FCC SAR TEST REPORT

APPLICANT	:	Zebra Technologies Corporation
EQUIPMENT	:	Tablet
BRAND NAME	:	Zebra
Model Name	:	ET45CB
FCC ID	:	UZ7ET45CB
STANDARD	:	FCC 47 CFR Part 2 (2.1093)

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Si Zhang

Approved by: Si Zhang

ACCREDITED Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FA230406	Rev. 01	Initial issue of report	Aug. 12, 2022

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Lenovo(Shanghai) Electronics Technology Co., Ltd., Tablet, ET45CB,** are as follows.

Highest Standalone 1g SAR Summary				
Equipment Class	Frequency Band		Body(Separation 0mm) 1g SAR (W/kg)	Highest Transmission 1g SAR (W/kg)
Licensed	GSM	GSM850	1.25	1.59
		GSM1900	1.25	
	WCDMA	Band II	1.25	
		Band IV	1.24	
		Band V	1.15	
	LTE	Band 2	1.24	
		Band 5	1.24	
		Band 7	1.25	
		Band 17	0.76	
		Band 38	1.26	
		Band 41	1.25	
		Band 42	1.25	
		Band 66/4	1.24	
	5GNR	n2	1.25	
		n5	1.24	
		n7	1.25	
		n38	1.23	
		n41	1.25	
		n66	1.26	
		n77/n78	1.26	
DTS	WLAN	2.4GHz WLAN	1.35	1.51
NII		5GHz WLAN	**1.39**	1.59
DTS	Bluetooth	Bluetooth	<0.10	1.59
Date of Testing:		2022/6/6 ~ 2022/7/27		

Remark:
1. This device supports LTE B4 and B66. Since the supported frequency span for LTE B4 falls completely within the supports frequency span for LTE B66, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for B66.
2. This device supports 5GNR n78 and 5GNR n77. Since the supported frequency span for 5GNR n78 falls completely within the supports frequency span for 5GNR n77, both 5GNR bands have the same target power, and both 5GNR bands share the same transmission path; therefore, SAR was only assessed for 5GNR n77.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications

2. Administration Data

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory			
Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR07-KS	CN1257	314309

Applicant	
Company Name	Zebra Technologies Corporation
Address	1 Zebra Plaza, Holtsville, NY 11742

Manufacturer	
Company Name	Zebra Technologies Corporation
Address	1 Zebra Plaza, Holtsville, NY 11742

3. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Tablet
Brand Name	Zebra
Model Name	ET45CB
FCC ID	UZ7ET45CB
IMEI Code	359496760006467
Wireless Technology and Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 42: 3450 MHz ~ 3550 MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz WLAN 5.5GHz Band: 5500 MHz ~ 5720MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Mode	GPRS/EGPRS RMC 12.2Kbps HSDPA HSUPA DC-HSDPA HSPA+ (16QAM uplink is not supported) LTE: QPSK, 16QAM,64QAM 5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM WLAN 2.4G 802.11b/g/n/ac/ax HT20/VHT20/HE20 WLAN 5G 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80 WLAN 5G 802.11ax HE20/HE40/HE80 Bluetooth BR / EDR/LE NFC:ASK
HW Version	EV2-2
SW Version	ET45-userdebug 11 11-10-12.00-RG-U00-PRD-GSE MXJ release-keys
MFD	30APR22
EUT Stage	Identical Prototype

Remark:

1. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 33.
2. The device implements the power management and sensor detection for SAR compliance and the Qualcomm smart transmit will manage to ensure the power level not exceeding the associated power table.
3. For Ant0/3, the device employs proximity sensors that detect the presence of the user's body also a finger or hand

near the bottom face, edge 1 and edge 4 of the device, reduced power will be active. (P-sensor can't work at detecting presence of the user's body at other edges of the device.)

4. For Ant2/6, the device employs proximity sensors that detect the presence of the user's body also a finger or hand near the bottom face, edge 4 of the device, reduced power will be active. (P-sensor can't work at detecting presence of the user's body at other edges of the device.)
5. For Ant7, the device employs proximity sensors that detect the presence of the user's body also a finger or hand near the bottom face, edge 1 of the device, reduced power will be active. (P-sensor can't work at detecting presence of the user's body at other edges of the device.)
6. For WWAN when transmit simultaneous with WLAN, power reduction will be activated to body. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body.
7. For 5G NR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
8. For 5GNR, the simultaneous transmission analysis is used standalone SAR at total power level to show compliance.
9. NSA and SA mode should perform SAR separately. For the bands, when channel bandwidth of SA and NSA is same, and the maximum power of NSA mode is same as SA total power level, SA SAR can represent NSA mode SAR. For the bands, when channel bandwidth of SA and NSA is different, choose the largest channel bandwidth with maximum power to perform SAR testing, so the largest channel bandwidth SAR can represent the smallest channel bandwidth SAR.
10. When channel bandwidth of SA and NSA is same, the power level is the same as 5GNR SA mode, so 5GNR NSA mode and SA mode power table only show one time. When channel bandwidth of SA and NSA is different, chose the largest channel bandwidth mode among SA and NSA to perform power measurement.5GNR n41/n77/n78 supports HPUE, HPUE power and SAR testing performed separately.
11. 5GNR n41/n77/n78 HUPE with higher power, 5GNR n41/n77/n78 HUPE SAR can represent power class 3 level SAR.
12. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
13. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.
14. This device has NFC function and the NFC SAR report will be separately submitted.
15. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode.

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
SA	n2	FDD	15	5, 10, 15, 20
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20, 25, 30, 40, 50
	n66	FDD	15	5, 10, 15, 20
	n38	TDD	30	20, 30, 40
	n41	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100
	n77	TDD	30	20, 30, 40, 60, 80, 100
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100
NSA	n2	FDD	15	5, 10, 15, 20
	n5	FDD	15	5, 10, 15, 20
	n7	FDD	15	5, 10, 15, 20
	n66	FDD	15	5, 10, 15, 20,30
	n77	TDD	30	20, 30, 40, 60, 80, 100
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100

Specification of Accessory				
Battery	**Brand Name**	Zebra	**Model Number**	BT-000456

Supported Unit Used in Test Configuration and System				
AC Adapter	**Brand Name**	Zebra	**Part Number**	PWR-WUA5V12W0US
Earphone 1	**Brand Name**	Zebra	**Part Number**	HDST-35MM-PTVP-01
Earphone 2	**Brand Name**	Zebra	**Part Number**	HDST-USBC-PTT1-01
USB Cable (Type C to Type A)	**Brand Name**	Zebra	**Part Number**	CBL-TC5X-USBC2A-01
Type C-Audio Cable (Type C to 3.5mm)	**Brand Name**	Zebra	**Part Number**	ADP-USBC-35MM1-01

4.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>UZ7ET45CB</td></tr>
<tr><td>Equipment Name</td><td>Tablet</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz
LTE Band 4: 1710 MHz ~ 1755 MHz
LTE Band 5: 824 MHz ~ 849 MHz
LTE Band 7: 2500 MHz ~ 2570 MHz
LTE Band 17: 704 MHz ~ 716 MHz
LTE Band 38: 2570 MHz ~ 2620 MHz
LTE Band 41: 2496 MHz ~ 2690 MHz
LTE Band 42: 3450 MHz ~ 3550 MHz
LTE Band 66: 1710 MHz ~ 1780 MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz
LTE Band 7: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 17: 5MHz, 10MHz
LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz
LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM</td></tr>
<tr><td>LTE release</td><td>R15, Cat 13</td></tr>
<tr><td>CA support</td><td>Yes, Uplink and Downlink</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Data only</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, Proximity Sensor. Power reduction will be active at bottom face, edge 1, and edge 4.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 14.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>1. This device supports LTE Carrier Aggregation (CA) in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.
2. This device supports maximum of 4 carriers in the downlink and 2 carriers in the uplink Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.</td></tr>
</table>

Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	20407	824.7	20415	825.5	20425	826.5	20450	829				
M	20525	836.5	20525	836.5	20525	836.5	20525	836.5				
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 7												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510				
M	21100	2535	21100	2535	21100	2535	21100	2535				
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560				
LTE Band 17												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq. (MHz)					
L	23755		706.5		23780		709					
M	23790		710		23790		710					
H	23825		713.5		23800		711					
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770
LTE Band 38												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	37775	2572.5	37800	2575	37825	2577.5	37850	2580				
M	38000	2595	38000	2595	38000	2595	38000	2595				
H	38225	2617.5	38200	2615	38175	2612.5	38150	2610				
LTE Band 41												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	39675	2498.5	39700	2501	39725	2503.5	39750	2506				
LM	40148	2545.8	40160	2547	40173	2548.3	40185	2549.5				
M	40620	2593	40620	2593	40620	2593	40620	2593				
HM	41093	2640.3	41080	2639	41068	2637.8	41055	2636.5				
H	41565	2687.5	41540	2685	41515	2682.5	41490	2680				

LTE Band 42								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	42115	3452.5	42140	3455	42165	3457.5	42190	3460
M	42590	3500	42590	3500	42590	3500	42590	3500
H	43065	3547.5	43040	3545	43015	3542.5	42990	3540

<For LTE Overlap Bands Description>

1) LTE Bands BW

Band	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE Band 4	Yes	Yes	Yes	Yes	Yes	Yes
LTE Band 66	Yes	Yes	Yes	Yes	Yes	Yes

2) LTE Bands tune up:

Band	Antenna	Sensor on Standalone DSI 1 Tune-up Limit	Sensor on Simultaneous DSI 3 Tune-up Limit	Sensor off Standalone DSI 0 Tune-up Limit	Sensor off Simultaneous DSI 2 Tune-up Limit	Default Tune-up Limit
LTE Band 4	Ant 0	19	16.4	25	24.5	25
LTE Band 66	Ant 0	19	16.4	25	24.5	25

4.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information	
Operating Frequency Range of each 5G NR transmission band	5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz
Channel Bandwidth	The detail please refers to section 4.1 5GNR FR1 bands table.
SCS	FDD: SCS15KHz, TDD: SCS30KHz
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM QPSK / 16QAM / 64QAM / 256QAM
A-MPR (Additional MPR) disabled for SAR Testing?	Yes
LTE Anchor Bands for n2	LTE B7
LTE Anchor Bands for n5	LTE B7
L TE Anchor Bands for n7	LTE B2/5
LTE Anchor Bands for n66	LTE B2/5/7
LTE Anchor Bands for n77	LTE B7
LTE Anchor Bands for n78	LTE B2/5/7/38

Transmission (H, M, L) channel numbers and frequencies in each 5G NR band								
NR Band 2								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860
M	376000	1880	376000	1880	376000	1880	376000	1880
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900
NR Band 5								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	165300	826.5	165800	829	166300	831.5	166800	834
M	167300	836.5	167300	836.5	167300	836.5	167300	836.5
H	169300	846.5	168800	844	168300	841.5	167800	839

	NR Band 7															
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	500500	2502.5	501000	2505	501500	2507.5	502000	2510	502500	2512.5	503000	2515	504000	2520	505000	2525
M	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535	507000	2535
H	513500	2567.5	513000	2565	512500	2562.5	512000	2560	511500	2557.5	511000	2555	510000	2550	509000	2545

NR Band 66										
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 30MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	345000	1725
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353000	1765

NR Band 38						
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	516000	2580	517002	2585.01	518004	2590.02
M	519000	2595	519000	2595	519000	2595
H	522000	2610	520998	2604.99	519996	2599.98

NR Band 41																		
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	501204	2506.02	502200	2511	503202	2516.01	504204	2521.02	505200	2526	506202	2531.01	507204	2536.02	508200	2541	509202	2546.01
M	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99	518598	2592.99
H	535998	2679.99	534996	2674.98	534000	2670	532998	2664.99	531996	2659.98	531000	2655	529998	2649.99	528996	2644.98	528000	2640

NR Band 77												
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647334	3710.01	647668	3715.02	648000	3720	648668	3730.02	649334	3740.01	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	664668	3970.02	664334	3965.01	664000	3960	663334	3950.01	6626668	3940.02	662000	3930

NR Band 78																		
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647334	3710.01	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02		
M	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750	650000	3750
H	652668	3790.02	652334	3785.01	652000	3780	651668	3775.02	651334	3770.01	651000	3765	650668	3760.02	650334	3755.01		

For <3450 MHz ~ 3550 MHz >

NR Band 77												
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 60MHz		Bandwidth 80MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630668	3460.02	631000	3465	631334	3470.01	632000	3480	632668	3490.02		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636000	3540	635668	3535.02	635334	3530.01	634668	3520.02	634000	3510		

NR Band 78																		
	Bandwidth 20MHz		Bandwidth 30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth 100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630668	3460.02	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495		
M	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01	633334	3500.01
H	636000	3540	635668	3535.02	635334	3530.01	635000	3525	634668	3520.02	634334	3515.01	634000	3510	633668	3505.02		

<For NR Overlap Bands Description>

1) NR Bands BW

Mode	Band	Duplex	SCS(KHz)	Bandwidths(BW)
NSA	n77	TDD	30	20, 30, 40, 60, 80, 100
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100
SA	n77	TDD	30	20, 30, 40, 60, 80, 100
	n78	TDD	30	20, 30, 40, 50, 60, 70, 80, 90, 100

2) NR Bands Tune up:

Band	Antenna	Sensor on Standalone DSI 1 Tune-up Limit	Sensor on Simultaneous DSI 3 Tune-up Limit	Sensor off Standalone DSI 0 Tune-up Limit	Sensor off Simultaneous DSI 2 Tune-up Limit	Default Tune-up Limit
5G NR n77 SA	Ant 1	15.3	15.3	15.3	15.3	21
5G NR n77 NSA	Ant 1	15.3	15.3	15.3	15.3	21
5G NR n77-HPUE SA	Ant 3	17.9	17.9	27	27	27
5G NR n77-HPUE NSA	Ant 3	17.9	17.9	27	27	27
5G NR n77 SA	Ant 3	17.9	17.9	24	24	24
5G NR n77 NSA	Ant 3	17.9	17.9	24	24	24
5G NR n77 SA	Ant 4	15.3	15.3	15.3	15.3	21
5G NR n77 NSA	Ant 4	15.3	15.3	15.3	15.3	21
5G NR n77 SA	Ant 5	20.20	20.20	20.20	17.6	21
5G NR n77 NSA	Ant 5	20.20	20.20	20.20	17.6	21
5G NR n78 SA	Ant 1	15.3	15.3	15.3	15.3	21
5G NR n78 NSA	Ant 1	15.3	15.3	15.3	15.3	21
5G NR n78-HPUE SA	Ant 3	17.9	17.9	27	27	27
5G NR n78-HPUE NSA	Ant 3	17.9	17.9	27	27	27
5G NR n78 SA	Ant 3	17.9	17.9	24	24	24
5G NR n78 NSA	Ant 3	17.9	17.9	24	24	24
5G NR n78 SA	Ant 4	15.3	15.3	15.3	15.3	21
5G NR n78 NSA	Ant 4	15.3	15.3	15.3	15.3	21
5G NR n78 SA	Ant 5	20.20	20.20	20.20	17.6	21
5G NR n78 NSA	Ant 5	20.20	20.20	20.20	17.6	21

5. Smart Transmit feature for RF Exposure compliance

The FCC RF exposure limit is defined based on time-averaged RF exposure. The product implements Qualcomm Smart Transmit feature which controls the instantaneous transmitting power for WWAN transmitter to ensure the product in compliance with FCC RF exposure limit over a defined time window, for SAR (transmit frequency ≤ 6GHz). To control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is compliant to the regulation requirement.

This report describes the procedures for the SAR char generation, and the parameters obtained from SAR characterization (referred to as SAR char, respectively) will be used as input for Smart Transmit. SAR char will be entered via the Embedded File System (EFS) to enable the Smart Transmit Feature.

<Terminologies in this report>

P_{limit}	The time-averaged RF power which corresponds to SAR_design_target.
P_{max}	Maximum target power level
SAR_design_target:	The design target for SAR compliance. It should be less than regulatory SAR limit to account for all device design related uncertainty.
SAR char	P_{limit} for all the technologies/bands for all applicable DSI

<SAR Characterization>

SAR char must be generated to cover all radio configurations and usage scenarios that the wireless device supports for operating at 6 GHz or below. It will then be used as input for Smart Transmit to control and manage RF exposure for f < 6 GHz.

<SAR design target and uncertainty>

The detail SAR design target relate to each exposure conditions pls refer to operation description

Item	Uncertainty dB (k=2)
Total uncertainty	1.5

To account for total uncertainty, SAR_design_target should be determined as:

$$SAR\_design\_target < SAR_{regulatory\_limit} \times 10^{\frac{-total\ uncertainty}{10}}$$

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR_design_target, below the predefined time-averaged power limit, for each characterized technology and band.

Smart Transmit allows the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit EFS settings and maximum tune up output power Pmax configured for this EUT for various transmit conditions (Device State Index DSI).

<P_{limit} for supported technologies and bands (P_{limit} in EFS file)>

Band	Antenna	Sensor On standalone DSI1	Sensor On simultaneous DSI3	Sensor Off standalone DSI0	Sensor Off simultaneous DSI2	Pmax*
GSM850	Ant0	22.60	20.00	30.40	27.80	24.50
GSM1900	Ant0	15.20	12.60	27.50	24.90	21.50
WCDMA Band II	Ant0	15.80	13.20	27.10	24.50	23.00
WCDMA Band IV	Ant0	18.10	15.50	25.00	22.40	23.00
WCDMA Band V	Ant0	22.50	20.30	29.60	27.00	23.00
LTE Band 2	Ant0	16.60	14.00	26.10	23.50	24.00
LTE Band 2	Ant2	16.30	16.30	26.20	26.20	24.00
LTE Band 4	Ant0	18.00	15.40	26.40	23.50	24.00
LTE Band 5	Ant0	21.50	18.90	26.90	24.30	24.00
LTE Band 5	Ant2	23.50	23.50	30.10	30.10	24.00
LTE Band 7	Ant0	15.70	13.10	24.70	22.10	23.00
LTE Band 7	Ant2	14.20	14.20	22.30	22.30	23.00
LTE Band 17	Ant0	26.10	23.50	29.50	26.90	24.00
LTE Band 66	Ant0	18.00	15.40	26.40	23.50	24.00
LTE Band 38	Ant0	15.10	12.50	23.80	21.20	21.00
LTE Band 41	Ant2	15.00	15.00	23.80	23.80	22.00
LTE Band 42	Ant3	16.50	16.50	26.30	26.30	21.00
FR1 n2	Ant0	18.40	15.80	25.20	22.60	24.00
FR1 n5	Ant0	22.20	19.60	28.40	25.80	24.00
FR1 n7	Ant0	14.50	11.90	27.30	24.70	23.00
FR1 n7	Ant2	14.50	14.50	22.50	22.50	23.00
FR1 n66	Ant0	18.60	16.00	25.70	23.10	24.00
FR1 n38	Ant0	14.30	11.70	24.20	21.60	23.00
FR1 n41	Ant2	13.50	13.50	23.50	23.50	23.00
FR1 n41 HPUE	Ant2	13.50	13.50	23.50	23.50	26.00
FR1 n41	Ant1	14.50	14.50	14.50	14.50	20.00
FR1 n41	Ant4	17.60	17.60	17.60	17.60	20.00
FR1 n41	Ant5	21.30	18.70	21.30	18.70	20.00
FR1 n77	Ant3	16.90	16.90	27.10	27.10	23.00
FR1 n77(HPUE)	Ant3	16.90	16.90	27.10	27.10	26.00
FR1 n77	Ant1	14.30	14.30	14.30	14.30	20.00
FR1 n77	Ant4	17.20	17.20	17.20	17.20	20.00
FR1 n77	Ant5	19.20	16.60	19.20	16.60	20.00
FR1 n78	Ant3	16.90	16.90	27.10	27.10	23.00
FR1 n78(HPUE)	Ant3	16.90	16.90	27.10	27.10	26.00
FR1 n78	Ant1	14.30	14.30	14.30	14.30	20.00
FR1 n78	Ant4	17.20	17.20	17.20	17.20	20.00
FR1 n78	Ant5	19.20	16.60	19.20	16.60	20.00

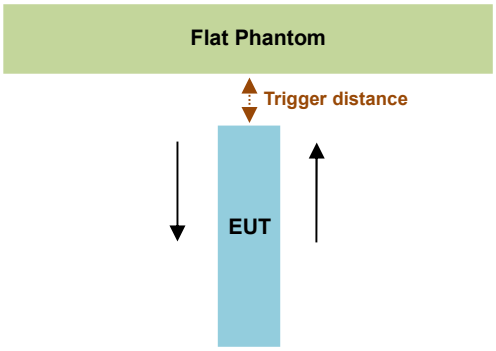
Note:

1) *P_{max} is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + 1dB device uncertainty.
2) All P_{limit} power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD).
3) The max allowed output power is the Plimit + 1dB device uncertainty, and if Plimit is higher than Pmax, the device output power will be Pmax instead.
4) For ant1/4/5 has no SAR sensor, Plimit for DSI0 (sensor on) and DSI1 (sensor off) at standalone are the same, Plimit for DSI2 (sensor on) and DSI3 (sensor off) at simultaneous are the same.
5) LTE Band 2/5/7 Ant 2 only for EN-DC combination.
6) 5GNR n41/77/78 ant 1/4/5 supports SRS (Sounding Reference Signal) functionality.

6. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)>:

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency 5825MHz and lowest 750MHz frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensor placed coincident with antenna elements at the Bottom Face, Edge 1 and Edge 4 of the device are utilized to determine when the device comes in proximity of the user's body at the Bottom Face or Edge 1 or Edge 4 side of the device. There is no need to do sensor coverage testing for the proximity sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the proximity sensor entirely covers the antenna.
3. When the sensor is active, all WWAN/WLAN bands reduced power will be active.
4. The sensors used to detect the proximity of the user's body at the Bottom Face or Edge 1 or Edge 4 side for WWAN/WLAN of the device use a detection threshold distance. The data shown in the sections below shows the distance(s).



<P-Sensor for ANT0>

Proximity Sensor Triggering Distance (mm)						
Position	Bottom Face		Edge 1		Edge 4	
	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards
Minimum	16	25	5	3	18	23

< P-Sensor for ANT2>

Proximity Sensor Triggering Distance (mm)				
Position	Bottom Face		Edge 4	
	Moving away	Moving towards	Moving away	Moving towards
Minimum	15	21	20	21

<P-Sensor for ANT3>

Proximity Sensor Triggering Distance (mm)						
Position	Bottom Face		Edge 1		Edge 4	
	Moving away	Moving towards	Moving away	Moving towards	Moving away	Moving towards
Minimum	16	25	5	3	18	23

< P-Sensor for ANT6>

Proximity Sensor Triggering Distance (mm)				
Position	Bottom Face		Edge 4	
	Moving away	Moving towards	Moving away	Moving towards
Minimum	18	19	16	16

< P-Sensor for ANT7>

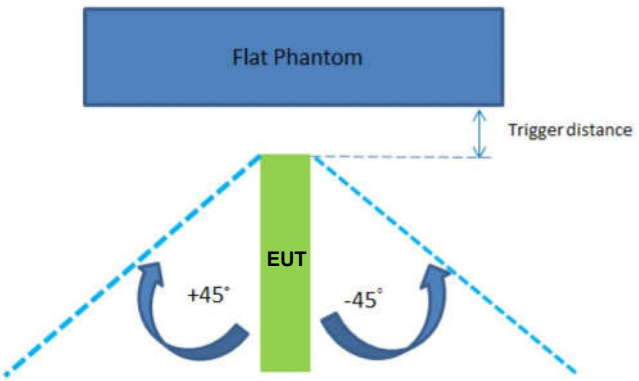
Proximity Sensor Triggering Distance (mm)				
Position	Bottom Face		Edge 1	
	Moving away	Moving towards	Moving away	Moving towards
Minimum	19	21	15	19

<Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)>:

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.
Illustrated in the internal photo exhibit, although the senor is spatially offset, there is no trigger condition where the antenna is next to the user but the sensor is laterally further away, therefore proximity sensor coverage testing is not required.
This procedure is not required because antenna and sensor are collocated and the peak SAR location is overlapping with the sensor.

<Tablet Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4)>:

The influence of table tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom.
Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



<P-Sensor for ANT0>

The Sensor Trigger Distance (mm)		
Position	Edge 1	Edge 4
Minimum	3	18

<P-Sensor for ANT2>

The Sensor Trigger Distance (mm)	
Position	Edge 4
Minimum	20

<P-Sensor for ANT3>

The Sensor Trigger Distance (mm)		
Position	Edge 1	Edge 4
Minimum	3	18

<P-Sensor for ANT6>

The Sensor Trigger Distance (mm)	
Position	Edge 4
Minimum	16

<P-Sensor for ANT7>

The Sensor Trigger Distance (mm)	
Position	Edge 1
Minimum	15

Proximity sensor power reduction

Exposure Position / wireless mode	Antenna	Bottom Face[1]	Edge 1[1]	Edge 2	Edge 3	Edge 4[1]
GSM850 GPRS 3 Tx slots	Ant0	1.6 dB	1.6 dB	0 dB	0 dB	1.6 dB
GSM1900 GPRS 3 Tx slots	Ant0	6.0 dB	6.0 dB	0 dB	0 dB	6.0 dB
WCDMA Band II	Ant0	7.2 dB	7.2 dB	0 dB	0 dB	7.2 dB
WCDMA Band IV	Ant0	4.9 dB	4.9 dB	0 dB	0 dB	4.9 dB
WCDMA Band V	Ant0	0.5 dB	0.5 dB	0 dB	0 dB	0.5 dB
LTE Band 2	Ant0	7.4 dB	7.4 dB	0 dB	0 dB	7.4 dB
LTE Band 5	Ant0	2.5 dB	2.5 dB	0 dB	0 dB	2.5 dB
LTE Band 7	Ant0	7.3 dB	7.3 dB	0 dB	0 dB	7.3 dB
LTE Band 17	Ant0	0.5 dB	0.5 dB	0 dB	0 dB	0.5 dB
LTE Band 66/4	Ant0	6.0 dB	6.0 dB	0 dB	0 dB	6.0 dB
LTE Band 38	Ant0	5.9 dB	5.9 dB	0 dB	0 dB	5.9 dB
FR1 n2	Ant0	5.6 dB	5.6 dB	0 dB	0 dB	5.6 dB
FR1 n5	Ant0	1.8 dB	1.8 dB	0 dB	0 dB	1.8 dB
FR1 n7	Ant0	8.5 dB	8.5 dB	0 dB	0 dB	8.5 dB
FR1 n66	Ant0	5.4 dB	5.4 dB	0 dB	0 dB	5.4 dB
FR1 n38	Ant0	8.7 dB	8.7 dB	0 dB	0 dB	8.7 dB
LTE Band 42	Ant3	4.5 dB	4.5 dB	0 dB	0 dB	4.5 dB
FR1 n77	Ant3	6.1 dB	6.1 dB	0 dB	0 dB	6.1 dB
FR1 n77 HPUE	Ant3	9.1 dB	9.1 dB	0 dB	0 dB	9.1 dB
FR1 n78	Ant3	6.1 dB	6.1 dB	0 dB	0 dB	6.1 dB
FR1 n78 HPUE	Ant3	9.1 dB	9.1 dB	0 dB	0 dB	9.1 dB

Exposure Position / wireless mode	Antenna	Bottom Face[1]	Edge 1	Edge 2	Edge 3	Edge 4[1]
LTE Band 2	Ant2	7.7 dB	0 dB	0 dB	0 dB	7.7 dB
LTE Band 5	Ant2	0.5 dB	0 dB	0 dB	0 dB	0.5 dB
LTE Band 7	Ant2	8.1 dB	0 dB	0 dB	0 dB	8.1 dB
LTE Band 41	Ant2	7.0 dB	0 dB	0 dB	0 dB	7.0 dB
FR1 n7	Ant2	8.0 dB	0 dB	0 dB	0 dB	8.0 dB
FR1 n41	Ant2	9.5 dB	0 dB	0 dB	0 dB	9.5 dB
FR1 n41 HPUE	Ant2	10.0 dB	0 dB	0 dB	0 dB	10.0 dB
WLAN 2.4GHz	Ant6	6.0 dB	0 dB	0 dB	0 dB	6.0 dB
WLAN 5.2GHz	Ant6	9.5 dB	0 dB	0 dB	0 dB	9.5 dB
WLAN 5.3GHz	Ant6	10.0 dB	0 dB	0 dB	0 dB	10.0 dB
WLAN 5.5GHz	Ant6	11.5 dB	0 dB	0 dB	0 dB	11.5 dB
WLAN 5.8GHz	Ant6	13.5 dB	0 dB	0 dB	0 dB	13.5 dB

Exposure Position / wireless mode	Antenna	Bottom Face[(1)]	Edge 1[(1)]	Edge 2	Edge 3	Edge 4
WLAN 2.4GHz	Ant7	6.0 dB	6.0 dB	0 dB	0 dB	0 dB
WLAN 5.2GHz	Ant7	7.5 dB	7.5 dB	0 dB	0 dB	0 dB
WLAN 5.3GHz	Ant7	7.5 dB	7.5 dB	0 dB	0 dB	0 dB
WLAN 5.5GHz	Ant7	4.0 dB	4.0 dB	0 dB	0 dB	0 dB
WLAN 5.8GHz	Ant7	6.0 dB	6.0 dB	0 dB	0 dB	0 dB

Remark:

1. [(1)]: Reduced maximum limit applied by activation of proximity sensor.
2. Power reduction is not applicable for Bluetooth.
3. Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown and described in exhibit “P-Sensor operational description
4. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
   For Ant0:
   - Bottom Face: 15 mm
   - Edge 1: 2 mm
   - Edge 4: 17 mm

   For Ant2:
   - Bottom Face: 14 mm
   - Edge 4: 19 mm

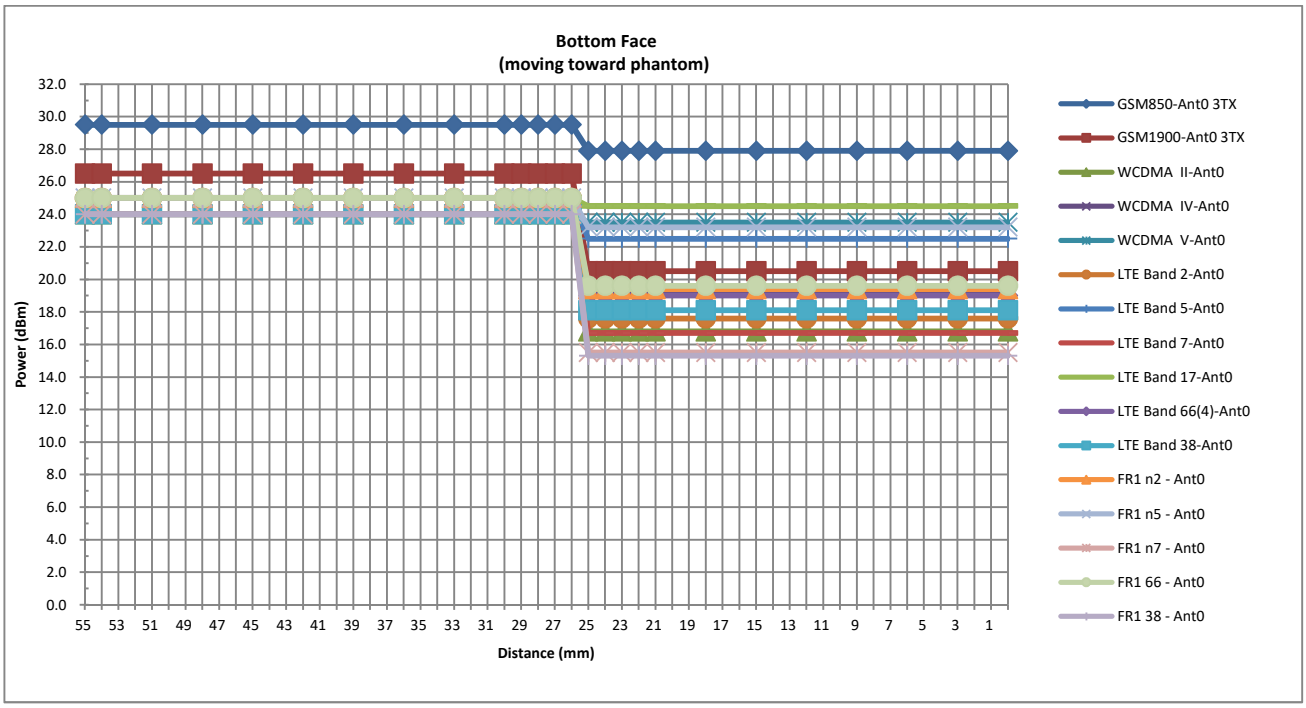
   For Ant3:
   - Bottom Face: 15 mm
   - Edge 1: 2 mm
   - Edge 4: 17 mm

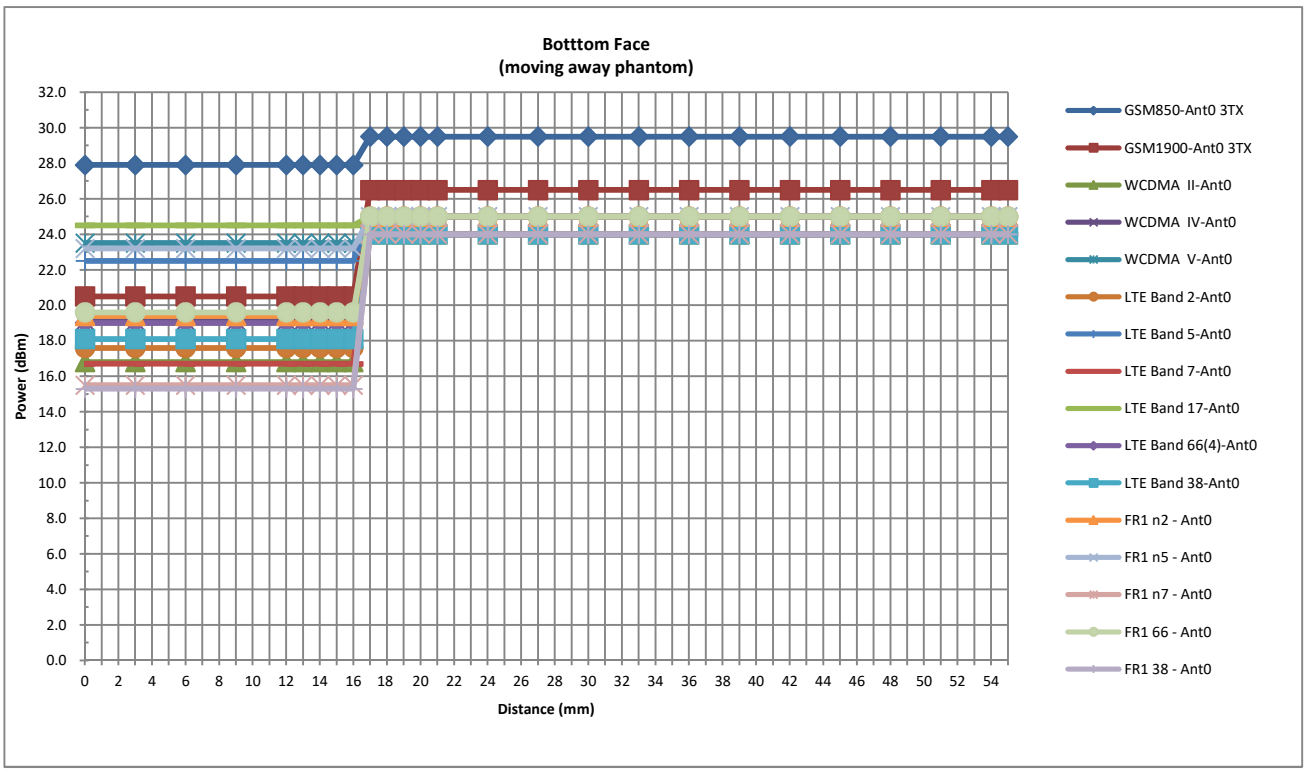
   For Ant6:
   - Bottom Face: 17 mm
   - Edge 4: 15 mm

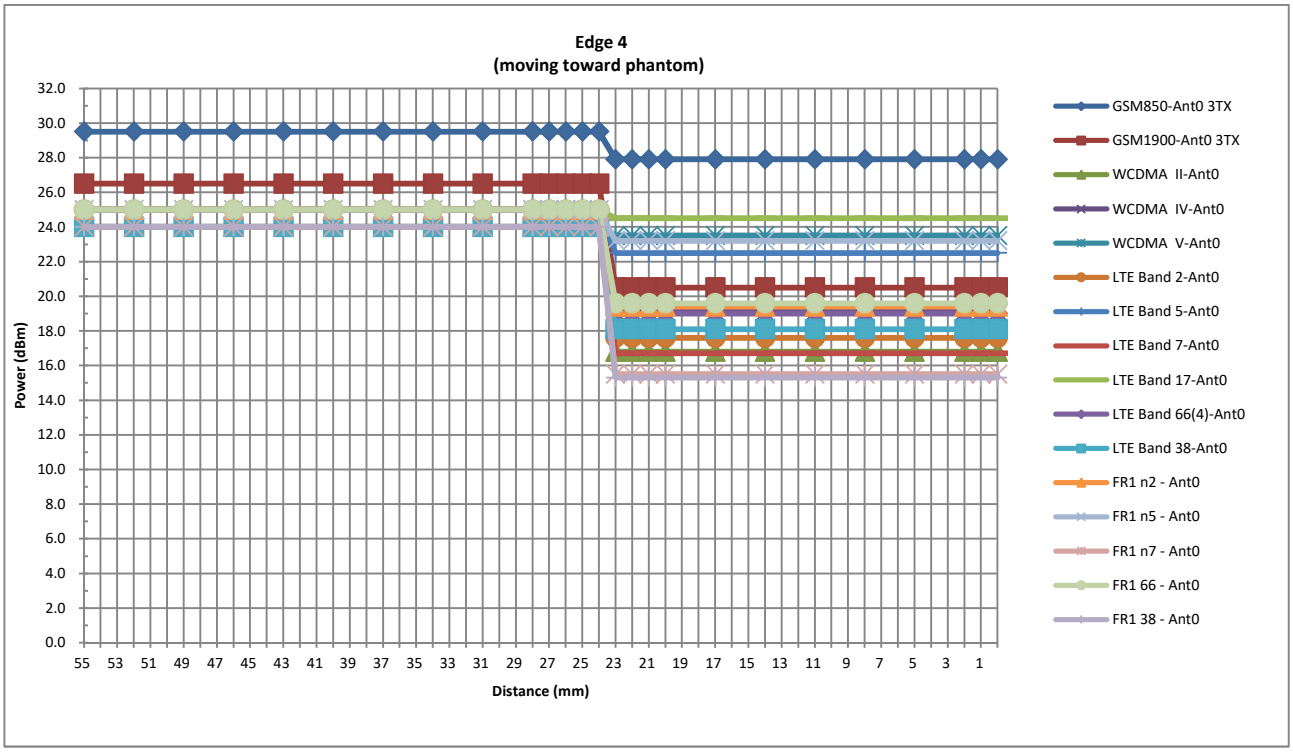
   For Ant7:
   - Bottom Face: 18 mm
   - Edge 1: 14 mm

