3x the OBW
5. No. of sweep points ≥ 2 x span / RBW
6. Detector = RMS
7. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
8. Trace mode = trace averaging (RMS) over 100 sweeps
9. The trace was allowed to stabilize

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below. Both H-Beam and V-Beam were investigated and the worst-case measurements were reported below.

2) Elements within the same antenna array are correlated to produce beamforming array gain. Antenna arrays cannot be correlated with another antenna array. During testing, only one antenna array was active.

3) EIRP measurements were taken at 1m test distance.

4) The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states: EIRP (dBm) = E (dBµV/m) + 20log(D) − 104.8; where D is the measurement distance (in the far field region) in m. The field strength E is calculated E (dBµV/m) = Spectrum Analyzer Channel Power Level (dBm) + Antenna Factor (dB/m) + Cable Loss (dB) + 107.

5) Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning.

6) This device supports transmission of H-polarized and V-polarized beams from the antenna array in both CP-OFDM and DFT-s-OFDM transmission schemes. SISO and MIMO operation is also supported for some configurations. As part of the testing, all modes are investigated fully on the channel showing the highest simulated EIRP using QPSK modulation. The configuration that shows the highest measured EIRP was then used to determine the EIRP for the low and high channels and for the additional modulations.

Band n261 Beam ID Configurations

Mode	Channel	Beam Pol.	Beam Id.
SISO	Low	H	178
		V	38
	Mid	H	177
		V	50
	High	H	177
		V	48
MIMO	Low	H	161
		V	33
	Mid	H	178
		V	50
	High	H	176
		V	48
DFT-s 2Tx	Low	H	161
		V	33
	Mid	H	178
		V	50
	High	H	176
		V	48

Table 7-4. Ant 1 Worst Case Beam ID

Mode	Channel	Beam Pol.	Beam Id.
SISO	Low	H	154
		V	26
	Mid	H	154
		V	46
	High	H	153
		V	26
MIMO	Low	H	153
		V	26
	Mid	H	175
		V	46
	High	H	153
		V	26
DFT-s 2Tx	Low	H	172
		V	47
	Mid	H	175
		V	46
	High	H	156
		V	27

Table 7-5. Ant 2 Worst Case Beam ID

Mode	Channel	Beam Pol.	Beam Id.
SISO	Low	H	186
		V	57
	Mid	H	186
		V	41
	High	H	186
		V	57
MIMO	Low	H	186
		V	57
	Mid	H	167
		V	41
	High	H	186
		V	57
DFT-s 2Tx	Low	H	184
		V	58
	Mid	H	167
		V	41
	High	H	184
		V	58

Table 7-6. Ant 3 Worst Case Beam ID

Mode	Channel	Beam Pol.	Beam Id.
SISO	Low	H	163
		V	53
	Mid	H	163
		V	36
	High	H	163
		V	36
MIMO	Low	H	181
		V	53
	Mid	H	36
		V	164
	High	H	164
		V	36
DFT-s 2Tx	Low	H	182
		V	54
	Mid	H	182
		V	54
	High	H	182
		V	54

Table 7-7. Ant 4 Worst Case Beam ID

Band n261

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	27550.08	Low	DFT-s-OFDM	QPSK	H + V	2Tx	161 + 33	H	341	91	1 / 42	25.01
	27924.92	Mid	DFT-s-OFDM	QPSK	H	SISO	177	V	9	98	1 / 23	21.50
	27924.92	Mid	DFT-s-OFDM	QPSK	V	SISO	50	H	315	340	1 / 23	23.83
	27924.92	Mid	CP-OFDM	QPSK	H	SISO	177	V	9	98	1 / 23	17.95
	27924.92	Mid	CP-OFDM	QPSK	H	SISO	50	H	315	340	1 / 23	20.88
	27924.92	Mid	CP-OFDM	QPSK	H + V	MIMO	178 + 50	H	345	82	1 / 23	21.01
	27924.92	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	178 + 50	H	345	82	1 / 23	26.26
	28299.96	High	DFT-s-OFDM	QPSK	H + V	2Tx	176 + 48	H	357	103	1 / 23	26.06
	27924.92	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	178 + 50	H	345	82	1 / 23	26.91
	27924.92	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	178 + 50	H	345	82	1 / 23	25.18
	27924.92	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	178 + 50	H	345	82	1 / 23	22.99

Table 7-8. Ant 1 EIRP Data (Band n261 - 100MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	28319.52	High	DFT-s-OFDM	QPSK	H	2Tx	176 + 48	H	355	109	64/0	22.91
	28319.52	High	DFT-s-OFDM	pi/2-BPSK	V	2Tx	176 + 48	H	355	109	64/0	22.87
	28319.52	High	DFT-s-OFDM	16QAM	V	2Tx	176 + 48	H	355	109	64/0	21.32
	28319.52	High	DFT-s-OFDM	64QAM	V	2Tx	176 + 48	H	355	109	64/0	19.19

Table 7-9. Ant 1 EIRP Data (Band n261 - 100MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	27525.00	Low	DFT-s-OFDM	QPSK	H + V	2 Tx	161 + 33	H	348	42	1 / 19	23.89
	27924.96	Mid	DFT-s-OFDM	QPSK	H	SISO	177	H	267	333	1 / 19	24.95
	27924.96	Mid	DFT-s-OFDM	QPSK	V	SISO	50	H	47	203	1 / 19	22.01
	27924.96	Mid	CP-OFDM	QPSK	H	SISO	177	H	267	333	1 / 19	23.70
	27924.96	Mid	CP-OFDM	QPSK	V	SISO	50	H	47	203	1 / 19	19.23
	27924.96	Mid	CP-OFDM	QPSK	H + V	MIMO	178 + 50	H	343	79	1 / 19	19.83
	27924.96	Mid	DFT-s-OFDM	QPSK	H + V	2 Tx	178 + 50	H	343	79	1 / 19	24.75
	28324.92	High	DFT-s-OFDM	QPSK	H + V	2 Tx	176 + 48	H	336	82	1 / 19	25.10
	28324.92	High	DFT-s-OFDM	pi/2-BPSK	H + V	2 Tx	176 + 48	H	267	333	1 / 19	25.04
	28324.92	High	DFT-s-OFDM	16QAM	H + V	2 Tx	176 + 48	H	267	333	1 / 19	22.73
	28324.92	High	DFT-s-OFDM	64QAM	H + V	2 Tx	176 + 48	H	267	333	1 / 19	19.37

Table 7-10. Ant 1 EIRP Data (Band n261 - 50MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	28319.52	High	DFT-s-OFDM	QPSK	H + V	2 Tx	176 + 48	H	15	47	32/0	15.96
	28319.52	High	DFT-s-OFDM	pi/2-BPSK	H + V	2 Tx	176 + 48	H	15	47	32/0	15.02
	28319.52	High	DFT-s-OFDM	16QAM	H + V	2 Tx	176 + 48	H	15	47	32/0	13.49
	28319.52	High	DFT-s-OFDM	64QAM	H + V	2 Tx	176 + 48	H	15	47	32/0	11.85

Table 7-11. Ant 1 EIRP Data (Band n261 - 50MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	27550.08	Low	DFT-s-OFDM	QPSK	H + V	2Tx	172 + 47	H	348	166	1 / 42	25.96
	27924.92	Mid	DFT-s-OFDM	QPSK	H	SISO	154	H	98	28	1 / 23	24.87
	27924.92	Mid	DFT-s-OFDM	QPSK	V	SISO	46	H	40	20	1 / 23	23.53
	27924.92	Mid	CP-OFDM	QPSK	H	SISO	154	H	98	28	1 / 23	21.36
	27924.92	Mid	CP-OFDM	QPSK	H	SISO	46	H	40	20	1 / 23	19.78
	27924.92	Mid	CP-OFDM	QPSK	H + V	MIMO	175 + 46	H	345	82	1 / 23	19.04
	27924.92	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	175 + 46	H	354	169	1 / 23	26.03
	28299.96	High	DFT-s-OFDM	QPSK	H + V	2Tx	156 + 27	H	353	167	1 / 23	26.36
	28299.96	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	156 + 27	H	353	167	1 / 23	25.83
	28299.96	High	DFT-s-OFDM	16QAM	H + V	2Tx	156 + 27	H	353	167	1 / 23	23.72
	28299.96	High	DFT-s-OFDM	64QAM	H + V	2Tx	156 + 27	H	353	167	1 / 23	21.07

Table 7-12. Ant 2 EIRP Data (Band n261 - 100MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	27924.92	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	175 + 46	H	46	162	64 / 0	23.41
	27924.92	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	175 + 46	H	46	162	64 / 0	23.37
	27924.92	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	175 + 46	H	46	162	64 / 0	20.57
	27924.92	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	175 + 46	H	46	162	64 / 0	19.98

Table 7-13. Ant 2 EIRP Data (Band n261 - 100MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	27525.00	Low	DFT-s-OFDM	QPSK	H + V	2Tx	172 + 47	H	354	170	1 / 12	25.17
	27924.96	Mid	DFT-s-OFDM	QPSK	H	SISO	154	H	279	332	1 / 12	25.05
	27924.96	Mid	DFT-s-OFDM	QPSK	V	SISO	46	H	40	20	1 / 12	22.01
	27924.96	Mid	CP-OFDM	QPSK	H	SISO	154	H	279	332	1 / 12	22.45
	27924.96	Mid	CP-OFDM	QPSK	H	SISO	46	H	40	20	1 / 12	18.98
	27924.96	Mid	CP-OFDM	QPSK	H + V	MIMO	175 + 46	H	69	157	1 / 12	21.90
	27924.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	175 + 46	H	69	157	1 / 12	27.12
	28324.92	High	DFT-s-OFDM	QPSK	H + V	2Tx	156 + 27	H	180	179	1 / 12	26.44
	27924.96	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	175 + 46	H	69	157	1 / 12	26.49
	27924.96	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	175 + 46	H	69	157	1 / 12	24.54
	27924.96	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	175 + 46	H	69	157	1 / 12	22.28