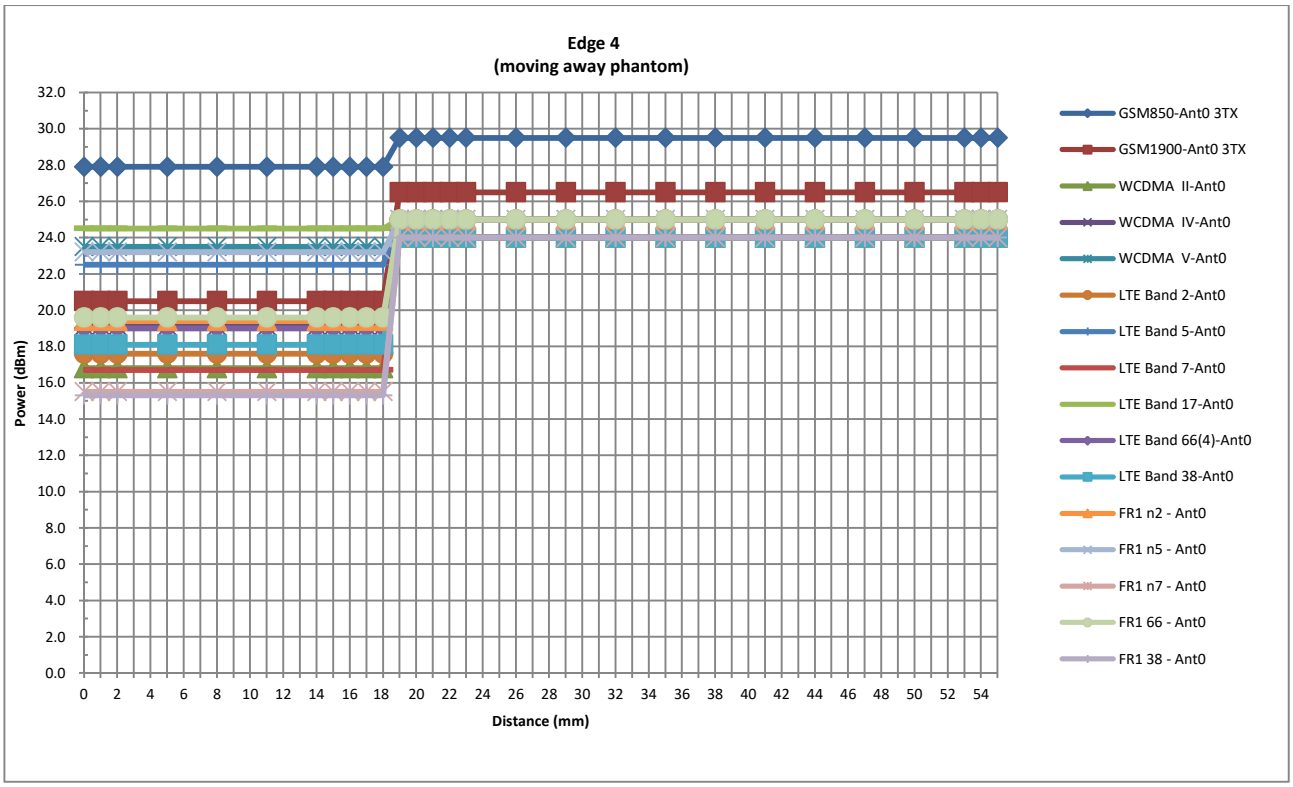
Power Measurement during Sensor Trigger distance testing for Ant.0

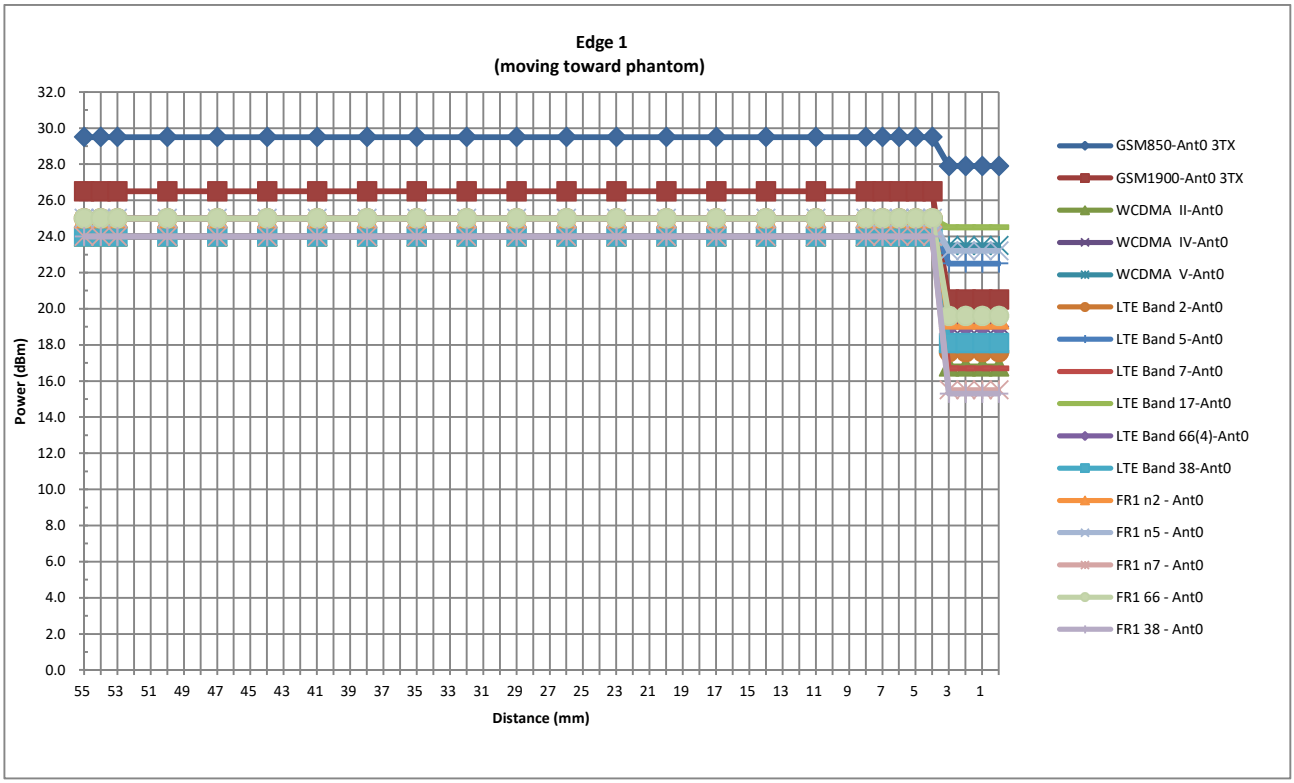
Band/Mode	Measured power reduction (dBm)		Reduction Levels
	w/o power back-off	w/ power back-off	(dB)
GSM850 GPRS 3 Tx slots	29.50	27.90	1.6
GSM1900 GPRS 3 Tx slots	26.50	20.50	6.0
WCDMA Band II	24.00	16.80	7.2
WCDMA Band IV	24.00	19.10	4.9
WCDMA Band V	24.00	23.50	0.5
LTE Band 2	25.00	17.60	7.4
LTE Band 5	25.00	22.50	2.5
LTE Band 7	24.00	16.70	7.3
LTE Band 17	25.00	24.50	0.5
LTE Band 66/4	25.00	19.00	6.0
LTE Band 38	24.00	18.10	5.9
FR1 n2	25.00	19.40	5.6
FR1 n5	25.00	23.20	1.8
FR1 n7	24.00	15.50	8.5
FR1 n66	25.00	19.60	5.4
FR1 n38	24.00	15.30	8.7

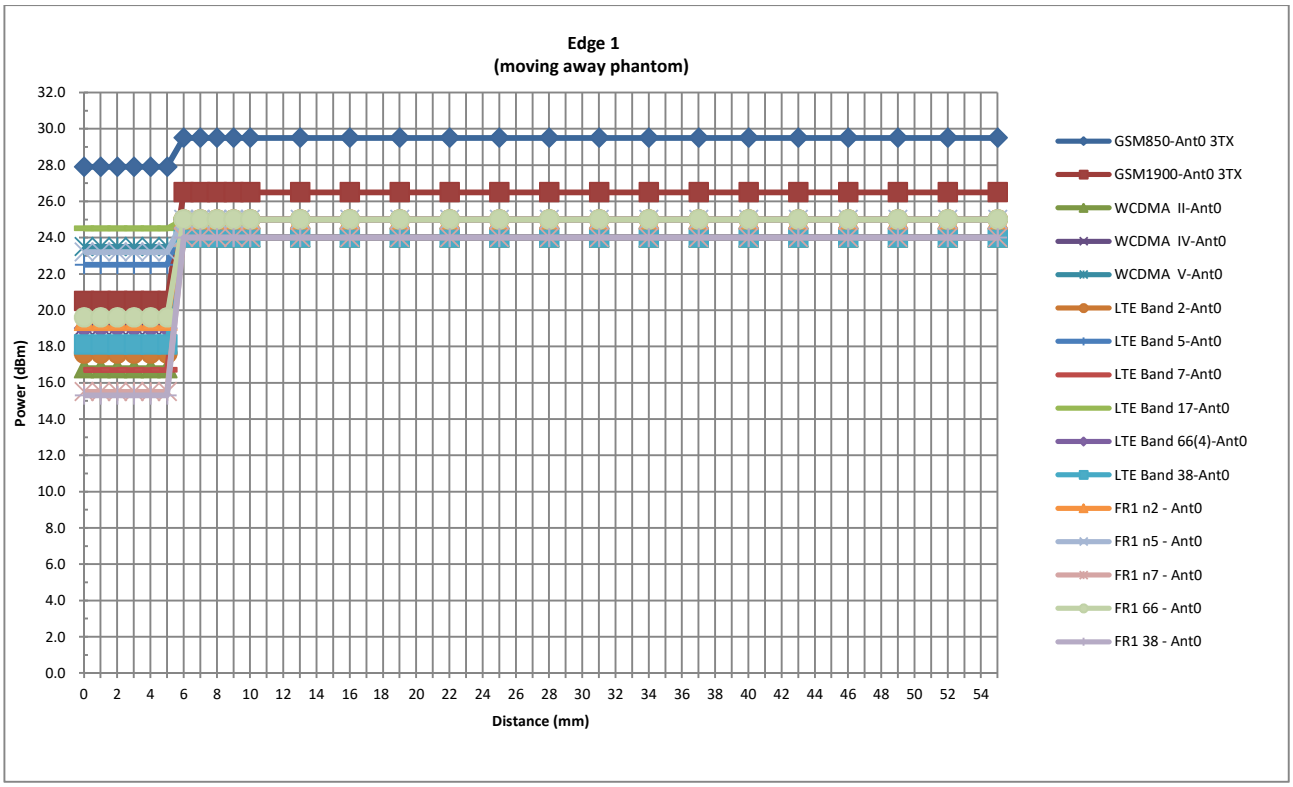

Bottom Face
(moving toward phantom)
Power (dBm)
Distance (mm)
GSM850-Ant0 3TX
GSM1900-Ant0 3TX
WCDMA II-Ant0
WCDMA IV-Ant0
WCDMA V-Ant0
LTE Band 2-Ant0
LTE Band 5-Ant0
LTE Band 7-Ant0
LTE Band 17-Ant0
LTE Band 66(4)-Ant0
LTE Band 38-Ant0
FR1 n2 - Ant0
FR1 n5 - Ant0
FR1 n7 - Ant0
FR1 66 - Ant0
FR1 38 - Ant0


Botttom Face
(moving away phantom)
Power (dBm)
Distance (mm)
GSM850-Ant0 3TX
GSM1900-Ant0 3TX
WCDMA II-Ant0
WCDMA IV-Ant0
WCDMA V-Ant0
LTE Band 2-Ant0
LTE Band 5-Ant0
LTE Band 7-Ant0
LTE Band 17-Ant0
LTE Band 66(4)-Ant0
LTE Band 38-Ant0
FR1 n2 - Ant0
FR1 n5 - Ant0
FR1 n7 - Ant0
FR1 66 - Ant0
FR1 38 - Ant0


Edge 4
(moving toward phantom)
Power (dBm)
Distance (mm)
GSM850-Ant0 3TX
GSM1900-Ant0 3TX
WCDMA II-Ant0
WCDMA IV-Ant0
WCDMA V-Ant0
LTE Band 2-Ant0
LTE Band 5-Ant0
LTE Band 7-Ant0
LTE Band 17-Ant0
LTE Band 66(4)-Ant0
LTE Band 38-Ant0
FR1 n2 - Ant0
FR1 n5 - Ant0
FR1 n7 - Ant0
FR1 66 - Ant0
FR1 38 - Ant0

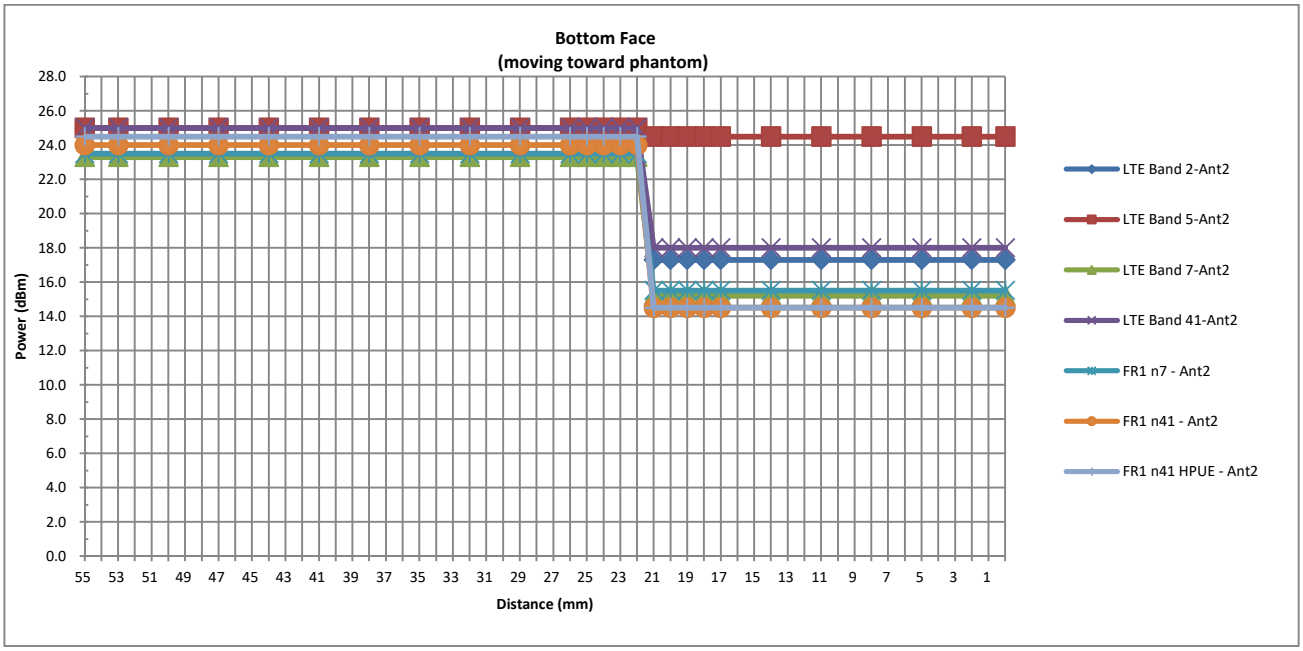

Edge 4
(moving away phantom)
Power (dBm)
Distance (mm)
GSM850-Ant0 3TX
GSM1900-Ant0 3TX
WCDMA II-Ant0
WCDMA IV-Ant0
WCDMA V-Ant0
LTE Band 2-Ant0
LTE Band 5-Ant0
LTE Band 7-Ant0
LTE Band 17-Ant0
LTE Band 66(4)-Ant0
LTE Band 38-Ant0
FR1 n2 - Ant0
FR1 n5 - Ant0
FR1 n7 - Ant0
FR1 66 - Ant0
FR1 38 - Ant0

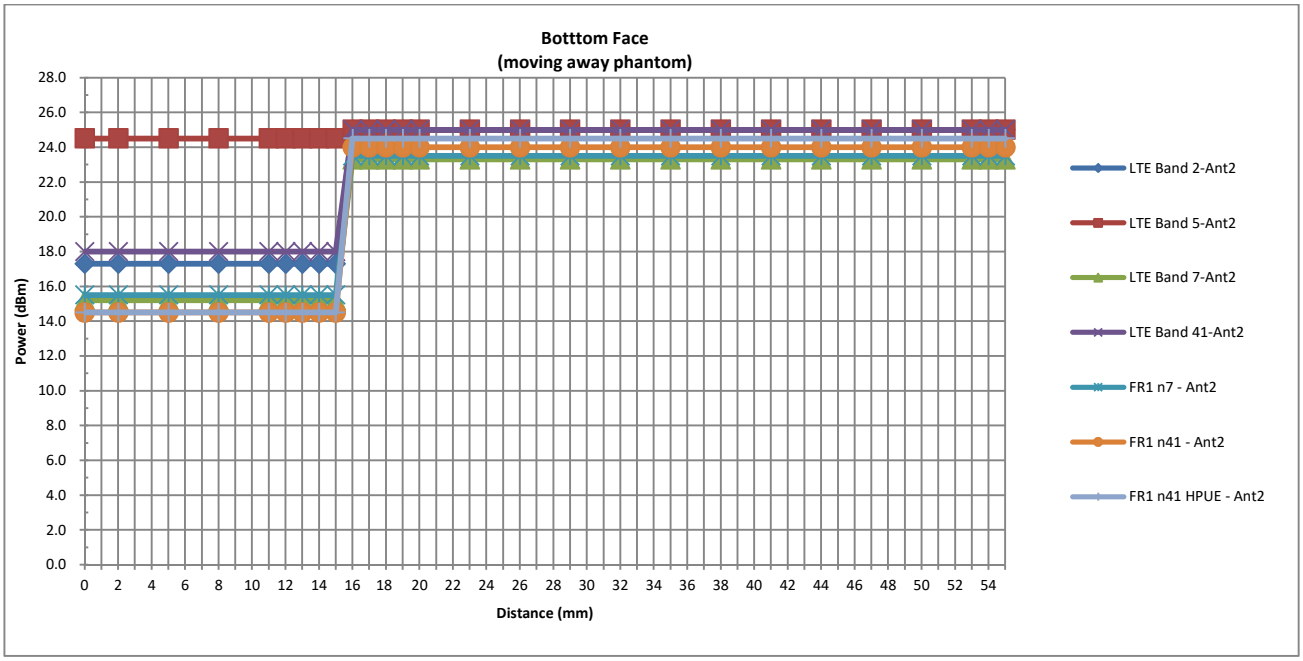

Edge 1
(moving toward phantom)
Power (dBm)
Distance (mm)
GSM850-Ant0 3TX
GSM1900-Ant0 3TX
WCDMA II-Ant0
WCDMA IV-Ant0
WCDMA V-Ant0
LTE Band 2-Ant0
LTE Band 5-Ant0
LTE Band 7-Ant0
LTE Band 17-Ant0
LTE Band 66(4)-Ant0
LTE Band 38-Ant0
FR1 n2 - Ant0
FR1 n5 - Ant0
FR1 n7 - Ant0
FR1 66 - Ant0
FR1 38 - Ant0

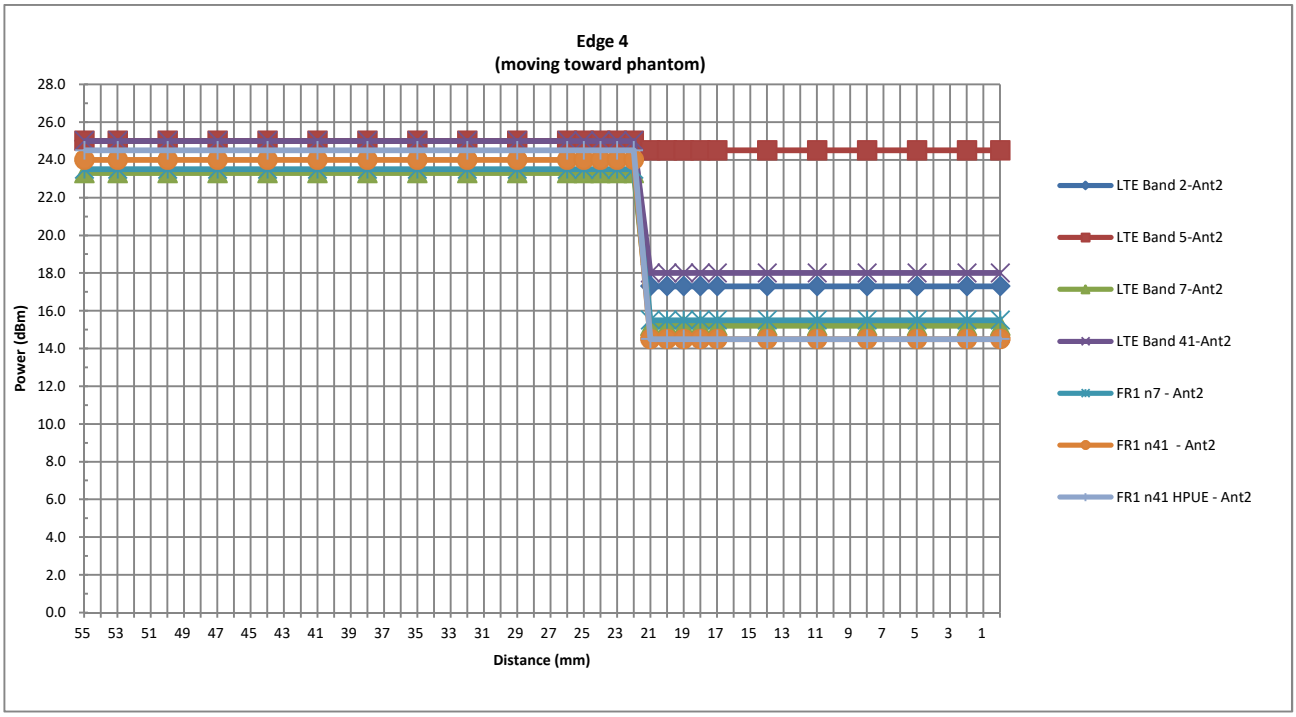

Edge 1
(moving away phantom)
Power (dBm)
Distance (mm)
GSM850-Ant0 3TX
GSM1900-Ant0 3TX
WCDMA II-Ant0
WCDMA IV-Ant0
WCDMA V-Ant0
LTE Band 2-Ant0
LTE Band 5-Ant0
LTE Band 7-Ant0
LTE Band 17-Ant0
LTE Band 66(4)-Ant0
LTE Band 38-Ant0
FR1 n2 - Ant0
FR1 n5 - Ant0
FR1 n7 - Ant0
FR1 66 - Ant0
FR1 38 - Ant0

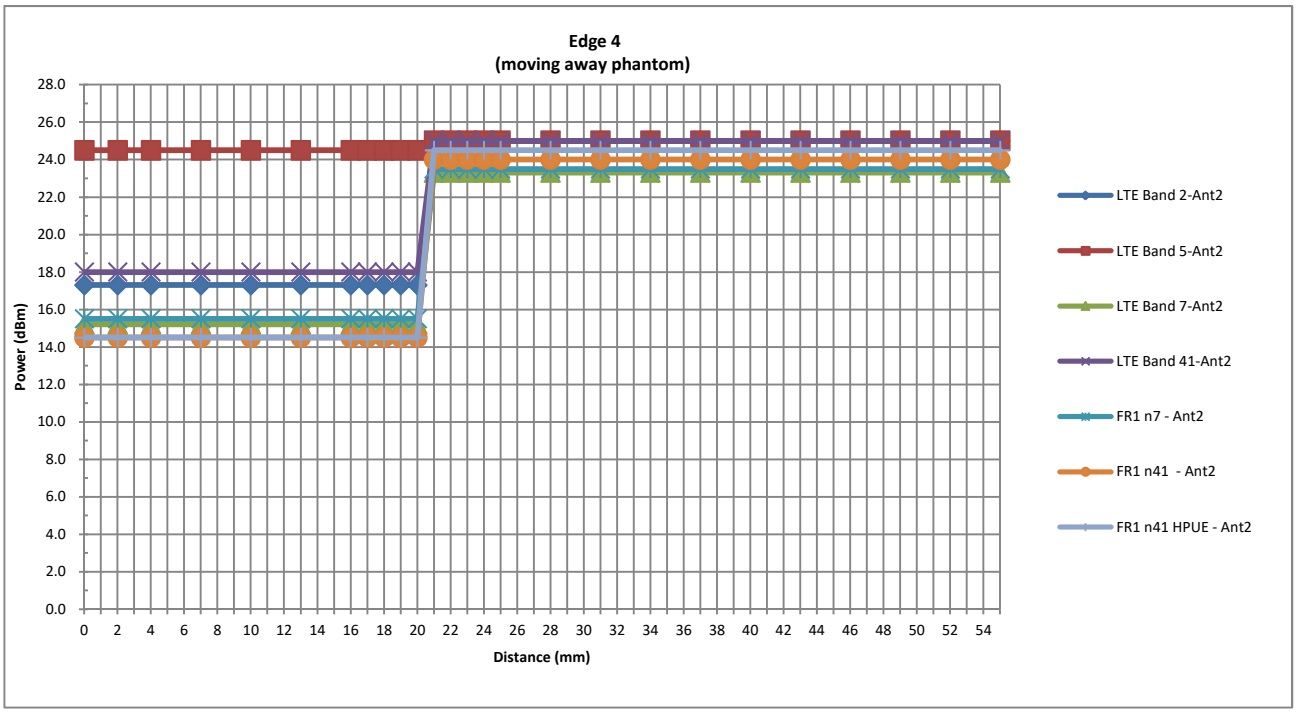
Power Measurement during Sensor Trigger distance testing for Ant.2

Band/Mode	Measured power reduction (dBm)		Reduction Levels
	w/o power back-off	w/ power back-off	(dB)
LTE Band 2	25.00	17.30	7.7
LTE Band 5	25.00	24.50	0.5
LTE Band 7	23.30	15.20	8.1
LTE Band 41	25.00	18.00	7.0
FR1 n7	23.50	15.50	8.0
FR1 n41	24.00	14.50	9.5
FR1 n41 HPUE	24.50	14.50	10.0



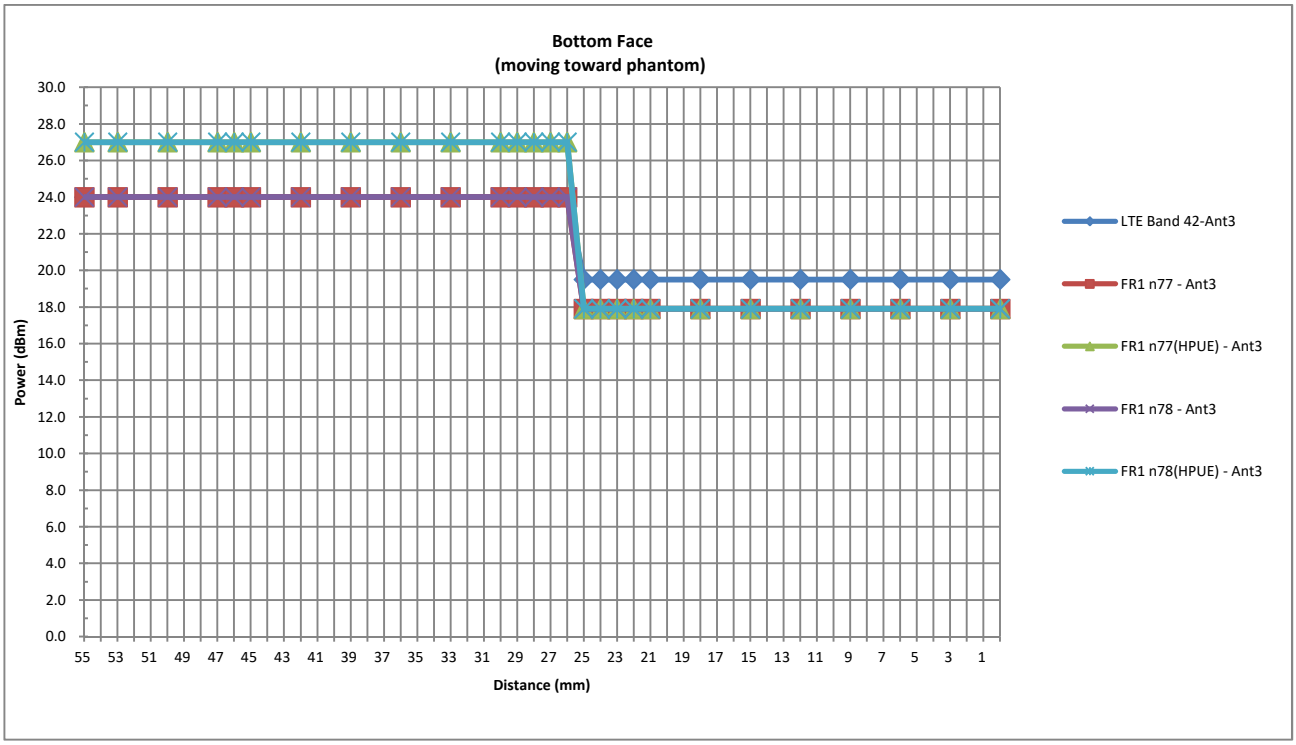


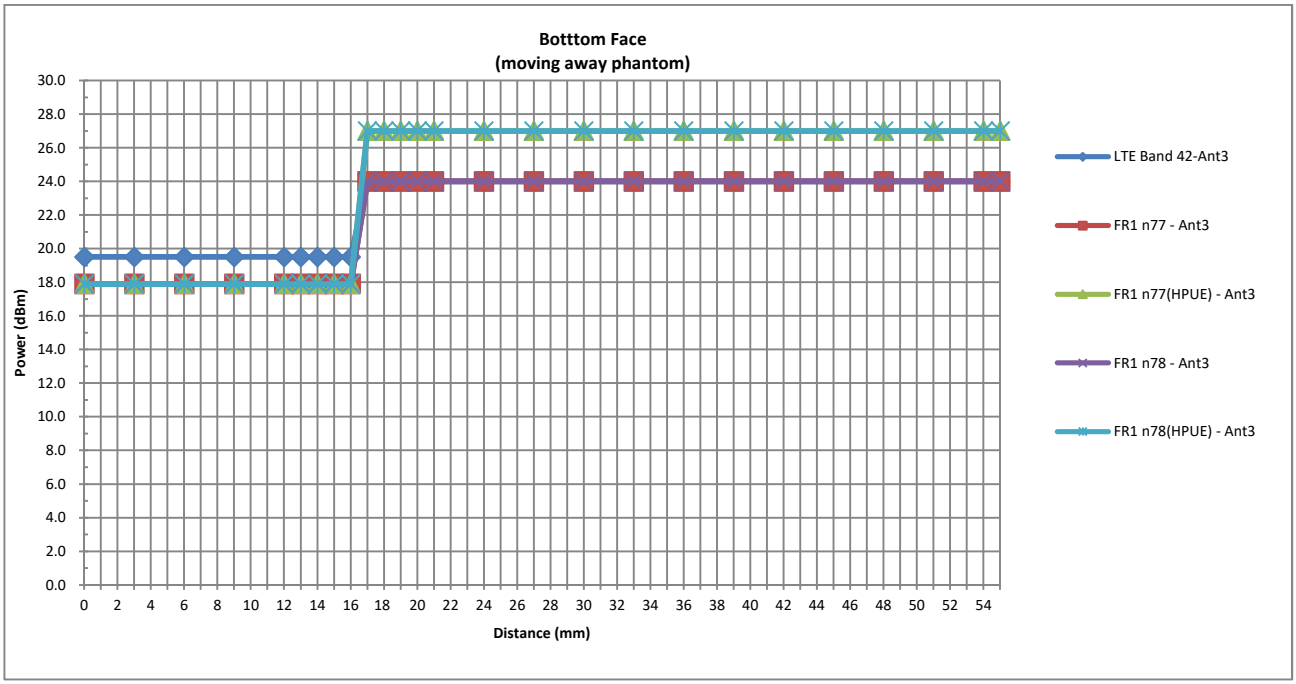

Edge 4
(moving toward phantom)
Power (dBm)
Distance (mm)
LTE Band 2-Ant2
LTE Band 5-Ant2
LTE Band 7-Ant2
LTE Band 41-Ant2
FR1 n7 - Ant2
FR1 n41 - Ant2
FR1 n41 HPUE - Ant2

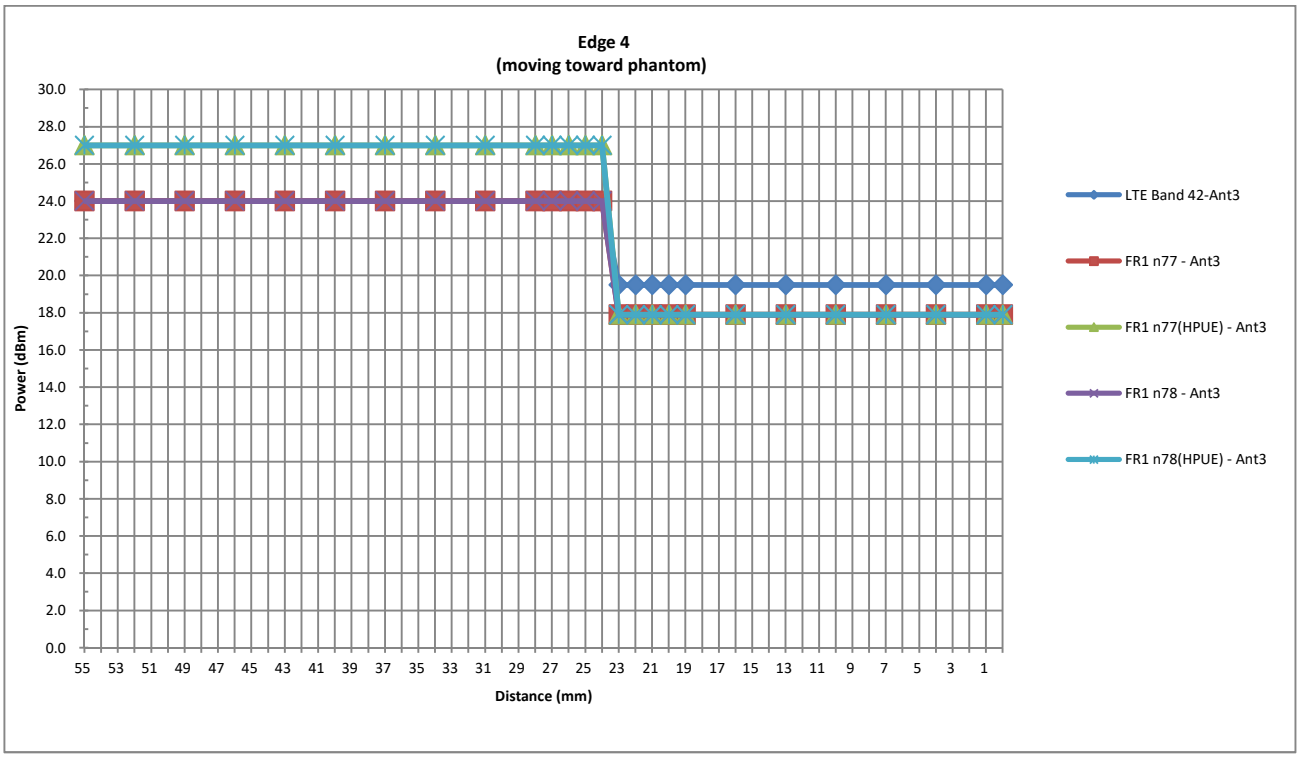

Edge 4
(moving away phantom)
Power (dBm)
Distance (mm)
LTE Band 2-Ant2
LTE Band 5-Ant2
LTE Band 7-Ant2
LTE Band 41-Ant2
FR1 n7 - Ant2
FR1 n41 - Ant2
FR1 n41 HPUE - Ant2

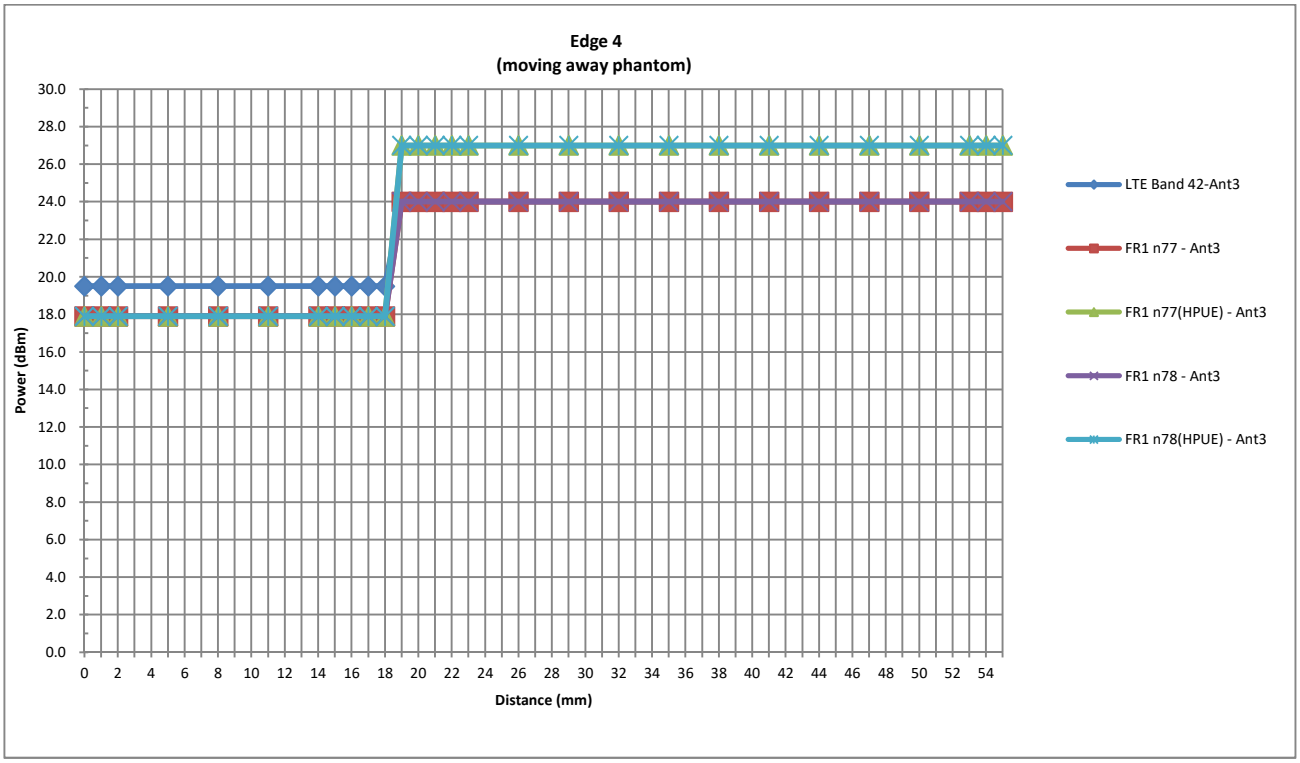
Power Measurement during Sensor Trigger distance testing for Ant.3

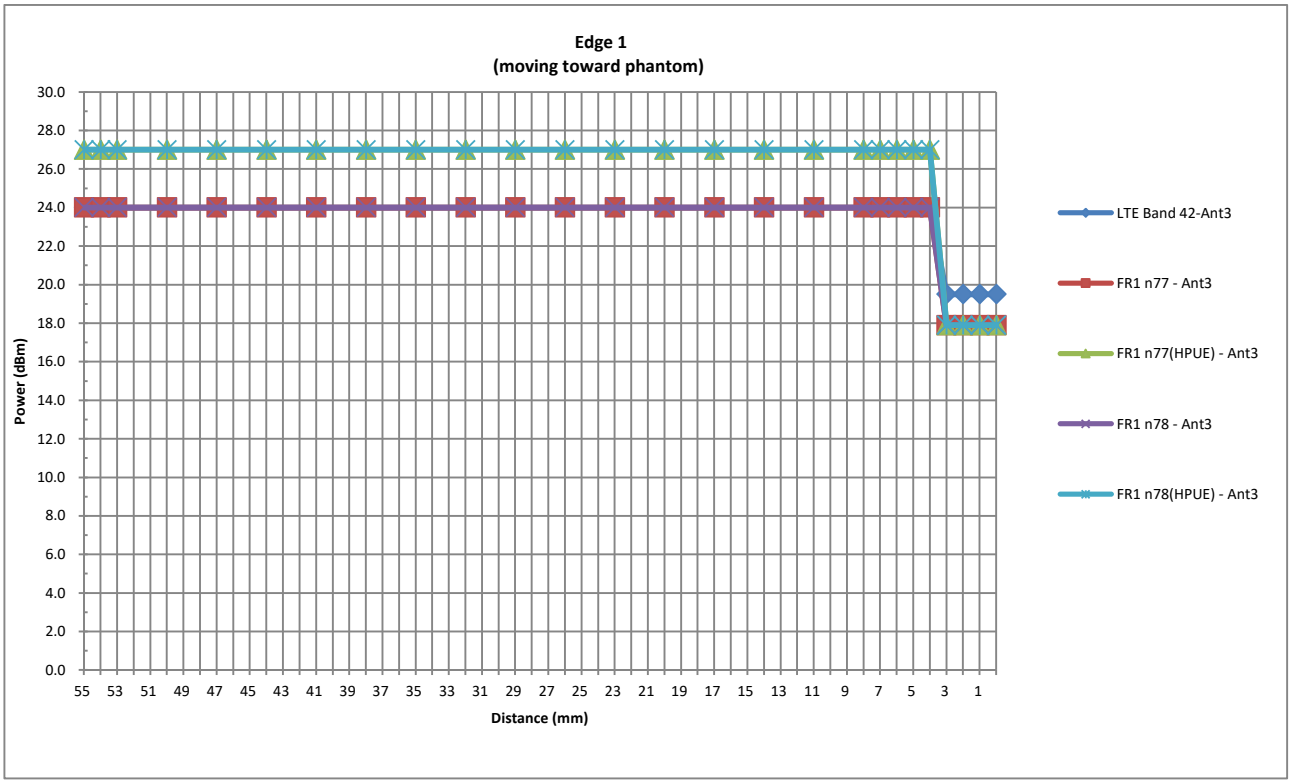
Band/Mode	Measured power reduction (dBm)		Reduction Levels
	w/o power back-off	w/ power back-off	(dB)
LTE Band 42	24.00	19.50	4.5
FR1 n77	24.00	17.90	6.1
FR1 n77 HPUE	27.00	17.90	9.1
FR1 n78	24.00	17.90	6.1
FR1 n78 HPUE	27.00	17.90	9.1

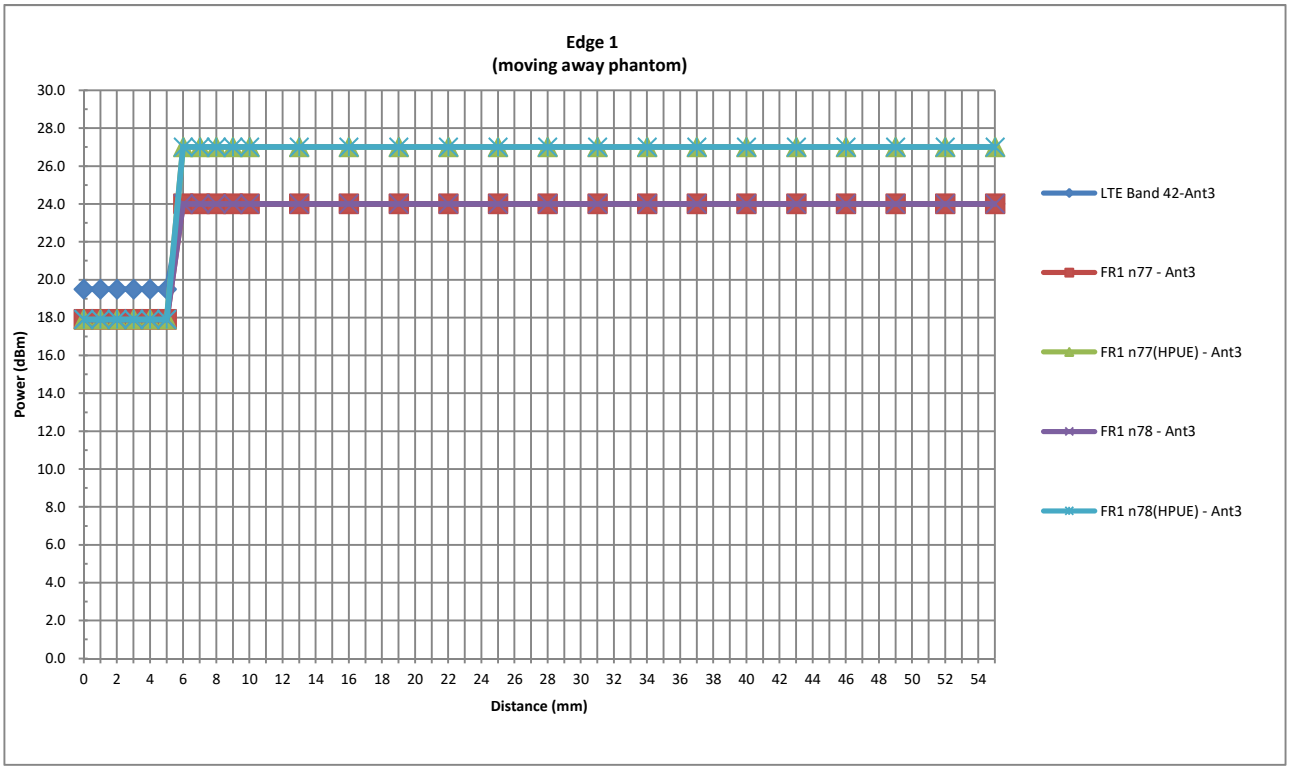





Edge 4
(moving toward phantom)
Power (dBm)
Distance (mm)
LTE Band 42-Ant3
FR1 n77 - Ant3
FR1 n77(HPUE) - Ant3
FR1 n78 - Ant3
FR1 n78(HPUE) - Ant3

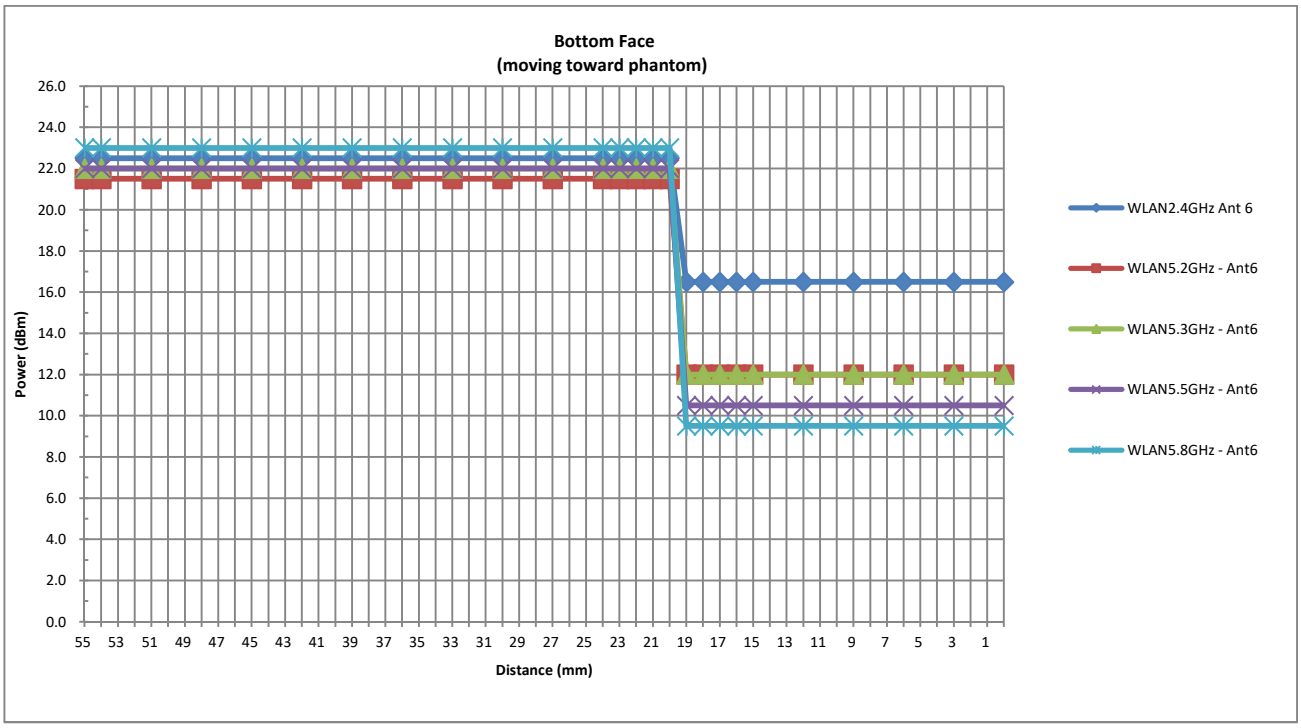

Edge 4
(moving away phantom)
Power (dBm)
Distance (mm)
LTE Band 42-Ant3
FR1 n77 - Ant3
FR1 n77(HPUE) - Ant3
FR1 n78 - Ant3
FR1 n78(HPUE) - Ant3

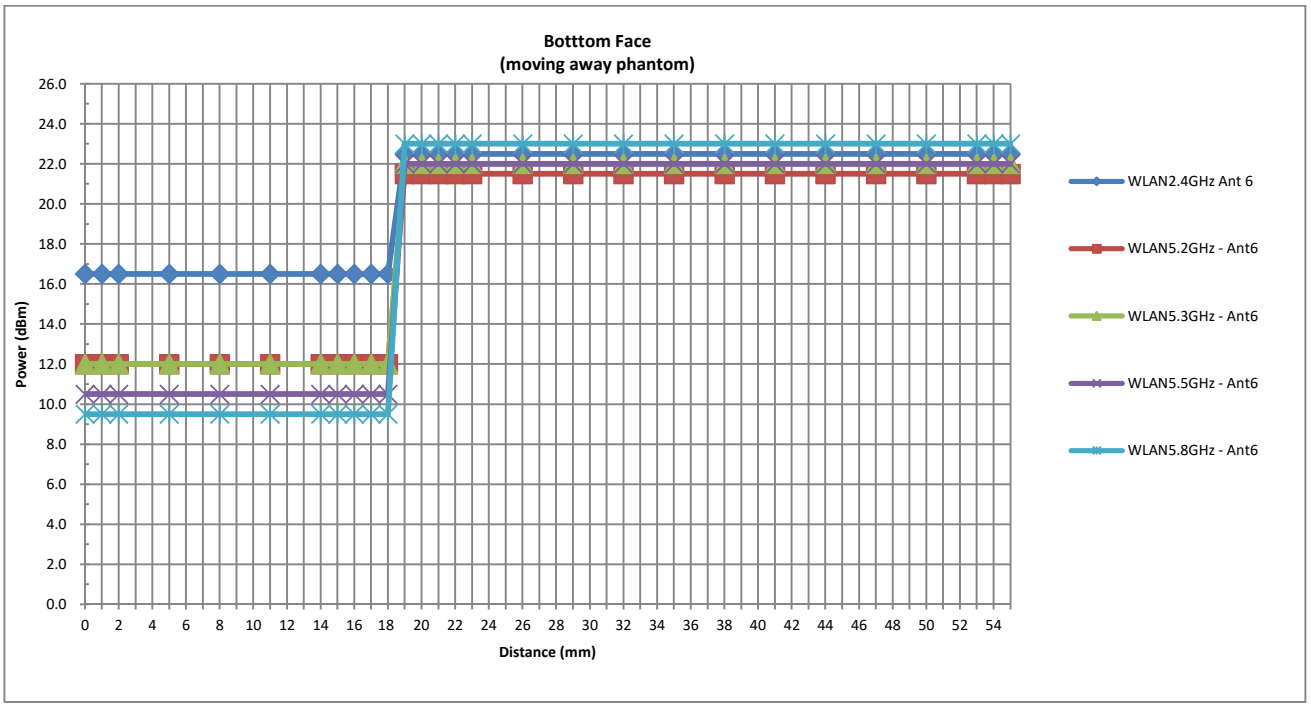

Edge 1
(moving toward phantom)
Power (dBm)
Distance (mm)
LTE Band 42-Ant3
FR1 n77 - Ant3
FR1 n77(HPUE) - Ant3
FR1 n78 - Ant3
FR1 n78(HPUE) - Ant3

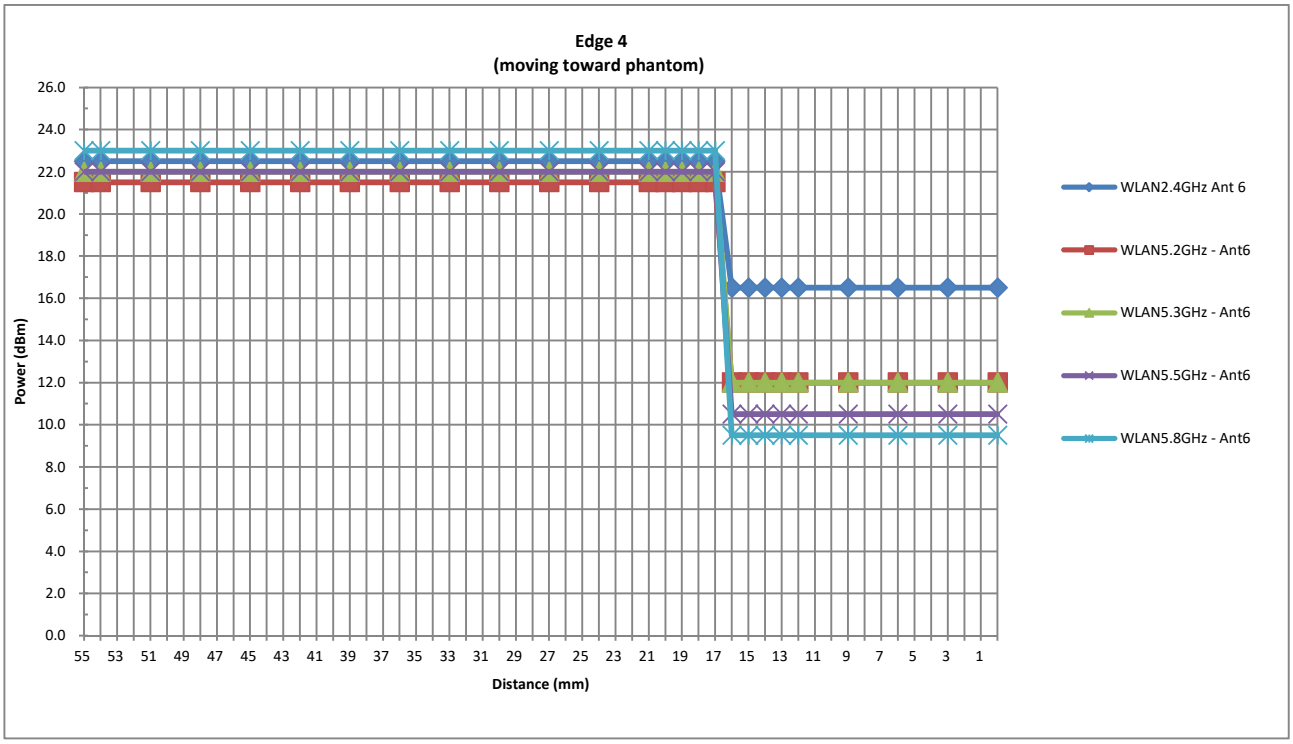

Edge 1
(moving away phantom)
Power (dBm)
Distance (mm)
LTE Band 42-Ant3
FR1 n77 - Ant3
FR1 n77(HPUE) - Ant3
FR1 n78 - Ant3
FR1 n78(HPUE) - Ant3

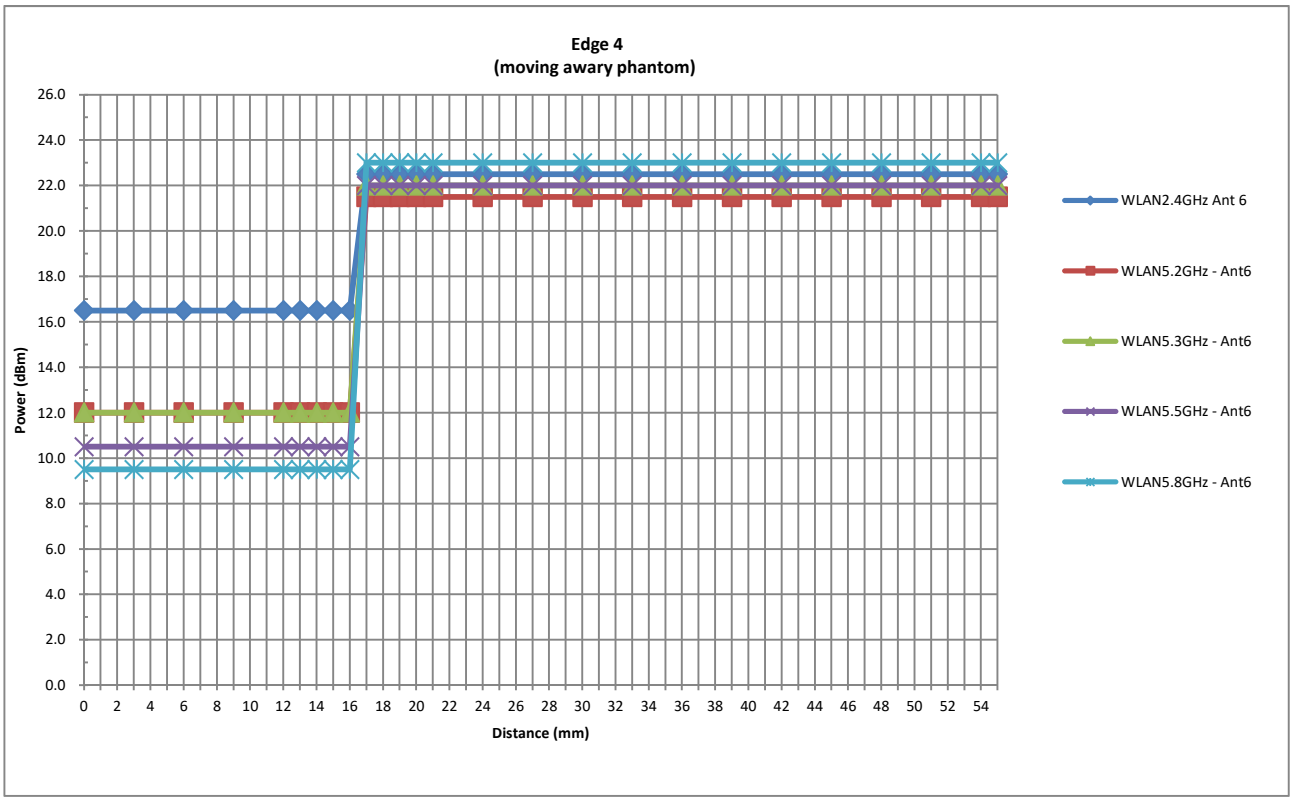
Power Measurement during Sensor Trigger distance testing for Ant.6

Band/Mode	Measured power reduction (dBm)		Reduction Levels
	w/o power back-off	w/ power back-off	(dB)
WLAN 2.4GHz	22.50	16.50	6.0
WLAN 5.2GHz	21.50	12.00	9.5
WLAN 5.3GHz	22.00	12.00	10.0
WLAN 5.5GHz	22.00	10.50	11.5
WLAN 5.8GHz	23.00	9.50	13.5



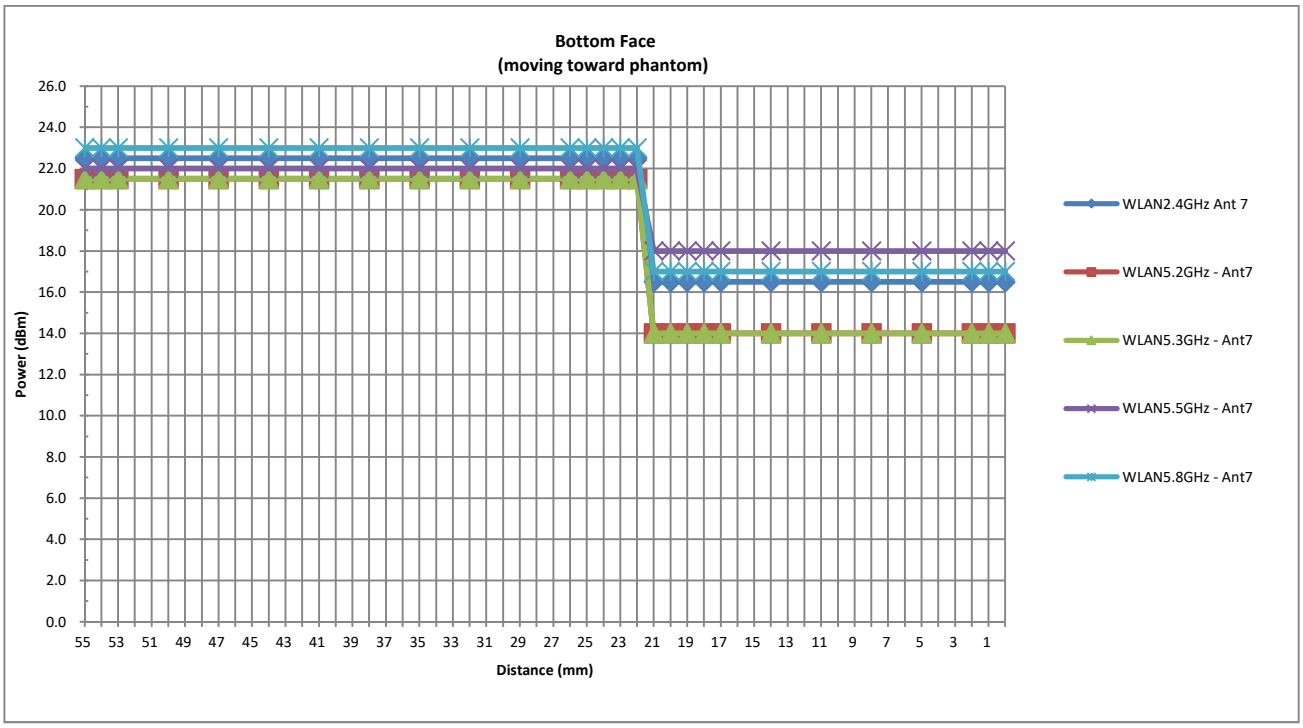


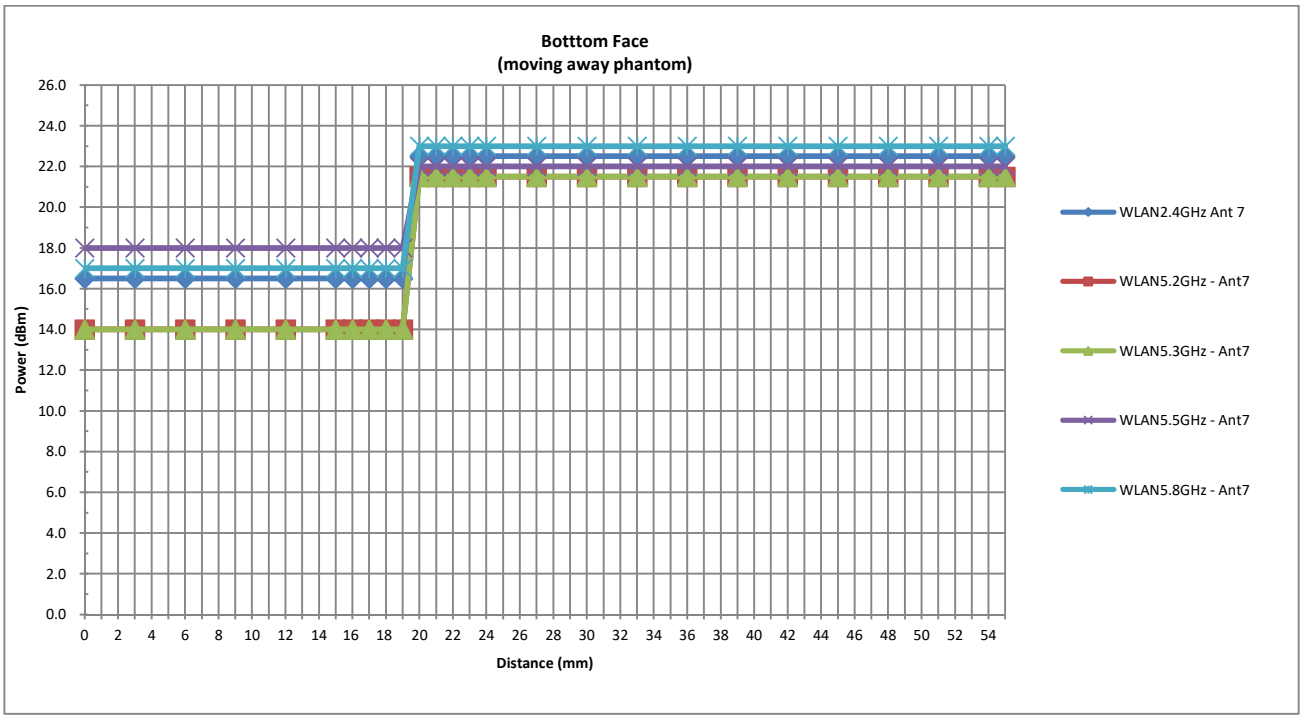

Edge 4
(moving toward phantom)
Power (dBm)
Distance (mm)
WLAN2.4GHz Ant 6
WLAN5.2GHz - Ant6
WLAN5.3GHz - Ant6
WLAN5.5GHz - Ant6
WLAN5.8GHz - Ant6

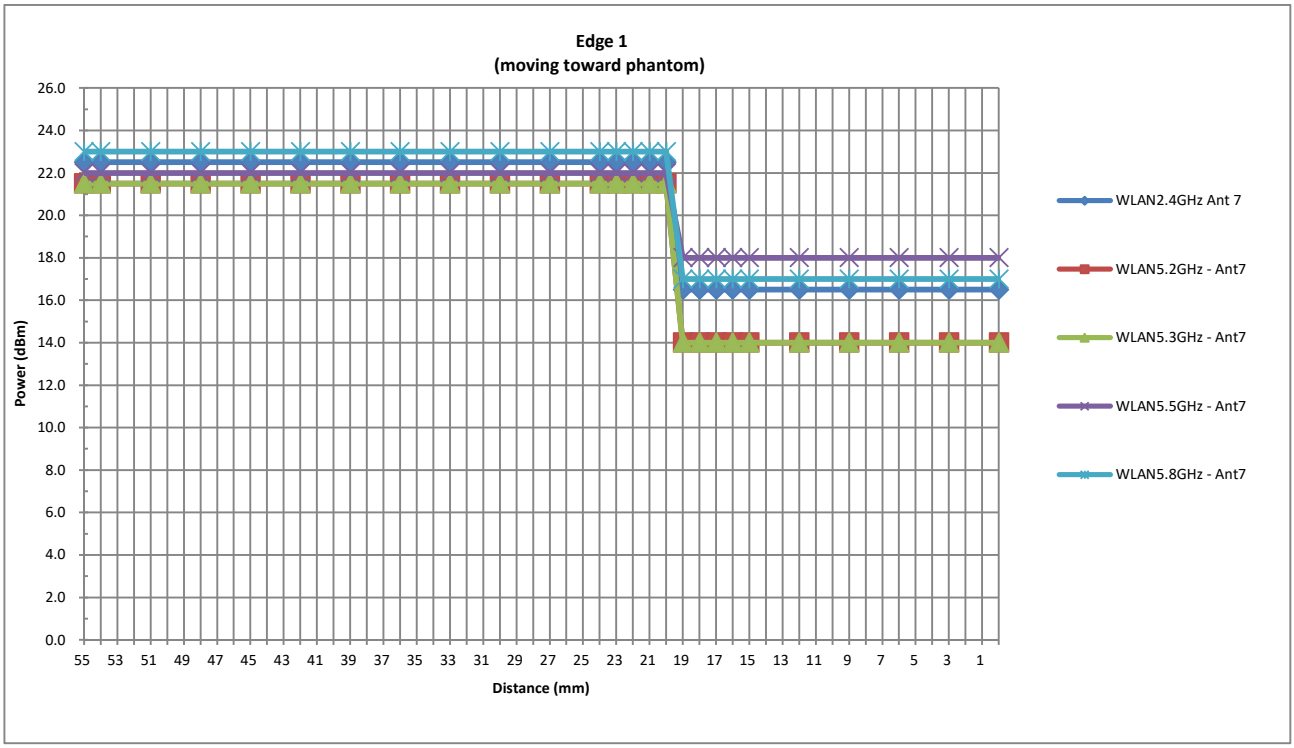

Edge 4
(moving awary phantom)
Power (dBm)
Distance (mm)
WLAN2.4GHz Ant 6
WLAN5.2GHz - Ant6
WLAN5.3GHz - Ant6
WLAN5.5GHz - Ant6
WLAN5.8GHz - Ant6

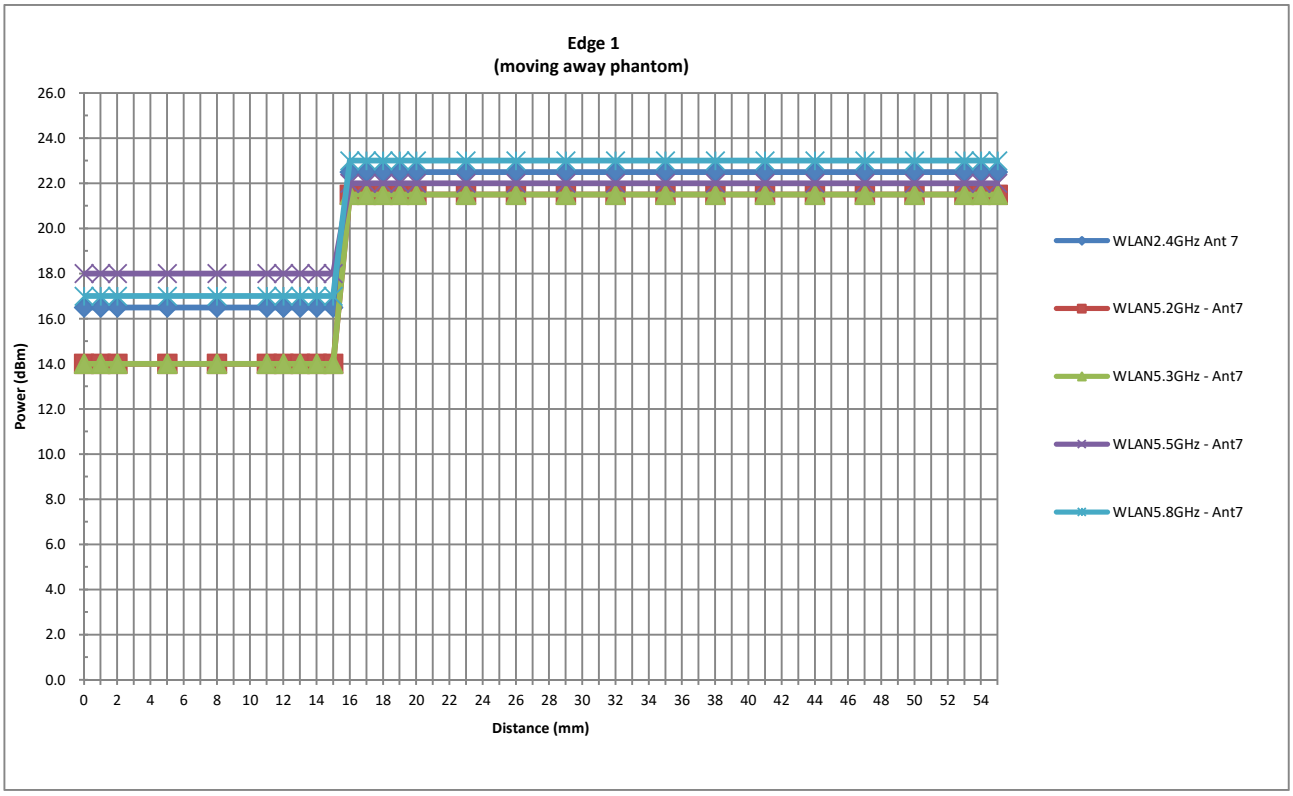
Power Measurement during Sensor Trigger distance testing for Ant.7

Band/Mode	Measured power reduction (dBm)		Reduction Levels
	w/o power back-off	w/ power back-off	(dB)
WLAN 2.4GHz	22.50	16.50	6.0
WLAN 5.2GHz	21.50	14.00	7.5
WLAN 5.3GHz	21.50	14.00	7.5
WLAN 5.5GHz	22.00	18.00	4.0
WLAN 5.8GHz	23.00	17.00	6.0






Edge 1
(moving toward phantom)
Power (dBm)
Distance (mm)
WLAN2.4GHz Ant 7
WLAN5.2GHz - Ant7
WLAN5.3GHz - Ant7
WLAN5.5GHz - Ant7
WLAN5.8GHz - Ant7


Edge 1
(moving away phantom)
Power (dBm)
Distance (mm)
WLAN2.4GHz Ant 7
WLAN5.2GHz - Ant7
WLAN5.3GHz - Ant7
WLAN5.5GHz - Ant7
WLAN5.8GHz - Ant7

7. RF Exposure Limits

7.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

7.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

8. Specific Absorption Rate (SAR)

8.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

8.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$\mathbf{SAR} = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\mathbf{dm}}\right) = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\boldsymbol{\rho}\mathbf{dv}}\right)$$

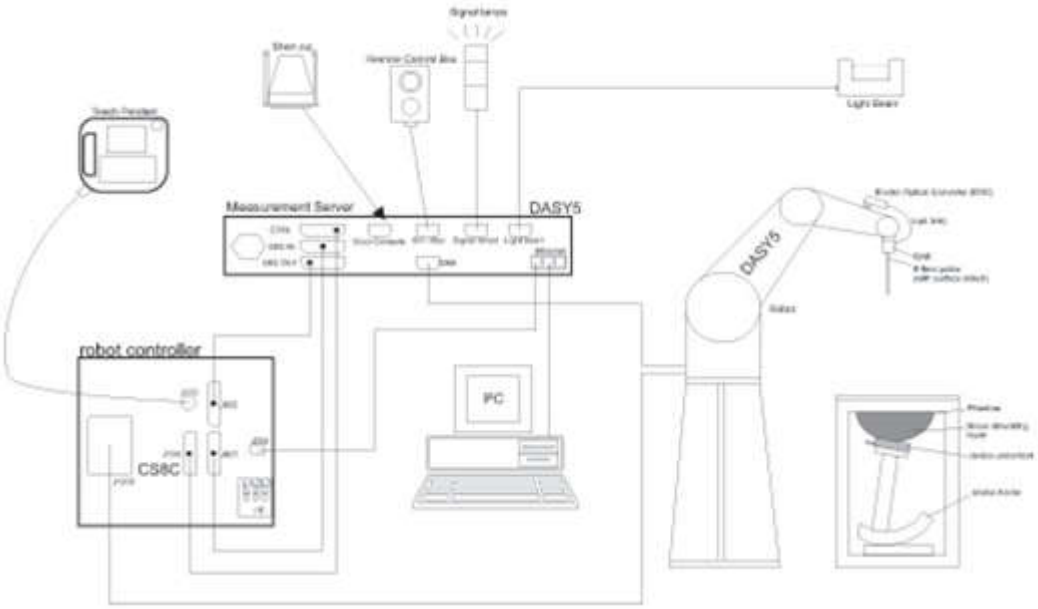
SAR is expressed in units of Watts per kilogram (W/kg)

$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}|\mathbf{E}|^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

9. System Description and Setup

The DASY system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

9.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz – >6 GHz Linearity: ±0.2 dB (30 MHz – 6 GHz)
Directivity	±0.3 dB in TSL (rotation around probe axis) ±0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g – >100 mW/g Linearity: ±0.2 dB (noise: typically <1 µW/g)
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm

9.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.1 Photo of DAE

9.3 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)
Filling Volume	Approx. 30 liters
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm

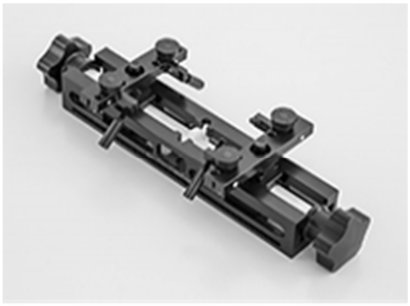
The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

9.4 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.

Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

Mounting Device for Laptops

10. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

10.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

10.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

10.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

10.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

10.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

10.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

11. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1087	2022/2/24	2023/2/23
SPEAG	835MHz System Validation Kit	D835V2	4d162	2021/12/17	2022/12/16
SPEAG	1750MHz System Validation Kit	D1750V2	1090	2022/2/24	2023/2/23
SPEAG	1900MHz System Validation Kit	D1900V2	5d182	2021/12/20	2022/12/19
SPEAG	2450MHz System Validation Kit	D2450V2	924	2020/9/2	2023/9/1
SPEAG	2600MHz System Validation Kit	D2600V2	1061	2020/11/26	2023/11/25
SPEAG	3500MHz System Validation Kit	D3500V2	1037	2020/11/25	2023/11/24
SPEAG	3700MHz System Validation Kit	D3700V2	1008	2020/11/25	2023/11/24
SPEAG	3900MHz System Validation Kit	D3900V2	1048	2020/5/14	2023/5/12
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	2019/9/24	2022/9/22
SPEAG	Data Acquisition Electronics	DAE4	1279	2021/9/21	2022/9/20
SPEAG	Data Acquisition Electronics	DAE4	1649	2022/3/30	2023/3/29
SPEAG	Dosimetric E-Field Probe	EX3DV4	7630	2022/3/4	2023/3/3
SPEAG	Dosimetric E-Field Probe	EX3DV4	7706	2022/1/20	2023/1/19
SPEAG	ELI4 Phantom	ELI V8.0	TP-2151	NCR	NCR
SPEAG	ELI4 Phantom	ELI V8.0	TP-2135	NCR	NCR
Anritsu	Radio Communication Analyzer	MT8821C	6262306173	2021/7/15	2022/7/14
Anritsu	Radio Communication Analyzer	MT8821C	6262306175	2022/7/14	2023/7/13
Agilent	ENA Series Network Analyzer	E5071C	MY46104587	2022/5/24	2023/5/23
SPEAG	Dielectric Probe Kit	DAK-3.5	1071	2022/1/24	2023/1/23
Anritsu	Vector Signal Generator	MG3710A	6201682672	2022/1/6	2023/1/5
Rohde & Schwarz	Power Meter	NRVD	102081	2021/8/12	2022/8/11
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2021/8/12	2022/8/11
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2021/8/12	2022/8/11
R&S	CBT BLUETOOTH TESTER	CBT	100641	2022/1/5	2023/1/4
EXA	Spectrum Analyzer	FSV7	101631	2021/10/14	2022/10/13
FLUKE	DIGITAC THERMOMETER	51II	97240029	2021/10/23	2022/10/22
Testo	Thermo-Hygrometer	608-H1	1241332102	2022/1/6	2023/1/5
ARRA	Power Divider	A3200-2	N/A	Note 1	
MCL	Attenuation1	BW-S10W5+	N/A	Note 1	
MCL	Attenuation2	BW-S10W5+	N/A	Note 1	
MCL	Attenuation3	BW-S10W5+	N/A	Note 1	
BONN	POWER AMPLIFIER	BLMA 0830-3	087193A	Note 1	
BONN	POWER AMPLIFIER	BLMA 2060-2	087193B	Note 1	
Agilent	Dual Directional Coupler	778D	20500	Note 1	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note 1	

Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

12. System Verification

12.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1.

Fig 11.1 Photo of Liquid Height for Body SAR

12.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	22.6	0.928	43.719	0.89	41.90	4.27	4.34	±5	2022/6/6
835	Head	22.9	0.935	42.525	0.90	41.50	3.89	2.47	±5	2022/6/11
1750	Head	22.7	1.351	40.380	1.37	40.10	-1.39	0.70	±5	2022/6/15
1900	Head	22.8	1.458	40.034	1.40	40.00	4.14	0.08	±5	2022/6/19
2450	Head	22.9	1.853	39.086	1.80	39.20	2.94	-0.29	±5	2022/6/24
2600	Head	22.6	2.006	40.535	1.96	39.00	2.35	3.94	±5	2022/6/27
3500	Head	22.7	2.827	39.042	2.91	37.90	-2.85	3.01	±5	2022/6/30
3700	Head	22.6	3.016	38.715	3.12	37.70	-3.33	2.69	±5	2022/7/7
3900	Head	22.9	3.219	38.420	3.32	37.50	-3.04	2.45	±5	2022/7/12
5250	Head	22.6	4.776	35.893	4.71	35.90	1.40	-0.02	±5	2022/7/17
5600	Head	22.7	5.202	35.230	5.07	35.50	2.60	-0.76	±5	2022/7/23
5750	Head	22.9	5.375	34.941	5.22	35.40	2.97	-1.30	±5	2022/7/27

12.3 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2022/6/6	750	Head	50	1087	7630	1279	0.424	8.58	8.48	-1.17
2022/6/11	835	Head	50	4d162	7630	1279	0.474	9.64	9.48	-1.66
2022/6/15	1750	Head	50	1090	7630	1279	1.820	37.00	36.4	-1.62
2022/6/19	1900	Head	50	5d182	7630	1279	2.100	39.60	42	6.06
2022/6/24	2450	Head	50	924	7630	1279	2.680	51.40	53.6	4.28
2022/6/27	2600	Head	50	1061	7630	1279	2.930	56.60	58.6	3.53
2022/6/30	3500	Head	50	1037	7630	1279	3.630	68.00	72.6	6.76
2022/7/7	3700	Head	50	1008	7630	1279	3.510	67.60	70.2	3.85
2022/7/12	3900	Head	50	1048	7706	1649	3.290	70.20	65.8	-6.27
2022/7/17	5250	Head	50	1113	7630	1279	4.320	80.50	86.4	7.33
2022/7/23	5600	Head	50	1113	7630	1279	4.490	83.40	89.8	7.67
2022/7/27	5750	Head	50	1113	7630	1279	4.250	80.00	85	6.25

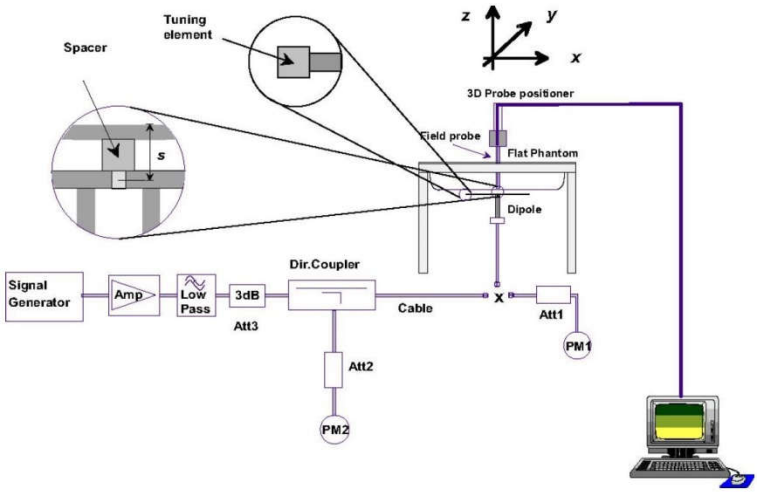


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

13. RF Exposure Positions

13.1 SAR Testing for Tablet

This device can be used also in full sized tablet exposure conditions, due to its size. Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR exclusion threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

<EUT Setup Photos>

Please refer to Appendix D for the test setup photos.

14. Conducted RF Output Power (Unit: dBm)

<GSM Conducted Power>

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
3. Other configurations of GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode

Default Power Mode

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GPRS 1 Tx slot	33.31	33.36	33.32	33.50	24.31	24.36	24.32	24.50
GPRS 2 Tx slots	30.80	30.95	30.73	31.50	24.80	24.95	24.73	25.50
GPRS 3 Tx slots	28.67	28.98	28.71	29.50	24.41	24.72	24.45	25.24
GPRS 4 Tx slots	26.24	26.34	26.18	27.50	23.24	23.34	23.18	24.50
EDGE 1 Tx slot	25.89	26.07	25.95	27.50	16.89	17.07	16.95	18.50
EDGE 2 Tx slots	25.72	25.82	25.74	27.50	19.72	19.82	19.74	21.50
EDGE 3 Tx slots	25.67	25.69	25.70	27.50	21.41	21.43	21.44	23.24
EDGE 4 Tx slots	25.52	25.57	25.59	27.50	22.52	22.57	22.59	24.50

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GPRS 1 Tx slot	30.27	30.39	30.23	30.50	21.27	21.39	21.23	21.50
GPRS 2 Tx slots	28.16	28.05	27.96	28.50	22.16	22.05	21.96	22.50
GPRS 3 Tx slots	25.76	25.79	25.83	26.50	21.50	21.53	21.57	22.24
GPRS 4 Tx slots	23.63	23.71	23.67	24.50	20.63	20.71	20.67	21.50
EDGE 1 Tx slot	25.50	25.35	25.30	26.50	16.50	16.35	16.30	17.50
EDGE 2 Tx slots	25.18	24.98	25.03	26.50	19.18	18.98	19.03	20.50
EDGE 3 Tx slots	24.81	24.67	24.72	26.50	20.55	20.41	20.46	22.24
EDGE 4 Tx slots	24.67	24.59	24.64	25.50	21.67	21.59	21.64	22.50

Reduced Power Mode for DSI 0

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GPRS 1 Tx slot	33.31	33.36	33.32	33.50	24.31	24.36	24.32	24.50
GPRS 2 Tx slots	30.80	30.95	30.73	31.50	24.80	24.95	24.73	25.50
GPRS 3 Tx slots	28.67	28.98	28.71	29.50	24.41	24.72	24.45	25.24
GPRS 4 Tx slots	26.24	26.34	26.18	27.50	23.24	23.34	23.18	24.50
EDGE 1 Tx slot	25.89	26.07	25.95	27.50	16.89	17.07	16.95	18.50
EDGE 2 Tx slots	25.72	25.82	25.74	27.50	19.72	19.82	19.74	21.50
EDGE 3 Tx slots	25.67	25.69	25.70	27.50	21.41	21.43	21.44	23.24
EDGE 4 Tx slots	25.52	25.57	25.59	27.50	22.52	22.57	22.59	24.50

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GPRS 1 Tx slot	30.27	30.39	30.23	30.50	21.27	21.39	21.23	21.50
GPRS 2 Tx slots	28.16	28.05	27.96	28.50	22.16	22.05	21.96	22.50
GPRS 3 Tx slots	25.76	25.79	25.83	26.50	21.50	21.53	21.57	22.24
GPRS 4 Tx slots	23.63	23.71	23.67	24.50	20.63	20.71	20.67	21.50
EDGE 1 Tx slot	25.50	25.35	25.30	26.50	16.50	16.35	16.30	17.50
EDGE 2 Tx slots	25.18	24.98	25.03	26.50	19.18	18.98	19.03	20.50
EDGE 3 Tx slots	24.81	24.67	24.72	26.50	20.55	20.41	20.46	22.24
EDGE 4 Tx slots	24.67	24.59	24.64	25.50	21.67	21.59	21.64	22.50

Reduced Power Mode for DSI 1

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GPRS 1 Tx slot	31.43	31.47	31.41	32.60	22.43	22.47	22.41	23.60
GPRS 2 Tx slots	28.35	28.36	28.11	29.60	22.35	22.36	22.11	23.60
GPRS 3 Tx slots	26.39	26.46	26.38	27.90	22.13	22.20	22.12	23.64
GPRS 4 Tx slots	25.18	25.25	25.07	26.60	22.18	22.25	22.07	23.60
EDGE 1 Tx slot	26.09	26.32	26.19	27.50	17.09	17.32	17.19	18.50
EDGE 2 Tx slots	25.94	26.00	25.96	27.50	19.94	20.00	19.96	21.50
EDGE 3 Tx slots	25.85	25.88	25.89	27.50	21.59	21.62	21.63	23.24
EDGE 4 Tx slots	24.89	24.86	24.99	26.60	21.89	21.86	21.99	23.60

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GPRS 1 Tx slot	23.56	23.62	23.66	25.20	14.56	14.62	14.66	16.20
GPRS 2 Tx slots	20.29	20.35	20.37	22.20	14.29	14.35	14.37	16.20
GPRS 3 Tx slots	18.61	18.60	18.62	20.50	14.35	14.34	14.36	16.24
GPRS 4 Tx slots	17.96	18.14	18.17	19.20	14.96	15.14	15.17	16.20
EDGE 1 Tx slot	23.27	23.43	23.27	25.20	14.27	14.43	14.27	16.20
EDGE 2 Tx slots	20.75	20.84	20.77	22.20	14.75	14.84	14.77	16.20
EDGE 3 Tx slots	18.67	18.79	18.75	20.50	14.41	14.53	14.49	16.24
EDGE 4 Tx slots	17.39	17.57	17.49	19.20	14.39	14.57	14.49	16.20

Reduced Power Mode for DSI 2

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GPRS 1 Tx slot	33.31	33.36	33.32	33.50	24.31	24.36	24.32	24.50
GPRS 2 Tx slots	30.80	30.95	30.73	31.50	24.80	24.95	24.73	25.50
GPRS 3 Tx slots	28.67	28.98	28.71	29.50	24.41	24.72	24.45	25.24
GPRS 4 Tx slots	26.24	26.34	26.18	27.50	23.24	23.34	23.18	24.50
EDGE 1 Tx slot	25.89	26.07	25.95	27.50	16.89	17.07	16.95	18.50
EDGE 2 Tx slots	25.72	25.82	25.74	27.50	19.72	19.82	19.74	21.50
EDGE 3 Tx slots	25.67	25.69	25.70	27.50	21.41	21.43	21.44	23.24
EDGE 4 Tx slots	25.52	25.57	25.59	27.50	22.52	22.57	22.59	24.50

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GPRS 1 Tx slot	30.27	30.39	30.23	30.50	21.27	21.39	21.23	21.50
GPRS 2 Tx slots	28.16	28.05	27.96	28.50	22.16	22.05	21.96	22.50
GPRS 3 Tx slots	25.76	25.79	25.83	26.50	21.50	21.53	21.57	22.24
GPRS 4 Tx slots	23.63	23.71	23.67	24.50	20.63	20.71	20.67	21.50
EDGE 1 Tx slot	25.50	25.35	25.30	26.50	16.50	16.35	16.30	17.50
EDGE 2 Tx slots	25.18	24.98	25.03	26.50	19.18	18.98	19.03	20.50
EDGE 3 Tx slots	24.81	24.67	24.72	26.50	20.55	20.41	20.46	22.24
EDGE 4 Tx slots	24.67	24.59	24.64	25.50	21.67	21.59	21.64	22.50

Reduced Power Mode for DSI 3

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GPRS 1 Tx slot	29.80	29.72	29.48	30.00	20.80	20.72	20.48	21.00
GPRS 2 Tx slots	26.53	26.58	26.84	27.00	20.53	20.58	20.84	21.00
GPRS 3 Tx slots	24.48	24.44	24.62	25.30	20.22	20.18	20.36	21.04
GPRS 4 Tx slots	22.60	22.57	22.91	24.00	19.60	19.57	19.91	21.00
EDGE 1 Tx slot	25.89	26.07	25.95	27.50	16.89	17.07	16.95	18.50
EDGE 2 Tx slots	25.06	25.18	25.12	27.00	19.06	19.18	19.12	21.00
EDGE 3 Tx slots	23.58	23.49	23.42	25.30	19.32	19.23	19.16	21.04
EDGE 4 Tx slots	22.17	22.06	22.15	24.00	19.17	19.06	19.15	21.00

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GPRS 1 Tx slot	21.12	21.25	21.35	22.60	12.12	12.25	12.35	13.60
GPRS 2 Tx slots	17.91	18.02	17.93	19.60	11.91	12.02	11.93	13.60
GPRS 3 Tx slots	16.42	16.50	16.38	17.90	12.16	12.24	12.12	13.64
GPRS 4 Tx slots	15.08	15.01	15.07	16.60	12.08	12.01	12.07	13.60
EDGE 1 Tx slot	20.77	20.84	20.73	22.60	11.77	11.84	11.73	13.60
EDGE 2 Tx slots	18.49	18.47	18.58	19.60	12.49	12.47	12.58	13.60
EDGE 3 Tx slots	16.75	16.82	16.97	17.90	12.49	12.56	12.71	13.64
EDGE 4 Tx slots	15.23	15.28	15.40	16.60	12.23	12.28	12.40	13.60

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (β_c and β_d) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$, and Δ_{CQI} = 24/15 with $\beta_{hs} = 24/15 * \beta_c$.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{hs} = 5/15 * β_c.

Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_d=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

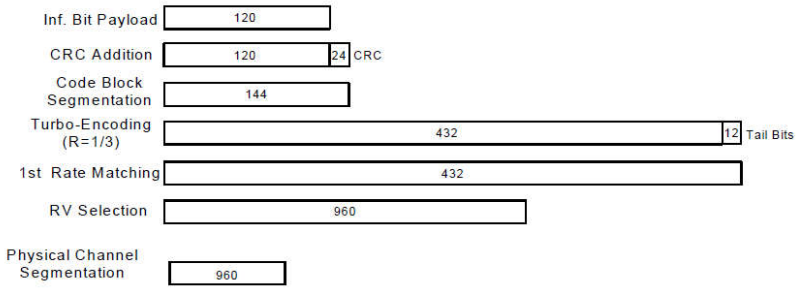


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

Default Power Mode

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	23.39	23.48	23.46	24.00	23.31	23.42	23.32	24.00	23.23	23.25	23.22	24.00
3GPP Rel 6	HSDPA Subtest-1	22.00	22.30	22.14	23.00	22.12	22.37	22.09	23.00	21.97	22.23	22.01	23.00
3GPP Rel 6	HSDPA Subtest-2	22.05	22.30	22.17	23.00	22.04	22.25	22.23	23.00	22.01	22.10	22.12	23.00
3GPP Rel 6	HSDPA Subtest-3	21.57	21.88	21.72	22.50	21.66	21.81	21.65	22.50	21.57	21.74	21.52	22.50
3GPP Rel 6	HSDPA Subtest-4	21.69	21.76	21.74	22.50	21.66	21.75	21.72	22.50	21.56	21.71	21.60	22.50
3GPP Rel 8	DC-HSDPA Subtest-1	21.96	22.23	22.14	23.00	22.04	22.27	22.08	23.00	22.03	22.16	22.00	23.00
3GPP Rel 8	DC-HSDPA Subtest-2	22.03	22.14	22.10	23.00	21.99	22.15	22.10	23.00	21.92	22.01	22.06	23.00
3GPP Rel 8	DC-HSDPA Subtest-3	21.60	21.81	21.59	22.50	21.71	21.80	21.62	22.50	21.59	21.71	21.62	22.50
3GPP Rel 8	DC-HSDPA Subtest-4	21.49	21.71	21.49	22.50	21.58	21.76	21.55	22.50	21.45	21.66	21.45	22.50
3GPP Rel 6	HSUPA Subtest-1	22.01	22.26	22.18	23.00	21.99	22.25	22.20	23.00	21.87	22.10	22.07	23.00
3GPP Rel 6	HSUPA Subtest-2	20.00	20.46	20.21	21.00	20.16	20.47	20.26	21.00	20.12	20.44	20.10	21.00
3GPP Rel 6	HSUPA Subtest-3	21.03	21.35	21.11	22.00	21.17	21.28	21.03	22.00	21.03	21.13	20.91	22.00
3GPP Rel 6	HSUPA Subtest-4	20.12	20.19	20.04	21.00	20.07	20.32	20.13	21.00	19.99	20.26	20.09	21.00
3GPP Rel 6	HSUPA Subtest-5	22.00	22.23	22.08	23.00	22.07	22.26	22.07	23.00	22.04	22.25	22.04	23.00

Reduced Power Mode for DSI 0

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	23.39	23.48	23.46	24.00	23.31	23.42	23.32	24.00	23.23	23.25	23.22	24.00
3GPP Rel 6	HSDPA Subtest-1	22.00	22.30	22.14	23.00	22.12	22.37	22.09	23.00	21.97	22.23	22.01	23.00
3GPP Rel 6	HSDPA Subtest-2	22.05	22.30	22.17	23.00	22.04	22.25	22.23	23.00	22.01	22.10	22.12	23.00
3GPP Rel 6	HSDPA Subtest-3	21.57	21.88	21.72	22.50	21.66	21.81	21.65	22.50	21.57	21.74	21.52	22.50
3GPP Rel 6	HSDPA Subtest-4	21.69	21.76	21.74	22.50	21.66	21.75	21.72	22.50	21.56	21.71	21.60	22.50
3GPP Rel 8	DC-HSDPA Subtest-1	21.96	22.23	22.14	23.00	22.04	22.27	22.08	23.00	22.03	22.16	22.00	23.00
3GPP Rel 8	DC-HSDPA Subtest-2	22.03	22.14	22.10	23.00	21.99	22.15	22.10	23.00	21.92	22.01	22.06	23.00
3GPP Rel 8	DC-HSDPA Subtest-3	21.60	21.81	21.59	22.50	21.71	21.80	21.62	22.50	21.59	21.71	21.62	22.50
3GPP Rel 8	DC-HSDPA Subtest-4	21.49	21.71	21.49	22.50	21.58	21.76	21.55	22.50	21.45	21.66	21.45	22.50
3GPP Rel 6	HSUPA Subtest-1	22.01	22.26	22.18	23.00	21.99	22.25	22.20	23.00	21.87	22.10	22.07	23.00
3GPP Rel 6	HSUPA Subtest-2	20.00	20.46	20.21	21.00	20.16	20.47	20.26	21.00	20.12	20.44	20.10	21.00
3GPP Rel 6	HSUPA Subtest-3	21.03	21.35	21.11	22.00	21.17	21.28	21.03	22.00	21.03	21.13	20.91	22.00
3GPP Rel 6	HSUPA Subtest-4	20.12	20.19	20.04	21.00	20.07	20.32	20.13	21.00	19.99	20.26	20.09	21.00
3GPP Rel 6	HSUPA Subtest-5	22.00	22.23	22.08	23.00	22.07	22.26	22.07	23.00	22.04	22.25	22.04	23.00

Reduced Power Mode for DSI 1

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	16.01	16.09	15.93	16.80	18.18	18.22	18.11	19.10	22.72	22.83	22.79	23.50
3GPP Rel 6	HSDPA Subtest-1	14.86	15.05	14.85	15.80	16.89	17.13	16.87	18.10	21.68	21.81	21.60	22.50
3GPP Rel 6	HSDPA Subtest-2	14.78	14.94	14.87	15.80	16.83	16.99	16.94	18.10	21.59	21.70	21.65	22.50
3GPP Rel 6	HSDPA Subtest-3	14.26	14.61	14.37	15.30	16.38	16.48	16.39	17.60	21.08	21.30	21.04	22.00
3GPP Rel 6	HSDPA Subtest-4	14.46	14.41	14.38	15.30	16.39	16.59	16.42	17.60	21.17	21.31	21.11	22.00
3GPP Rel 8	DC-HSDPA Subtest-1	14.66	15.01	14.84	15.80	16.80	16.99	16.86	18.10	21.59	21.73	21.52	22.50
3GPP Rel 8	DC-HSDPA Subtest-2	14.65	14.90	14.87	15.80	16.79	16.87	16.85	18.10	21.50	21.63	21.62	22.50
3GPP Rel 8	DC-HSDPA Subtest-3	14.32	14.50	14.34	15.30	16.42	16.58	16.41	17.60	21.21	21.24	21.20	22.00
3GPP Rel 8	DC-HSDPA Subtest-4	14.23	14.40	14.15	15.30	16.37	16.53	16.39	17.60	20.96	21.26	21.06	22.00
3GPP Rel 6	HSUPA Subtest-1	14.75	15.05	14.87	15.80	16.80	17.06	16.94	18.10	21.48	21.60	21.58	22.50
3GPP Rel 6	HSUPA Subtest-2	12.81	13.11	12.97	13.80	14.87	15.19	15.04	16.10	19.71	20.00	19.70	20.50
3GPP Rel 6	HSUPA Subtest-3	13.68	14.05	13.80	14.80	15.91	16.05	15.80	17.10	20.60	20.74	20.47	21.50
3GPP Rel 6	HSUPA Subtest-4	12.80	12.93	12.66	13.80	14.81	15.01	14.97	16.10	19.58	19.77	19.70	20.50
3GPP Rel 6	HSUPA Subtest-5	14.71	14.92	14.78	15.80	16.79	17.10	16.78	18.10	21.59	21.84	21.63	22.50

Reduced Power Mode for DSI 2

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	23.39	23.48	23.46	24.00	22.77	22.82	22.71	23.40	23.23	23.25	23.22	24.00
3GPP Rel 6	HSDPA Subtest-1	22.00	22.30	22.14	23.00	21.46	21.75	21.62	22.40	21.97	22.23	22.01	23.00
3GPP Rel 6	HSDPA Subtest-2	22.05	22.30	22.17	23.00	21.42	21.59	21.80	22.40	22.01	22.10	22.12	23.00
3GPP Rel 6	HSDPA Subtest-3	21.57	21.88	21.72	22.50	21.06	21.15	21.22	21.90	21.57	21.74	21.52	22.50
3GPP Rel 6	HSDPA Subtest-4	21.69	21.76	21.74	22.50	20.98	21.08	21.32	21.90	21.56	21.71	21.60	22.50
3GPP Rel 8	DC-HSDPA Subtest-1	21.96	22.23	22.14	23.00	21.38	21.64	21.67	22.40	22.03	22.16	22.00	23.00
3GPP Rel 8	DC-HSDPA Subtest-2	22.03	22.14	22.10	23.00	21.40	21.56	21.66	22.40	21.92	22.01	22.06	23.00
3GPP Rel 8	DC-HSDPA Subtest-3	21.60	21.81	21.59	22.50	21.11	21.21	21.25	21.90	21.59	21.71	21.62	22.50
3GPP Rel 8	DC-HSDPA Subtest-4	21.49	21.71	21.49	22.50	20.92	21.16	21.14	21.90	21.45	21.66	21.45	22.50
3GPP Rel 6	HSUPA Subtest-1	22.01	22.26	22.18	23.00	21.38	21.62	21.81	22.40	21.87	22.10	22.07	23.00
3GPP Rel 6	HSUPA Subtest-2	20.00	20.46	20.21	21.00	19.52	19.82	19.86	20.40	20.12	20.44	20.10	21.00
3GPP Rel 6	HSUPA Subtest-3	21.03	21.35	21.11	22.00	20.52	20.71	20.65	21.40	21.03	21.13	20.91	22.00
3GPP Rel 6	HSUPA Subtest-4	20.12	20.19	20.04	21.00	19.49	19.67	19.75	20.40	19.99	20.26	20.09	21.00
3GPP Rel 6	HSUPA Subtest-5	22.00	22.23	22.08	23.00	21.41	21.66	21.64	22.40	22.04	22.25	22.04	23.00

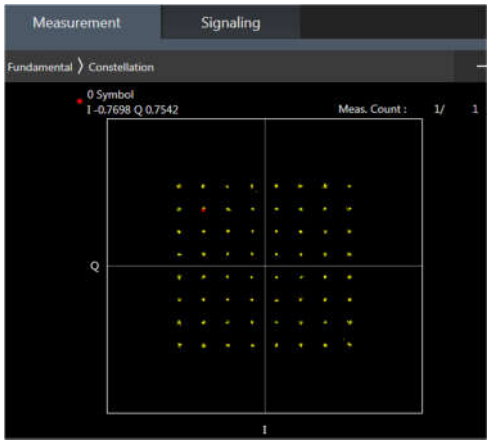
Reduced Power Mode for DSI 3

Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
3GPP Rel 99	RMC 12.2Kbps	13.62	13.72	13.68	14.20	15.30	15.45	15.27	16.50	20.19	20.28	20.22	21.30
3GPP Rel 6	HSDPA Subtest-1	12.60	12.90	12.76	13.20	14.26	14.42	14.14	15.50	18.95	19.24	19.01	20.30
3GPP Rel 6	HSDPA Subtest-2	12.68	12.87	12.69	13.20	14.15	14.29	14.37	15.50	18.97	19.11	19.08	20.30
3GPP Rel 6	HSDPA Subtest-3	12.14	12.40	12.41	12.70	13.73	13.95	13.69	15.00	18.62	18.78	18.52	19.80
3GPP Rel 6	HSDPA Subtest-4	12.30	12.38	12.27	12.70	13.72	13.79	13.72	15.00	18.62	18.71	18.60	19.80
3GPP Rel 8	DC-HSDPA Subtest-1	12.64	12.85	12.65	13.20	14.18	14.38	14.25	15.50	19.06	19.22	19.03	20.30
3GPP Rel 8	DC-HSDPA Subtest-2	12.57	12.74	12.57	13.20	14.06	14.21	14.22	15.50	18.89	18.99	19.10	20.30
3GPP Rel 8	DC-HSDPA Subtest-3	12.16	12.36	12.10	12.70	13.83	13.86	13.69	15.00	18.61	18.68	18.57	19.80
3GPP Rel 8	DC-HSDPA Subtest-4	12.11	12.29	12.08	12.70	13.65	13.84	13.61	15.00	18.51	18.71	18.48	19.80
3GPP Rel 6	HSUPA Subtest-1	12.53	12.80	12.66	13.20	13.97	14.31	14.25	15.50	18.86	19.08	19.11	19.80
3GPP Rel 6	HSUPA Subtest-2	10.68	10.93	10.76	11.20	12.25	12.61	12.26	13.50	17.18	17.33	17.06	18.30
3GPP Rel 6	HSUPA Subtest-3	11.55	11.86	11.63	12.20	13.27	13.28	13.14	14.50	18.08	18.17	17.89	19.30
3GPP Rel 6	HSUPA Subtest-4	10.66	10.81	10.63	11.20	12.18	12.43	12.21	13.50	16.94	17.27	17.11	18.30
3GPP Rel 6	HSUPA Subtest-5	12.51	12.71	12.62	13.20	14.16	14.32	14.14	15.50	19.09	19.21	19.03	20.30

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B5 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 4 SAR test was covered by Band 66; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to May 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



64QAM

16QAM

Default Power Mode

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Band 2								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.75	23.83	23.69	25	0
20	QPSK	1	49	23.65	23.72	23.63		
20	QPSK	1	99	23.66	23.75	23.70		
20	QPSK	50	0	22.78	22.86	22.73	24	1
20	QPSK	50	24	22.67	22.75	22.55		
20	QPSK	50	50	22.65	22.78	22.75		
20	QPSK	100	0	22.61	22.82	22.66		
20	16QAM	1	0	22.73	22.77	22.65	24	1
20	16QAM	1	49	22.69	22.76	22.69		
20	16QAM	1	99	22.68	22.70	22.73		
20	16QAM	50	0	21.79	21.85	21.77	23	2
20	16QAM	50	24	21.78	21.69	21.71		
20	16QAM	50	50	21.69	21.74	21.70		
20	16QAM	100	0	21.68	21.69	21.60		
20	64QAM	1	0	21.75	21.89	21.73	23	2
20	64QAM	1	49	21.68	21.72	21.63		
20	64QAM	1	99	21.65	21.69	21.75		
20	64QAM	50	0	20.70	20.88	20.73	22	3
20	64QAM	50	24	20.79	20.65	20.67		
20	64QAM	50	50	20.70	20.74	20.66		
20	64QAM	100	0	20.65	20.72	20.53		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.68	23.79	23.59	25	0
15	QPSK	1	37	23.63	23.60	23.58		
15	QPSK	1	74	23.51	23.66	23.64		
15	QPSK	36	0	22.72	22.70	22.63	24	1
15	QPSK	36	20	22.62	22.65	22.52		
15	QPSK	36	39	22.58	22.73	22.61		
15	QPSK	75	0	22.47	22.65	22.56		
15	16QAM	1	0	22.62	22.72	22.53	24	1
15	16QAM	1	37	22.53	22.66	22.60		
15	16QAM	1	74	22.65	22.56	22.69		
15	16QAM	36	0	21.71	21.80	21.74	23	2
15	16QAM	36	20	21.64	21.52	21.66		
15	16QAM	36	39	21.51	21.72	21.57		
15	16QAM	75	0	21.54	21.63	21.51		
15	64QAM	1	0	21.61	21.76	21.66	23	2
15	64QAM	1	37	21.62	21.61	21.57		
15	64QAM	1	74	21.58	21.55	21.64		
15	64QAM	36	0	20.60	20.82	20.60	22	3
15	64QAM	36	20	20.67	20.56	20.52		
15	64QAM	36	39	20.58	20.58	20.64		
15	64QAM	75	0	20.49	20.55	20.49		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.61	23.77	23.59	25	0
10	QPSK	1	25	23.52	23.59	23.51		

10	QPSK	1	49	23.64	23.62	23.63		
10	QPSK	25	0	22.72	22.70	22.56	24	1
10	QPSK	25	12	22.50	22.63	22.44		
10	QPSK	25	25	22.60	22.66	22.62		
10	QPSK	50	0	22.53	22.67	22.61		
10	16QAM	1	0	22.59	22.73	22.59	24	1
10	16QAM	1	25	22.67	22.64	22.53		
10	16QAM	1	49	22.51	22.58	22.71		
10	16QAM	25	0	21.67	21.77	21.59	23	2
10	16QAM	25	12	21.73	21.61	21.66		
10	16QAM	25	25	21.51	21.58	21.58		
10	16QAM	50	0	21.62	21.60	21.49		
10	64QAM	1	0	21.65	21.83	21.65	23	2
10	64QAM	1	25	21.61	21.54	21.46		
10	64QAM	1	49	21.56	21.59	21.65		
10	64QAM	25	0	20.63	20.82	20.56	22	3
10	64QAM	25	12	20.65	20.53	20.64		
10	64QAM	25	25	20.65	20.67	20.59		
10	64QAM	50	0	20.48	20.63	20.44		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.71	23.65	23.59	25	0
5	QPSK	1	12	23.49	23.55	23.48		
5	QPSK	1	24	23.51	23.67	23.52		
5	QPSK	12	0	22.62	22.72	22.67	24	1
5	QPSK	12	7	22.59	22.59	22.53		
5	QPSK	12	13	22.50	22.75	22.73		
5	QPSK	25	0	22.59	22.68	22.53		
5	16QAM	1	0	22.56	22.66	22.56	24	1
5	16QAM	1	12	22.65	22.68	22.51		
5	16QAM	1	24	22.56	22.62	22.62		
5	16QAM	12	0	21.75	21.80	21.74	23	2
5	16QAM	12	7	21.74	21.58	21.58		
5	16QAM	12	13	21.62	21.71	21.63		
5	16QAM	25	0	21.63	21.65	21.58		
5	64QAM	1	0	21.66	21.72	21.68	23	2
5	64QAM	1	12	21.65	21.61	21.56		
5	64QAM	1	24	21.48	21.64	21.64		
5	64QAM	12	0	20.66	20.76	20.67	22	3
5	64QAM	12	7	20.63	20.57	20.61		
5	64QAM	12	13	20.67	20.57	20.56		
5	64QAM	25	0	20.54	20.66	20.37		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.68	23.69	23.53	25	0
3	QPSK	1	8	23.57	23.60	23.50		
3	QPSK	1	14	23.52	23.63	23.55		
3	QPSK	8	0	22.61	22.69	22.66	24	1
3	QPSK	8	4	22.62	22.64	22.49		
3	QPSK	8	7	22.56	22.67	22.70		
3	QPSK	15	0	22.52	22.74	22.53		
3	16QAM	1	0	22.65	22.61	22.52	24	1
3	16QAM	1	8	22.60	22.68	22.52		
3	16QAM	1	14	22.59	22.67	22.62		
3	16QAM	8	0	21.62	21.82	21.60	23	2
3	16QAM	8	4	21.69	21.60	21.69		

3	16QAM	8	7	21.52	21.62	21.57		
3	16QAM	15	0	21.54	21.65	21.48		
3	64QAM	1	0	21.67	21.74	21.65	23	2
3	64QAM	1	8	21.56	21.57	21.59		
3	64QAM	1	14	21.52	21.59	21.70		
3	64QAM	8	0	20.53	20.71	20.65	22	3
3	64QAM	8	4	20.68	20.47	20.63		
3	64QAM	8	7	20.54	20.58	20.51		
3	64QAM	15	0	20.58	20.70	20.39		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.60	23.72	23.52	25	0
1.4	QPSK	1	3	23.54	23.61	23.58		
1.4	QPSK	1	5	23.48	23.61	23.58		
1.4	QPSK	3	0	23.57	23.66	23.66		
1.4	QPSK	3	1	23.54	23.61	23.51		
1.4	QPSK	3	3	23.51	23.70	23.61		
1.4	QPSK	6	0	22.75	22.74	22.69	24	1
1.4	16QAM	1	0	22.64	22.62	22.49	24	1
1.4	16QAM	1	3	22.50	22.67	22.65		
1.4	16QAM	1	5	22.57	22.71	22.49		
1.4	16QAM	3	0	22.63	22.61	22.60		
1.4	16QAM	3	1	22.59	22.61	22.59		
1.4	16QAM	3	3	22.58	22.62	22.57		
1.4	16QAM	6	0	21.69	21.76	21.66	23	2
1.4	64QAM	1	0	21.68	21.55	21.55	23	2
1.4	64QAM	1	3	21.59	21.64	21.65		
1.4	64QAM	1	5	21.50	21.61	21.56		
1.4	64QAM	3	0	21.62	21.79	21.58		
1.4	64QAM	3	1	21.57	21.69	21.58		
1.4	64QAM	3	3	21.57	21.56	21.63		
1.4	64QAM	6	0	20.65	20.83	20.60	22	3

Band 4								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	23.54	23.64	23.48	25	0
20	QPSK	1	49	23.33	23.48	23.36		
20	QPSK	1	99	23.42	23.49	23.50		
20	QPSK	50	0	22.53	22.58	22.47	24	1
20	QPSK	50	24	22.47	22.50	22.24		
20	QPSK	50	50	22.35	22.47	22.56		
20	QPSK	100	0	22.40	22.53	22.46		
20	16QAM	1	0	22.46	22.52	22.47	24	1
20	16QAM	1	49	22.41	22.46	22.39		
20	16QAM	1	99	22.42	22.41	22.50		
20	16QAM	50	0	21.51	21.64	21.56	23	2
20	16QAM	50	24	21.51	21.47	21.39		
20	16QAM	50	50	21.44	21.44	21.51		
20	16QAM	100	0	21.50	21.51	21.35		
20	64QAM	1	0	21.47	21.62	21.50	23	2
20	64QAM	1	49	21.43	21.44	21.39		
20	64QAM	1	99	21.36	21.50	21.46		
20	64QAM	50	0	20.51	20.70	20.47	22	3
20	64QAM	50	24	20.56	20.40	20.35		
20	64QAM	50	50	20.44	20.53	20.39		
20	64QAM	100	0	20.45	20.50	20.32		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	23.46	23.50	23.44	25	0
15	QPSK	1	37	23.24	23.35	23.32		
15	QPSK	1	74	23.26	23.35	23.43		
15	QPSK	36	0	22.46	22.40	22.44	24	1
15	QPSK	36	20	22.34	22.46	22.08		
15	QPSK	36	39	22.19	22.36	22.41		
15	QPSK	75	0	22.22	22.47	22.28		
15	16QAM	1	0	22.31	22.44	22.35	24	1
15	16QAM	1	37	22.37	22.32	22.27		
15	16QAM	1	74	22.24	22.23	22.39		
15	16QAM	36	0	21.42	21.51	21.48	23	2
15	16QAM	36	20	21.42	21.34	21.26		
15	16QAM	36	39	21.37	21.27	21.36		
15	16QAM	75	0	21.37	21.41	21.22		
15	64QAM	1	0	21.37	21.51	21.39	23	2
15	64QAM	1	37	21.40	21.26	21.21		
15	64QAM	1	74	21.19	21.35	21.38		
15	64QAM	36	0	20.43	20.67	20.37	22	3
15	64QAM	36	20	20.38	20.35	20.23		
15	64QAM	36	39	20.32	20.41	20.21		
15	64QAM	75	0	20.33	20.47	20.15		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	23.51	23.54	23.36	25	0
10	QPSK	1	25	23.29	23.45	23.31		
10	QPSK	1	49	23.27	23.45	23.34		
10	QPSK	25	0	22.47	22.46	22.30	24	1
10	QPSK	25	12	22.44	22.41	22.15		