Table 7-14. Ant 2 EIRP Data (Band n261 - 50MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	27924.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	175 + 46	H	72	164	32 / 0	22.47
	27924.96	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	175 + 46	H	72	164	32 / 0	22.34
	27924.96	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	175 + 46	H	72	164	32 / 0	20.48
	27924.96	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	175 + 46	H	72	164	32 / 0	19.64

Table 7-15. Ant 2 EIRP Data (Band n261 - 50MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	27550.08	Low	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	H	2	174	1 / 42	28.32
	27924.92	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	167 + 41	H	44	187	1 / 23	26.25
	28299.96	High	DFT-s-OFDM	QPSK	H	SISO	186	H	144	175	1 / 23	25.60
	28299.96	High	DFT-s-OFDM	QPSK	V	SISO	57	H	44	175	1 / 23	24.07
	28299.96	High	CP-OFDM	QPSK	H	SISO	186	H	144	175	1 / 23	22.15
	28299.96	High	CP-OFDM	QPSK	H	SISO	57	H	44	175	1 / 23	20.98
	28299.96	High	CP-OFDM	QPSK	H + V	MIMO	186 + 57	H	356	179	1 / 23	22.18
	28299.96	High	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	H	26	198	1 / 33	28.57
	28299.96	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	184 + 58	H	26	198	1 / 33	28.14
	28299.96	High	DFT-s-OFDM	16QAM	H + V	2Tx	184 + 58	H	26	198	1 / 33	26.20
	28299.96	High	DFT-s-OFDM	64QAM	H + V	2Tx	184 + 58	H	26	198	1 / 33	24.87

Table 7-16. Ant 3 EIRP Data (Band n261 - 100MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	28299.96	High	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	H	37	187	64 /0	18.91
	28299.96	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	184 + 58	H	37	187	64 /0	18.88
	28299.96	High	DFT-s-OFDM	16QAM	H + V	2Tx	184 + 58	H	37	187	64 /0	17.22
	28299.96	High	DFT-s-OFDM	64QAM	H + V	2Tx	184 + 58	H	37	187	64 /0	15.14

Table 7-17. Ant 3 EIRP Data (Band n261 - 100MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	27525.00	Low	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	H	1	171	1 / 19	27.24
	27924.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	167 + 41	H	40	174	1 / 16	25.71
	28324.92	High	DFT-s-OFDM	QPSK	H	SISO	186	H	314	180	1 / 16	24.41
	28324.92	High	DFT-s-OFDM	QPSK	V	SISO	57	H	40	178	1 / 16	23.69
	28324.92	High	CP-OFDM	QPSK	H	SISO	186	H	314	180	1 / 16	20.63
	28324.92	High	CP-OFDM	QPSK	H	SISO	57	H	40	178	1 / 16	19.86
	28324.92	High	CP-OFDM	QPSK	H + V	MIMO	186 + 57	H	40	174	1 / 16	21.78
	28324.92	High	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	H	358	178	1 /16	26.88
	27525.00	Low	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	184 + 58	H	1	171	1 / 19	27.07
	27525.00	Low	DFT-s-OFDM	16QAM	H + V	2Tx	184 + 58	H	1	171	1 / 19	24.50
	27525.00	Low	DFT-s-OFDM	64QAM	H + V	2Tx	184 + 58	H	1	171	1 / 19	23.59

Table 7-18. Ant 3 EIRP Data (Band n261 - 50MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	27525.00	Low	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	H	50	199	32 / 0	19.01
	27525.00	Low	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	184 + 58	H	50	199	32 / 0	18.77
	27525.00	Low	DFT-s-OFDM	16QAM	H + V	2Tx	184 + 58	H	50	199	32 / 0	17.45
	27525.00	Low	DFT-s-OFDM	64QAM	H + V	2Tx	184 + 58	H	50	199	32 / 0	16.42

Table 7-19. Ant 3 EIRP Data (Band n261 - 50MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	27550.08	Low	DFT-s-OFDM	QPSK	H + V	MIMO	182 + 54	H	2	174	1 / 42	25.45
	27924.92	Mid	DFT-s-OFDM	QPSK	H + V	MIMO	182 + 54	H	44	187	1 / 23	26.66
	28299.96	High	DFT-s-OFDM	QPSK	H	SISO	36	H	40	337	1 / 33	24.75
	28299.96	High	DFT-s-OFDM	QPSK	V	SISO	163	H	314	21	1 / 33	25.01
	28299.96	High	CP-OFDM	QPSK	H	SISO	36	H	40	337	1 / 33	21.62
	28299.96	High	CP-OFDM	QPSK	H	MIMO	163	H	314	21	1 / 33	21.13
	28299.96	High	CP-OFDM	QPSK	H + V	MIMO	164 + 36	H	359	247	1 / 23	20.85
	28299.96	High	DFT-s-OFDM	QPSK	H + V	2Tx	182 + 54	H	26	198	1 / 33	26.70
	28299.96	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	182 + 54	H	26	198	1 / 33	26.69
	28299.96	High	DFT-s-OFDM	16QAM	H + V	2Tx	182 + 54	H	26	198	1 / 33	24.81
	28299.96	High	DFT-s-OFDM	64QAM	H + V	2Tx	182 + 54	H	26	198	1 / 33	22.63

Table 7-20. Ant 4 EIRP Data (Band n261 - 100MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	28299.96	High	DFT-s-OFDM	QPSK	H	2Tx	182 + 54	H	10	109	64 / 0	16.25
	28299.96	High	DFT-s-OFDM	pi/2-BPSK	V	2Tx	182 + 54	H	10	109	64 / 0	16.14
	28299.96	High	DFT-s-OFDM	16QAM	V	2Tx	182 + 54	H	10	109	64 / 0	15.04
	28299.96	High	DFT-s-OFDM	64QAM	V	2Tx	182 + 54	H	10	109	64 / 0	14.66

Table 7-21. Ant 4 EIRP Data (Band n261 - 100MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	27525.00	Low	DFT-s-OFDM	QPSK	H + V	2Tx	182 + 54	H	343	243	1 / 16	24.77
	27924.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	182 + 54	H	361	342	1 / 16	26.66
	28324.92	High	DFT-s-OFDM	QPSK	H	SISO	36	H	314	180	1 / 16	24.41
	28324.92	High	DFT-s-OFDM	QPSK	V	SISO	163	H	40	178	1 / 16	23.69
	28324.92	High	CP-OFDM	QPSK	H	SISO	36	H	314	180	1 / 16	20.63
	28324.92	High	CP-OFDM	QPSK	H	SISO	163	H	40	178	1 / 16	19.86
	28324.92	High	CP-OFDM	QPSK	H + V	MIMO	164 + 36	H	352	177	1 / 16	21.75
	28324.92	High	DFT-s-OFDM	QPSK	H + V	2Tx	182 + 54	H	360	246	1 /16	26.71
	28324.92	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	182 + 54	H	360	246	1 / 16	25.81
	28324.92	High	DFT-s-OFDM	16QAM	H + V	2Tx	182 + 54	H	360	246	1 / 16	23.50
	28324.92	High	DFT-s-OFDM	64QAM	H + V	2Tx	182 + 54	H	360	246	1 / 16	21.37

Table 7-22. Ant 4 EIRP Data (Band n261 - 50MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	28324.92	High	DFT-s-OFDM	QPSK	H + V	2Tx	182 + 54	H	42	202	32 / 0	19.32
	28324.92	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	182 + 54	H	42	202	32 / 0	19.05
	28324.92	High	DFT-s-OFDM	16QAM	H + V	2Tx	182 + 54	H	42	202	32 / 0	17.74
	28324.92	High	DFT-s-OFDM	64QAM	H + V	2Tx	182 + 54	H	42	202	32 / 0	15.07

Table 7-23. Ant 4 EIRP Data (Band n261 - 50MHz-2CC)

Band n260 Beam ID Configurations

Mode	Channel	Beam Pol.	Beam Id.
SISO	Low	H	177
		V	31
	Mid	H	177
		V	50
	High	H	176
		V	30
MIMO	Low	H	159
		V	31
	Mid	H	158
		V	30
	High	H	158
		V	30
DFT-s 2Tx	Low	H	158
		V	30
	Mid	H	178
		V	50
	High	H	158
		V	30

Table 7-24. Ant 1 Worst Case Beam ID

Mode	Channel	Beam Pol.	Beam Id.
SISO	Low	H	173
		V	46
	Mid	H	153
		V	46
	High	H	154
		V	44
MIMO	Low	H	175
		V	46
	Mid	H	175
		V	46
	High	H	174
		V	44
DFT-s 2Tx	Low	H	174
		V	44
	Mid	H	174
		V	44
	High	H	174
		V	44

Table 7-25. Ant 2 Worst Case Beam ID

Mode	Channel	Beam Pol.	Beam Id.
SISO	Low	H	169
		V	41
	Mid	H	169
		V	56
	High	H	184
		V	56
MIMO	Low	H	167
		V	41
	Mid	H	185
		V	56
	High	H	185
		V	56
DFT-s 2Tx	Low	H	184
		V	58
	Mid	H	170
		V	42
	High	H	184
		V	58