10	QPSK	25	25	22.27	22.33	22.45		
10	QPSK	50	0	22.27	22.37	22.29		
10	16QAM	1	0	22.29	22.41	22.36	24	1
10	16QAM	1	25	22.29	22.34	22.22		
10	16QAM	1	49	22.25	22.23	22.39		
10	16QAM	25	0	21.37	21.56	21.54	23	2
10	16QAM	25	12	21.42	21.33	21.37		
10	16QAM	25	25	21.41	21.27	21.49		
10	16QAM	50	0	21.40	21.44	21.31		
10	64QAM	1	0	21.34	21.46	21.33	23	2
10	64QAM	1	25	21.32	21.39	21.25		
10	64QAM	1	49	21.21	21.40	21.34		
10	64QAM	25	0	20.39	20.58	20.39	22	3
10	64QAM	25	12	20.40	20.35	20.24		
10	64QAM	25	25	20.29	20.37	20.26		
10	64QAM	50	0	20.29	20.42	20.20		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	23.42	23.56	23.46	25	0
5	QPSK	1	12	23.29	23.38	23.27		
5	QPSK	1	24	23.39	23.44	23.38		
5	QPSK	12	0	22.36	22.54	22.37	24	1
5	QPSK	12	7	22.44	22.37	22.19		
5	QPSK	12	13	22.25	22.32	22.46		
5	QPSK	25	0	22.31	22.37	22.35		
5	16QAM	1	0	22.36	22.49	22.32	24	1
5	16QAM	1	12	22.36	22.38	22.26		
5	16QAM	1	24	22.32	22.35	22.50		
5	16QAM	12	0	21.40	21.60	21.38	23	2
5	16QAM	12	7	21.43	21.29	21.25		
5	16QAM	12	13	21.35	21.36	21.49		
5	16QAM	25	0	21.42	21.42	21.27		
5	64QAM	1	0	21.41	21.55	21.33	23	2
5	64QAM	1	12	21.38	21.33	21.25		
5	64QAM	1	24	21.27	21.33	21.42		
5	64QAM	12	0	20.46	20.68	20.38	22	3
5	64QAM	12	7	20.39	20.32	20.32		
5	64QAM	12	13	20.28	20.40	20.35		
5	64QAM	25	0	20.32	20.46	20.17		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	23.39	23.47	23.32	25	0
3	QPSK	1	8	23.16	23.44	23.19		
3	QPSK	1	14	23.31	23.40	23.48		
3	QPSK	8	0	22.46	22.53	22.30	24	1
3	QPSK	8	4	22.30	22.35	22.12		
3	QPSK	8	7	22.21	22.34	22.47		
3	QPSK	15	0	22.28	22.35	22.43		
3	16QAM	1	0	22.31	22.49	22.41	24	1
3	16QAM	1	8	22.32	22.39	22.25		
3	16QAM	1	14	22.27	22.32	22.37		
3	16QAM	8	0	21.33	21.56	21.48	23	2
3	16QAM	8	4	21.37	21.35	21.31		
3	16QAM	8	7	21.39	21.30	21.36		
3	16QAM	15	0	21.40	21.48	21.19		
3	64QAM	1	0	21.38	21.59	21.38	23	2

3	64QAM	1	8	21.29	21.39	21.23		
3	64QAM	1	14	21.20	21.39	21.43		
3	64QAM	8	0	20.39	20.60	20.42	22	3
3	64QAM	8	4	20.41	20.36	20.25		
3	64QAM	8	7	20.42	20.42	20.31		
3	64QAM	15	0	20.37	20.38	20.22		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.40	23.50	23.29	25	0
1.4	QPSK	1	3	23.35	23.43	23.31		
1.4	QPSK	1	5	23.29	23.44	23.30		
1.4	QPSK	3	0	23.30	23.48	23.38		
1.4	QPSK	3	1	23.25	23.43	23.25		
1.4	QPSK	3	3	23.29	23.54	23.37		
1.4	QPSK	6	0	22.53	22.54	22.52	24	1
1.4	16QAM	1	0	22.37	22.35	22.31	24	1
1.4	16QAM	1	3	22.33	22.45	22.43		
1.4	16QAM	1	5	22.28	22.55	22.31		
1.4	16QAM	3	0	22.46	22.40	22.31		
1.4	16QAM	3	1	22.39	22.43	22.34		
1.4	16QAM	3	3	22.42	22.48	22.39		
1.4	16QAM	6	0	21.55	21.55	21.48	23	2
1.4	64QAM	1	0	21.44	21.32	21.38	23	2
1.4	64QAM	1	3	21.30	21.39	21.35		
1.4	64QAM	1	5	21.23	21.43	21.33		
1.4	64QAM	3	0	21.46	21.54	21.28		
1.4	64QAM	3	1	21.31	21.50	21.28		
1.4	64QAM	3	3	21.40	21.31	21.36		
1.4	64QAM	6	0	20.42	20.55	20.31	22	3

Band 5								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	23.21	23.27	23.16	25	0
10	QPSK	1	25	23.11	23.22	23.11		
10	QPSK	1	49	23.13	23.17	23.14		
10	QPSK	25	0	22.36	22.43	22.24	24	1
10	QPSK	25	12	22.39	22.21	22.35		
10	QPSK	25	25	22.27	22.35	22.28		
10	QPSK	50	0	22.36	22.39	22.22		
10	16QAM	1	0	22.26	22.25	22.12	24	1
10	16QAM	1	25	22.26	22.31	22.26		
10	16QAM	1	49	22.18	22.15	22.27		
10	16QAM	25	0	21.35	21.40	21.27	23	2
10	16QAM	25	12	21.23	21.21	21.19		
10	16QAM	25	25	21.32	21.23	21.26		
10	16QAM	50	0	21.22	21.18	21.18		
10	64QAM	1	0	21.20	21.39	21.23	23	2
10	64QAM	1	25	21.14	21.26	21.12		
10	64QAM	1	49	21.13	21.14	21.25		
10	64QAM	25	0	20.26	20.33	20.21	22	3
10	64QAM	25	12	20.37	20.19	20.24		
10	64QAM	25	25	20.15	20.25	20.10		
10	64QAM	50	0	20.17	20.20	20.19		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.09	23.15	23.11	25	0
5	QPSK	1	12	23.05	23.07	23.01		
5	QPSK	1	24	23.09	23.10	23.03		
5	QPSK	12	0	22.24	22.39	22.13	24	1
5	QPSK	12	7	22.14	22.14	22.01		
5	QPSK	12	13	22.09	22.20	22.14		
5	QPSK	25	0	22.17	22.28	22.06		
5	16QAM	1	0	22.16	22.19	22.00	24	1
5	16QAM	1	12	22.22	22.22	22.20		
5	16QAM	1	24	22.12	22.07	22.22		
5	16QAM	12	0	21.31	21.36	21.21	23	2
5	16QAM	12	7	21.15	21.06	21.01		
5	16QAM	12	13	21.00	21.17	21.11		
5	16QAM	25	0	21.12	21.13	21.03		
5	64QAM	1	0	21.09	21.27	21.13	23	2
5	64QAM	1	12	21.10	21.17	21.07		
5	64QAM	1	24	21.02	21.07	21.07		
5	64QAM	12	0	20.18	20.27	20.09	22	3
5	64QAM	12	7	20.30	20.06	20.19		
5	64QAM	12	13	20.07	20.11	20.07		
5	64QAM	25	0	20.06	20.15	20.18		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.15	23.23	23.11	25	0
3	QPSK	1	8	23.13	23.18	23.15		
3	QPSK	1	14	23.11	23.06	23.09		
3	QPSK	8	0	22.30	22.30	22.07	24	1
3	QPSK	8	4	22.05	22.10	22.17		

3	QPSK	8	7	22.09	22.23	22.14		
3	QPSK	15	0	22.19	22.27	22.04		
3	16QAM	1	0	22.21	22.20	22.09	24	1
3	16QAM	1	8	22.23	22.17	22.18		
3	16QAM	1	14	22.02	22.02	22.11		
3	16QAM	8	0	21.24	21.37	21.18	23	2
3	16QAM	8	4	21.16	21.15	21.13		
3	16QAM	8	7	21.06	21.10	21.05		
3	16QAM	15	0	21.18	21.01	21.05		
3	64QAM	1	0	21.11	21.36	21.11	23	2
3	64QAM	1	8	21.01	21.18	21.02		
3	64QAM	1	14	21.07	21.02	21.14		
3	64QAM	8	0	20.21	20.19	20.10	22	3
3	64QAM	8	4	20.28	20.15	20.11		
3	64QAM	8	7	20.03	20.20	20.13		
3	64QAM	15	0	20.11	20.23	20.16		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.04	23.17	23.05	25	0
1.4	QPSK	1	3	23.03	23.12	23.09		
1.4	QPSK	1	5	23.10	23.19	23.01		
1.4	QPSK	3	0	23.14	23.18	23.13		
1.4	QPSK	3	1	23.05	23.09	23.04		
1.4	QPSK	3	3	23.05	23.10	23.14		
1.4	QPSK	6	0	22.27	22.29	22.25	24	1
1.4	16QAM	1	0	22.06	22.05	22.00	24	1
1.4	16QAM	1	3	22.09	22.23	22.10		
1.4	16QAM	1	5	22.19	22.22	22.09		
1.4	16QAM	3	0	22.15	22.18	22.05		
1.4	16QAM	3	1	22.04	22.20	22.00		
1.4	16QAM	3	3	22.18	22.14	22.12		
1.4	16QAM	6	0	21.20	21.24	21.25	23	2
1.4	64QAM	1	0	21.20	21.09	21.15	23	2
1.4	64QAM	1	3	21.06	21.07	21.02		
1.4	64QAM	1	5	21.18	21.21	21.06		
1.4	64QAM	3	0	21.18	21.19	21.10		
1.4	64QAM	3	1	21.05	21.22	21.03		
1.4	64QAM	3	3	21.06	21.11	21.06		
1.4	64QAM	6	0	20.16	20.25	20.01	22	3

Band 7								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	22.74	22.90	22.75	24	0
20	QPSK	1	49	22.69	22.81	22.71		
20	QPSK	1	99	22.78	22.77	22.81		
20	QPSK	50	0	21.91	22.08	21.81	23	1
20	QPSK	50	24	22.03	21.88	21.87		
20	QPSK	50	50	21.88	21.88	21.81		
20	QPSK	100	0	21.95	22.00	21.84		
20	16QAM	1	0	21.83	21.84	21.64	23	1
20	16QAM	1	49	21.87	21.96	21.88		
20	16QAM	1	99	21.75	21.68	21.82		
20	16QAM	50	0	20.92	20.97	20.91	22	2
20	16QAM	50	24	20.87	20.77	20.87		
20	16QAM	50	50	20.99	20.81	20.80		
20	16QAM	100	0	20.75	20.70	20.72		
20	64QAM	1	0	20.77	21.03	20.80	22	2
20	64QAM	1	49	20.74	20.85	20.67		
20	64QAM	1	99	20.73	20.72	20.86		
20	64QAM	50	0	19.78	19.88	19.82	21	3
20	64QAM	50	24	20.02	19.72	19.83		
20	64QAM	50	50	19.82	19.89	19.66		
20	64QAM	100	0	19.80	19.77	19.53		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.67	22.87	22.65	24	0
15	QPSK	1	37	22.55	22.65	22.68		
15	QPSK	1	74	22.61	22.62	22.77		
15	QPSK	36	0	21.78	21.95	21.64	23	1
15	QPSK	36	20	21.99	21.79	21.78		
15	QPSK	36	39	21.81	21.72	21.75		
15	QPSK	75	0	21.92	21.93	21.80		
15	16QAM	1	0	21.66	21.70	21.58	23	1
15	16QAM	1	37	21.75	21.90	21.80		
15	16QAM	1	74	21.67	21.55	21.74		
15	16QAM	36	0	20.89	20.87	20.80	22	2
15	16QAM	36	20	20.81	20.68	20.85		
15	16QAM	36	39	20.96	20.63	20.72		
15	16QAM	75	0	20.63	20.67	20.56		
15	64QAM	1	0	20.64	20.97	20.65	22	2
15	64QAM	1	37	20.59	20.67	20.63		
15	64QAM	1	74	20.69	20.62	20.73		
15	64QAM	36	0	19.64	19.83	19.77	21	3
15	64QAM	36	20	19.89	19.64	19.81		
15	64QAM	36	39	19.74	19.87	19.59		
15	64QAM	75	0	19.76	19.73	19.41		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.67	22.72	22.64	24	0
10	QPSK	1	25	22.66	22.72	22.67		
10	QPSK	1	49	22.71	22.74	22.77		
10	QPSK	25	0	21.88	22.03	21.71	23	1
10	QPSK	25	12	21.86	21.71	21.77		

10	QPSK	25	25	21.72	21.78	21.68		
10	QPSK	50	0	21.93	21.90	21.82		
10	16QAM	1	0	21.69	21.69	21.49	23	1
10	16QAM	1	25	21.74	21.88	21.84		
10	16QAM	1	49	21.57	21.59	21.74		
10	16QAM	25	0	20.77	20.83	20.89	22	2
10	16QAM	25	12	20.79	20.74	20.69		
10	16QAM	25	25	20.93	20.74	20.64		
10	16QAM	50	0	20.73	20.63	20.55		
10	64QAM	1	0	20.65	20.91	20.69	22	2
10	64QAM	1	25	20.68	20.77	20.54		
10	64QAM	1	49	20.67	20.58	20.70		
10	64QAM	25	0	19.68	19.74	19.64	21	3
10	64QAM	25	12	19.92	19.55	19.72		
10	64QAM	25	25	19.66	19.72	19.61		
10	64QAM	50	0	19.72	19.62	19.48		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.57	22.79	22.63	24	0
5	QPSK	1	12	22.59	22.68	22.67		
5	QPSK	1	24	22.64	22.66	22.76		
5	QPSK	12	0	21.80	21.94	21.68	23	1
5	QPSK	12	7	21.88	21.85	21.78		
5	QPSK	12	13	21.82	21.73	21.74		
5	QPSK	25	0	21.90	21.95	21.77		
5	16QAM	1	0	21.69	21.76	21.49	23	1
5	16QAM	1	12	21.83	21.84	21.73		
5	16QAM	1	24	21.62	21.52	21.76		
5	16QAM	12	0	20.74	20.93	20.80	22	2
5	16QAM	12	7	20.77	20.64	20.84		
5	16QAM	12	13	20.85	20.65	20.72		
5	16QAM	25	0	20.65	20.59	20.55		
5	64QAM	1	0	20.69	20.91	20.73	22	2
5	64QAM	1	12	20.58	20.72	20.49		
5	64QAM	1	24	20.67	20.70	20.84		
5	64QAM	12	0	19.74	19.70	19.67	21	3
5	64QAM	12	7	19.93	19.55	19.77		
5	64QAM	12	13	19.71	19.85	19.55		
5	64QAM	25	0	19.68	19.70	19.43		

Band 17								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.48	23.64	23.48	25	0
10	QPSK	1	25	23.37	23.51	23.34		
10	QPSK	1	49	23.43	23.51	23.41		
10	QPSK	25	0	22.58	22.75	22.52	24	1
10	QPSK	25	12	22.68	22.56	22.59		
10	QPSK	25	25	22.63	22.66	22.51		
10	QPSK	50	0	22.69	22.73	22.52		
10	16QAM	1	0	22.59	22.51	22.47	24	1
10	16QAM	1	25	22.57	22.60	22.63		
10	16QAM	1	49	22.53	22.39	22.57		
10	16QAM	25	0	21.57	21.64	21.55	23	2
10	16QAM	25	12	21.58	21.52	21.52		
10	16QAM	25	25	21.65	21.58	21.53		
10	16QAM	50	0	21.46	21.47	21.45		
10	64QAM	1	0	21.55	21.71	21.53	23	2
10	64QAM	1	25	21.44	21.59	21.41		
10	64QAM	1	49	21.48	21.40	21.54		
10	64QAM	25	0	20.51	20.57	20.56	22	3
10	64QAM	25	12	20.67	20.54	20.56		
10	64QAM	25	25	20.50	20.55	20.36		
10	64QAM	50	0	20.41	20.48	20.33		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	23.45	23.58	23.42	25	0
5	QPSK	1	12	23.27	23.44	23.16		
5	QPSK	1	24	23.32	23.34	23.26		
5	QPSK	12	0	22.41	22.58	22.48	24	1
5	QPSK	12	7	22.63	22.44	22.50		
5	QPSK	12	13	22.46	22.50	22.39		
5	QPSK	25	0	22.60	22.60	22.44		
5	16QAM	1	0	22.49	22.33	22.45	24	1
5	16QAM	1	12	22.42	22.46	22.49		
5	16QAM	1	24	22.47	22.27	22.43		
5	16QAM	12	0	21.43	21.54	21.51	23	2
5	16QAM	12	7	21.50	21.38	21.50		
5	16QAM	12	13	21.61	21.49	21.49		
5	16QAM	25	0	21.36	21.38	21.36		
5	64QAM	1	0	21.49	21.65	21.51	23	2
5	64QAM	1	12	21.32	21.53	21.31		
5	64QAM	1	24	21.30	21.28	21.47		
5	64QAM	12	0	20.43	20.44	20.47	22	3
5	64QAM	12	7	20.49	20.48	20.40		
5	64QAM	12	13	20.37	20.40	20.31		
5	64QAM	25	0	20.32	20.39	20.25		

Band 66								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	23.61	23.66	23.61	25	0
20	QPSK	1	49	23.56	23.65	23.49		
20	QPSK	1	99	23.60	23.62	23.51		
20	QPSK	50	0	22.69	22.84	22.63	24	1
20	QPSK	50	24	22.72	22.65	22.77		
20	QPSK	50	50	22.60	22.77	22.70		
20	QPSK	100	0	22.73	22.80	22.56		
20	16QAM	1	0	22.64	22.64	22.58	24	1
20	16QAM	1	49	22.70	22.69	22.63		
20	16QAM	1	99	22.51	22.62	22.61		
20	16QAM	50	0	21.74	21.75	21.62	23	2
20	16QAM	50	24	21.62	21.68	21.64		
20	16QAM	50	50	21.71	21.71	21.70		
20	16QAM	100	0	21.66	21.58	21.56		
20	64QAM	1	0	21.53	21.82	21.66	23	2
20	64QAM	1	49	21.54	21.72	21.53		
20	64QAM	1	99	21.56	21.51	21.59		
20	64QAM	50	0	20.60	20.66	20.63	22	3
20	64QAM	50	24	20.84	20.66	20.71		
20	64QAM	50	50	20.51	20.61	20.63		
20	64QAM	100	0	20.61	20.69	20.35		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	23.48	23.63	23.50	25	0
15	QPSK	1	37	23.41	23.49	23.41		
15	QPSK	1	74	23.43	23.57	23.49		
15	QPSK	36	0	22.54	22.75	22.47	24	1
15	QPSK	36	20	22.59	22.59	22.69		
15	QPSK	36	39	22.42	22.72	22.58		
15	QPSK	75	0	22.69	22.70	22.50		
15	16QAM	1	0	22.51	22.61	22.51	24	1
15	16QAM	1	37	22.57	22.62	22.53		
15	16QAM	1	74	22.45	22.45	22.50		
15	16QAM	36	0	21.66	21.64	21.55	23	2
15	16QAM	36	20	21.45	21.61	21.60		
15	16QAM	36	39	21.64	21.68	21.61		
15	16QAM	75	0	21.55	21.41	21.39		
15	64QAM	1	0	21.39	21.78	21.58	23	2
15	64QAM	1	37	21.40	21.58	21.42		
15	64QAM	1	74	21.48	21.45	21.52		
15	64QAM	36	0	20.48	20.62	20.50	22	3
15	64QAM	36	20	20.74	20.52	20.54		
15	64QAM	36	39	20.39	20.44	20.50		
15	64QAM	75	0	20.47	20.63	20.30		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	23.58	23.57	23.53	25	0
10	QPSK	1	25	23.54	23.48	23.33		
10	QPSK	1	49	23.56	23.56	23.42		
10	QPSK	25	0	22.57	22.77	22.47	24	1
10	QPSK	25	12	22.63	22.52	22.71		

10	QPSK	25	25	22.47	22.62	22.64		
10	QPSK	50	0	22.64	22.63	22.47		
10	16QAM	1	0	22.50	22.54	22.49		
10	16QAM	1	25	22.59	22.55	22.60	24	1
10	16QAM	1	49	22.44	22.58	22.59		
10	16QAM	25	0	21.65	21.67	21.47		
10	16QAM	25	12	21.56	21.54	21.51	23	2
10	16QAM	25	25	21.61	21.59	21.63		
10	16QAM	50	0	21.52	21.53	21.39		
10	64QAM	1	0	21.40	21.75	21.60		
10	64QAM	1	25	21.49	21.54	21.35	23	2
10	64QAM	1	49	21.44	21.35	21.44		
10	64QAM	25	0	20.49	20.60	20.45		
10	64QAM	25	12	20.75	20.59	20.64	22	3
10	64QAM	25	25	20.43	20.52	20.55		
10	64QAM	50	0	20.44	20.60	20.27		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	23.47	23.59	23.54		
5	QPSK	1	12	23.45	23.49	23.39	25	0
5	QPSK	1	24	23.58	23.44	23.46		
5	QPSK	12	0	22.64	22.80	22.57		
5	QPSK	12	7	22.66	22.63	22.72	24	1
5	QPSK	12	13	22.49	22.69	22.58		
5	QPSK	25	0	22.65	22.77	22.54		
5	16QAM	1	0	22.46	22.62	22.51		
5	16QAM	1	12	22.52	22.62	22.60	24	1
5	16QAM	1	24	22.33	22.45	22.50		
5	16QAM	12	0	21.67	21.60	21.58		
5	16QAM	12	7	21.56	21.56	21.60	23	2
5	16QAM	12	13	21.65	21.53	21.54		
5	16QAM	25	0	21.55	21.46	21.43		
5	64QAM	1	0	21.38	21.78	21.63		
5	64QAM	1	12	21.43	21.69	21.41	23	2
5	64QAM	1	24	21.52	21.43	21.52		
5	64QAM	12	0	20.45	20.57	20.55		
5	64QAM	12	7	20.67	20.56	20.58	22	3
5	64QAM	12	13	20.34	20.52	20.56		
5	64QAM	25	0	20.44	20.52	20.29		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	23.54	23.51	23.57		
3	QPSK	1	8	23.41	23.48	23.35	25	0
3	QPSK	1	14	23.43	23.56	23.46		
3	QPSK	8	0	22.66	22.76	22.47		
3	QPSK	8	4	22.65	22.50	22.68	24	1
3	QPSK	8	7	22.47	22.68	22.57		
3	QPSK	15	0	22.65	22.76	22.40		
3	16QAM	1	0	22.54	22.47	22.51		
3	16QAM	1	8	22.54	22.55	22.46	24	1
3	16QAM	1	14	22.44	22.55	22.52		
3	16QAM	8	0	21.57	21.62	21.52		
3	16QAM	8	4	21.47	21.56	21.59	23	2
3	16QAM	8	7	21.62	21.65	21.68		
3	16QAM	15	0	21.56	21.51	21.50		
3	64QAM	1	0	21.47	21.70	21.48	23	2

3	64QAM	1	8	21.36	21.57	21.36		
3	64QAM	1	14	21.43	21.47	21.52		
3	64QAM	8	0	20.46	20.48	20.51	22	3
3	64QAM	8	4	20.81	20.63	20.62		
3	64QAM	8	7	20.46	20.48	20.60		
3	64QAM	15	0	20.48	20.54	20.21		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	23.49	23.56	23.52	25	0
1.4	QPSK	1	3	23.39	23.53	23.56		
1.4	QPSK	1	5	23.40	23.60	23.45		
1.4	QPSK	3	0	23.34	23.63	23.54		
1.4	QPSK	3	1	23.31	23.57	23.42		
1.4	QPSK	3	3	23.42	23.56	23.50		
1.4	QPSK	6	0	22.72	22.74	22.59	24	1
1.4	16QAM	1	0	22.49	22.41	22.37	24	1
1.4	16QAM	1	3	22.52	22.62	22.54		
1.4	16QAM	1	5	22.46	22.56	22.42		
1.4	16QAM	3	0	22.56	22.55	22.39		
1.4	16QAM	3	1	22.47	22.67	22.48		
1.4	16QAM	3	3	22.62	22.60	22.46		
1.4	16QAM	6	0	21.61	21.62	21.58	23	2
1.4	64QAM	1	0	21.65	21.56	21.60	23	2
1.4	64QAM	1	3	21.48	21.53	21.37		
1.4	64QAM	1	5	21.30	21.59	21.43		
1.4	64QAM	3	0	21.61	21.61	21.30		
1.4	64QAM	3	1	21.32	21.58	21.50		
1.4	64QAM	3	3	21.39	21.57	21.49		
1.4	64QAM	6	0	20.64	20.66	20.37	22	3

Ant2

Band 2 ENDC								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.53	23.66	23.61	25	0
20	QPSK	1	49	23.49	23.51	23.43		
20	QPSK	1	99	23.53	23.56	23.40		
20	QPSK	50	0	22.62	22.71	22.61	24	1
20	QPSK	50	24	22.53	22.65	22.60		
20	QPSK	50	50	22.61	22.63	22.54		
20	QPSK	100	0	22.55	22.68	22.59		
20	16QAM	1	0	22.39	22.57	22.49	24	1
20	16QAM	1	49	22.32	22.48	22.38		
20	16QAM	1	99	22.51	22.59	22.49		
20	16QAM	50	0	21.51	21.64	21.62	23	2
20	16QAM	50	24	21.65	21.71	21.56		
20	16QAM	50	50	21.45	21.61	21.48		
20	16QAM	100	0	21.60	21.70	21.58		
20	64QAM	1	0	21.51	21.56	21.38	23	2
20	64QAM	1	49	21.46	21.50	21.36		
20	64QAM	1	99	21.36	21.53	21.44		
20	64QAM	50	0	20.56	20.70	20.54	22	3
20	64QAM	50	24	20.54	20.67	20.60		
20	64QAM	50	50	20.61	20.63	20.45		
20	64QAM	100	0	20.59	20.69	20.67		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.35	23.59	23.47	25	0
15	QPSK	1	37	23.34	23.39	23.26		
15	QPSK	1	74	23.47	23.43	23.30		
15	QPSK	36	0	22.59	22.65	22.57	24	1
15	QPSK	36	20	22.35	22.49	22.49		
15	QPSK	36	39	22.50	22.52	22.38		
15	QPSK	75	0	22.48	22.60	22.47		
15	16QAM	1	0	22.37	22.45	22.39	24	1
15	16QAM	1	37	22.21	22.33	22.31		
15	16QAM	1	74	22.43	22.46	22.37		
15	16QAM	36	0	21.48	21.57	21.58	23	2
15	16QAM	36	20	21.56	21.66	21.42		
15	16QAM	36	39	21.43	21.44	21.37		
15	16QAM	75	0	21.57	21.56	21.52		
15	64QAM	1	0	21.36	21.47	21.25	23	2
15	64QAM	1	37	21.37	21.43	21.24		
15	64QAM	1	74	21.34	21.47	21.33		
15	64QAM	36	0	20.50	20.65	20.49	22	3
15	64QAM	36	20	20.48	20.51	20.51		
15	64QAM	36	39	20.56	20.54	20.33		
15	64QAM	75	0	20.44	20.61	20.53		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.47	23.49	23.51	25	0
10	QPSK	1	25	23.39	23.39	23.33		
10	QPSK	1	49	23.39	23.46	23.29		
10	QPSK	25	0	22.49	22.54	22.57	24	1

10	QPSK	25	12	22.37	22.53	22.48		
10	QPSK	25	25	22.43	22.55	22.47		
10	QPSK	50	0	22.46	22.56	22.51		
10	16QAM	1	0	22.31	22.42	22.46		
10	16QAM	1	25	22.28	22.45	22.33	24	1
10	16QAM	1	49	22.44	22.49	22.36		
10	16QAM	25	0	21.34	21.59	21.47		
10	16QAM	25	12	21.50	21.68	21.40	23	2
10	16QAM	25	25	21.40	21.46	21.31		
10	16QAM	50	0	21.47	21.67	21.43		
10	64QAM	1	0	21.33	21.40	21.27		
10	64QAM	1	25	21.37	21.41	21.21	23	2
10	64QAM	1	49	21.34	21.43	21.34		
10	64QAM	25	0	20.43	20.61	20.47		
10	64QAM	25	12	20.43	20.64	20.54	22	3
10	64QAM	25	25	20.58	20.49	20.29		
10	64QAM	50	0	20.42	20.58	20.55		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.41	23.52	23.52		
5	QPSK	1	12	23.47	23.35	23.36	25	0
5	QPSK	1	24	23.40	23.44	23.37		
5	QPSK	12	0	22.56	22.55	22.54		
5	QPSK	12	7	22.51	22.50	22.53	24	1
5	QPSK	12	13	22.52	22.57	22.43		
5	QPSK	25	0	22.43	22.64	22.48		
5	16QAM	1	0	22.33	22.54	22.32		
5	16QAM	1	12	22.26	22.37	22.35	24	1
5	16QAM	1	24	22.48	22.49	22.34		
5	16QAM	12	0	21.43	21.46	21.51		
5	16QAM	12	7	21.53	21.58	21.38	23	2
5	16QAM	12	13	21.40	21.50	21.31		
5	16QAM	25	0	21.45	21.59	21.41		
5	64QAM	1	0	21.37	21.54	21.32		
5	64QAM	1	12	21.44	21.47	21.25	23	2
5	64QAM	1	24	21.23	21.44	21.27		
5	64QAM	12	0	20.40	20.65	20.41		
5	64QAM	12	7	20.37	20.57	20.46	22	3
5	64QAM	12	13	20.53	20.56	20.42		
5	64QAM	25	0	20.45	20.63	20.57		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.36	23.57	23.46		
3	QPSK	1	8	23.46	23.33	23.39	25	0
3	QPSK	1	14	23.47	23.44	23.23		
3	QPSK	8	0	22.48	22.56	22.49		
3	QPSK	8	4	22.48	22.62	22.51	24	1
3	QPSK	8	7	22.57	22.50	22.37		
3	QPSK	15	0	22.39	22.64	22.51		
3	16QAM	1	0	22.35	22.42	22.36		
3	16QAM	1	8	22.20	22.41	22.32	24	1
3	16QAM	1	14	22.42	22.45	22.44		
3	16QAM	8	0	21.47	21.47	21.59		
3	16QAM	8	4	21.60	21.60	21.47	23	2
3	16QAM	8	7	21.35	21.46	21.39		
3	16QAM	15	0	21.55	21.55	21.48		

3	64QAM	1	0	21.48	21.40	21.22	23	2
3	64QAM	1	8	21.30	21.34	21.26		
3	64QAM	1	14	21.22	21.35	21.31		
3	64QAM	8	0	20.40	20.53	20.44	22	3
3	64QAM	8	4	20.42	20.64	20.54		
3	64QAM	8	7	20.58	20.55	20.28		
3	64QAM	15	0	20.41	20.57	20.64		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.37	23.62	23.58	25	0
1.4	QPSK	1	3	23.40	23.54	23.32		
1.4	QPSK	1	5	23.36	23.45	23.38		
1.4	QPSK	3	0	23.39	23.59	23.54		
1.4	QPSK	3	1	23.33	23.39	23.38		
1.4	QPSK	3	3	23.41	23.47	23.34		
1.4	QPSK	6	0	22.51	22.67	22.48	24	1
1.4	16QAM	1	0	22.37	22.55	22.52	24	1
1.4	16QAM	1	3	22.48	22.58	22.48		
1.4	16QAM	1	5	22.50	22.51	22.48		
1.4	16QAM	3	0	22.21	22.47	22.34		
1.4	16QAM	3	1	22.20	22.38	22.27		
1.4	16QAM	3	3	22.41	22.54	22.34		
1.4	16QAM	6	0	21.47	21.60	21.55	23	2
1.4	64QAM	1	0	21.57	21.63	21.47	23	2
1.4	64QAM	1	3	21.38	21.43	21.45		
1.4	64QAM	1	5	21.58	21.60	21.40		
1.4	64QAM	3	0	21.38	21.51	21.35		
1.4	64QAM	3	1	21.35	21.48	21.19		
1.4	64QAM	3	3	21.30	21.37	21.34		
1.4	64QAM	6	0	20.52	20.58	20.33	22	3

Band 5								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	24.25	24.30	24.12	25	0
10	QPSK	1	25	24.00	24.04	24.04		
10	QPSK	1	49	23.89	24.05	23.94		
10	QPSK	25	0	23.25	23.45	23.34	24	1
10	QPSK	25	12	23.24	23.29	23.21		
10	QPSK	25	25	23.31	23.35	23.15		
10	QPSK	50	0	23.35	23.43	23.30		
10	16QAM	1	0	23.35	23.30	23.26	24	1
10	16QAM	1	25	23.40	23.44	23.34		
10	16QAM	1	49	23.39	23.35	23.37		
10	16QAM	25	0	22.15	22.33	22.23	23	2
10	16QAM	25	12	22.31	22.30	22.31		
10	16QAM	25	25	22.22	22.33	22.25		
10	16QAM	50	0	22.22	22.40	22.43		
10	64QAM	1	0	22.12	22.28	22.04	23	2
10	64QAM	1	25	22.06	22.07	21.98		
10	64QAM	1	49	22.00	22.20	22.07		
10	64QAM	25	0	21.11	21.25	21.12	22	3
10	64QAM	25	12	21.29	21.34	21.23		
10	64QAM	25	25	21.38	21.37	21.25		
10	64QAM	50	0	21.24	21.38	21.24		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	24.20	24.27	24.10	25	0
5	QPSK	1	12	24.01	24.11	24.07		
5	QPSK	1	24	23.94	24.02	23.90		
5	QPSK	12	0	23.25	23.46	23.31	24	1
5	QPSK	12	7	23.21	23.33	23.15		
5	QPSK	12	13	23.23	23.44	23.17		
5	QPSK	25	0	23.33	23.43	23.33		
5	16QAM	1	0	23.38	23.31	23.27	24	1
5	16QAM	1	12	23.34	23.46	23.38		
5	16QAM	1	24	23.42	23.33	23.35		
5	16QAM	12	0	22.14	22.30	22.24	23	2
5	16QAM	12	7	22.29	22.29	22.32		
5	16QAM	12	13	22.28	22.29	22.25		
5	16QAM	25	0	22.20	22.34	22.41		
5	64QAM	1	0	22.13	22.30	22.02	23	2
5	64QAM	1	12	22.05	22.01	21.98		
5	64QAM	1	24	21.94	22.18	22.06		
5	64QAM	12	0	21.15	21.24	21.16	22	3
5	64QAM	12	7	21.32	21.35	21.24		
5	64QAM	12	13	21.41	21.36	21.26		
5	64QAM	25	0	21.29	21.42	21.27		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	24.24	24.26	24.10	25	0
3	QPSK	1	8	23.99	24.09	24.01		
3	QPSK	1	14	23.92	24.05	23.94		

3	QPSK	8	0	23.23	23.40	23.34	24	1
3	QPSK	8	4	23.19	23.35	23.20		
3	QPSK	8	7	23.23	23.43	23.16		
3	QPSK	15	0	23.40	23.45	23.32		
3	16QAM	1	0	23.34	23.33	23.22	24	1
3	16QAM	1	8	23.38	23.45	23.40		
3	16QAM	1	14	23.37	23.33	23.39		
3	16QAM	8	0	22.20	22.30	22.21	23	2
3	16QAM	8	4	22.24	22.31	22.32		
3	16QAM	8	7	22.25	22.29	22.19		
3	16QAM	15	0	22.19	22.39	22.39		
3	64QAM	1	0	22.11	22.28	21.99	23	2
3	64QAM	1	8	22.03	22.03	22.02		
3	64QAM	1	14	21.98	22.18	22.09		
3	64QAM	8	0	21.13	21.27	21.14	22	3
3	64QAM	8	4	21.34	21.39	21.17		
3	64QAM	8	7	21.39	21.38	21.25		
3	64QAM	15	0	21.23	21.44	21.23		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	24.19	24.23	24.15	25	0
1.4	QPSK	1	3	24.05	24.05	24.04		
1.4	QPSK	1	5	23.89	24.02	23.92		
1.4	QPSK	3	0	23.19	23.46	23.38		
1.4	QPSK	3	1	23.23	23.35	23.20		
1.4	QPSK	3	3	23.25	23.43	23.12		
1.4	QPSK	6	0	23.32	23.48	23.26	24	1
1.4	16QAM	1	0	23.38	23.32	23.23	24	1
1.4	16QAM	1	3	23.39	23.43	23.36		
1.4	16QAM	1	5	23.37	23.35	23.35		
1.4	16QAM	3	0	22.19	22.34	22.24		
1.4	16QAM	3	1	22.30	22.25	22.36		
1.4	16QAM	3	3	22.28	22.32	22.25		
1.4	16QAM	6	0	22.19	22.35	22.41	23	2
1.4	64QAM	1	0	22.09	22.32	21.98	23	2
1.4	64QAM	1	3	22.02	22.04	21.99		
1.4	64QAM	1	5	21.96	22.15	22.08		
1.4	64QAM	3	0	21.11	21.21	21.15		
1.4	64QAM	3	1	21.28	21.35	21.23		
1.4	64QAM	3	3	21.36	21.37	21.31		
1.4	64QAM	6	0	21.26	21.40	21.27	22	3

Band 7 ENDC								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	22.47	22.54	22.53	24	0
20	QPSK	1	49	22.39	22.42	22.38		
20	QPSK	1	99	22.42	22.52	22.32		
20	QPSK	50	0	21.48	21.59	21.44	23	1
20	QPSK	50	24	21.44	21.58	21.50		
20	QPSK	50	50	21.49	21.55	21.38		
20	QPSK	100	0	21.51	21.52	21.51		
20	16QAM	1	0	21.28	21.45	21.39	23	1
20	16QAM	1	49	21.28	21.43	21.27		
20	16QAM	1	99	21.34	21.44	21.37		
20	16QAM	50	0	20.42	20.54	20.57	22	2
20	16QAM	50	24	20.57	20.53	20.50		
20	16QAM	50	50	20.27	20.45	20.32		
20	16QAM	100	0	20.52	20.53	20.41		
20	64QAM	1	0	20.46	20.48	20.28	22	2
20	64QAM	1	49	20.35	20.42	20.34		
20	64QAM	1	99	20.29	20.39	20.35		
20	64QAM	50	0	19.44	19.56	19.50	21	3
20	64QAM	50	24	19.37	19.53	19.46		
20	64QAM	50	50	19.54	19.55	19.30		
20	64QAM	100	0	19.53	19.53	19.49		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.42	22.48	22.50	24	0
15	QPSK	1	37	22.25	22.27	22.29		
15	QPSK	1	74	22.25	22.42	22.15		
15	QPSK	36	0	21.34	21.42	21.31	23	1
15	QPSK	36	20	21.40	21.55	21.46		
15	QPSK	36	39	21.43	21.45	21.21		
15	QPSK	75	0	21.41	21.36	21.36		
15	16QAM	1	0	21.22	21.42	21.32	23	1
15	16QAM	1	37	21.24	21.36	21.22		
15	16QAM	1	74	21.23	21.34	21.25		
15	16QAM	36	0	20.36	20.41	20.41	22	2
15	16QAM	36	20	20.52	20.49	20.43		
15	16QAM	36	39	20.25	20.30	20.16		
15	16QAM	75	0	20.37	20.42	20.31		
15	64QAM	1	0	20.41	20.34	20.14	22	2
15	64QAM	1	37	20.29	20.32	20.21		
15	64QAM	1	74	20.12	20.26	20.26		
15	64QAM	36	0	19.34	19.45	19.37	21	3
15	64QAM	36	20	19.26	19.39	19.38		
15	64QAM	36	39	19.37	19.42	19.15		
15	64QAM	75	0	19.49	19.43	19.32		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.45	22.41	22.51	24	0
10	QPSK	1	25	22.24	22.36	22.26		
10	QPSK	1	49	22.30	22.39	22.18		
10	QPSK	25	0	21.44	21.50	21.36	23	1
10	QPSK	25	12	21.28	21.44	21.41		

10	QPSK	25	25	21.34	21.50	21.27		
10	QPSK	50	0	21.40	21.41	21.34		
10	16QAM	1	0	21.21	21.41	21.26	23	1
10	16QAM	1	25	21.21	21.39	21.10		
10	16QAM	1	49	21.17	21.33	21.30		
10	16QAM	25	0	20.30	20.49	20.42	22	2
10	16QAM	25	12	20.53	20.36	20.41		
10	16QAM	25	25	20.24	20.28	20.19		
10	16QAM	50	0	20.42	20.36	20.30		
10	64QAM	1	0	20.43	20.31	20.13	22	2
10	64QAM	1	25	20.20	20.38	20.16		
10	64QAM	1	49	20.23	20.28	20.22		
10	64QAM	25	0	19.36	19.43	19.35	21	3
10	64QAM	25	12	19.28	19.49	19.37		
10	64QAM	25	25	19.43	19.47	19.13		
10	64QAM	50	0	19.41	19.41	19.31		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.43	22.50	22.47	24	0
5	QPSK	1	12	22.31	22.30	22.26		
5	QPSK	1	24	22.35	22.40	22.16		
5	QPSK	12	0	21.35	21.55	21.33	23	1
5	QPSK	12	7	21.26	21.50	21.47		
5	QPSK	12	13	21.36	21.52	21.22		
5	QPSK	25	0	21.43	21.35	21.44		
5	16QAM	1	0	21.16	21.35	21.35	23	1
5	16QAM	1	12	21.15	21.33	21.18		
5	16QAM	1	24	21.23	21.26	21.35		
5	16QAM	12	0	20.39	20.48	20.46	22	2
5	16QAM	12	7	20.47	20.46	20.46		
5	16QAM	12	13	20.18	20.37	20.21		
5	16QAM	25	0	20.49	20.35	20.23		
5	64QAM	1	0	20.35	20.40	20.26	22	2
5	64QAM	1	12	20.18	20.40	20.26		
5	64QAM	1	24	20.21	20.33	20.33		
5	64QAM	12	0	19.39	19.43	19.33	21	3
5	64QAM	12	7	19.34	19.37	19.30		
5	64QAM	12	13	19.45	19.40	19.25		
5	64QAM	25	0	19.42	19.38	19.43		

Reduced Power Mode for DSI 0

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Band 2								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.75	23.83	23.69	25	0
20	QPSK	1	49	23.65	23.72	23.63		
20	QPSK	1	99	23.66	23.75	23.70		
20	QPSK	50	0	22.78	22.86	22.73	24	1
20	QPSK	50	24	22.67	22.75	22.55		
20	QPSK	50	50	22.65	22.78	22.75		
20	QPSK	100	0	22.61	22.82	22.66		
20	16QAM	1	0	22.73	22.77	22.65	24	1
20	16QAM	1	49	22.69	22.76	22.69		
20	16QAM	1	99	22.68	22.70	22.73		
20	16QAM	50	0	21.79	21.85	21.77	23	2
20	16QAM	50	24	21.78	21.69	21.71		
20	16QAM	50	50	21.69	21.74	21.70		
20	16QAM	100	0	21.68	21.69	21.60		
20	64QAM	1	0	21.75	21.89	21.73	23	2
20	64QAM	1	49	21.68	21.72	21.63		
20	64QAM	1	99	21.65	21.69	21.75		
20	64QAM	50	0	20.70	20.88	20.73	22	3
20	64QAM	50	24	20.79	20.65	20.67		
20	64QAM	50	50	20.70	20.74	20.66		
20	64QAM	100	0	20.65	20.72	20.53		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.68	23.79	23.59	25	0
15	QPSK	1	37	23.63	23.60	23.58		
15	QPSK	1	74	23.51	23.66	23.64		
15	QPSK	36	0	22.72	22.70	22.63	24	1
15	QPSK	36	20	22.62	22.65	22.52		
15	QPSK	36	39	22.58	22.73	22.61		
15	QPSK	75	0	22.47	22.65	22.56		
15	16QAM	1	0	22.62	22.72	22.53	24	1
15	16QAM	1	37	22.53	22.66	22.60		
15	16QAM	1	74	22.65	22.56	22.69		
15	16QAM	36	0	21.71	21.80	21.74	23	2
15	16QAM	36	20	21.64	21.52	21.66		
15	16QAM	36	39	21.51	21.72	21.57		
15	16QAM	75	0	21.54	21.63	21.51		
15	64QAM	1	0	21.61	21.76	21.66	23	2
15	64QAM	1	37	21.62	21.61	21.57		
15	64QAM	1	74	21.58	21.55	21.64		
15	64QAM	36	0	20.60	20.82	20.60	22	3
15	64QAM	36	20	20.67	20.56	20.52		
15	64QAM	36	39	20.58	20.58	20.64		
15	64QAM	75	0	20.49	20.55	20.49		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.61	23.77	23.59	25	0

10	QPSK	1	25	23.52	23.59	23.51		
10	QPSK	1	49	23.64	23.62	23.63		
10	QPSK	25	0	22.72	22.70	22.56	24	1
10	QPSK	25	12	22.50	22.63	22.44		
10	QPSK	25	25	22.60	22.66	22.62		
10	QPSK	50	0	22.53	22.67	22.61		
10	16QAM	1	0	22.59	22.73	22.59	24	1
10	16QAM	1	25	22.67	22.64	22.53		
10	16QAM	1	49	22.51	22.58	22.71		
10	16QAM	25	0	21.67	21.77	21.59	23	2
10	16QAM	25	12	21.73	21.61	21.66		
10	16QAM	25	25	21.51	21.58	21.58		
10	16QAM	50	0	21.62	21.60	21.49		
10	64QAM	1	0	21.65	21.83	21.65	23	2
10	64QAM	1	25	21.61	21.54	21.46		
10	64QAM	1	49	21.56	21.59	21.65		
10	64QAM	25	0	20.63	20.82	20.56	22	3
10	64QAM	25	12	20.65	20.53	20.64		
10	64QAM	25	25	20.65	20.67	20.59		
10	64QAM	50	0	20.48	20.63	20.44		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.71	23.65	23.59	25	0
5	QPSK	1	12	23.49	23.55	23.48		
5	QPSK	1	24	23.51	23.67	23.52		
5	QPSK	12	0	22.62	22.72	22.67	24	1
5	QPSK	12	7	22.59	22.59	22.53		
5	QPSK	12	13	22.50	22.75	22.73		
5	QPSK	25	0	22.59	22.68	22.53		
5	16QAM	1	0	22.56	22.66	22.56	24	1
5	16QAM	1	12	22.65	22.68	22.51		
5	16QAM	1	24	22.56	22.62	22.62		
5	16QAM	12	0	21.75	21.80	21.74	23	2
5	16QAM	12	7	21.74	21.58	21.58		
5	16QAM	12	13	21.62	21.71	21.63		
5	16QAM	25	0	21.63	21.65	21.58		
5	64QAM	1	0	21.66	21.72	21.68	23	2
5	64QAM	1	12	21.65	21.61	21.56		
5	64QAM	1	24	21.48	21.64	21.64		
5	64QAM	12	0	20.66	20.76	20.67	22	3
5	64QAM	12	7	20.63	20.57	20.61		
5	64QAM	12	13	20.67	20.57	20.56		
5	64QAM	25	0	20.54	20.66	20.37		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.68	23.69	23.53	25	0
3	QPSK	1	8	23.57	23.60	23.50		
3	QPSK	1	14	23.52	23.63	23.55		
3	QPSK	8	0	22.61	22.69	22.66	24	1
3	QPSK	8	4	22.62	22.64	22.49		
3	QPSK	8	7	22.56	22.67	22.70		
3	QPSK	15	0	22.52	22.74	22.53		
3	16QAM	1	0	22.65	22.61	22.52	24	1
3	16QAM	1	8	22.60	22.68	22.52		
3	16QAM	1	14	22.59	22.67	22.62		
3	16QAM	8	0	21.62	21.82	21.60	23	2

3	16QAM	8	4	21.69	21.60	21.69		
3	16QAM	8	7	21.52	21.62	21.57		
3	16QAM	15	0	21.54	21.65	21.48		
3	64QAM	1	0	21.67	21.74	21.65	23	2
3	64QAM	1	8	21.56	21.57	21.59		
3	64QAM	1	14	21.52	21.59	21.70		
3	64QAM	8	0	20.53	20.71	20.65	22	3
3	64QAM	8	4	20.68	20.47	20.63		
3	64QAM	8	7	20.54	20.58	20.51		
3	64QAM	15	0	20.58	20.70	20.39		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.60	23.72	23.52	25	0
1.4	QPSK	1	3	23.54	23.61	23.58		
1.4	QPSK	1	5	23.48	23.61	23.58		
1.4	QPSK	3	0	23.57	23.66	23.66		
1.4	QPSK	3	1	23.54	23.61	23.51		
1.4	QPSK	3	3	23.51	23.70	23.61		
1.4	QPSK	6	0	22.75	22.74	22.69	24	1
1.4	16QAM	1	0	22.64	22.62	22.49	24	1
1.4	16QAM	1	3	22.50	22.67	22.65		
1.4	16QAM	1	5	22.57	22.71	22.49		
1.4	16QAM	3	0	22.63	22.61	22.60		
1.4	16QAM	3	1	22.59	22.61	22.59		
1.4	16QAM	3	3	22.58	22.62	22.57		
1.4	16QAM	6	0	21.69	21.76	21.66	23	2
1.4	64QAM	1	0	21.68	21.55	21.55	23	2
1.4	64QAM	1	3	21.59	21.64	21.65		
1.4	64QAM	1	5	21.50	21.61	21.56		
1.4	64QAM	3	0	21.62	21.79	21.58		
1.4	64QAM	3	1	21.57	21.69	21.58		
1.4	64QAM	3	3	21.57	21.56	21.63		
1.4	64QAM	6	0	20.65	20.83	20.60	22	3

Band 4								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	23.54	23.64	23.48	25	0
20	QPSK	1	49	23.33	23.48	23.36		
20	QPSK	1	99	23.42	23.49	23.50		
20	QPSK	50	0	22.53	22.58	22.47	24	1
20	QPSK	50	24	22.47	22.50	22.24		
20	QPSK	50	50	22.35	22.47	22.56		
20	QPSK	100	0	22.40	22.53	22.46		
20	16QAM	1	0	22.46	22.52	22.47	24	1
20	16QAM	1	49	22.41	22.46	22.39		
20	16QAM	1	99	22.42	22.41	22.50		
20	16QAM	50	0	21.51	21.64	21.56	23	2
20	16QAM	50	24	21.51	21.47	21.39		
20	16QAM	50	50	21.44	21.44	21.51		
20	16QAM	100	0	21.50	21.51	21.35		
20	64QAM	1	0	21.47	21.62	21.50	23	2
20	64QAM	1	49	21.43	21.44	21.39		
20	64QAM	1	99	21.36	21.50	21.46		
20	64QAM	50	0	20.51	20.70	20.47	22	3
20	64QAM	50	24	20.56	20.40	20.35		
20	64QAM	50	50	20.44	20.53	20.39		
20	64QAM	100	0	20.45	20.50	20.32		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	23.46	23.50	23.44	25	0
15	QPSK	1	37	23.24	23.35	23.32		
15	QPSK	1	74	23.26	23.35	23.43		
15	QPSK	36	0	22.46	22.40	22.44	24	1
15	QPSK	36	20	22.34	22.46	22.08		
15	QPSK	36	39	22.19	22.36	22.41		
15	QPSK	75	0	22.22	22.47	22.28		
15	16QAM	1	0	22.31	22.44	22.35	24	1
15	16QAM	1	37	22.37	22.32	22.27		
15	16QAM	1	74	22.24	22.23	22.39		
15	16QAM	36	0	21.42	21.51	21.48	23	2
15	16QAM	36	20	21.42	21.34	21.26		
15	16QAM	36	39	21.37	21.27	21.36		
15	16QAM	75	0	21.37	21.41	21.22		
15	64QAM	1	0	21.37	21.51	21.39	23	2
15	64QAM	1	37	21.40	21.26	21.21		
15	64QAM	1	74	21.19	21.35	21.38		
15	64QAM	36	0	20.43	20.67	20.37	22	3
15	64QAM	36	20	20.38	20.35	20.23		
15	64QAM	36	39	20.32	20.41	20.21		
15	64QAM	75	0	20.33	20.47	20.15		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	23.51	23.54	23.36	25	0
10	QPSK	1	25	23.29	23.45	23.31		
10	QPSK	1	49	23.27	23.45	23.34		
10	QPSK	25	0	22.47	22.46	22.30	24	1
10	QPSK	25	12	22.44	22.41	22.15		

10	QPSK	25	25	22.27	22.33	22.45		
10	QPSK	50	0	22.27	22.37	22.29		
10	16QAM	1	0	22.29	22.41	22.36	24	1
10	16QAM	1	25	22.29	22.34	22.22		
10	16QAM	1	49	22.25	22.23	22.39		
10	16QAM	25	0	21.37	21.56	21.54	23	2
10	16QAM	25	12	21.42	21.33	21.37		
10	16QAM	25	25	21.41	21.27	21.49		
10	16QAM	50	0	21.40	21.44	21.31		
10	64QAM	1	0	21.34	21.46	21.33	23	2
10	64QAM	1	25	21.32	21.39	21.25		
10	64QAM	1	49	21.21	21.40	21.34		
10	64QAM	25	0	20.39	20.58	20.39	22	3
10	64QAM	25	12	20.40	20.35	20.24		
10	64QAM	25	25	20.29	20.37	20.26		
10	64QAM	50	0	20.29	20.42	20.20		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	23.42	23.56	23.46	25	0
5	QPSK	1	12	23.29	23.38	23.27		
5	QPSK	1	24	23.39	23.44	23.38		
5	QPSK	12	0	22.36	22.54	22.37	24	1
5	QPSK	12	7	22.44	22.37	22.19		
5	QPSK	12	13	22.25	22.32	22.46		
5	QPSK	25	0	22.31	22.37	22.35		
5	16QAM	1	0	22.36	22.49	22.32	24	1
5	16QAM	1	12	22.36	22.38	22.26		
5	16QAM	1	24	22.32	22.35	22.50		
5	16QAM	12	0	21.40	21.60	21.38	23	2
5	16QAM	12	7	21.43	21.29	21.25		
5	16QAM	12	13	21.35	21.36	21.49		
5	16QAM	25	0	21.42	21.42	21.27		
5	64QAM	1	0	21.41	21.55	21.33	23	2
5	64QAM	1	12	21.38	21.33	21.25		
5	64QAM	1	24	21.27	21.33	21.42		
5	64QAM	12	0	20.46	20.68	20.38	22	3
5	64QAM	12	7	20.39	20.32	20.32		
5	64QAM	12	13	20.28	20.40	20.35		
5	64QAM	25	0	20.32	20.46	20.17		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	23.39	23.47	23.32	25	0
3	QPSK	1	8	23.16	23.44	23.19		
3	QPSK	1	14	23.31	23.40	23.48		
3	QPSK	8	0	22.46	22.53	22.30	24	1
3	QPSK	8	4	22.30	22.35	22.12		
3	QPSK	8	7	22.21	22.34	22.47		
3	QPSK	15	0	22.28	22.35	22.43		
3	16QAM	1	0	22.31	22.49	22.41	24	1
3	16QAM	1	8	22.32	22.39	22.25		
3	16QAM	1	14	22.27	22.32	22.37		
3	16QAM	8	0	21.33	21.56	21.48	23	2
3	16QAM	8	4	21.37	21.35	21.31		
3	16QAM	8	7	21.39	21.30	21.36		
3	16QAM	15	0	21.40	21.48	21.19		
3	64QAM	1	0	21.38	21.59	21.38	23	2

3	64QAM	1	8	21.29	21.39	21.23		
3	64QAM	1	14	21.20	21.39	21.43		
3	64QAM	8	0	20.39	20.60	20.42	22	3
3	64QAM	8	4	20.41	20.36	20.25		
3	64QAM	8	7	20.42	20.42	20.31		
3	64QAM	15	0	20.37	20.38	20.22		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.40	23.50	23.29	25	0
1.4	QPSK	1	3	23.35	23.43	23.31		
1.4	QPSK	1	5	23.29	23.44	23.30		
1.4	QPSK	3	0	23.30	23.48	23.38		
1.4	QPSK	3	1	23.25	23.43	23.25		
1.4	QPSK	3	3	23.29	23.54	23.37		
1.4	QPSK	6	0	22.53	22.54	22.52	24	1
1.4	16QAM	1	0	22.37	22.35	22.31	24	1
1.4	16QAM	1	3	22.33	22.45	22.43		
1.4	16QAM	1	5	22.28	22.55	22.31		
1.4	16QAM	3	0	22.46	22.40	22.31		
1.4	16QAM	3	1	22.39	22.43	22.34		
1.4	16QAM	3	3	22.42	22.48	22.39		
1.4	16QAM	6	0	21.55	21.55	21.48	23	2
1.4	64QAM	1	0	21.44	21.32	21.38	23	2
1.4	64QAM	1	3	21.30	21.39	21.35		
1.4	64QAM	1	5	21.23	21.43	21.33		
1.4	64QAM	3	0	21.46	21.54	21.28		
1.4	64QAM	3	1	21.31	21.50	21.28		
1.4	64QAM	3	3	21.40	21.31	21.36		
1.4	64QAM	6	0	20.42	20.55	20.31	22	3

Band 5								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	23.21	23.27	23.16	25	0
10	QPSK	1	25	23.11	23.22	23.11		
10	QPSK	1	49	23.13	23.17	23.14		
10	QPSK	25	0	22.36	22.43	22.24	24	1
10	QPSK	25	12	22.39	22.21	22.35		
10	QPSK	25	25	22.27	22.35	22.28		
10	QPSK	50	0	22.36	22.39	22.22		
10	16QAM	1	0	22.26	22.25	22.12	24	1
10	16QAM	1	25	22.26	22.31	22.26		
10	16QAM	1	49	22.18	22.15	22.27		
10	16QAM	25	0	21.35	21.40	21.27	23	2
10	16QAM	25	12	21.23	21.21	21.19		
10	16QAM	25	25	21.32	21.23	21.26		
10	16QAM	50	0	21.22	21.18	21.18		
10	64QAM	1	0	21.20	21.39	21.23	23	2
10	64QAM	1	25	21.14	21.26	21.12		
10	64QAM	1	49	21.13	21.14	21.25		
10	64QAM	25	0	20.26	20.33	20.21	22	3
10	64QAM	25	12	20.37	20.19	20.24		
10	64QAM	25	25	20.15	20.25	20.10		
10	64QAM	50	0	20.17	20.20	20.19		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.09	23.15	23.11	25	0
5	QPSK	1	12	23.05	23.07	23.01		
5	QPSK	1	24	23.09	23.10	23.03		
5	QPSK	12	0	22.24	22.39	22.13	24	1
5	QPSK	12	7	22.14	22.14	22.01		
5	QPSK	12	13	22.09	22.20	22.14		
5	QPSK	25	0	22.17	22.28	22.06		
5	16QAM	1	0	22.16	22.19	22.00	24	1
5	16QAM	1	12	22.22	22.22	22.20		
5	16QAM	1	24	22.12	22.07	22.22		
5	16QAM	12	0	21.31	21.36	21.21	23	2
5	16QAM	12	7	21.15	21.06	21.01		
5	16QAM	12	13	21.00	21.17	21.11		
5	16QAM	25	0	21.12	21.13	21.03		
5	64QAM	1	0	21.09	21.27	21.13	23	2
5	64QAM	1	12	21.10	21.17	21.07		
5	64QAM	1	24	21.02	21.07	21.07		
5	64QAM	12	0	20.18	20.27	20.09	22	3
5	64QAM	12	7	20.30	20.06	20.19		
5	64QAM	12	13	20.07	20.11	20.07		
5	64QAM	25	0	20.06	20.15	20.18		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.15	23.23	23.11	25	0
3	QPSK	1	8	23.13	23.18	23.15		
3	QPSK	1	14	23.11	23.06	23.09		
3	QPSK	8	0	22.30	22.30	22.07	24	1

3	QPSK	8	4	22.05	22.10	22.17		
3	QPSK	8	7	22.09	22.23	22.14		
3	QPSK	15	0	22.19	22.27	22.04		
3	16QAM	1	0	22.21	22.20	22.09	24	1
3	16QAM	1	8	22.23	22.17	22.18		
3	16QAM	1	14	22.02	22.02	22.11		
3	16QAM	8	0	21.24	21.37	21.18	23	2
3	16QAM	8	4	21.16	21.15	21.13		
3	16QAM	8	7	21.06	21.10	21.05		
3	16QAM	15	0	21.18	21.01	21.05		
3	64QAM	1	0	21.11	21.36	21.11	23	2
3	64QAM	1	8	21.01	21.18	21.02		
3	64QAM	1	14	21.07	21.02	21.14		
3	64QAM	8	0	20.21	20.19	20.10	22	3
3	64QAM	8	4	20.28	20.15	20.11		
3	64QAM	8	7	20.03	20.20	20.13		
3	64QAM	15	0	20.11	20.23	20.16		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.04	23.17	23.05	25	0
1.4	QPSK	1	3	23.03	23.12	23.09		
1.4	QPSK	1	5	23.10	23.19	23.01		
1.4	QPSK	3	0	23.14	23.18	23.13		
1.4	QPSK	3	1	23.05	23.09	23.04		
1.4	QPSK	3	3	23.05	23.10	23.14		
1.4	QPSK	6	0	22.27	22.29	22.25	24	1
1.4	16QAM	1	0	22.06	22.05	22.00	24	1
1.4	16QAM	1	3	22.09	22.23	22.10		
1.4	16QAM	1	5	22.19	22.22	22.09		
1.4	16QAM	3	0	22.15	22.18	22.05		
1.4	16QAM	3	1	22.04	22.20	22.00		
1.4	16QAM	3	3	22.18	22.14	22.12		
1.4	16QAM	6	0	21.20	21.24	21.25	23	2
1.4	64QAM	1	0	21.20	21.09	21.15	23	2
1.4	64QAM	1	3	21.06	21.07	21.02		
1.4	64QAM	1	5	21.18	21.21	21.06		
1.4	64QAM	3	0	21.18	21.19	21.10		
1.4	64QAM	3	1	21.05	21.22	21.03		
1.4	64QAM	3	3	21.06	21.11	21.06		
1.4	64QAM	6	0	20.16	20.25	20.01	22	3

Band 7								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	22.74	22.90	22.75	24	0
20	QPSK	1	49	22.69	22.81	22.71		
20	QPSK	1	99	22.78	22.77	22.81		
20	QPSK	50	0	21.91	22.08	21.81	23	1
20	QPSK	50	24	22.03	21.88	21.87		
20	QPSK	50	50	21.88	21.88	21.81		
20	QPSK	100	0	21.95	22.00	21.84		
20	16QAM	1	0	21.83	21.84	21.64	23	1
20	16QAM	1	49	21.87	21.96	21.88		
20	16QAM	1	99	21.75	21.68	21.82		
20	16QAM	50	0	20.92	20.97	20.91	22	2
20	16QAM	50	24	20.87	20.77	20.87		
20	16QAM	50	50	20.99	20.81	20.80		
20	16QAM	100	0	20.75	20.70	20.72		
20	64QAM	1	0	20.77	21.03	20.80	22	2
20	64QAM	1	49	20.74	20.85	20.67		
20	64QAM	1	99	20.73	20.72	20.86		
20	64QAM	50	0	19.78	19.88	19.82	21	3
20	64QAM	50	24	20.02	19.72	19.83		
20	64QAM	50	50	19.82	19.89	19.66		
20	64QAM	100	0	19.80	19.77	19.53		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.67	22.87	22.65	24	0
15	QPSK	1	37	22.55	22.65	22.68		
15	QPSK	1	74	22.61	22.62	22.77		
15	QPSK	36	0	21.78	21.95	21.64	23	1
15	QPSK	36	20	21.99	21.79	21.78		
15	QPSK	36	39	21.81	21.72	21.75		
15	QPSK	75	0	21.92	21.93	21.80		
15	16QAM	1	0	21.66	21.70	21.58	23	1
15	16QAM	1	37	21.75	21.90	21.80		
15	16QAM	1	74	21.67	21.55	21.74		
15	16QAM	36	0	20.89	20.87	20.80	22	2
15	16QAM	36	20	20.81	20.68	20.85		
15	16QAM	36	39	20.96	20.63	20.72		
15	16QAM	75	0	20.63	20.67	20.56		
15	64QAM	1	0	20.64	20.97	20.65	22	2
15	64QAM	1	37	20.59	20.67	20.63		
15	64QAM	1	74	20.69	20.62	20.73		
15	64QAM	36	0	19.64	19.83	19.77	21	3
15	64QAM	36	20	19.89	19.64	19.81		
15	64QAM	36	39	19.74	19.87	19.59		
15	64QAM	75	0	19.76	19.73	19.41		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.67	22.72	22.64	24	0
10	QPSK	1	25	22.66	22.72	22.67		
10	QPSK	1	49	22.71	22.74	22.77		
10	QPSK	25	0	21.88	22.03	21.71	23	1
10	QPSK	25	12	21.86	21.71	21.77		

10	QPSK	25	25	21.72	21.78	21.68		
10	QPSK	50	0	21.93	21.90	21.82		
10	16QAM	1	0	21.69	21.69	21.49	23	1
10	16QAM	1	25	21.74	21.88	21.84		
10	16QAM	1	49	21.57	21.59	21.74		
10	16QAM	25	0	20.77	20.83	20.89	22	2
10	16QAM	25	12	20.79	20.74	20.69		
10	16QAM	25	25	20.93	20.74	20.64		
10	16QAM	50	0	20.73	20.63	20.55		
10	64QAM	1	0	20.65	20.91	20.69	22	2
10	64QAM	1	25	20.68	20.77	20.54		
10	64QAM	1	49	20.67	20.58	20.70		
10	64QAM	25	0	19.68	19.74	19.64	21	3
10	64QAM	25	12	19.92	19.55	19.72		
10	64QAM	25	25	19.66	19.72	19.61		
10	64QAM	50	0	19.72	19.62	19.48		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.57	22.79	22.63	24	0
5	QPSK	1	12	22.59	22.68	22.67		
5	QPSK	1	24	22.64	22.66	22.76		
5	QPSK	12	0	21.80	21.94	21.68	23	1
5	QPSK	12	7	21.88	21.85	21.78		
5	QPSK	12	13	21.82	21.73	21.74		
5	QPSK	25	0	21.90	21.95	21.77		
5	16QAM	1	0	21.69	21.76	21.49	23	1
5	16QAM	1	12	21.83	21.84	21.73		
5	16QAM	1	24	21.62	21.52	21.76		
5	16QAM	12	0	20.74	20.93	20.80	22	2
5	16QAM	12	7	20.77	20.64	20.84		
5	16QAM	12	13	20.85	20.65	20.72		
5	16QAM	25	0	20.65	20.59	20.55		
5	64QAM	1	0	20.69	20.91	20.73	22	2
5	64QAM	1	12	20.58	20.72	20.49		
5	64QAM	1	24	20.67	20.70	20.84		
5	64QAM	12	0	19.74	19.70	19.67	21	3
5	64QAM	12	7	19.93	19.55	19.77		
5	64QAM	12	13	19.71	19.85	19.55		
5	64QAM	25	0	19.68	19.70	19.43		

Band 17								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.48	23.64	23.48	25	0
10	QPSK	1	25	23.37	23.51	23.34		
10	QPSK	1	49	23.43	23.51	23.41		
10	QPSK	25	0	22.58	22.75	22.52	24	1
10	QPSK	25	12	22.68	22.56	22.59		
10	QPSK	25	25	22.63	22.66	22.51		
10	QPSK	50	0	22.69	22.73	22.52		
10	16QAM	1	0	22.59	22.51	22.47	24	1
10	16QAM	1	25	22.57	22.60	22.63		
10	16QAM	1	49	22.53	22.39	22.57		
10	16QAM	25	0	21.57	21.64	21.55	23	2
10	16QAM	25	12	21.58	21.52	21.52		
10	16QAM	25	25	21.65	21.58	21.53		
10	16QAM	50	0	21.46	21.47	21.45		
10	64QAM	1	0	21.55	21.71	21.53	23	2
10	64QAM	1	25	21.44	21.59	21.41		
10	64QAM	1	49	21.48	21.40	21.54		
10	64QAM	25	0	20.51	20.57	20.56	22	3
10	64QAM	25	12	20.67	20.54	20.56		
10	64QAM	25	25	20.50	20.55	20.36		
10	64QAM	50	0	20.41	20.48	20.33		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	23.45	23.58	23.42	25	0
5	QPSK	1	12	23.27	23.44	23.16		
5	QPSK	1	24	23.32	23.34	23.26		
5	QPSK	12	0	22.41	22.58	22.48	24	1
5	QPSK	12	7	22.63	22.44	22.50		
5	QPSK	12	13	22.46	22.50	22.39		
5	QPSK	25	0	22.60	22.60	22.44		
5	16QAM	1	0	22.49	22.33	22.45	24	1
5	16QAM	1	12	22.42	22.46	22.49		
5	16QAM	1	24	22.47	22.27	22.43		
5	16QAM	12	0	21.43	21.54	21.51	23	2
5	16QAM	12	7	21.50	21.38	21.50		
5	16QAM	12	13	21.61	21.49	21.49		
5	16QAM	25	0	21.36	21.38	21.36		
5	64QAM	1	0	21.49	21.65	21.51	23	2
5	64QAM	1	12	21.32	21.53	21.31		
5	64QAM	1	24	21.30	21.28	21.47		
5	64QAM	12	0	20.43	20.44	20.47	22	3
5	64QAM	12	7	20.49	20.48	20.40		
5	64QAM	12	13	20.37	20.40	20.31		
5	64QAM	25	0	20.32	20.39	20.25		

Band 66								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	23.66	23.68	23.61	25	0
20	QPSK	1	49	23.56	23.65	23.49		
20	QPSK	1	99	23.60	23.62	23.51		
20	QPSK	50	0	22.69	22.84	22.63	24	1
20	QPSK	50	24	22.72	22.65	22.77		
20	QPSK	50	50	22.60	22.77	22.70		
20	QPSK	100	0	22.73	22.80	22.56		
20	16QAM	1	0	22.64	22.64	22.58	24	1
20	16QAM	1	49	22.70	22.69	22.63		
20	16QAM	1	99	22.51	22.62	22.61		
20	16QAM	50	0	21.74	21.75	21.62	23	2
20	16QAM	50	24	21.62	21.68	21.64		
20	16QAM	50	50	21.71	21.71	21.70		
20	16QAM	100	0	21.66	21.58	21.56		
20	64QAM	1	0	21.53	21.82	21.66	23	2
20	64QAM	1	49	21.54	21.72	21.53		
20	64QAM	1	99	21.56	21.51	21.59		
20	64QAM	50	0	20.60	20.66	20.63	22	3
20	64QAM	50	24	20.84	20.66	20.71		
20	64QAM	50	50	20.51	20.61	20.63		
20	64QAM	100	0	20.61	20.69	20.35		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	23.48	23.63	23.50	25	0
15	QPSK	1	37	23.41	23.49	23.41		
15	QPSK	1	74	23.43	23.57	23.49		
15	QPSK	36	0	22.54	22.75	22.47	24	1
15	QPSK	36	20	22.59	22.59	22.69		
15	QPSK	36	39	22.42	22.72	22.58		
15	QPSK	75	0	22.69	22.70	22.50		
15	16QAM	1	0	22.51	22.61	22.51	24	1
15	16QAM	1	37	22.57	22.62	22.53		
15	16QAM	1	74	22.45	22.45	22.50		
15	16QAM	36	0	21.66	21.64	21.55	23	2
15	16QAM	36	20	21.45	21.61	21.60		
15	16QAM	36	39	21.64	21.68	21.61		
15	16QAM	75	0	21.55	21.41	21.39		
15	64QAM	1	0	21.39	21.78	21.58	23	2
15	64QAM	1	37	21.40	21.58	21.42		
15	64QAM	1	74	21.48	21.45	21.52		
15	64QAM	36	0	20.48	20.62	20.50	22	3
15	64QAM	36	20	20.74	20.52	20.54		
15	64QAM	36	39	20.39	20.44	20.50		
15	64QAM	75	0	20.47	20.63	20.30		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	23.58	23.57	23.53	25	0
10	QPSK	1	25	23.54	23.48	23.33		
10	QPSK	1	49	23.56	23.56	23.42		
10	QPSK	25	0	22.57	22.77	22.47	24	1
10	QPSK	25	12	22.63	22.52	22.71		

10	QPSK	25	25	22.47	22.62	22.64		
10	QPSK	50	0	22.64	22.63	22.47		
10	16QAM	1	0	22.50	22.54	22.49	24	1
10	16QAM	1	25	22.59	22.55	22.60		
10	16QAM	1	49	22.44	22.58	22.59		
10	16QAM	25	0	21.65	21.67	21.47	23	2
10	16QAM	25	12	21.56	21.54	21.51		
10	16QAM	25	25	21.61	21.59	21.63		
10	16QAM	50	0	21.52	21.53	21.39		
10	64QAM	1	0	21.40	21.75	21.60	23	2
10	64QAM	1	25	21.49	21.54	21.35		
10	64QAM	1	49	21.44	21.35	21.44		
10	64QAM	25	0	20.49	20.60	20.45	22	3
10	64QAM	25	12	20.75	20.59	20.64		
10	64QAM	25	25	20.43	20.52	20.55		
10	64QAM	50	0	20.44	20.60	20.27		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	23.47	23.59	23.54	25	0
5	QPSK	1	12	23.45	23.49	23.39		
5	QPSK	1	24	23.58	23.44	23.46		
5	QPSK	12	0	22.64	22.80	22.57	24	1
5	QPSK	12	7	22.66	22.63	22.72		
5	QPSK	12	13	22.49	22.69	22.58		
5	QPSK	25	0	22.65	22.77	22.54		
5	16QAM	1	0	22.46	22.62	22.51	24	1
5	16QAM	1	12	22.52	22.62	22.60		
5	16QAM	1	24	22.33	22.45	22.50		
5	16QAM	12	0	21.67	21.60	21.58	23	2
5	16QAM	12	7	21.56	21.56	21.60		
5	16QAM	12	13	21.65	21.53	21.54		
5	16QAM	25	0	21.55	21.46	21.43		
5	64QAM	1	0	21.38	21.78	21.63	23	2
5	64QAM	1	12	21.43	21.69	21.41		
5	64QAM	1	24	21.52	21.43	21.52		
5	64QAM	12	0	20.45	20.57	20.55	22	3
5	64QAM	12	7	20.67	20.56	20.58		
5	64QAM	12	13	20.34	20.52	20.56		
5	64QAM	25	0	20.44	20.52	20.29		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	23.54	23.51	23.57	25	0
3	QPSK	1	8	23.41	23.48	23.35		
3	QPSK	1	14	23.43	23.56	23.46		
3	QPSK	8	0	22.66	22.76	22.47	24	1
3	QPSK	8	4	22.65	22.50	22.68		
3	QPSK	8	7	22.47	22.68	22.57		
3	QPSK	15	0	22.65	22.76	22.40		
3	16QAM	1	0	22.54	22.47	22.51	24	1
3	16QAM	1	8	22.54	22.55	22.46		
3	16QAM	1	14	22.44	22.55	22.52		
3	16QAM	8	0	21.57	21.62	21.52	23	2
3	16QAM	8	4	21.47	21.56	21.59		
3	16QAM	8	7	21.62	21.65	21.68		
3	16QAM	15	0	21.56	21.51	21.50		
3	64QAM	1	0	21.47	21.70	21.48	23	2

3	64QAM	1	8	21.36	21.57	21.36		
3	64QAM	1	14	21.43	21.47	21.52		
3	64QAM	8	0	20.46	20.48	20.51	22	3
3	64QAM	8	4	20.81	20.63	20.62		
3	64QAM	8	7	20.46	20.48	20.60		
3	64QAM	15	0	20.48	20.54	20.21		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	23.49	23.56	23.52	25	0
1.4	QPSK	1	3	23.39	23.53	23.56		
1.4	QPSK	1	5	23.40	23.60	23.45		
1.4	QPSK	3	0	23.34	23.63	23.54		
1.4	QPSK	3	1	23.31	23.57	23.42		
1.4	QPSK	3	3	23.42	23.56	23.50		
1.4	QPSK	6	0	22.72	22.74	22.59	24	1
1.4	16QAM	1	0	22.49	22.41	22.37	24	1
1.4	16QAM	1	3	22.52	22.62	22.54		
1.4	16QAM	1	5	22.46	22.56	22.42		
1.4	16QAM	3	0	22.56	22.55	22.39		
1.4	16QAM	3	1	22.47	22.67	22.48		
1.4	16QAM	3	3	22.62	22.60	22.46		
1.4	16QAM	6	0	21.61	21.62	21.58	23	2
1.4	64QAM	1	0	21.65	21.56	21.60	23	2
1.4	64QAM	1	3	21.48	21.53	21.37		
1.4	64QAM	1	5	21.30	21.59	21.43		
1.4	64QAM	3	0	21.61	21.61	21.30		
1.4	64QAM	3	1	21.32	21.58	21.50		
1.4	64QAM	3	3	21.39	21.57	21.49		
1.4	64QAM	6	0	20.64	20.66	20.37	22	3