Table 7-26. Ant 3 Worst Case Beam ID

Mode	Channel	Beam Pol.	Beam Id.
SISO	Low	H	163
		V	35
	Mid	H	163
		V	53
	High	H	163
		V	35
MIMO	Low	H	163
		V	35
	Mid	H	181
		V	53
	High	H	163
		V	35
DFT-s 2Tx	Low	H	163
		V	35
	Mid	H	163
		V	35
	High	H	183
		V	55

Table 7-27. Ant 4 Worst Case Beam ID

Band n260

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	37027.32	Low	DFT-s-OFDM	QPSK	H + V	2Tx	158 + 30	V	357	258	1 / 33	20.87
	38497.44	Mid	DFT-s-OFDM	QPSK	H	SISO	177	H	305	181	1 / 33	22.36
	38497.44	Mid	DFT-s-OFDM	QPSK	V	SISO	50	H	312	17	1 / 33	23.47
	38497.44	Mid	DFT-s-OFDM	QPSK	H	SISO	177	H	305	181	1 / 33	19.16
	38497.44	Mid	CP-OFDM	QPSK	V	SISO	50	H	312	17	1 / 33	20.29
	38497.44	Mid	CP-OFDM	QPSK	H + V	MIMO	158 + 30	V	343	294	1 / 33	21.83
	38497.44	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	178 + 50	V	343	294	1 / 33	24.54
	39966.24	High	DFT-s-OFDM	QPSK	H + V	2Tx	158 + 30	V	354	272	1 / 33	23.89
	38497.44	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	178 + 50	V	343	294	1 / 33	24.35
	38497.44	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	178 + 50	V	343	294	1 / 33	22.50
	38497.44	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	178 + 50	V	343	294	1 / 33	19.80

Table 7-28. Ant 1 EIRP Data (Band n260 - 100MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	39966.24	High	DFT-s-OFDM	QPSK	H + V	2Tx	158 + 30	V	353	292	64/0	18.23
	39966.24	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	158 + 30	V	353	292	64/0	18.33
	39966.24	High	DFT-s-OFDM	16QAM	H + V	2Tx	158 + 30	V	353	292	64/0	16.56
	39966.24	High	DFT-s-OFDM	64QAM	H + V	2Tx	158 + 30	V	353	292	64/0	14.32

Table 7-29. Ant 1 EIRP Data (Band n260 - 100MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	37025.04	Low	DFT-s-OFDM	QPSK	V	SISO	31	H	311	18	1 / 16	21.40
	38499.96	Mid	DFT-s-OFDM	QPSK	H	SISO	177	H	68	344	1 / 19	21.06
	38499.96	Mid	DFT-s-OFDM	QPSK	V	SISO	50	H	41	162	1 / 19	22.66
	38499.96	Mid	DFT-s-OFDM	QPSK	H	SISO	177	H	68	344	1 / 19	17.31
	38499.96	Mid	CP-OFDM	QPSK	V	SISO	50	H	41	162	1 / 19	18.92
	38499.96	Mid	CP-OFDM	QPSK	H + V	MIMO	158 + 30	V	345	292	1 / 16	17.54
	38499.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	178 + 50	V	345	292	1 / 16	21.72
	39975.00	High	DFT-s-OFDM	QPSK	V	SISO	30	H	44	169	1 / 16	19.11
	38499.96	Mid	DFT-s-OFDM	QPSK	V	SISO	50	H	44	169	1 / 16	22.45
	38499.96	Mid	DFT-s-OFDM	QPSK	V	SISO	50	H	44	169	1 / 16	19.23
	38499.96	Mid	DFT-s-OFDM	QPSK	V	SISO	50	H	44	169	1 / 16	16.99

Table 7-30. Ant 1 EIRP Data (Band n260 - 50MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	39975.00	High	DFT-s-OFDM	QPSK	H + V	2Tx	158 + 30	V	345	287	32 / 0	19.61
	39975.00	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	158 + 30	V	345	287	32 / 0	19.55
	39975.00	High	DFT-s-OFDM	16QAM	H + V	2Tx	158 + 30	V	345	287	32 / 0	17.86
	39975.00	High	DFT-s-OFDM	64QAM	H + V	2Tx	158 + 30	V	345	287	32 / 0	15.75

Table 7-31. Ant 1 EIRP Data (Band n260 - 50MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	37027.32	Low	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	357	274	1 / 33	23.85
	38497.44	Mid	DFT-s-OFDM	QPSK	H	SISO	153	H	317	159	1 / 33	20.83
	38497.44	Mid	DFT-s-OFDM	QPSK	V	SISO	46	H	46	198	1 / 33	21.59
	38497.44	Mid	DFT-s-OFDM	QPSK	H	SISO	153	H	317	159	1 / 33	17.63
	38497.44	Mid	CP-OFDM	QPSK	V	SISO	46	H	46	198	1 / 33	18.58
	38497.44	Mid	CP-OFDM	QPSK	H + V	MIMO	175 + 46	V	353	274	1 / 33	14.14
	38497.44	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	353	274	1 / 33	25.74
	39966.24	High	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	354	272	1 / 33	26.91
	39966.24	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	174 + 44	V	354	272	1 / 33	26.58
	39966.24	High	DFT-s-OFDM	16QAM	H + V	2Tx	174 + 44	V	354	272	1 / 33	24.04
	39966.24	High	DFT-s-OFDM	64QAM	H + V	2Tx	174 + 44	V	354	272	1 / 33	22.02

Table 7-32. Ant 2 EIRP Data (Band n260 - 100MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	39966.24	High	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	354	272	64/0	20.83
	39966.24	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	174 + 44	V	354	272	64/0	20.89
	39966.24	High	DFT-s-OFDM	16QAM	H + V	2Tx	174 + 44	V	354	272	64/0	19.20
	39966.24	High	DFT-s-OFDM	64QAM	H + V	2Tx	174 + 44	V	354	272	64/0	17.90

Table 7-33. Ant 2 EIRP Data (Band n260 - 100MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	37025.04	Low	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	10	252	1 / 16	20.75
	38499.96	Mid	DFT-s-OFDM	QPSK	H	SISO	153	V	363	94	1 / 16	20.52
	38499.96	Mid	DFT-s-OFDM	QPSK	V	SISO	46	H	307	15	1 / 16	23.70
	38499.96	Mid	DFT-s-OFDM	QPSK	H	SISO	153	V	363	94	1 / 16	17.03
	38499.96	Mid	CP-OFDM	QPSK	V	SISO	46	H	307	15	1 / 16	20.20
	38499.96	Mid	CP-OFDM	QPSK	H + V	MIMO	175 + 46	V	358	273	1 / 16	18.62
	38499.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	358	273	1 / 16	24.96
	39975.00	High	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	350	276	1 / 16	24.56
	38499.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	358	273	1 / 16	22.45
	38499.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	358	273	1 / 16	19.23
	38499.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	358	273	1 / 16	16.99

Table 7-34. Ant 2 EIRP Data (Band n260 - 50MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	38499.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	174 + 44	V	357	274	32 / 0	18.25
	38499.96	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	174 + 44	V	357	274	32 / 0	18.14
	38499.96	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	174 + 44	V	357	274	32 / 0	16.64
	38499.96	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	174 + 44	V	357	274	32 / 0	14.89

Table 7-35. Ant 2 EIRP Data (Band n260 - 50MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	37027.32	Low	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	V	353	153	1 / 42	24.39
	38497.44	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	170 + 42	V	356	138	1 / 42	21.91
	39966.24	High	DFT-s-OFDM	QPSK	H	SISO	184	H	15	154	1 / 32	23.45
	39966.24	High	DFT-s-OFDM	QPSK	V	SISO	56	H	320	195	1 / 23	23.13
	39966.24	High	DFT-s-OFDM	QPSK	H	SISO	184	H	15	154	1 / 32	20.22
	39966.24	High	CP-OFDM	QPSK	V	SISO	56	H	320	195	1 / 23	19.79
	39966.24	High	CP-OFDM	QPSK	H + V	MIMO	185 + 56	V	345	159	1 / 42	22.20
	39966.24	High	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	V	345	159	1 / 42	25.28
	39966.24	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	184 + 58	V	354	272	1 / 33	25.31
	39966.24	High	DFT-s-OFDM	16QAM	H + V	2Tx	184 + 58	V	354	272	1 / 33	23.04
	39966.24	High	DFT-s-OFDM	64QAM	H + V	2Tx	184 + 58	V	354	272	1 / 33	21.86

Table 7-36. Ant 3 EIRP Data (Band n260 - 100MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	39966.24	High	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	V	334	192	64/0	19.43
	39966.24	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	184 + 58	V	334	192	64/0	19.42
	39966.24	High	DFT-s-OFDM	16QAM	H + V	2Tx	184 + 58	V	334	192	64/0	17.71
	39966.24	High	DFT-s-OFDM	64QAM	H + V	2Tx	184 + 58	V	334	192	64/0	15.56

Table 7-37. Ant 3 EIRP Data (Band n260 - 100MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	37025.04	Low	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	H	353	153	1 / 19	22.20
	38499.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	170 + 42	H	114	195	1 / 19	24.29
	39975.00	High	DFT-s-OFDM	QPSK	H	SISO	184	H	19	192	1 / 19	22.14
	39975.00	High	DFT-s-OFDM	QPSK	V	SISO	56	V	330	162	1 / 19	20.84
	39975.00	High	DFT-s-OFDM	QPSK	H	SISO	184	H	19	192	1 / 19	16.39
	39975.00	High	CP-OFDM	QPSK	V	SISO	56	V	330	162	1 / 19	19.25
	39975.00	High	CP-OFDM	QPSK	H + V	MIMO	185 + 56	H	340	159	1 / 19	19.93
	39975.00	High	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	H	331	193	1 / 16	26.52
	39975.00	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	184 + 58	H	331	193	1 / 16	25.54
	39975.00	High	DFT-s-OFDM	16QAM	H + V	2Tx	184 + 58	H	331	193	1 / 16	23.34
	39975.00	High	DFT-s-OFDM	64QAM	H + V	2Tx	184 + 58	H	331	193	1 / 16	20.84

Table 7-38. Ant 3 EIRP Data (Band n260 - 50MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	39975.00	High	DFT-s-OFDM	QPSK	H + V	2Tx	184 + 58	H	309	195	32 / 0	19.26
	39975.00	High	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	184 + 58	H	309	195	32 / 0	19.05
	39975.00	High	DFT-s-OFDM	16QAM	H + V	2Tx	184 + 58	H	309	195	32 / 0	17.14
	39975.00	High	DFT-s-OFDM	64QAM	H + V	2Tx	184 + 58	H	309	195	32 / 0	15.53

Table 7-39. Ant 3 EIRP Data (Band n260 - 50MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	37027.32	Low	DFT-s-OFDM	QPSK	H + V	2Tx	163 + 35	V	349	187	1 / 42	25.53
	38497.44	Mid	DFT-s-OFDM	QPSK	H	SISO	163	H	313	185	1 / 42	21.90
	38497.44	Mid	DFT-s-OFDM	QPSK	V	SISO	53	H	53	174	1 / 42	21.39
	38497.44	Mid	CP-OFDM	QPSK	H	SISO	163	H	313	185	1 / 42	19.37
	38497.44	Mid	CP-OFDM	QPSK	V	SISO	53	H	53	174	1 / 42	19.02
	38497.44	Mid	CP-OFDM	QPSK	H + V	MIMO	181 + 53	V	351	183	1 / 42	19.40
	38497.44	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	163 + 35	V	351	183	1 / 42	25.65
	39966.24	High	DFT-s-OFDM	QPSK	H + V	2Tx	183 + 55	V	350	187	1 / 42	24.72
	38497.44	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	163 + 35	V	351	183	1 / 42	25.32
	38497.44	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	163 + 35	V	351	183	1 / 42	23.25
	38497.44	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	163 + 35	V	351	183	1 / 42	20.72

Table 7-40. Ant 4 EIRP Data (Band n260 - 100MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	38497.44	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	163 + 35	V	356	182	64/0	23.33
	38497.44	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	163 + 35	V	356	182	64/0	23.34
	38497.44	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	163 + 35	V	356	182	64/0	21.63
	38497.44	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	163 + 35	V	356	182	64/0	19.62

Table 7-41. Ant 4 EIRP Data (Band n260 - 100MHz-2CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
1	37025.04	Low	DFT-s-OFDM	QPSK	H + V	2Tx	163 + 35	V	348	186	1 / 16	25.20
	38499.96	Mid	DFT-s-OFDM	QPSK	H	SISO	163	H	316	189	1 / 16	20.99
	38499.96	Mid	DFT-s-OFDM	QPSK	V	SISO	53	H	56	169	1 / 16	21.65
	38499.96	Mid	CP-OFDM	QPSK	H	SISO	163	H	316	189	1 / 16	19.02
	38499.96	Mid	CP-OFDM	QPSK	V	SISO	53	H	56	169	1 / 16	19.40
	38499.96	Mid	CP-OFDM	QPSK	H + V	MIMO	181 + 53	V	355	182	1 / 16	18.76
	38499.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	163 + 35	V	355	182	1 / 16	25.29
	39975.00	High	DFT-s-OFDM	QPSK	H + V	2Tx	183 + 55	V	359	187	1 / 16	23.92
	38499.96	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	163 + 35	V	355	182	1 / 16	25.08
	38499.96	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	163 + 35	V	355	182	1 / 16	23.04
	38499.96	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	163 + 35	V	355	182	1 / 16	20.48

Table 7-42. Ant4 EIRP Data (Band n260 - 50MHz-1CC)

CCs active	Frequency [MHz]	Channel	Transmission Scheme	Modulation	Beam Pol	Ant. Div.	BeamID	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
2	38499.96	Mid	DFT-s-OFDM	QPSK	H + V	2Tx	163 + 35	H	356	182	32 / 0	20.04
	38499.96	Mid	DFT-s-OFDM	pi/2-BPSK	H + V	2Tx	163 + 35	H	356	182	32 / 0	20.02
	38499.96	Mid	DFT-s-OFDM	16QAM	H + V	2Tx	163 + 35	H	356	182	32 / 0	18.22
	38499.96	Mid	DFT-s-OFDM	64QAM	H + V	2Tx	163 + 35	H	356	182	32 / 0	16.25

Table 7-43. Ant 4 EIRP Data (Band n260 - 50MHz-2CC)

7.4 Radiated Spurious and Harmonic Emissions

§2.1051, §30.203

Test Overview

The spectrum is scanned from 30MHz to 100GHz for n261 and from 30MHz to 200GHz for n260. All out of band emissions are measured in a radiated test setup while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All modulations were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The conductive power or total radiated power of any emissions outside a licensee's frequency block shall be -13dBm/1MHz.

Test Procedure Used

ANSI C63.26-2015 Section 5.7.4
KDB 842590 D01 v01r01 Section 4.4.2 and Section 4.4.3

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 100 GHz for n261 and 200GHz for n260. Several plots are used to show investigations in this entire span.
2. Detector = RMS
3. Trace mode = trace average
4. Sweep time = auto couple
5. Number of sweep points ≥ 2 x Span/RBW
6. The trace was allowed to stabilize
7. RBW = 1MHz, VBW = 3MHz

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

2) All radiated spurious emissions were measured as EIRP to compare with the §30.203 TRP limits.

3) Elements within the same antenna array are correlated to produce beamforming array gain. Antenna arrays cannot be correlated with another antenna array. During testing, only one antenna array was active.

4) The plots from 1-200GHz show corrected average EIRP levels. The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states: EIRP (dBm) = E (dBμV/m) + 20log(D) − 104.8; where D is the measurement distance (in the far field region) in m. The field strength E is calculated E (dBμV/m) = Spectrum Analyzer Level (dBm) + Antenna Factor (dB/m) + Cable Loss (dB) + Harmonic Mixer Conversion Loss (dB) + 107. All appropriate Antenna Factor and Cable Loss have been applied in the spectrum analyzer for each measurement. For measurements > 40GHz, Harmonic Mixer Conversion Loss was also applied to the spectrum analyzer.

5) Emissions below 18GHz were measured at a 3 meter test distance, while emissions above 18GHz were measured at the appropriate far field distance. The far field of the mmWave signal is based on formula: R > 2D^2/wavelength, where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, D is the largest dimension of the measurement antenna.

Frequency Range (GHz)	Wavelength(cm)	Far Field Distance (m)	Measurement Distance (m)
18-40	0.749	0.54	1.00
40-60	0.500	1.39	1.50
60-90	0.333	0.91	1.00
90-140	0.214	0.58	1.00
140-200	0.150	0.39	1.00

Table 7-44. Far-Field Distance & Measurement Distance per Frequency Range

6) All emissions from 30MHz - 40GHz were measured using a spectrum analyzer with an internal preamplifier. Emissions >40GHz were measured using a harmonic mixer with the spectrum analyzer.

7) All RSE's were measured with 1CC. It was determined that adding more CC's causes the overall amplitude of just 1CC to decrease, therefore, 1CC is the worst case for the purposes of spurious emissions measurements.

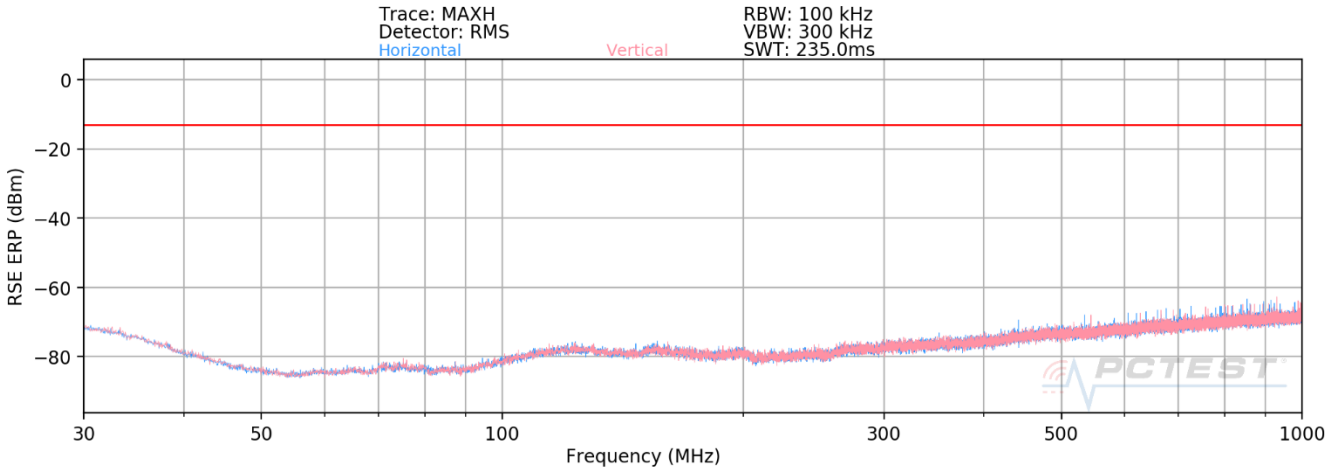
8) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

9) All RSE's were investigated in EN-DC mode and with 802.11 chipset active. It was determined that there is no new emission introduced by EN-DC mode, or the 802.11 chipset. For EN-DC mode, n261 uses LTE B2, B5, B12, B13, B48 and B66, and n260 uses LTE B2, B4, B5, B13, and B66.