Ant2

Band 2 ENDC								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.53	23.66	23.61	25	0
20	QPSK	1	49	23.49	23.51	23.43		
20	QPSK	1	99	23.53	23.56	23.40		
20	QPSK	50	0	22.62	22.71	22.61	24	1
20	QPSK	50	24	22.53	22.65	22.60		
20	QPSK	50	50	22.61	22.63	22.54		
20	QPSK	100	0	22.55	22.68	22.59		
20	16QAM	1	0	22.39	22.57	22.49	24	1
20	16QAM	1	49	22.32	22.48	22.38		
20	16QAM	1	99	22.51	22.59	22.49		
20	16QAM	50	0	21.51	21.64	21.62	23	2
20	16QAM	50	24	21.65	21.71	21.56		
20	16QAM	50	50	21.45	21.61	21.48		
20	16QAM	100	0	21.60	21.70	21.58		
20	64QAM	1	0	21.51	21.56	21.38	23	2
20	64QAM	1	49	21.46	21.50	21.36		
20	64QAM	1	99	21.36	21.53	21.44		
20	64QAM	50	0	20.56	20.70	20.54	22	3
20	64QAM	50	24	20.54	20.67	20.60		
20	64QAM	50	50	20.61	20.63	20.45		
20	64QAM	100	0	20.59	20.69	20.67		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.35	23.59	23.47	25	0
15	QPSK	1	37	23.34	23.39	23.26		
15	QPSK	1	74	23.47	23.43	23.30		
15	QPSK	36	0	22.59	22.65	22.57	24	1
15	QPSK	36	20	22.35	22.49	22.49		
15	QPSK	36	39	22.50	22.52	22.38		
15	QPSK	75	0	22.48	22.60	22.47		
15	16QAM	1	0	22.37	22.45	22.39	24	1
15	16QAM	1	37	22.21	22.33	22.31		
15	16QAM	1	74	22.43	22.46	22.37		
15	16QAM	36	0	21.48	21.57	21.58	23	2
15	16QAM	36	20	21.56	21.66	21.42		
15	16QAM	36	39	21.43	21.44	21.37		
15	16QAM	75	0	21.57	21.56	21.52		
15	64QAM	1	0	21.36	21.47	21.25	23	2
15	64QAM	1	37	21.37	21.43	21.24		
15	64QAM	1	74	21.34	21.47	21.33		
15	64QAM	36	0	20.50	20.65	20.49	22	3
15	64QAM	36	20	20.48	20.51	20.51		
15	64QAM	36	39	20.56	20.54	20.33		
15	64QAM	75	0	20.44	20.61	20.53		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.47	23.49	23.51	25	0
10	QPSK	1	25	23.39	23.39	23.33		
10	QPSK	1	49	23.39	23.46	23.29		
10	QPSK	25	0	22.49	22.54	22.57	24	1

10	QPSK	25	12	22.37	22.53	22.48		
10	QPSK	25	25	22.43	22.55	22.47		
10	QPSK	50	0	22.46	22.56	22.51		
10	16QAM	1	0	22.31	22.42	22.46		
10	16QAM	1	25	22.28	22.45	22.33	24	1
10	16QAM	1	49	22.44	22.49	22.36		
10	16QAM	25	0	21.34	21.59	21.47		
10	16QAM	25	12	21.50	21.68	21.40	23	2
10	16QAM	25	25	21.40	21.46	21.31		
10	16QAM	50	0	21.47	21.67	21.43		
10	64QAM	1	0	21.33	21.40	21.27		
10	64QAM	1	25	21.37	21.41	21.21	23	2
10	64QAM	1	49	21.34	21.43	21.34		
10	64QAM	25	0	20.43	20.61	20.47		
10	64QAM	25	12	20.43	20.64	20.54	22	3
10	64QAM	25	25	20.58	20.49	20.29		
10	64QAM	50	0	20.42	20.58	20.55		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.41	23.52	23.52		
5	QPSK	1	12	23.47	23.35	23.36	25	0
5	QPSK	1	24	23.40	23.44	23.37		
5	QPSK	12	0	22.56	22.55	22.54		
5	QPSK	12	7	22.51	22.50	22.53	24	1
5	QPSK	12	13	22.52	22.57	22.43		
5	QPSK	25	0	22.43	22.64	22.48		
5	16QAM	1	0	22.33	22.54	22.32		
5	16QAM	1	12	22.26	22.37	22.35	24	1
5	16QAM	1	24	22.48	22.49	22.34		
5	16QAM	12	0	21.43	21.46	21.51		
5	16QAM	12	7	21.53	21.58	21.38	23	2
5	16QAM	12	13	21.40	21.50	21.31		
5	16QAM	25	0	21.45	21.59	21.41		
5	64QAM	1	0	21.37	21.54	21.32		
5	64QAM	1	12	21.44	21.47	21.25	23	2
5	64QAM	1	24	21.23	21.44	21.27		
5	64QAM	12	0	20.40	20.65	20.41		
5	64QAM	12	7	20.37	20.57	20.46	22	3
5	64QAM	12	13	20.53	20.56	20.42		
5	64QAM	25	0	20.45	20.63	20.57		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.36	23.57	23.46		
3	QPSK	1	8	23.46	23.33	23.39	25	0
3	QPSK	1	14	23.47	23.44	23.23		
3	QPSK	8	0	22.48	22.56	22.49		
3	QPSK	8	4	22.48	22.62	22.51	24	1
3	QPSK	8	7	22.57	22.50	22.37		
3	QPSK	15	0	22.39	22.64	22.51		
3	16QAM	1	0	22.35	22.42	22.36		
3	16QAM	1	8	22.20	22.41	22.32	24	1
3	16QAM	1	14	22.42	22.45	22.44		
3	16QAM	8	0	21.47	21.47	21.59		
3	16QAM	8	4	21.60	21.60	21.47	23	2
3	16QAM	8	7	21.35	21.46	21.39		
3	16QAM	15	0	21.55	21.55	21.48		

3	64QAM	1	0	21.48	21.40	21.22	23	2
3	64QAM	1	8	21.30	21.34	21.26		
3	64QAM	1	14	21.22	21.35	21.31		
3	64QAM	8	0	20.40	20.53	20.44	22	3
3	64QAM	8	4	20.42	20.64	20.54		
3	64QAM	8	7	20.58	20.55	20.28		
3	64QAM	15	0	20.41	20.57	20.64		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.37	23.62	23.58	25	0
1.4	QPSK	1	3	23.40	23.54	23.32		
1.4	QPSK	1	5	23.36	23.45	23.38		
1.4	QPSK	3	0	23.39	23.59	23.54		
1.4	QPSK	3	1	23.33	23.39	23.38		
1.4	QPSK	3	3	23.41	23.47	23.34		
1.4	QPSK	6	0	22.51	22.67	22.48	24	1
1.4	16QAM	1	0	22.37	22.55	22.52	24	1
1.4	16QAM	1	3	22.48	22.58	22.48		
1.4	16QAM	1	5	22.50	22.51	22.48		
1.4	16QAM	3	0	22.21	22.47	22.34		
1.4	16QAM	3	1	22.20	22.38	22.27		
1.4	16QAM	3	3	22.41	22.54	22.34		
1.4	16QAM	6	0	21.47	21.60	21.55	23	2
1.4	64QAM	1	0	21.57	21.63	21.47	23	2
1.4	64QAM	1	3	21.38	21.43	21.45		
1.4	64QAM	1	5	21.58	21.60	21.40		
1.4	64QAM	3	0	21.38	21.51	21.35		
1.4	64QAM	3	1	21.35	21.48	21.19		
1.4	64QAM	3	3	21.30	21.37	21.34		
1.4	64QAM	6	0	20.52	20.58	20.33	22	3

Band 5								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	24.25	24.30	24.12	25	0
10	QPSK	1	25	24.00	24.04	24.04		
10	QPSK	1	49	23.89	24.05	23.94		
10	QPSK	25	0	23.25	23.45	23.34	24	1
10	QPSK	25	12	23.24	23.29	23.21		
10	QPSK	25	25	23.31	23.35	23.15		
10	QPSK	50	0	23.35	23.43	23.30		
10	16QAM	1	0	23.35	23.30	23.26	24	1
10	16QAM	1	25	23.40	23.44	23.34		
10	16QAM	1	49	23.39	23.35	23.37		
10	16QAM	25	0	22.15	22.33	22.23	23	2
10	16QAM	25	12	22.31	22.30	22.31		
10	16QAM	25	25	22.22	22.33	22.25		
10	16QAM	50	0	22.22	22.40	22.43		
10	64QAM	1	0	22.12	22.28	22.04	23	2
10	64QAM	1	25	22.06	22.07	21.98		
10	64QAM	1	49	22.00	22.20	22.07		
10	64QAM	25	0	21.11	21.25	21.12	22	3
10	64QAM	25	12	21.29	21.34	21.23		
10	64QAM	25	25	21.38	21.37	21.25		
10	64QAM	50	0	21.24	21.38	21.24		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	24.20	24.27	24.10	25	0
5	QPSK	1	12	24.01	24.11	24.07		
5	QPSK	1	24	23.94	24.02	23.90		
5	QPSK	12	0	23.25	23.46	23.31	24	1
5	QPSK	12	7	23.21	23.33	23.15		
5	QPSK	12	13	23.23	23.44	23.17		
5	QPSK	25	0	23.33	23.43	23.33		
5	16QAM	1	0	23.38	23.31	23.27	24	1
5	16QAM	1	12	23.34	23.46	23.38		
5	16QAM	1	24	23.42	23.33	23.35		
5	16QAM	12	0	22.14	22.30	22.24	23	2
5	16QAM	12	7	22.29	22.29	22.32		
5	16QAM	12	13	22.28	22.29	22.25		
5	16QAM	25	0	22.20	22.34	22.41		
5	64QAM	1	0	22.13	22.30	22.02	23	2
5	64QAM	1	12	22.05	22.01	21.98		
5	64QAM	1	24	21.94	22.18	22.06		
5	64QAM	12	0	21.15	21.24	21.16	22	3
5	64QAM	12	7	21.32	21.35	21.24		
5	64QAM	12	13	21.41	21.36	21.26		
5	64QAM	25	0	21.29	21.42	21.27		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	24.24	24.26	24.10	25	0
3	QPSK	1	8	23.99	24.09	24.01		
3	QPSK	1	14	23.92	24.05	23.94		

3	QPSK	8	0	23.23	23.40	23.34	24	1
3	QPSK	8	4	23.19	23.35	23.20		
3	QPSK	8	7	23.23	23.43	23.16		
3	QPSK	15	0	23.40	23.45	23.32		
3	16QAM	1	0	23.34	23.33	23.22	24	1
3	16QAM	1	8	23.38	23.45	23.40		
3	16QAM	1	14	23.37	23.33	23.39		
3	16QAM	8	0	22.20	22.30	22.21	23	2
3	16QAM	8	4	22.24	22.31	22.32		
3	16QAM	8	7	22.25	22.29	22.19		
3	16QAM	15	0	22.19	22.39	22.39		
3	64QAM	1	0	22.11	22.28	21.99	23	2
3	64QAM	1	8	22.03	22.03	22.02		
3	64QAM	1	14	21.98	22.18	22.09		
3	64QAM	8	0	21.13	21.27	21.14	22	3
3	64QAM	8	4	21.34	21.39	21.17		
3	64QAM	8	7	21.39	21.38	21.25		
3	64QAM	15	0	21.23	21.44	21.23		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	24.19	24.23	24.15	25	0
1.4	QPSK	1	3	24.05	24.05	24.04		
1.4	QPSK	1	5	23.89	24.02	23.92		
1.4	QPSK	3	0	23.19	23.46	23.38		
1.4	QPSK	3	1	23.23	23.35	23.20		
1.4	QPSK	3	3	23.25	23.43	23.12		
1.4	QPSK	6	0	23.32	23.48	23.26	24	1
1.4	16QAM	1	0	23.38	23.32	23.23	24	1
1.4	16QAM	1	3	23.39	23.43	23.36		
1.4	16QAM	1	5	23.37	23.35	23.35		
1.4	16QAM	3	0	22.19	22.34	22.24		
1.4	16QAM	3	1	22.30	22.25	22.36		
1.4	16QAM	3	3	22.28	22.32	22.25		
1.4	16QAM	6	0	22.19	22.35	22.41	23	2
1.4	64QAM	1	0	22.09	22.32	21.98	23	2
1.4	64QAM	1	3	22.02	22.04	21.99		
1.4	64QAM	1	5	21.96	22.15	22.08		
1.4	64QAM	3	0	21.11	21.21	21.15		
1.4	64QAM	3	1	21.28	21.35	21.23		
1.4	64QAM	3	3	21.36	21.37	21.31		
1.4	64QAM	6	0	21.26	21.40	21.27	22	3

Band 7 ENDC								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	22.54	22.56	22.53	23.3	0
20	QPSK	1	49	22.39	22.42	22.38		
20	QPSK	1	99	22.42	22.52	22.32		
20	QPSK	50	0	21.48	21.59	21.44	23	0.3
20	QPSK	50	24	21.44	21.58	21.50		
20	QPSK	50	50	21.49	21.55	21.38		
20	QPSK	100	0	21.51	21.52	21.51		
20	16QAM	1	0	21.28	21.45	21.39	23	0.3
20	16QAM	1	49	21.28	21.43	21.27		
20	16QAM	1	99	21.34	21.44	21.37		
20	16QAM	50	0	20.42	20.54	20.57	22	1.3
20	16QAM	50	24	20.57	20.53	20.50		
20	16QAM	50	50	20.27	20.45	20.32		
20	16QAM	100	0	20.52	20.53	20.41		
20	64QAM	1	0	20.46	20.48	20.28	22	1.3
20	64QAM	1	49	20.35	20.42	20.34		
20	64QAM	1	99	20.29	20.39	20.35		
20	64QAM	50	0	19.44	19.56	19.50	21	2.3
20	64QAM	50	24	19.37	19.53	19.46		
20	64QAM	50	50	19.54	19.55	19.30		
20	64QAM	100	0	19.53	19.53	19.49		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	22.42	22.48	22.50	23.3	0
15	QPSK	1	37	22.25	22.27	22.29		
15	QPSK	1	74	22.25	22.42	22.15		
15	QPSK	36	0	21.34	21.42	21.31	23	0.3
15	QPSK	36	20	21.40	21.55	21.46		
15	QPSK	36	39	21.43	21.45	21.21		
15	QPSK	75	0	21.41	21.36	21.36		
15	16QAM	1	0	21.22	21.42	21.32	23	0.3
15	16QAM	1	37	21.24	21.36	21.22		
15	16QAM	1	74	21.23	21.34	21.25		
15	16QAM	36	0	20.36	20.41	20.41	22	1.3
15	16QAM	36	20	20.52	20.49	20.43		
15	16QAM	36	39	20.25	20.30	20.16		
15	16QAM	75	0	20.37	20.42	20.31		
15	64QAM	1	0	20.41	20.34	20.14	22	1.3
15	64QAM	1	37	20.29	20.32	20.21		
15	64QAM	1	74	20.12	20.26	20.26		
15	64QAM	36	0	19.34	19.45	19.37	21	2.3
15	64QAM	36	20	19.26	19.39	19.38		
15	64QAM	36	39	19.37	19.42	19.15		
15	64QAM	75	0	19.49	19.43	19.32		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	22.45	22.41	22.51	23.3	0
10	QPSK	1	25	22.24	22.36	22.26		
10	QPSK	1	49	22.30	22.39	22.18		
10	QPSK	25	0	21.44	21.50	21.36	23	0.3
10	QPSK	25	12	21.28	21.44	21.41		

10	QPSK	25	25	21.34	21.50	21.27		
10	QPSK	50	0	21.40	21.41	21.34		
10	16QAM	1	0	21.21	21.41	21.26	23	0.3
10	16QAM	1	25	21.21	21.39	21.10		
10	16QAM	1	49	21.17	21.33	21.30		
10	16QAM	25	0	20.30	20.49	20.42	22	1.3
10	16QAM	25	12	20.53	20.36	20.41		
10	16QAM	25	25	20.24	20.28	20.19		
10	16QAM	50	0	20.42	20.36	20.30		
10	64QAM	1	0	20.43	20.31	20.13	22	1.3
10	64QAM	1	25	20.20	20.38	20.16		
10	64QAM	1	49	20.23	20.28	20.22		
10	64QAM	25	0	19.36	19.43	19.35	21	2.3
10	64QAM	25	12	19.28	19.49	19.37		
10	64QAM	25	25	19.43	19.47	19.13		
10	64QAM	50	0	19.41	19.41	19.31		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	22.43	22.50	22.47	23.3	0
5	QPSK	1	12	22.31	22.30	22.26		
5	QPSK	1	24	22.35	22.40	22.16		
5	QPSK	12	0	21.35	21.55	21.33	23	0.3
5	QPSK	12	7	21.26	21.50	21.47		
5	QPSK	12	13	21.36	21.52	21.22		
5	QPSK	25	0	21.43	21.35	21.44		
5	16QAM	1	0	21.16	21.35	21.35	23	0.3
5	16QAM	1	12	21.15	21.33	21.18		
5	16QAM	1	24	21.23	21.26	21.35		
5	16QAM	12	0	20.39	20.48	20.46	22	1.3
5	16QAM	12	7	20.47	20.46	20.46		
5	16QAM	12	13	20.18	20.37	20.21		
5	16QAM	25	0	20.49	20.35	20.23		
5	64QAM	1	0	20.35	20.40	20.26	22	1.3
5	64QAM	1	12	20.18	20.40	20.26		
5	64QAM	1	24	20.21	20.33	20.33		
5	64QAM	12	0	19.39	19.43	19.33	21	2.3
5	64QAM	12	7	19.34	19.37	19.30		
5	64QAM	12	13	19.45	19.40	19.25		
5	64QAM	25	0	19.42	19.38	19.43		

Reduced Power Mode for DSI 1

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Band 2								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	16.25	16.48	16.46	17.6	0
20	QPSK	1	49	16.20	16.32	16.18		
20	QPSK	1	99	16.27	16.34	16.21		
20	QPSK	50	0	16.37	16.42	16.36	17.6	0
20	QPSK	50	24	16.35	16.38	16.34		
20	QPSK	50	50	16.31	16.34	16.30		
20	QPSK	100	0	16.34	16.40	16.30		
20	16QAM	1	0	16.28	16.33	16.28	17.6	0
20	16QAM	1	49	16.30	16.39	16.30		
20	16QAM	1	99	16.22	16.35	16.26		
20	16QAM	50	0	16.24	16.31	16.23	17.6	0
20	16QAM	50	24	16.23	16.33	16.24		
20	16QAM	50	50	16.26	16.37	16.23		
20	16QAM	100	0	16.28	16.36	16.32		
20	64QAM	1	0	16.27	16.32	16.23	17.6	0
20	64QAM	1	49	16.33	16.39	16.32		
20	64QAM	1	99	16.30	16.36	16.30		
20	64QAM	50	0	16.30	16.33	16.22	17.6	0
20	64QAM	50	24	16.24	16.30	16.23		
20	64QAM	50	50	16.27	16.36	16.33		
20	64QAM	100	0	16.08	16.20	16.11		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	16.18	16.37	16.31	17.6	0
15	QPSK	1	37	16.12	16.23	16.05		
15	QPSK	1	74	16.21	16.25	16.08		
15	QPSK	36	0	16.28	16.31	16.22	17.6	0
15	QPSK	36	20	16.21	16.27	16.27		
15	QPSK	36	39	16.17	16.20	16.21		
15	QPSK	75	0	16.23	16.29	16.18		
15	16QAM	1	0	16.19	16.26	16.17	17.6	0
15	16QAM	1	37	16.18	16.26	16.19		
15	16QAM	1	74	16.17	16.31	16.14		
15	16QAM	36	0	16.10	16.25	16.15	17.6	0
15	16QAM	36	20	16.16	16.25	16.13		
15	16QAM	36	39	16.21	16.23	16.13		
15	16QAM	75	0	16.20	16.22	16.20		
15	64QAM	1	0	16.20	16.19	16.15	17.6	0
15	64QAM	1	37	16.25	16.31	16.25		
15	64QAM	1	74	16.26	16.28	16.19		
15	64QAM	36	0	16.21	16.24	16.16	17.6	0
15	64QAM	36	20	16.16	16.15	16.13		
15	64QAM	36	39	16.23	16.23	16.22		
15	64QAM	75	0	15.95	16.05	15.99		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	16.13	16.39	16.29	17.6	0
10	QPSK	1	25	16.06	16.24	16.15		
10	QPSK	1	49	16.14	16.25	16.09		

10	QPSK	25	0	16.31	16.35	16.23	17.6	0
10	QPSK	25	12	16.23	16.33	16.26		
10	QPSK	25	25	16.27	16.20	16.20		
10	QPSK	50	0	16.21	16.37	16.20		
10	16QAM	1	0	16.20	16.29	16.21	17.6	0
10	16QAM	1	25	16.16	16.35	16.20		
10	16QAM	1	49	16.15	16.23	16.20		
10	16QAM	25	0	16.12	16.24	16.19	17.6	0
10	16QAM	25	12	16.14	16.23	16.12		
10	16QAM	25	25	16.21	16.24	16.09		
10	16QAM	50	0	16.25	16.28	16.22		
10	64QAM	1	0	16.18	16.28	16.13	17.6	0
10	64QAM	1	25	16.30	16.25	16.21		
10	64QAM	1	49	16.27	16.22	16.21		
10	64QAM	25	0	16.20	16.21	16.12	17.6	0
10	64QAM	25	12	16.16	16.23	16.18		
10	64QAM	25	25	16.17	16.27	16.21		
10	64QAM	50	0	15.94	16.05	16.06		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	16.12	16.39	16.27	17.6	0
5	QPSK	1	12	16.16	16.17	16.07		
5	QPSK	1	24	16.15	16.21	16.11		
5	QPSK	12	0	16.29	16.37	16.27	17.6	0
5	QPSK	12	7	16.23	16.30	16.21		
5	QPSK	12	13	16.24	16.30	16.18		
5	QPSK	25	0	16.26	16.27	16.25		
5	16QAM	1	0	16.16	16.21	16.18	17.6	0
5	16QAM	1	12	16.17	16.30	16.25		
5	16QAM	1	24	16.16	16.23	16.21		
5	16QAM	12	0	16.11	16.26	16.12	17.6	0
5	16QAM	12	7	16.14	16.20	16.11		
5	16QAM	12	13	16.21	16.34	16.14		
5	16QAM	25	0	16.14	16.32	16.19		
5	64QAM	1	0	16.16	16.22	16.16	17.6	0
5	64QAM	1	12	16.20	16.35	16.22		
5	64QAM	1	24	16.22	16.25	16.25		
5	64QAM	12	0	16.20	16.27	16.15	17.6	0
5	64QAM	12	7	16.12	16.23	16.17		
5	64QAM	12	13	16.22	16.27	16.26		
5	64QAM	25	0	16.04	16.12	15.97		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	16.20	16.32	16.27	17.6	0
3	QPSK	1	8	16.07	16.18	16.04		
3	QPSK	1	14	16.16	16.22	16.13		
3	QPSK	8	0	16.24	16.31	16.30	17.6	0
3	QPSK	8	4	16.22	16.29	16.27		
3	QPSK	8	7	16.24	16.29	16.25		
3	QPSK	15	0	16.31	16.34	16.18		
3	16QAM	1	0	16.13	16.20	16.17	17.6	0
3	16QAM	1	8	16.19	16.30	16.15		
3	16QAM	1	14	16.16	16.23	16.18		
3	16QAM	8	0	16.19	16.19	16.10	17.6	0
3	16QAM	8	4	16.16	16.21	16.14		
3	16QAM	8	7	16.23	16.23	16.13		

3	16QAM	15	0	16.16	16.28	16.28		
3	64QAM	1	0	16.18	16.19	16.13	17.6	0
3	64QAM	1	8	16.23	16.29	16.27		
3	64QAM	1	14	16.20	16.29	16.25		
3	64QAM	8	0	16.19	16.22	16.18	17.6	0
3	64QAM	8	4	16.15	16.18	16.14		
3	64QAM	8	7	16.21	16.26	16.20		
3	64QAM	15	0	16.01	16.11	16.04		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	16.16	16.32	16.24	17.6	0
1.4	QPSK	1	3	16.15	16.27	16.05		
1.4	QPSK	1	5	16.18	16.21	16.16		
1.4	QPSK	3	0	16.33	16.30	16.30		
1.4	QPSK	3	1	16.24	16.34	16.28		
1.4	QPSK	3	3	16.26	16.29	16.21		
1.4	QPSK	6	0	16.24	16.36	16.16	17.6	0
1.4	16QAM	1	0	16.18	16.27	16.23	17.6	0
1.4	16QAM	1	3	16.21	16.27	16.17		
1.4	16QAM	1	5	16.15	16.26	16.16		
1.4	16QAM	3	0	16.19	16.17	16.19		
1.4	16QAM	3	1	16.19	16.26	16.13		
1.4	16QAM	3	3	16.13	16.29	16.10		
1.4	16QAM	6	0	16.19	16.28	16.23	17.6	0
1.4	64QAM	1	0	16.23	16.18	16.16	17.6	0
1.4	64QAM	1	3	16.27	16.36	16.26		
1.4	64QAM	1	5	16.21	16.29	16.21		
1.4	64QAM	3	0	16.19	16.21	16.19		
1.4	64QAM	3	1	16.15	16.24	16.08		
1.4	64QAM	3	3	16.23	16.23	16.22		
1.4	64QAM	6	0	16.00	16.11	16.01	17.6	0

Band 4								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	17.81	17.88	17.80	19	0
20	QPSK	1	49	17.64	17.80	17.83		
20	QPSK	1	99	17.73	17.74	17.71		
20	QPSK	50	0	17.78	17.84	17.73	19	0
20	QPSK	50	24	17.69	17.79	17.65		
20	QPSK	50	50	17.64	17.71	17.56		
20	QPSK	100	0	17.74	17.83	17.70		
20	16QAM	1	0	17.64	17.81	17.59	19	0
20	16QAM	1	49	17.75	17.74	17.76		
20	16QAM	1	99	17.69	17.69	17.74		
20	16QAM	50	0	17.68	17.74	17.68	19	0
20	16QAM	50	24	17.56	17.63	17.51		
20	16QAM	50	50	17.66	17.74	17.65		
20	16QAM	100	0	17.68	17.75	17.75		
20	64QAM	1	0	17.64	17.75	17.63	19	0
20	64QAM	1	49	17.63	17.75	17.62		
20	64QAM	1	99	17.72	17.77	17.71		
20	64QAM	50	0	17.79	17.78	17.65	19	0
20	64QAM	50	24	17.64	17.77	17.62		
20	64QAM	50	50	17.63	17.75	17.74		
20	64QAM	100	0	17.67	17.80	17.78		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	17.77	17.83	17.75	19	0
15	QPSK	1	37	17.60	17.74	17.79		
15	QPSK	1	74	17.70	17.70	17.65		
15	QPSK	36	0	17.75	17.76	17.67	19	0
15	QPSK	36	20	17.62	17.73	17.63		
15	QPSK	36	39	17.57	17.65	17.50		
15	QPSK	75	0	17.68	17.75	17.65		
15	16QAM	1	0	17.59	17.77	17.55	19	0
15	16QAM	1	37	17.71	17.71	17.69		
15	16QAM	1	74	17.62	17.63	17.66		
15	16QAM	36	0	17.61	17.67	17.61	19	0
15	16QAM	36	20	17.47	17.59	17.47		
15	16QAM	36	39	17.62	17.69	17.61		
15	16QAM	75	0	17.62	17.73	17.65		
15	64QAM	1	0	17.57	17.70	17.56	19	0
15	64QAM	1	37	17.58	17.73	17.60		
15	64QAM	1	74	17.66	17.68	17.68		
15	64QAM	36	0	17.73	17.75	17.59	19	0
15	64QAM	36	20	17.61	17.69	17.56		
15	64QAM	36	39	17.55	17.66	17.69		
15	64QAM	75	0	17.60	17.78	17.68		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	17.68	17.76	17.69	19	0
10	QPSK	1	25	17.51	17.71	17.69		
10	QPSK	1	49	17.65	17.66	17.57		
10	QPSK	25	0	17.66	17.75	17.60	19	0
10	QPSK	25	12	17.60	17.67	17.58		

10	QPSK	25	25	17.54	17.63	17.50		
10	QPSK	50	0	17.64	17.70	17.63		
10	16QAM	1	0	17.52	17.70	17.46	19	0
10	16QAM	1	25	17.66	17.67	17.63		
10	16QAM	1	49	17.62	17.61	17.61		
10	16QAM	25	0	17.55	17.63	17.60	19	0
10	16QAM	25	12	17.50	17.52	17.37		
10	16QAM	25	25	17.57	17.64	17.52		
10	16QAM	50	0	17.58	17.65	17.67		
10	64QAM	1	0	17.50	17.67	17.51	19	0
10	64QAM	1	25	17.51	17.66	17.53		
10	64QAM	1	49	17.61	17.67	17.58		
10	64QAM	25	0	17.71	17.70	17.55	19	0
10	64QAM	25	12	17.50	17.71	17.53		
10	64QAM	25	25	17.53	17.65	17.63		
10	64QAM	50	0	17.58	17.69	17.65		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	17.72	17.78	17.74	19	0
5	QPSK	1	12	17.55	17.73	17.71		
5	QPSK	1	24	17.64	17.69	17.60		
5	QPSK	12	0	17.69	17.76	17.61	19	0
5	QPSK	12	7	17.60	17.73	17.59		
5	QPSK	12	13	17.57	17.59	17.46		
5	QPSK	25	0	17.61	17.73	17.63		
5	16QAM	1	0	17.55	17.71	17.53	19	0
5	16QAM	1	12	17.69	17.65	17.68		
5	16QAM	1	24	17.64	17.59	17.67		
5	16QAM	12	0	17.60	17.68	17.58	19	0
5	16QAM	12	7	17.51	17.50	17.39		
5	16QAM	12	13	17.56	17.66	17.52		
5	16QAM	25	0	17.56	17.66	17.63		
5	64QAM	1	0	17.51	17.70	17.50	19	0
5	64QAM	1	12	17.57	17.67	17.50		
5	64QAM	1	24	17.60	17.67	17.60		
5	64QAM	12	0	17.69	17.73	17.54	19	0
5	64QAM	12	7	17.57	17.68	17.52		
5	64QAM	12	13	17.55	17.65	17.64		
5	64QAM	25	0	17.60	17.68	17.70		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	17.73	17.79	17.75	19	0
3	QPSK	1	8	17.55	17.76	17.79		
3	QPSK	1	14	17.67	17.68	17.66		
3	QPSK	8	0	17.70	17.73	17.61	19	0
3	QPSK	8	4	17.57	17.70	17.54		
3	QPSK	8	7	17.54	17.59	17.50		
3	QPSK	15	0	17.69	17.73	17.64		
3	16QAM	1	0	17.59	17.75	17.55	19	0
3	16QAM	1	8	17.66	17.64	17.69		
3	16QAM	1	14	17.62	17.58	17.64		
3	16QAM	8	0	17.60	17.69	17.60	19	0
3	16QAM	8	4	17.50	17.56	17.46		
3	16QAM	8	7	17.55	17.65	17.58		
3	16QAM	15	0	17.62	17.66	17.64		
3	64QAM	1	0	17.59	17.70	17.52	19	0

3	64QAM	1	8	17.54	17.66	17.57		
3	64QAM	1	14	17.62	17.66	17.59		
3	64QAM	8	0	17.69	17.69	17.57	19	0
3	64QAM	8	4	17.57	17.72	17.51		
3	64QAM	8	7	17.52	17.66	17.66		
3	64QAM	15	0	17.61	17.76	17.70		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	17.69	17.75	17.64	19	0
1.4	QPSK	1	3	17.48	17.63	17.70		
1.4	QPSK	1	5	17.60	17.63	17.54		
1.4	QPSK	3	0	17.68	17.67	17.58		
1.4	QPSK	3	1	17.56	17.69	17.48		
1.4	QPSK	3	3	17.54	17.59	17.42		
1.4	QPSK	6	0	17.58	17.71	17.57	19	0
1.4	16QAM	1	0	17.51	17.70	17.42	19	0
1.4	16QAM	1	3	17.58	17.59	17.63		
1.4	16QAM	1	5	17.53	17.54	17.62		
1.4	16QAM	3	0	17.57	17.59	17.59		
1.4	16QAM	3	1	17.43	17.49	17.42		
1.4	16QAM	3	3	17.55	17.62	17.53		
1.4	16QAM	6	0	17.54	17.63	17.63	19	0
1.4	64QAM	1	0	17.48	17.59	17.50	19	0
1.4	64QAM	1	3	17.51	17.60	17.50		
1.4	64QAM	1	5	17.57	17.61	17.56		
1.4	64QAM	3	0	17.64	17.67	17.48		
1.4	64QAM	3	1	17.53	17.62	17.47		
1.4	64QAM	3	3	17.53	17.66	17.63		
1.4	64QAM	6	0	17.54	17.67	17.68	19	0

Band 5								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	21.89	21.94	21.83	22.5	0
10	QPSK	1	25	21.78	21.89	21.76		
10	QPSK	1	49	21.77	21.92	21.78		
10	QPSK	25	0	21.82	21.92	21.88	22.5	0
10	QPSK	25	12	21.79	21.89	21.82		
10	QPSK	25	25	21.70	21.79	21.73		
10	QPSK	50	0	21.85	21.90	21.77		
10	16QAM	1	0	21.71	21.77	21.62	22.5	0
10	16QAM	1	25	21.77	21.83	21.76		
10	16QAM	1	49	21.74	21.86	21.74		
10	16QAM	25	0	21.69	21.84	21.73	22.5	0
10	16QAM	25	12	21.57	21.59	21.60		
10	16QAM	25	25	21.69	21.59	21.74		
10	16QAM	50	0	21.62	21.63	21.64		
10	64QAM	1	0	21.61	21.82	21.61	22.5	0
10	64QAM	1	25	21.52	21.71	21.57		
10	64QAM	1	49	21.59	21.61	21.72		
10	64QAM	25	0	21.00	21.14	20.93	22	0.5
10	64QAM	25	12	21.12	20.88	20.94		
10	64QAM	25	25	20.93	20.92	20.86		
10	64QAM	50	0	20.86	20.94	20.92		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	21.83	21.90	21.79	22.5	0
5	QPSK	1	12	21.71	21.84	21.69		
5	QPSK	1	24	21.72	21.92	21.72		
5	QPSK	12	0	21.76	21.86	21.85	22.5	0
5	QPSK	12	7	21.77	21.84	21.77		
5	QPSK	12	13	21.71	21.76	21.68		
5	QPSK	25	0	21.78	21.86	21.72		
5	16QAM	1	0	21.71	21.73	21.62	22.5	0
5	16QAM	1	12	21.71	21.81	21.74		
5	16QAM	1	24	21.71	21.80	21.70		
5	16QAM	12	0	21.65	21.79	21.66	22.5	0
5	16QAM	12	7	21.57	21.54	21.55		
5	16QAM	12	13	21.63	21.59	21.68		
5	16QAM	25	0	21.57	21.58	21.64		
5	64QAM	1	0	21.62	21.79	21.57	22.5	0
5	64QAM	1	12	21.51	21.67	21.52		
5	64QAM	1	24	21.53	21.58	21.70		
5	64QAM	12	0	20.95	21.09	20.87	22	0.5
5	64QAM	12	7	21.08	20.85	20.89		
5	64QAM	12	13	20.90	20.85	20.79		
5	64QAM	25	0	20.79	20.93	20.86		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	21.83	21.91	21.79	22.5	0
3	QPSK	1	8	21.72	21.83	21.72		
3	QPSK	1	14	21.69	21.88	21.73		
3	QPSK	8	0	21.78	21.85	21.83	22.5	0
3	QPSK	8	4	21.76	21.85	21.74		

3	QPSK	8	7	21.66	21.75	21.67		
3	QPSK	15	0	21.83	21.84	21.72		
3	16QAM	1	0	21.67	21.75	21.55	22.5	0
3	16QAM	1	8	21.75	21.75	21.71		
3	16QAM	1	14	21.68	21.84	21.71		
3	16QAM	8	0	21.62	21.75	21.72	22.5	0
3	16QAM	8	4	21.48	21.54	21.54		
3	16QAM	8	7	21.65	21.52	21.71		
3	16QAM	15	0	21.58	21.58	21.56		
3	64QAM	1	0	21.54	21.77	21.55	22.5	0
3	64QAM	1	8	21.43	21.64	21.49		
3	64QAM	1	14	21.55	21.54	21.65		
3	64QAM	8	0	20.98	21.07	20.89	22	0.5
3	64QAM	8	4	21.10	20.85	20.86		
3	64QAM	8	7	20.85	20.87	20.80		
3	64QAM	15	0	20.82	20.85	20.89		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	21.82	21.85	21.72	22.5	0
1.4	QPSK	1	3	21.69	21.77	21.68		
1.4	QPSK	1	5	21.69	21.81	21.71		
1.4	QPSK	3	0	21.74	21.79	21.80		
1.4	QPSK	3	1	21.71	21.77	21.69		
1.4	QPSK	3	3	21.62	21.66	21.64		
1.4	QPSK	6	0	21.74	21.82	21.65	22.5	0
1.4	16QAM	1	0	21.60	21.67	21.48	22.5	0
1.4	16QAM	1	3	21.69	21.73	21.65		
1.4	16QAM	1	5	21.64	21.74	21.66		
1.4	16QAM	3	0	21.60	21.75	21.62		
1.4	16QAM	3	1	21.45	21.52	21.47		
1.4	16QAM	3	3	21.61	21.53	21.66		
1.4	16QAM	6	0	21.51	21.56	21.56	22.5	0
1.4	64QAM	1	0	21.48	21.73	21.50	22.5	0
1.4	64QAM	1	3	21.39	21.63	21.47		
1.4	64QAM	1	5	21.48	21.50	21.59		
1.4	64QAM	3	0	20.93	21.04	20.84		
1.4	64QAM	3	1	21.05	20.75	20.86		
1.4	64QAM	3	3	20.82	20.84	20.80		
1.4	64QAM	6	0	20.74	20.85	20.82	22	0.5