10) There was no discernible difference in the spurious emission levels when using different LTE anchor bands. Thus, LTE Band 2 was used as a representative anchor band for EN-DC investigations.

Band n261 – Ant 1

30MHz - 1GHz



Plot 7-33. Ant 1- n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor Band 2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

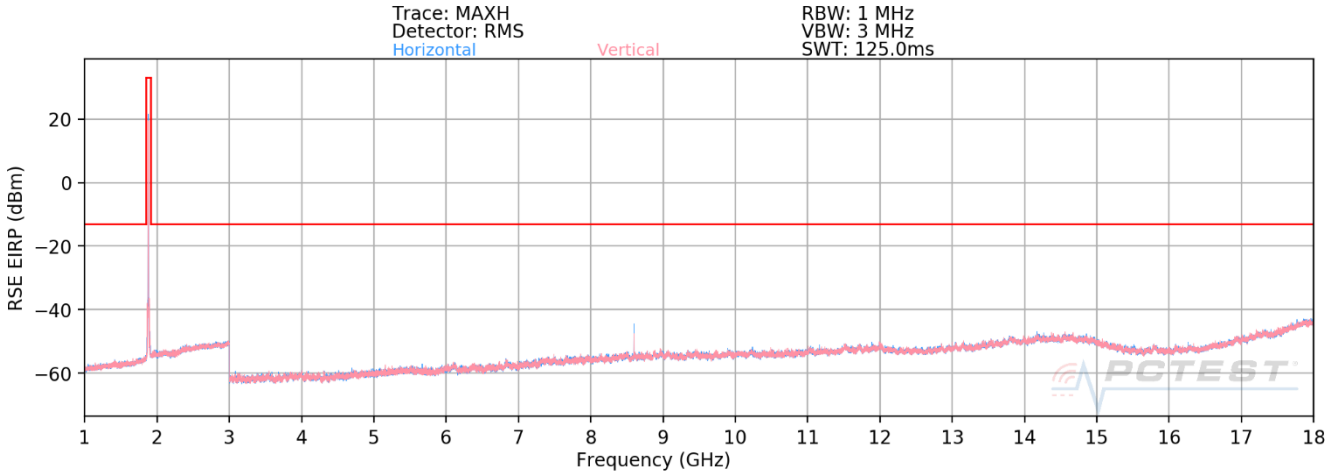
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
842.14	Low	50	H	QPSK	H	-	-	-71.21	-13.00	-58.21
556.24	Mid	50	H	QPSK	H	-	-	-70.58	-13.00	-57.58
891.67	High	50	H	QPSK	H	-	-	-70.46	-13.00	-57.46

Table 7-45. Ant 1 - SISO -Spurious Emissions Table (30MHz - 1GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 3 meter.

1GHz - 18GHz



Plot 7-34. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor Band 2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

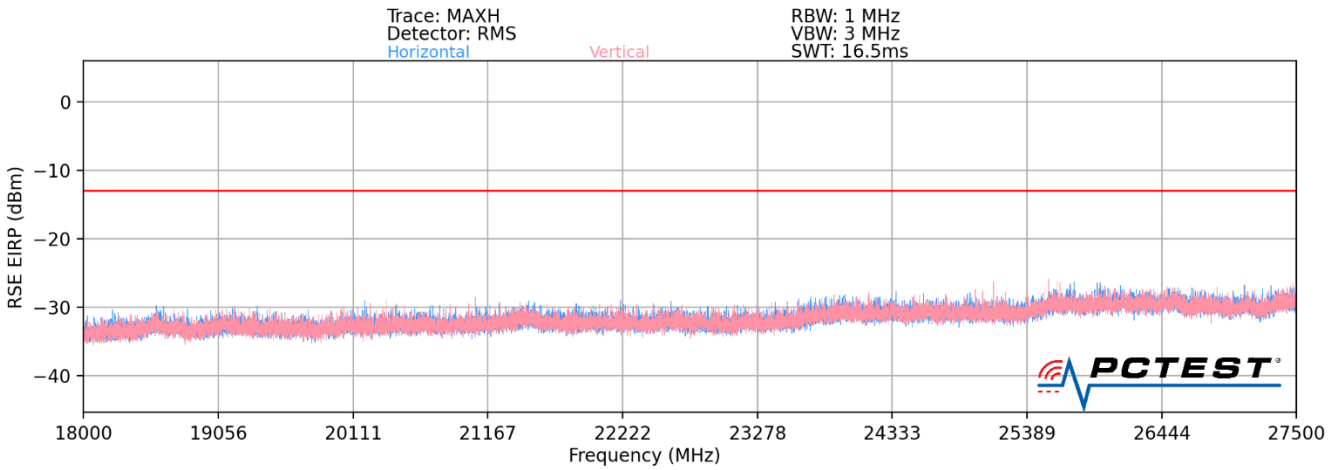
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
8812.31	Low	50	H	QPSK	H	149	116	-45.20	-13.00	-32.20
9300.70	Mid	50	H	QPSK	H	336	110	-38.41	-13.00	-25.41
8971.76	High	50	H	QPSK	H	167	353	-39.00	-13.00	-26.00

Table 7-46. Ant 1 - SISO -Spurious Emissions Table (1GHz - 18GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 3 meter.

18GHz - 27.5GHz



Plot 7-35. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

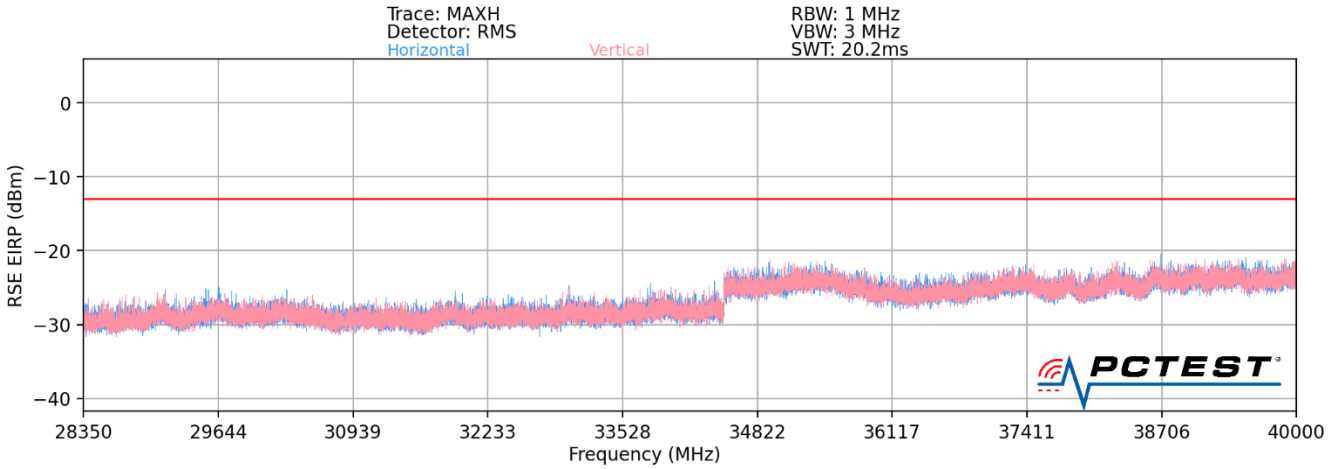
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
27098.55	Low	50	V	QPSK	H	-	-	-36.36	-13.00	-23.36
27000.22	Mid	50	V	QPSK	H	-	-	-36.26	-13.00	-23.26
26757.89	High	50	V	QPSK	H	-	-	-36.37	-13.00	-23.37

Table 7-27. Ant 1 - SISO -Spurious Emissions Table (18GHz - 27.5GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

28.35GHz - 40GHz



Plot 7-36. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

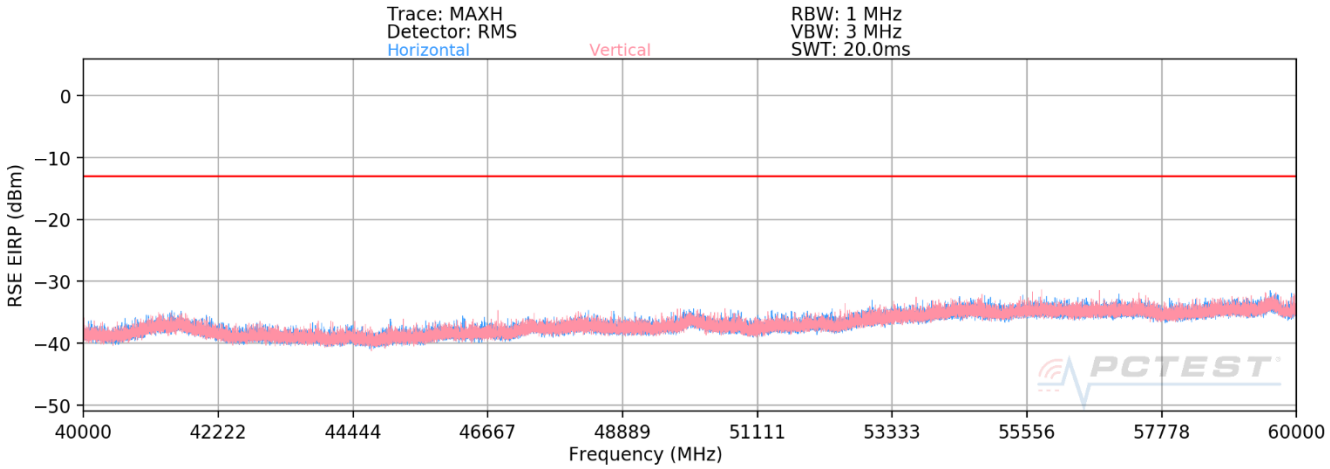
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
37238.24	Low	50	V	QPSK	H	-	-	-35.89	-13.00	-22.89
37316.54	Mid	50	V	QPSK	H	-	-	-35.64	-13.00	-22.64
37746.98	High	50	V	QPSK	H	-	-	-34.56	-13.00	-21.56

Table 7-28. Ant 1 - SISO -Spurious Emissions Table (28.35GHz - 40GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

40GHz - 60GHz



Plot 7-37. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]

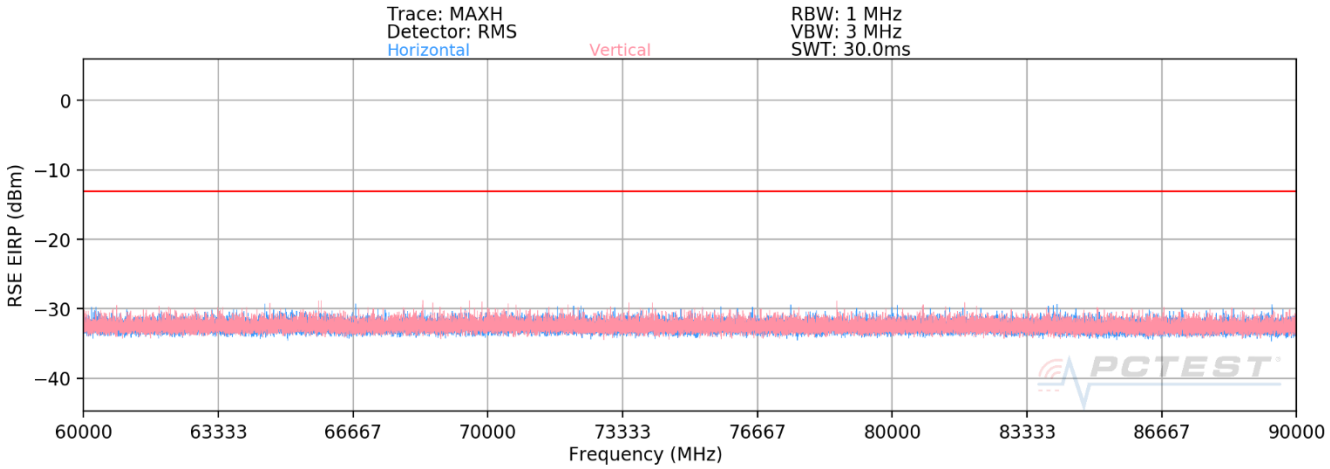
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
55051.22	Low	50	H	QPSK	V	283	289	-36.77	-13.00	-23.77
55850.58	Mid	50	H	QPSK	V	292	293	-36.22	-13.00	-23.22
56650.38	High	50	H	QPSK	V	293	300	-37.88	-13.00	-24.88

Table 7-29. Ant 1 - SISO -Spurious Emissions Table (40GHz - 60GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

60GHz - 90GHz



Plot 7-38. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]

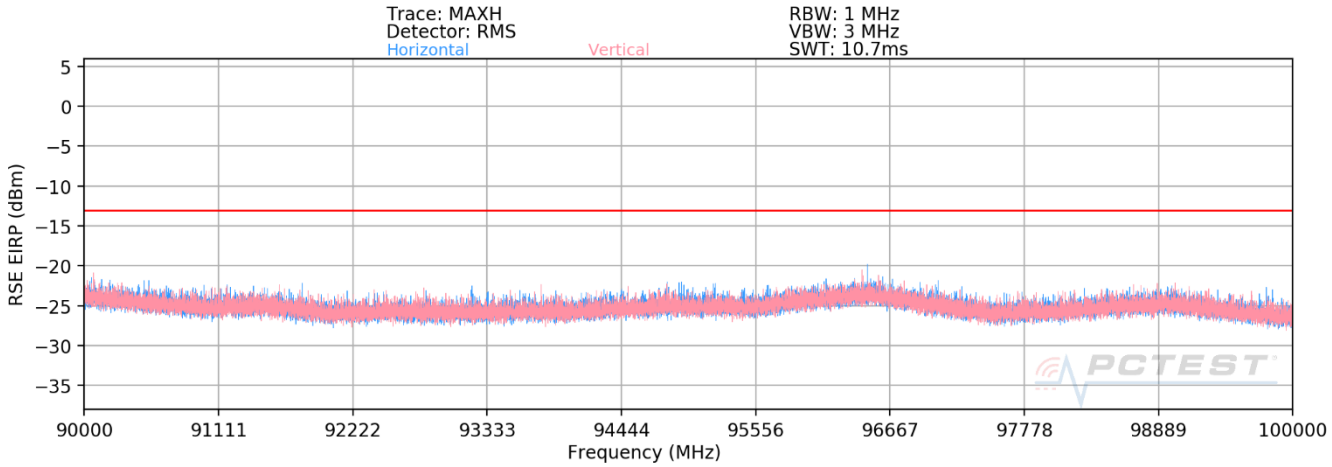
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
74835.00	Low	50	H	QPSK	V	-	-	-38.95	-13.00	-25.95
83776.46	Mid	50	V	QPSK	V	-	-	-40.21	-13.00	-27.21
84977.92	High	50	V	QPSK	V	-	-	-41.01	-13.00	-28.01

Table 7-30. Ant 1 - SISO -Spurious Emissions Table (60GHz - 90GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

90GHz - 100GHz



Plot 7-39. Ant 1-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
94653.22	Low	50	H	QPSK	V	-	-	-40.21	-13.00	-27.21
95822.00	Mid	50	H	QPSK	V	-	-	-40.11	-13.00	-27.11
96245.33	High	50	H	QPSK	V	-	-	-40.21	-13.00	-27.21

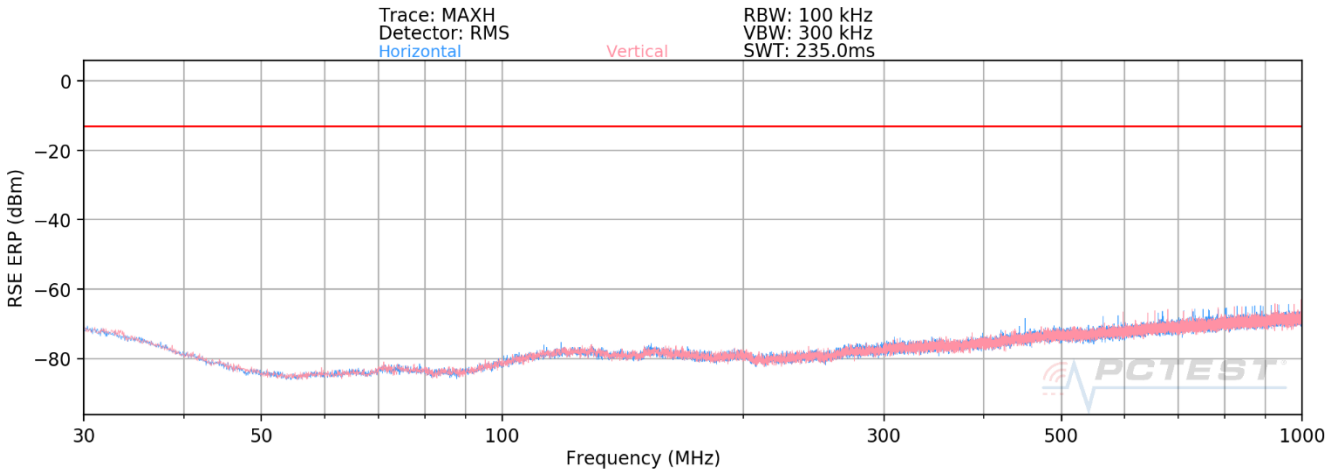
Table 7-31. Ant 1 - SISO -Spurious Emissions Table (90GHz - 100GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

Band n261 – Ant 2

30MHz - 1GHz



Plot 7-40. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor Band 2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

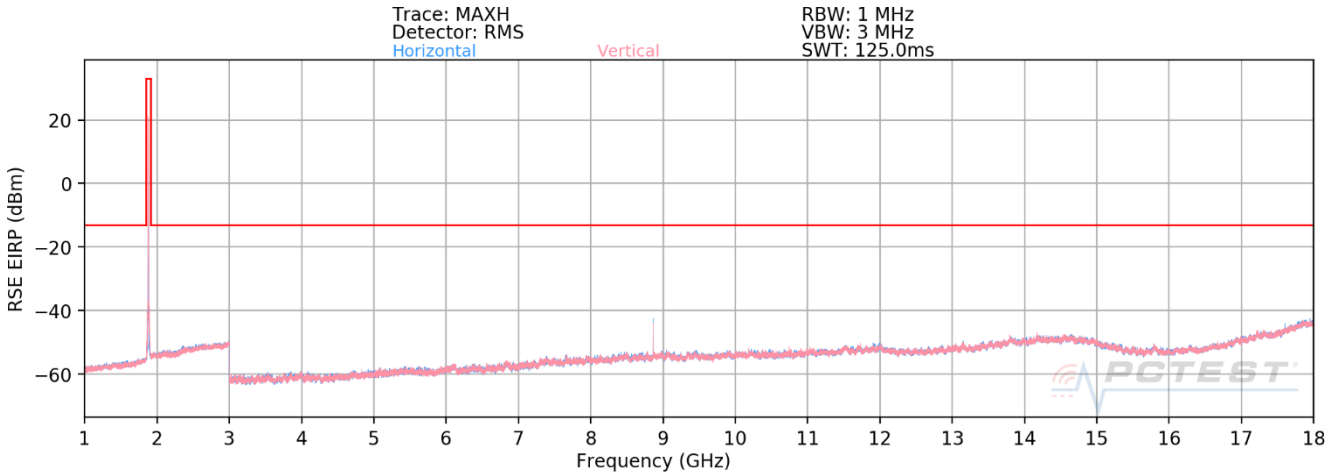
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
704.56	Low	50	H	QPSK	H	-	-	-71.41	-13.00	-58.41
651.24	Mid	50	H	QPSK	H	-	-	-74.25	-13.00	-61.25
890.00	High	50	H	QPSK	H	-	-	-68.98	-13.00	-55.98

Table 7-32. Ant 2 - SISO -Spurious Emissions Table (30MHz - 1GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 3 meter.