Band 7								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	15.72	15.81	15.78	16.7	0
20	QPSK	1	49	15.57	15.67	15.62		
20	QPSK	1	99	15.56	15.57	15.50		
20	QPSK	50	0	15.60	15.70	15.63	16.7	0
20	QPSK	50	24	15.56	15.60	15.48		
20	QPSK	50	50	15.39	15.55	15.40		
20	QPSK	100	0	15.45	15.64	15.57		
20	16QAM	1	0	15.47	15.59	15.49	16.7	0
20	16QAM	1	49	15.47	15.61	15.53		
20	16QAM	1	99	15.42	15.53	15.42		
20	16QAM	50	0	15.51	15.56	15.48	16.7	0
20	16QAM	50	24	15.44	15.51	15.33		
20	16QAM	50	50	15.44	15.63	15.56		
20	16QAM	100	0	15.51	15.54	15.46		
20	64QAM	1	0	15.39	15.51	15.38	16.7	0
20	64QAM	1	49	15.44	15.59	15.51		
20	64QAM	1	99	15.52	15.54	15.48		
20	64QAM	50	0	15.33	15.50	15.35	16.7	0
20	64QAM	50	24	15.36	15.54	15.34		
20	64QAM	50	50	15.46	15.49	15.45		
20	64QAM	100	0	15.36	15.52	15.33		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	15.63	15.65	15.52	16.7	0
15	QPSK	1	37	15.50	15.55	15.52		
15	QPSK	1	74	15.49	15.44	15.41		
15	QPSK	36	0	15.49	15.60	15.50	16.7	0
15	QPSK	36	20	15.42	15.53	15.42		
15	QPSK	36	39	15.27	15.44	15.30		
15	QPSK	75	0	15.36	15.55	15.47		
15	16QAM	1	0	15.33	15.47	15.37	16.7	0
15	16QAM	1	37	15.41	15.54	15.43		
15	16QAM	1	74	15.31	15.44	15.29		
15	16QAM	36	0	15.44	15.45	15.35	16.7	0
15	16QAM	36	20	15.31	15.37	15.21		
15	16QAM	36	39	15.37	15.51	15.46		
15	16QAM	75	0	15.44	15.41	15.35		
15	64QAM	1	0	15.27	15.41	15.31	16.7	0
15	64QAM	1	37	15.31	15.51	15.43		
15	64QAM	1	74	15.43	15.42	15.37		
15	64QAM	36	0	15.26	15.39	15.21	16.7	0
15	64QAM	36	20	15.22	15.40	15.20		
15	64QAM	36	39	15.36	15.41	15.39		
15	64QAM	75	0	15.26	15.38	15.25		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	15.67	15.73	15.57	16.7	0
10	QPSK	1	25	15.52	15.64	15.58		
10	QPSK	1	49	15.47	15.48	15.45		
10	QPSK	25	0	15.55	15.60	15.54	16.7	0
10	QPSK	25	12	15.50	15.55	15.43		

10	QPSK	25	25	15.32	15.53	15.34		
10	QPSK	50	0	15.40	15.55	15.48		
10	16QAM	1	0	15.37	15.51	15.39	16.7	0
10	16QAM	1	25	15.43	15.54	15.47		
10	16QAM	1	49	15.32	15.48	15.32		
10	16QAM	25	0	15.42	15.47	15.41	16.7	0
10	16QAM	25	12	15.39	15.48	15.30		
10	16QAM	25	25	15.37	15.56	15.53		
10	16QAM	50	0	15.43	15.48	15.44		
10	64QAM	1	0	15.29	15.49	15.29	16.7	0
10	64QAM	1	25	15.40	15.55	15.43		
10	64QAM	1	49	15.43	15.46	15.43		
10	64QAM	25	0	15.30	15.46	15.26	16.7	0
10	64QAM	25	12	15.29	15.46	15.30		
10	64QAM	25	25	15.38	15.40	15.41		
10	64QAM	50	0	15.26	15.45	15.23		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	15.62	15.71	15.50	16.7	0
5	QPSK	1	12	15.50	15.57	15.54		
5	QPSK	1	24	15.49	15.47	15.40		
5	QPSK	12	0	15.45	15.58	15.54	16.7	0
5	QPSK	12	7	15.42	15.50	15.33		
5	QPSK	12	13	15.30	15.40	15.29		
5	QPSK	25	0	15.31	15.55	15.48		
5	16QAM	1	0	15.36	15.47	15.40	16.7	0
5	16QAM	1	12	15.38	15.49	15.38		
5	16QAM	1	24	15.31	15.46	15.33		
5	16QAM	12	0	15.42	15.43	15.39	16.7	0
5	16QAM	12	7	15.31	15.39	15.19		
5	16QAM	12	13	15.29	15.53	15.43		
5	16QAM	25	0	15.36	15.45	15.36		
5	64QAM	1	0	15.26	15.37	15.28	16.7	0
5	64QAM	1	12	15.31	15.48	15.39		
5	64QAM	1	24	15.37	15.40	15.37		
5	64QAM	12	0	15.24	15.40	15.27	16.7	0
5	64QAM	12	7	15.24	15.44	15.26		
5	64QAM	12	13	15.38	15.36	15.31		
5	64QAM	25	0	15.22	15.40	15.23		

Band 17								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.48	23.64	23.48	25	0
10	QPSK	1	25	23.37	23.51	23.34		
10	QPSK	1	49	23.43	23.51	23.41		
10	QPSK	25	0	22.58	22.75	22.52	24	1
10	QPSK	25	12	22.68	22.56	22.59		
10	QPSK	25	25	22.63	22.66	22.51		
10	QPSK	50	0	22.69	22.73	22.52		
10	16QAM	1	0	22.59	22.51	22.47	24	1
10	16QAM	1	25	22.57	22.60	22.63		
10	16QAM	1	49	22.53	22.39	22.57		
10	16QAM	25	0	21.57	21.64	21.55	23	2
10	16QAM	25	12	21.58	21.52	21.52		
10	16QAM	25	25	21.65	21.58	21.53		
10	16QAM	50	0	21.46	21.47	21.45		
10	64QAM	1	0	21.55	21.71	21.53	23	2
10	64QAM	1	25	21.44	21.59	21.41		
10	64QAM	1	49	21.48	21.40	21.54		
10	64QAM	25	0	20.51	20.57	20.56	22	3
10	64QAM	25	12	20.67	20.54	20.56		
10	64QAM	25	25	20.50	20.55	20.36		
10	64QAM	50	0	20.41	20.48	20.33		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	23.45	23.58	23.42	25	0
5	QPSK	1	12	23.27	23.44	23.16		
5	QPSK	1	24	23.32	23.34	23.26		
5	QPSK	12	0	22.41	22.58	22.48	24	1
5	QPSK	12	7	22.63	22.44	22.50		
5	QPSK	12	13	22.46	22.50	22.39		
5	QPSK	25	0	22.60	22.60	22.44		
5	16QAM	1	0	22.49	22.33	22.45	24	1
5	16QAM	1	12	22.42	22.46	22.49		
5	16QAM	1	24	22.47	22.27	22.43		
5	16QAM	12	0	21.43	21.54	21.51	23	2
5	16QAM	12	7	21.50	21.38	21.50		
5	16QAM	12	13	21.61	21.49	21.49		
5	16QAM	25	0	21.36	21.38	21.36		
5	64QAM	1	0	21.49	21.65	21.51	23	2
5	64QAM	1	12	21.32	21.53	21.31		
5	64QAM	1	24	21.30	21.28	21.47		
5	64QAM	12	0	20.43	20.44	20.47	22	3
5	64QAM	12	7	20.49	20.48	20.40		
5	64QAM	12	13	20.37	20.40	20.31		
5	64QAM	25	0	20.32	20.39	20.25		

Band 66								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	17.81	17.89	17.82	19	0
20	QPSK	1	49	17.69	17.87	17.83		
20	QPSK	1	99	17.74	17.74	17.75		
20	QPSK	50	0	17.80	17.86	17.80	19	0
20	QPSK	50	24	17.72	17.82	17.70		
20	QPSK	50	50	17.64	17.77	17.62		
20	QPSK	100	0	17.77	17.84	17.71		
20	16QAM	1	0	17.68	17.81	17.66	19	0
20	16QAM	1	49	17.80	17.74	17.77		
20	16QAM	1	99	17.69	17.70	17.74		
20	16QAM	50	0	17.72	17.80	17.70	19	0
20	16QAM	50	24	17.60	17.68	17.56		
20	16QAM	50	50	17.67	17.75	17.72		
20	16QAM	100	0	17.67	17.81	17.78		
20	64QAM	1	0	17.70	17.79	17.66	19	0
20	64QAM	1	49	17.65	17.78	17.62		
20	64QAM	1	99	17.72	17.79	17.76		
20	64QAM	50	0	17.78	17.81	17.70	19	0
20	64QAM	50	24	17.64	17.79	17.63		
20	64QAM	50	50	17.69	17.81	17.76		
20	64QAM	100	0	17.68	17.83	17.79		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	17.75	17.87	17.81	19	0
15	QPSK	1	37	17.61	17.82	17.77		
15	QPSK	1	74	17.66	17.72	17.70		
15	QPSK	36	0	17.77	17.85	17.76	19	0
15	QPSK	36	20	17.68	17.80	17.66		
15	QPSK	36	39	17.57	17.69	17.60		
15	QPSK	75	0	17.76	17.80	17.69		
15	16QAM	1	0	17.64	17.79	17.63	19	0
15	16QAM	1	37	17.77	17.69	17.74		
15	16QAM	1	74	17.67	17.62	17.67		
15	16QAM	36	0	17.64	17.71	17.62	19	0
15	16QAM	36	20	17.56	17.66	17.49		
15	16QAM	36	39	17.63	17.74	17.68		
15	16QAM	75	0	17.62	17.76	17.71		
15	64QAM	1	0	17.63	17.76	17.64	19	0
15	64QAM	1	37	17.61	17.74	17.57		
15	64QAM	1	74	17.66	17.71	17.69		
15	64QAM	36	0	17.75	17.76	17.67	19	0
15	64QAM	36	20	17.56	17.73	17.56		
15	64QAM	36	39	17.67	17.76	17.74		
15	64QAM	75	0	17.62	17.78	17.74		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	17.70	17.76	17.72	19	0
10	QPSK	1	25	17.58	17.78	17.72		
10	QPSK	1	49	17.64	17.66	17.66		
10	QPSK	25	0	17.69	17.77	17.69	19	0
10	QPSK	25	12	17.62	17.75	17.58		

10	QPSK	25	25	17.52	17.66	17.52		
10	QPSK	50	0	17.64	17.77	17.58		
10	16QAM	1	0	17.56	17.74	17.59		
10	16QAM	1	25	17.73	17.63	17.63	19	0
10	16QAM	1	49	17.61	17.62	17.64		
10	16QAM	25	0	17.61	17.73	17.58		
10	16QAM	25	12	17.50	17.60	17.45	19	0
10	16QAM	25	25	17.56	17.69	17.66		
10	16QAM	50	0	17.60	17.70	17.70		
10	64QAM	1	0	17.62	17.72	17.56		
10	64QAM	1	25	17.51	17.69	17.53	19	0
10	64QAM	1	49	17.61	17.71	17.63		
10	64QAM	25	0	17.70	17.70	17.63		
10	64QAM	25	12	17.56	17.72	17.51	19	0
10	64QAM	25	25	17.61	17.68	17.68		
10	64QAM	50	0	17.55	17.70	17.67		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	17.79	17.80	17.72		
5	QPSK	1	12	17.62	17.82	17.74	19	0
5	QPSK	1	24	17.71	17.70	17.66		
5	QPSK	12	0	17.72	17.78	17.77		
5	QPSK	12	7	17.63	17.79	17.61	19	0
5	QPSK	12	13	17.61	17.67	17.56		
5	QPSK	25	0	17.73	17.82	17.63		
5	16QAM	1	0	17.63	17.78	17.57		
5	16QAM	1	12	17.72	17.70	17.73	19	0
5	16QAM	1	24	17.67	17.61	17.66		
5	16QAM	12	0	17.67	17.71	17.64		
5	16QAM	12	7	17.51	17.61	17.54	19	0
5	16QAM	12	13	17.61	17.68	17.63		
5	16QAM	25	0	17.62	17.72	17.70		
5	64QAM	1	0	17.64	17.72	17.56		
5	64QAM	1	12	17.62	17.68	17.57	19	0
5	64QAM	1	24	17.69	17.69	17.67		
5	64QAM	12	0	17.68	17.77	17.62		
5	64QAM	12	7	17.58	17.70	17.57	19	0
5	64QAM	12	13	17.66	17.74	17.72		
5	64QAM	25	0	17.61	17.74	17.76		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	17.76	17.84	17.75		
3	QPSK	1	8	17.57	17.76	17.71	19	0
3	QPSK	1	14	17.67	17.63	17.68		
3	QPSK	8	0	17.71	17.79	17.75		
3	QPSK	8	4	17.66	17.76	17.63	19	0
3	QPSK	8	7	17.57	17.68	17.57		
3	QPSK	15	0	17.69	17.77	17.66		
3	16QAM	1	0	17.62	17.70	17.61		
3	16QAM	1	8	17.73	17.64	17.71	19	0
3	16QAM	1	14	17.60	17.59	17.66		
3	16QAM	8	0	17.60	17.70	17.62		
3	16QAM	8	4	17.48	17.62	17.51	19	0
3	16QAM	8	7	17.56	17.67	17.65		
3	16QAM	15	0	17.59	17.74	17.66		
3	64QAM	1	0	17.64	17.69	17.58	19	0

3	64QAM	1	8	17.56	17.67	17.55		
3	64QAM	1	14	17.66	17.68	17.69		
3	64QAM	8	0	17.73	17.74	17.60	19	0
3	64QAM	8	4	17.58	17.70	17.52		
3	64QAM	8	7	17.58	17.71	17.65		
3	64QAM	15	0	17.60	17.74	17.71		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	17.72	17.81	17.71	19	0
1.4	QPSK	1	3	17.61	17.77	17.74		
1.4	QPSK	1	5	17.62	17.61	17.62		
1.4	QPSK	3	0	17.68	17.72	17.65		
1.4	QPSK	3	1	17.62	17.68	17.56		
1.4	QPSK	3	3	17.54	17.64	17.53		
1.4	QPSK	6	0	17.65	17.74	17.60	19	0
1.4	16QAM	1	0	17.58	17.72	17.50	19	0
1.4	16QAM	1	3	17.68	17.64	17.69		
1.4	16QAM	1	5	17.58	17.62	17.63		
1.4	16QAM	3	0	17.60	17.70	17.59		
1.4	16QAM	3	1	17.46	17.59	17.43		
1.4	16QAM	3	3	17.57	17.63	17.56		
1.4	16QAM	6	0	17.55	17.71	17.64	19	0
1.4	64QAM	1	0	17.58	17.70	17.50	19	0
1.4	64QAM	1	3	17.54	17.69	17.49		
1.4	64QAM	1	5	17.62	17.69	17.66		
1.4	64QAM	3	0	17.69	17.69	17.58		
1.4	64QAM	3	1	17.55	17.68	17.48		
1.4	64QAM	3	3	17.55	17.69	17.65		
1.4	64QAM	6	0	17.57	17.70	17.70	19	0

Ant2

Band 2 ENDC								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	16.31	16.42	16.27	17.3	0
20	QPSK	1	49	16.29	16.40	16.31		
20	QPSK	1	99	16.27	16.33	16.22		
20	QPSK	50	0	16.27	16.39	16.33	17.3	0
20	QPSK	50	24	16.28	16.37	16.23		
20	QPSK	50	50	16.20	16.33	16.20		
20	QPSK	100	0	16.23	16.36	16.32		
20	16QAM	1	0	16.26	16.35	16.21	17.3	0
20	16QAM	1	49	16.22	16.30	16.20		
20	16QAM	1	99	16.14	16.27	16.15		
20	16QAM	50	0	16.24	16.31	16.17	17.3	0
20	16QAM	50	24	16.19	16.34	16.29		
20	16QAM	50	50	16.17	16.27	16.22		
20	16QAM	100	0	16.23	16.30	16.26		
20	64QAM	1	0	16.26	16.32	16.28	17.3	0
20	64QAM	1	49	16.29	16.34	16.26		
20	64QAM	1	99	16.30	16.35	16.23		
20	64QAM	50	0	16.25	16.32	16.26	17.3	0
20	64QAM	50	24	16.24	16.34	16.22		
20	64QAM	50	50	16.23	16.28	16.19		
20	64QAM	100	0	16.24	16.32	16.18		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	16.19	16.39	16.12	17.3	0
15	QPSK	1	37	16.16	16.25	16.18		
15	QPSK	1	74	16.17	16.18	16.11		
15	QPSK	36	0	16.17	16.29	16.25	17.3	0
15	QPSK	36	20	16.15	16.23	16.10		
15	QPSK	36	39	16.14	16.20	16.13		
15	QPSK	75	0	16.11	16.27	16.21		
15	16QAM	1	0	16.21	16.25	16.09	17.3	0
15	16QAM	1	37	16.18	16.16	16.11		
15	16QAM	1	74	16.10	16.21	16.07		
15	16QAM	36	0	16.18	16.22	16.12	17.3	0
15	16QAM	36	20	16.06	16.23	16.25		
15	16QAM	36	39	16.10	16.14	16.17		
15	16QAM	75	0	16.19	16.18	16.13		
15	64QAM	1	0	16.12	16.21	16.16	17.3	0
15	64QAM	1	37	16.18	16.25	16.19		
15	64QAM	1	74	16.27	16.28	16.11		
15	64QAM	36	0	16.22	16.25	16.14	17.3	0
15	64QAM	36	20	16.19	16.21	16.11		
15	64QAM	36	39	16.11	16.14	16.09		
15	64QAM	75	0	16.20	16.22	16.06		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	16.19	16.31	16.22	17.3	0
10	QPSK	1	25	16.24	16.31	16.27		
10	QPSK	1	49	16.20	16.25	16.13		
10	QPSK	25	0	16.20	16.25	16.19	17.3	0

10	QPSK	25	12	16.25	16.23	16.17		
10	QPSK	25	25	16.07	16.22	16.13		
10	QPSK	50	0	16.17	16.24	16.28		
10	16QAM	1	0	16.22	16.20	16.14	17.3	0
10	16QAM	1	25	16.18	16.24	16.07		
10	16QAM	1	49	16.10	16.14	16.10		
10	16QAM	25	0	16.14	16.20	16.04	17.3	0
10	16QAM	25	12	16.04	16.22	16.26		
10	16QAM	25	25	16.08	16.16	16.17		
10	16QAM	50	0	16.17	16.19	16.19		
10	64QAM	1	0	16.18	16.22	16.15	17.3	0
10	64QAM	1	25	16.17	16.26	16.18		
10	64QAM	1	49	16.23	16.27	16.18		
10	64QAM	25	0	16.12	16.18	16.19	17.3	0
10	64QAM	25	12	16.15	16.22	16.16		
10	64QAM	25	25	16.14	16.15	16.07		
10	64QAM	50	0	16.14	16.26	16.11		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	16.17	16.34	16.16	17.3	0
5	QPSK	1	12	16.15	16.30	16.25		
5	QPSK	1	24	16.20	16.24	16.16		
5	QPSK	12	0	16.14	16.28	16.28	17.3	0
5	QPSK	12	7	16.16	16.24	16.18		
5	QPSK	12	13	16.08	16.23	16.13		
5	QPSK	25	0	16.09	16.31	16.29		
5	16QAM	1	0	16.22	16.31	16.17	17.3	0
5	16QAM	1	12	16.13	16.16	16.08		
5	16QAM	1	24	16.09	16.20	16.01		
5	16QAM	12	0	16.12	16.24	16.11	17.3	0
5	16QAM	12	7	16.13	16.30	16.18		
5	16QAM	12	13	16.06	16.23	16.12		
5	16QAM	25	0	16.12	16.23	16.20		
5	64QAM	1	0	16.19	16.26	16.21	17.3	0
5	64QAM	1	12	16.24	16.29	16.13		
5	64QAM	1	24	16.24	16.28	16.14		
5	64QAM	12	0	16.11	16.25	16.22	17.3	0
5	64QAM	12	7	16.19	16.23	16.10		
5	64QAM	12	13	16.14	16.18	16.06		
5	64QAM	25	0	16.17	16.23	16.10		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	16.20	16.36	16.16	17.3	0
3	QPSK	1	8	16.16	16.27	16.18		
3	QPSK	1	14	16.23	16.26	16.13		
3	QPSK	8	0	16.17	16.36	16.23	17.3	0
3	QPSK	8	4	16.22	16.23	16.11		
3	QPSK	8	7	16.09	16.28	16.05		
3	QPSK	15	0	16.11	16.25	16.27		
3	16QAM	1	0	16.19	16.24	16.17	17.3	0
3	16QAM	1	8	16.07	16.26	16.13		
3	16QAM	1	14	16.05	16.22	16.11		
3	16QAM	8	0	16.13	16.25	16.07	17.3	0
3	16QAM	8	4	16.13	16.25	16.24		
3	16QAM	8	7	16.12	16.17	16.16		
3	16QAM	15	0	16.08	16.18	16.15		

3	64QAM	1	0	16.20	16.23	16.16	17.3	0
3	64QAM	1	8	16.21	16.21	16.12		
3	64QAM	1	14	16.16	16.29	16.10		
3	64QAM	8	0	16.20	16.26	16.14	17.3	0
3	64QAM	8	4	16.13	16.29	16.13		
3	64QAM	8	7	16.15	16.24	16.09		
3	64QAM	15	0	16.10	16.28	16.05		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	16.25	16.35	16.22	17.3	0
1.4	QPSK	1	3	16.16	16.28	16.17		
1.4	QPSK	1	5	16.18	16.29	16.13		
1.4	QPSK	3	0	16.19	16.35	16.22		
1.4	QPSK	3	1	16.14	16.34	16.19		
1.4	QPSK	3	3	16.07	16.27	16.08		
1.4	QPSK	6	0	16.14	16.25	16.26	17.3	0
1.4	16QAM	1	0	16.21	16.21	16.08	17.3	0
1.4	16QAM	1	3	16.10	16.26	16.14		
1.4	16QAM	1	5	16.10	16.18	16.11		
1.4	16QAM	3	0	16.11	16.22	16.11		
1.4	16QAM	3	1	16.14	16.30	16.25		
1.4	16QAM	3	3	16.03	16.24	16.18		
1.4	16QAM	6	0	16.19	16.21	16.23	17.3	0
1.4	64QAM	1	0	16.19	16.24	16.25	17.3	0
1.4	64QAM	1	3	16.18	16.19	16.15		
1.4	64QAM	1	5	16.18	16.23	16.15		
1.4	64QAM	3	0	16.11	16.21	16.19		
1.4	64QAM	3	1	16.18	16.27	16.18		
1.4	64QAM	3	3	16.19	16.15	16.10		
1.4	64QAM	6	0	16.14	16.27	16.12	17.3	0

Band 5								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	24.25	24.30	24.12	24.5	0
10	QPSK	1	25	24.00	24.04	24.04		
10	QPSK	1	49	23.89	24.05	23.94		
10	QPSK	25	0	23.25	23.45	23.34	24	0.5
10	QPSK	25	12	23.24	23.29	23.21		
10	QPSK	25	25	23.31	23.35	23.15		
10	QPSK	50	0	23.35	23.43	23.30		
10	16QAM	1	0	23.35	23.30	23.26	24	0.5
10	16QAM	1	25	23.40	23.44	23.34		
10	16QAM	1	49	23.39	23.35	23.37		
10	16QAM	25	0	22.15	22.33	22.23	23	1.5
10	16QAM	25	12	22.31	22.30	22.31		
10	16QAM	25	25	22.22	22.33	22.25		
10	16QAM	50	0	22.22	22.40	22.43		
10	64QAM	1	0	22.12	22.28	22.04	23	1.5
10	64QAM	1	25	22.06	22.07	21.98		
10	64QAM	1	49	22.00	22.20	22.07		
10	64QAM	25	0	21.11	21.25	21.12	22	2.5
10	64QAM	25	12	21.29	21.34	21.23		
10	64QAM	25	25	21.38	21.37	21.25		
10	64QAM	50	0	21.24	21.38	21.24		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	24.20	24.27	24.10	24.5	0
5	QPSK	1	12	24.01	24.11	24.07		
5	QPSK	1	24	23.94	24.02	23.90		
5	QPSK	12	0	23.25	23.46	23.31	24	0.5
5	QPSK	12	7	23.21	23.33	23.15		
5	QPSK	12	13	23.23	23.44	23.17		
5	QPSK	25	0	23.33	23.43	23.33		
5	16QAM	1	0	23.38	23.31	23.27	24	0.5
5	16QAM	1	12	23.34	23.46	23.38		
5	16QAM	1	24	23.42	23.33	23.35		
5	16QAM	12	0	22.14	22.30	22.24	23	1.5
5	16QAM	12	7	22.29	22.29	22.32		
5	16QAM	12	13	22.28	22.29	22.25		
5	16QAM	25	0	22.20	22.34	22.41		
5	64QAM	1	0	22.13	22.30	22.02	23	1.5
5	64QAM	1	12	22.05	22.01	21.98		
5	64QAM	1	24	21.94	22.18	22.06		
5	64QAM	12	0	21.15	21.24	21.16	22	2.5
5	64QAM	12	7	21.32	21.35	21.24		
5	64QAM	12	13	21.41	21.36	21.26		
5	64QAM	25	0	21.29	21.42	21.27		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	24.24	24.26	24.10	24.5	0
3	QPSK	1	8	23.99	24.09	24.01		
3	QPSK	1	14	23.92	24.05	23.94		
3	QPSK	8	0	23.23	23.40	23.34	24	0.5

3	QPSK	8	4	23.19	23.35	23.20		
3	QPSK	8	7	23.23	23.43	23.16		
3	QPSK	15	0	23.40	23.45	23.32		
3	16QAM	1	0	23.34	23.33	23.22	24	0.5
3	16QAM	1	8	23.38	23.45	23.40		
3	16QAM	1	14	23.37	23.33	23.39		
3	16QAM	8	0	22.20	22.30	22.21	23	1.5
3	16QAM	8	4	22.24	22.31	22.32		
3	16QAM	8	7	22.25	22.29	22.19		
3	16QAM	15	0	22.19	22.39	22.39		
3	64QAM	1	0	22.11	22.28	21.99	23	1.5
3	64QAM	1	8	22.03	22.03	22.02		
3	64QAM	1	14	21.98	22.18	22.09		
3	64QAM	8	0	21.13	21.27	21.14	22	2.5
3	64QAM	8	4	21.34	21.39	21.17		
3	64QAM	8	7	21.39	21.38	21.25		
3	64QAM	15	0	21.23	21.44	21.23		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	24.19	24.23	24.15	24.5	0
1.4	QPSK	1	3	24.05	24.05	24.04		
1.4	QPSK	1	5	23.89	24.02	23.92		
1.4	QPSK	3	0	23.19	23.46	23.38		
1.4	QPSK	3	1	23.23	23.35	23.20		
1.4	QPSK	3	3	23.25	23.43	23.12		
1.4	QPSK	6	0	23.32	23.48	23.26	24	0.5
1.4	16QAM	1	0	23.38	23.32	23.23	24	0.5
1.4	16QAM	1	3	23.39	23.43	23.36		
1.4	16QAM	1	5	23.37	23.35	23.35		
1.4	16QAM	3	0	22.19	22.34	22.24		
1.4	16QAM	3	1	22.30	22.25	22.36		
1.4	16QAM	3	3	22.28	22.32	22.25		
1.4	16QAM	6	0	22.19	22.35	22.41	23	1.5
1.4	64QAM	1	0	22.09	22.32	21.98	23	1.5
1.4	64QAM	1	3	22.02	22.04	21.99		
1.4	64QAM	1	5	21.96	22.15	22.08		
1.4	64QAM	3	0	21.11	21.21	21.15		
1.4	64QAM	3	1	21.28	21.35	21.23		
1.4	64QAM	3	3	21.36	21.37	21.31		
1.4	64QAM	6	0	21.26	21.40	21.27	22	2.5

Band 7 ENDC								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	14.18	14.28	14.25	15.2	0
20	QPSK	1	49	14.10	14.17	14.04		
20	QPSK	1	99	14.19	14.22	14.17		
20	QPSK	50	0	14.15	14.27	14.14	15.2	0
20	QPSK	50	24	14.15	14.26	14.12		
20	QPSK	50	50	14.14	14.21	14.09		
20	QPSK	100	0	14.14	14.24	14.23		
20	16QAM	1	0	14.02	14.14	14.08	15.2	0
20	16QAM	1	49	13.99	14.09	14.02		
20	16QAM	1	99	14.08	14.16	14.03		
20	16QAM	50	0	14.01	14.15	14.06	15.2	0
20	16QAM	50	24	14.18	14.20	14.17		
20	16QAM	50	50	14.01	14.12	14.00		
20	16QAM	100	0	14.03	14.18	14.07		
20	64QAM	1	0	14.00	14.09	13.96	15.2	0
20	64QAM	1	49	13.90	14.04	13.94		
20	64QAM	1	99	14.02	14.15	14.08		
20	64QAM	50	0	14.11	14.16	14.20	15.2	0
20	64QAM	50	24	14.12	14.20	14.14		
20	64QAM	50	50	14.08	14.21	14.17		
20	64QAM	100	0	14.10	14.17	14.13		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	14.06	14.20	14.15	15.2	0
15	QPSK	1	37	14.00	14.12	14.00		
15	QPSK	1	74	14.13	14.12	14.10		
15	QPSK	36	0	14.01	14.18	14.10	15.2	0
15	QPSK	36	20	14.03	14.22	14.03		
15	QPSK	36	39	14.11	14.06	13.98		
15	QPSK	75	0	14.00	14.20	14.10		
15	16QAM	1	0	13.95	14.02	14.05	15.2	0
15	16QAM	1	37	13.91	14.03	13.96		
15	16QAM	1	74	13.94	14.10	13.92		
15	16QAM	36	0	13.94	14.12	14.00	15.2	0
15	16QAM	36	20	14.04	14.14	14.11		
15	16QAM	36	39	13.86	13.97	13.87		
15	16QAM	75	0	13.94	14.10	14.04		
15	64QAM	1	0	13.91	13.97	13.91	15.2	0
15	64QAM	1	37	13.83	14.00	13.90		
15	64QAM	1	74	13.93	14.10	13.99		
15	64QAM	36	0	14.01	14.11	14.10	15.2	0
15	64QAM	36	20	14.01	14.11	14.00		
15	64QAM	36	39	13.96	14.14	14.13		
15	64QAM	75	0	14.00	14.03	14.02		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	14.09	14.25	14.11	15.2	0
10	QPSK	1	25	14.04	14.08	13.97		
10	QPSK	1	49	14.07	14.09	14.08		
10	QPSK	25	0	14.06	14.19	14.05	15.2	0
10	QPSK	25	12	14.02	14.19	13.97		

10	QPSK	25	25	14.02	14.10	14.02		
10	QPSK	50	0	14.05	14.19	14.18		
10	16QAM	1	0	13.94	14.02	13.95	15.2	0
10	16QAM	1	25	13.95	14.00	13.98		
10	16QAM	1	49	13.94	14.02	13.95		
10	16QAM	25	0	13.94	14.02	13.94	15.2	0
10	16QAM	25	12	14.11	14.21	14.05		
10	16QAM	25	25	13.87	14.08	13.93		
10	16QAM	50	0	13.89	14.15	14.02		
10	64QAM	1	0	13.97	14.03	13.85	15.2	0
10	64QAM	1	25	13.84	14.01	13.86		
10	64QAM	1	49	13.93	14.10	13.96		
10	64QAM	25	0	13.97	14.02	14.12	15.2	0
10	64QAM	25	12	13.99	14.10	14.09		
10	64QAM	25	25	14.01	14.16	14.05		
10	64QAM	50	0	14.05	14.06	14.08		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	14.14	14.25	14.20	15.2	0
5	QPSK	1	12	13.95	14.11	13.96		
5	QPSK	1	24	14.10	14.13	14.12		
5	QPSK	12	0	14.07	14.26	14.02	15.2	0
5	QPSK	12	7	14.05	14.14	14.06		
5	QPSK	12	13	13.99	14.11	13.94		
5	QPSK	25	0	14.02	14.22	14.10		
5	16QAM	1	0	13.98	14.01	13.96	15.2	0
5	16QAM	1	12	13.89	14.04	13.89		
5	16QAM	1	24	13.96	14.05	13.89		
5	16QAM	12	0	13.92	14.01	13.92	15.2	0
5	16QAM	12	7	14.09	14.22	14.04		
5	16QAM	12	13	13.93	14.03	13.94		
5	16QAM	25	0	13.99	14.11	14.00		
5	64QAM	1	0	13.92	14.06	13.83	15.2	0
5	64QAM	1	12	13.80	13.92	13.90		
5	64QAM	1	24	13.93	14.09	14.01		
5	64QAM	12	0	14.01	14.10	14.05	15.2	0
5	64QAM	12	7	14.00	14.12	14.00		
5	64QAM	12	13	13.96	14.11	14.02		
5	64QAM	25	0	14.05	14.04	14.08		

Reduced Power Mode for DSI 2

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Band 2								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.36	23.41	23.38	24.5	0
20	QPSK	1	49	23.28	23.39	23.30		
20	QPSK	1	99	23.31	23.30	23.35		
20	QPSK	50	0	22.70	22.83	22.65	24	0.5
20	QPSK	50	24	22.58	22.68	22.47		
20	QPSK	50	50	22.54	22.70	22.68		
20	QPSK	100	0	22.57	22.73	22.61		
20	16QAM	1	0	22.66	22.68	22.56	24	0.5
20	16QAM	1	49	22.64	22.71	22.64		
20	16QAM	1	99	22.62	22.60	22.67		
20	16QAM	50	0	21.72	21.75	21.67	23	1.5
20	16QAM	50	24	21.73	21.61	21.67		
20	16QAM	50	50	21.58	21.67	21.62		
20	16QAM	100	0	21.59	21.65	21.55		
20	64QAM	1	0	21.65	21.80	21.64	23	1.5
20	64QAM	1	49	21.64	21.64	21.59		
20	64QAM	1	99	21.57	21.60	21.68		
20	64QAM	50	0	20.60	20.78	20.65	22	2.5
20	64QAM	50	24	20.73	20.56	20.57		
20	64QAM	50	50	20.60	20.70	20.58		
20	64QAM	100	0	20.58	20.68	20.49		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.22	23.37	23.30	24.5	0
15	QPSK	1	37	23.23	23.28	23.25		
15	QPSK	1	74	23.24	23.27	23.27		
15	QPSK	36	0	22.58	22.70	22.61	24	0.5
15	QPSK	36	20	22.47	22.54	22.40		
15	QPSK	36	39	22.50	22.67	22.59		
15	QPSK	75	0	22.46	22.59	22.55		
15	16QAM	1	0	22.53	22.54	22.49	24	0.5
15	16QAM	1	37	22.52	22.57	22.51		
15	16QAM	1	74	22.47	22.47	22.57		
15	16QAM	36	0	21.65	21.63	21.64	23	1.5
15	16QAM	36	20	21.68	21.49	21.57		
15	16QAM	36	39	21.51	21.55	21.47		
15	16QAM	75	0	21.54	21.59	21.42		
15	64QAM	1	0	21.56	21.71	21.49	23	1.5
15	64QAM	1	37	21.60	21.54	21.44		
15	64QAM	1	74	21.46	21.55	21.54		
15	64QAM	36	0	20.53	20.74	20.52	22	2.5
15	64QAM	36	20	20.58	20.47	20.46		
15	64QAM	36	39	20.46	20.57	20.51		
15	64QAM	75	0	20.49	20.53	20.45		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.31	23.38	23.28	24.5	0
10	QPSK	1	25	23.20	23.26	23.16		

10	QPSK	1	49	23.19	23.31	23.26		
10	QPSK	25	0	22.61	22.73	22.62	24	0.5
10	QPSK	25	12	22.50	22.56	22.42		
10	QPSK	25	25	22.50	22.65	22.60		
10	QPSK	50	0	22.51	22.70	22.56		
10	16QAM	1	0	22.55	22.53	22.41	24	0.5
10	16QAM	1	25	22.52	22.64	22.53		
10	16QAM	1	49	22.48	22.56	22.57		
10	16QAM	25	0	21.57	21.62	21.60	23	1.5
10	16QAM	25	12	21.70	21.49	21.56		
10	16QAM	25	25	21.52	21.63	21.58		
10	16QAM	50	0	21.45	21.58	21.49		
10	64QAM	1	0	21.61	21.68	21.51	23	1.5
10	64QAM	1	25	21.60	21.54	21.52		
10	64QAM	1	49	21.46	21.49	21.54		
10	64QAM	25	0	20.57	20.68	20.60	22	2.5
10	64QAM	25	12	20.68	20.41	20.53		
10	64QAM	25	25	20.46	20.65	20.46		
10	64QAM	50	0	20.50	20.57	20.38		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.28	23.36	23.30	24.5	0
5	QPSK	1	12	23.18	23.27	23.20		
5	QPSK	1	24	23.17	23.37	23.32		
5	QPSK	12	0	22.62	22.68	22.56	24	0.5
5	QPSK	12	7	22.46	22.63	22.35		
5	QPSK	12	13	22.42	22.57	22.55		
5	QPSK	25	0	22.50	22.59	22.58		
5	16QAM	1	0	22.59	22.55	22.52	24	0.5
5	16QAM	1	12	22.51	22.58	22.61		
5	16QAM	1	24	22.52	22.47	22.59		
5	16QAM	12	0	21.68	21.65	21.52	23	1.5
5	16QAM	12	7	21.69	21.50	21.60		
5	16QAM	12	13	21.54	21.53	21.59		
5	16QAM	25	0	21.54	21.62	21.45		
5	64QAM	1	0	21.53	21.70	21.54	23	1.5
5	64QAM	1	12	21.57	21.54	21.47		
5	64QAM	1	24	21.50	21.50	21.61		
5	64QAM	12	0	20.52	20.66	20.54	22	2.5
5	64QAM	12	7	20.70	20.44	20.45		
5	64QAM	12	13	20.49	20.64	20.44		
5	64QAM	25	0	20.52	20.60	20.42		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.26	23.37	23.29	24.5	0
3	QPSK	1	8	23.19	23.25	23.16		
3	QPSK	1	14	23.18	23.34	23.20		
3	QPSK	8	0	22.61	22.68	22.50	24	0.5
3	QPSK	8	4	22.51	22.57	22.42		
3	QPSK	8	7	22.48	22.61	22.58		
3	QPSK	15	0	22.54	22.67	22.58		
3	16QAM	1	0	22.62	22.54	22.48	24	0.5
3	16QAM	1	8	22.60	22.59	22.60		
3	16QAM	1	14	22.48	22.54	22.62		
3	16QAM	8	0	21.60	21.61	21.59	23	1.5
3	16QAM	8	4	21.60	21.56	21.63		