1GHz - 18GHz



Plot 7-41. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor Band 2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

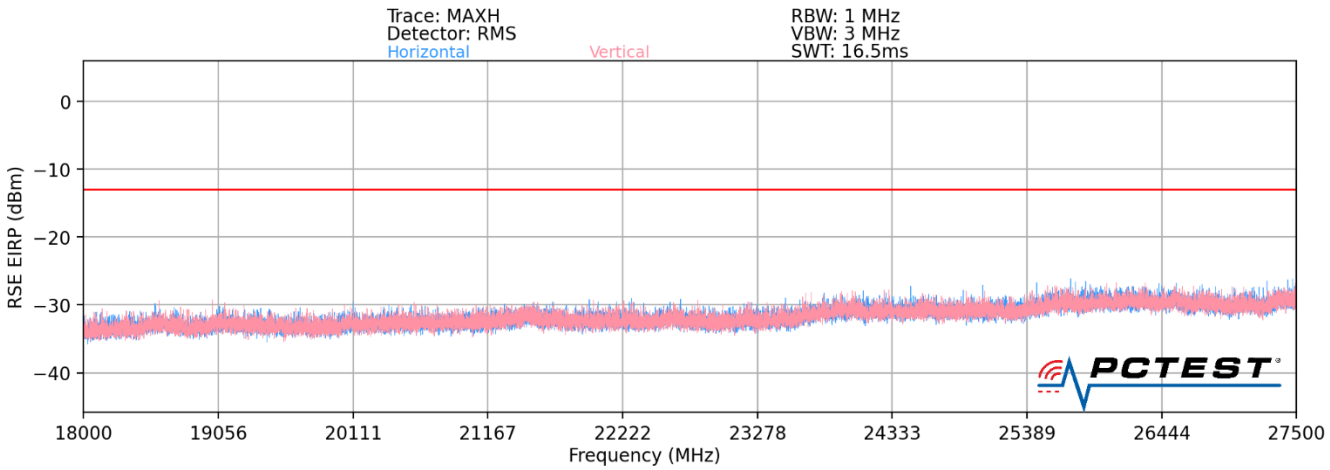
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
8796.50	Low	50	H	QPSK	H	-	-	-55.53	-13.00	-42.53
9124.56	Mid	50	H	QPSK	H	148	100	-40.03	-13.00	-27.03
8999.35	High	50	H	QPSK	H	167	252	-39.34	-13.00	-26.34

Table 7-33. Ant 2 - SISO -Spurious Emissions Table (1GHz - 18GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 3 meter.

18GHz - 27.5GHz



Plot 7-42. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

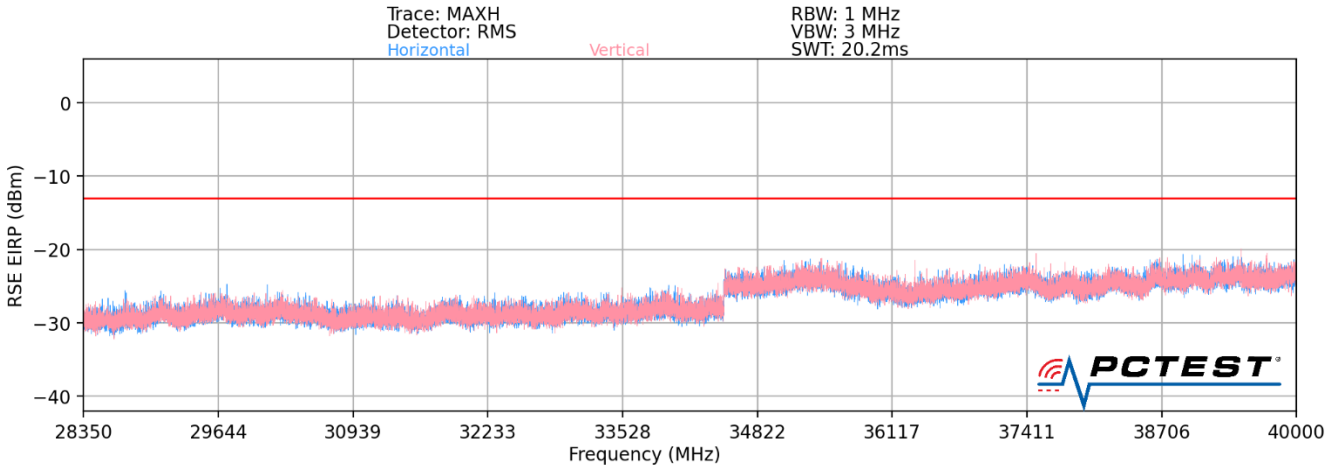
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
27242.11	Low	50	V	QPSK	H	-	-	-35.69	-13.00	-22.69
27316.64	Mid	50	V	QPSK	H	-	-	-36.79	-13.00	-23.79
27222.04	High	50	V	QPSK	H	-	-	-37.01	-13.00	-24.01

Table 7-34. Ant 2 - SISO -Spurious Emissions Table (18GHz - 27.5GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

28.35GHz - 40GHz



Plot 7-43. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

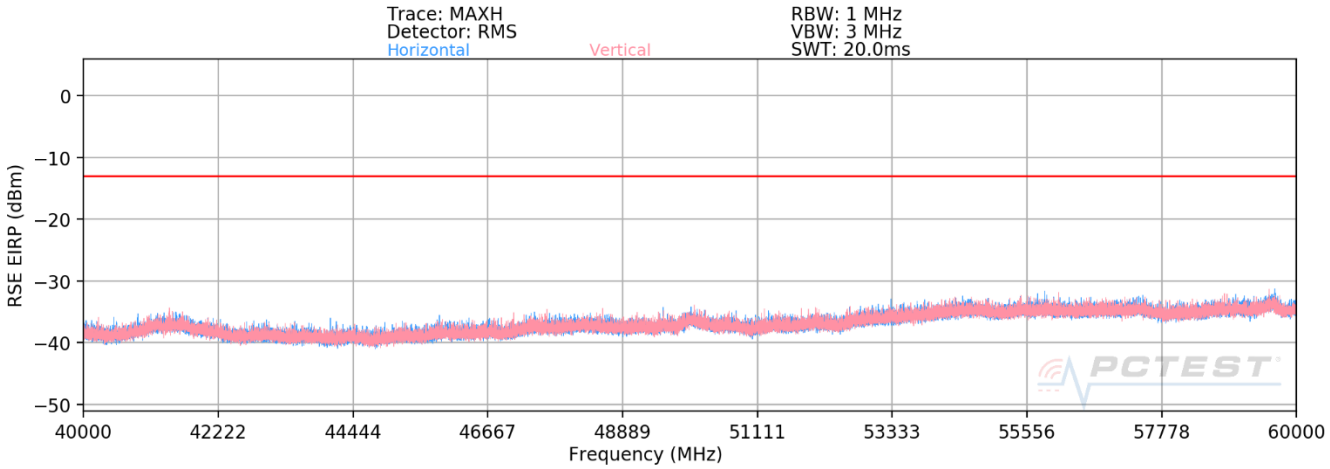
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
28591.68	Low	50	V	QPSK	H	-	-	-36.84	-13.00	-23.84
26649.44	Mid	50	V	QPSK	H	-	-	-37.78	-13.00	-24.78
28674.46	High	50	V	QPSK	H	-	-	-37.87	-13.00	-24.87

Table 7-35. Ant 2 - SISO -Spurious Emissions Table (28.35GHz - 40GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

40GHz - 60GHz



Plot 7-44. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]

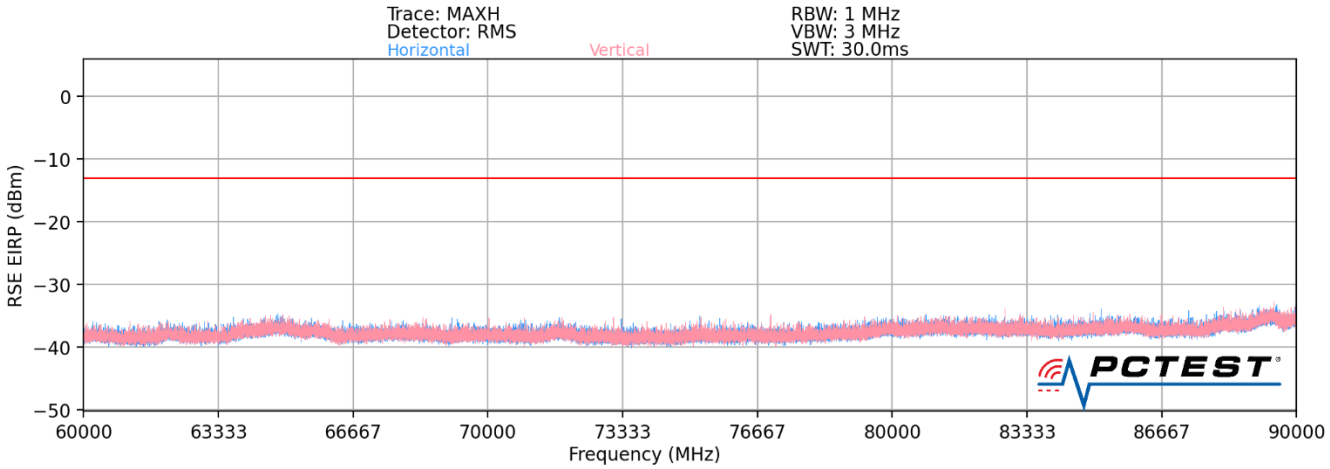
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
55050.50	Low	50	H	QPSK	V	58	27	-36.17	-13.00	-23.17
55850.49	Mid	50	H	QPSK	V	60	37	-38.33	-13.00	-25.33
56651.85	High	50	H	QPSK	V	57	44	-39.29	-13.00	-26.29

Table 7-36. Ant 2 - SISO -Spurious Emissions Table (40GHz - 60GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

60GHz - 90GHz



Plot 7-45. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]

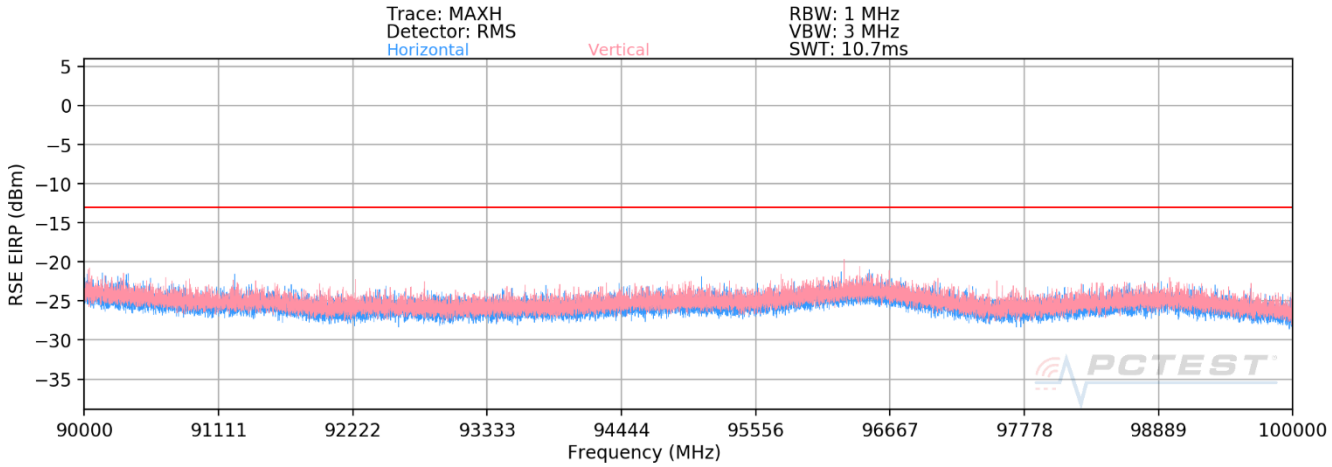
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
74835.00	Low	50	H	QPSK	V	-	-	-39.68	-13.00	-26.68
83776.46	Mid	50	V	QPSK	V	-	-	-40.04	-13.00	-27.04
84977.92	High	50	V	QPSK	V	-	-	-40.41	-13.00	-27.41

Table 7-37. Ant 2 - SISO -Spurious Emissions Table (60GHz - 90GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

90GHz - 100GHz



Plot 7-46. Ant 2-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor B2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
94785.69	Low	50	H	QPSK	V	-	-	-39.43	-13.00	-26.43
95554.24	Mid	50	H	QPSK	V	-	-	-40.01	-13.00	-27.01
98247.25	High	50	H	QPSK	V	-	-	-40.14	-13.00	-27.14

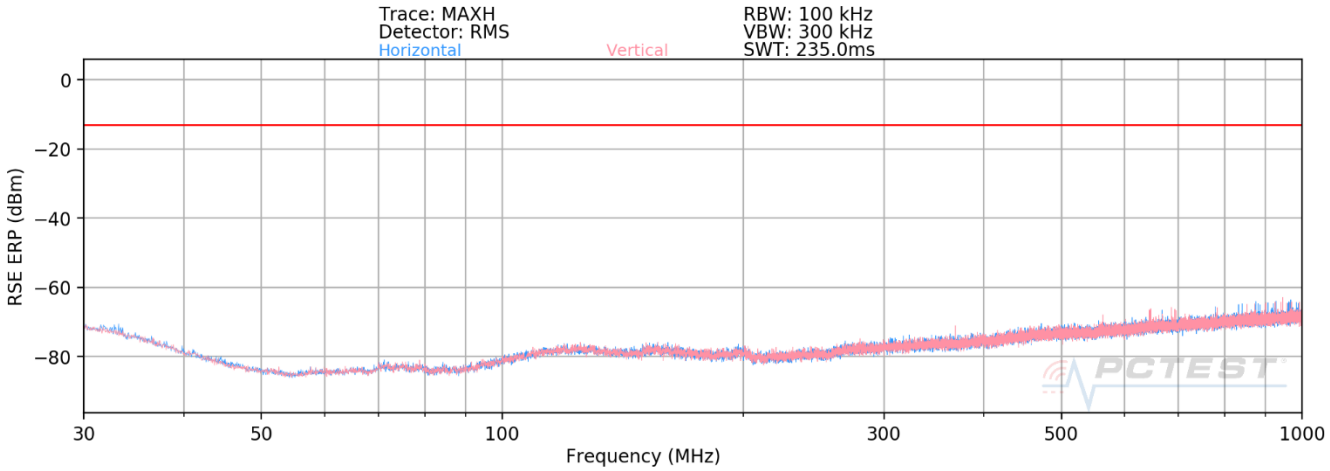
Table 7-38. Ant 2 - SISO -Spurious Emissions Table (90GHz - 100GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

Band n261 – Ant 3

30MHz - 1GHz



Plot 7-40. Ant 3-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor Band 2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

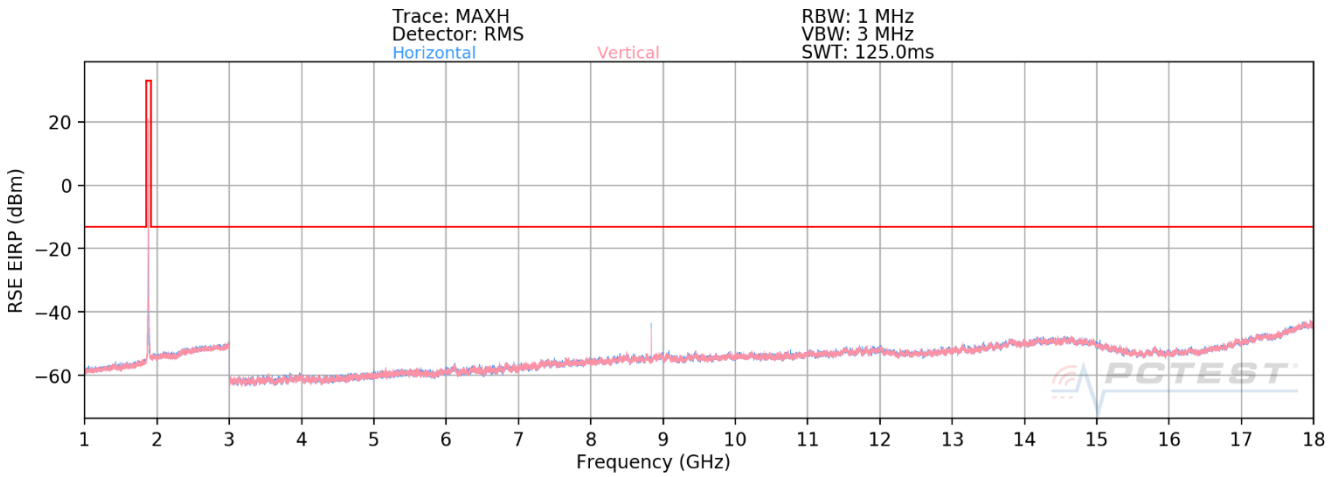
Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
711.42	Low	50	H	QPSK	H	-	-	-70.42	-13.00	-57.42
649.66	Mid	50	H	QPSK	H	-	-	-75.33	-13.00	-62.33
889.36	High	50	H	QPSK	H	-	-	-69.54	-13.00	-56.54

Table 7-32. Ant 3 - MIMO -Spurious Emissions Table (30MHz - 1GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 3 meter.

1GHz - 18GHz



Plot 7-41. Ant 3-n261 Radiated Spurious Plot (1CC QPSK Mid Channel H Beam – EN-DC Anchor Band 2)

Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
8800.42	Low	50	H	QPSK	H	-	-	-54.97	-13.00	-41.97
9125.36	Mid	50	H	QPSK	H	150	124	-39.24	-13.00	-26.24
9001.24	High	50	H	QPSK	H	172	255	-38.44	-13.00	-25.44

Table 7-33. Ant 3 - MIMO -Spurious Emissions Table (1GHz - 18GHz)

Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 3 meter.