

<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 GSM / 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. Therefore, the GPRS (3Tx slots) for GSM850 UAT & LAT, GSM1900 UAT and GPRS (4Tx slots) for GSM1900 LAT is considered as the primary mode for Head/Hotspot SAR, the GPRS (3Tx slots) for GSM850 UAT & LAT and GPRS (4Tx slots) for GSM1900 UAT & LAT is considered as the primary mode for Body-worn SAR.
3. Other configurations of GSM / 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 $\leq \frac{1}{4}$ dB higher than the primary mode, SAR measurement is not required for the secondary mode



GSM850 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.57	32.95	32.58	33.50	23.57	23.95	23.58	24.50
GPRS 1 Tx slot	32.59	33.01	32.98	33.50	23.59	24.01	23.98	24.50
GPRS 2 Tx slots	30.70	30.92	30.78	31.50	24.70	24.92	24.78	25.50
GPRS 3 Tx slots	29.37	29.49	29.52	30.50	25.11	25.23	25.26	26.24
GPRS 4 Tx slots	27.85	28.14	27.58	29.00	24.85	25.14	24.58	26.00
EDGE 1 Tx slot	26.64	26.89	26.89	28.00	17.64	17.89	17.89	19.00
EDGE 2 Tx slots	25.87	26.73	26.71	27.50	19.87	20.73	20.71	21.50
EDGE 3 Tx slots	24.22	25.63	25.70	26.00	19.96	21.37	21.44	21.74
EDGE 4 Tx slots	23.82	24.79	24.71	25.50	20.82	21.79	21.71	22.50

GSM1900 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	29.18	29.75	30.04	31.00	20.18	20.75	21.04	22.00
GPRS 1 Tx slot	29.19	29.77	30.06	31.00	20.19	20.77	21.06	22.00
GPRS 2 Tx slots	27.46	27.67	28.03	29.00	21.46	21.67	22.03	23.00
GPRS 3 Tx slots	25.13	26.03	26.62	27.00	20.87	21.77	22.36	22.74
GPRS 4 Tx slots	24.11	25.03	25.55	26.00	21.11	22.03	22.55	23.00
EDGE 1 Tx slot	26.08	25.82	26.72	27.50	17.08	16.82	17.72	18.50
EDGE 2 Tx slots	24.37	24.85	25.21	26.00	18.37	18.85	19.21	20.00
EDGE 3 Tx slots	23.10	23.43	23.77	24.50	18.84	19.17	19.51	20.24
EDGE 4 Tx slots	22.32	22.89	23.29	24.00	19.32	19.89	20.29	21.00



GSM850 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.25	32.91	32.80	33.00	23.25	23.91	23.80	24.00
GPRS 1 Tx slot	32.29	32.96	32.81	33.00	23.29	23.96	23.81	24.00
GPRS 2 Tx slots	30.44	30.78	29.50	31.00	24.44	24.78	23.50	25.00
GPRS 3 Tx slots	29.19	29.23	29.23	29.80	24.93	24.97	24.97	25.54
GPRS 4 Tx slots	27.65	27.72	27.33	28.20	24.65	24.72	24.33	25.20
EDGE 1 Tx slot	26.27	26.65	26.61	27.10	17.27	17.65	17.61	18.10
EDGE 2 Tx slots	25.64	26.31	26.20	26.80	19.64	20.31	20.20	20.80
EDGE 3 Tx slots	24.68	24.89	24.73	25.40	20.42	20.63	20.47	21.14
EDGE 4 Tx slots	23.69	24.10	23.86	24.70	20.69	21.10	20.86	21.70

GSM1900 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	25.52	25.30	25.55	26.60	16.52	16.30	16.55	17.60
GPRS 1 Tx slot	25.55	25.32	25.56	26.60	16.55	16.32	16.56	17.60
GPRS 2 Tx slots	22.12	22.22	22.59	23.50	16.12	16.22	16.59	17.50
GPRS 3 Tx slots	20.55	20.96	21.17	22.00	16.29	16.70	16.91	17.74
GPRS 4 Tx slots	19.07	19.31	18.85	20.60	16.07	16.31	15.85	17.60
EDGE 1 Tx slot	25.05	24.97	25.26	25.50	16.05	15.97	16.26	16.50
EDGE 2 Tx slots	22.25	22.63	22.83	23.00	16.25	16.63	16.83	17.00
EDGE 3 Tx slots	20.69	20.64	20.83	21.50	16.43	16.38	16.57	17.24
EDGE 4 Tx slots	18.94	19.04	19.32	20.50	15.94	16.04	16.32	17.50



GSM850 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.08	32.40	32.22	32.50	23.08	23.40	23.22	23.50
GPRS 1 Tx slot	32.09	32.41	32.23	32.50	23.09	23.41	23.23	23.50
GPRS 2 Tx slots	29.25	29.35	29.04	29.50	23.25	23.35	23.04	23.50
GPRS 3 Tx slots	27.26	27.02	27.21	28.00	23.00	22.76	22.95	23.74
GPRS 4 Tx slots	25.32	25.92	24.86	26.40	22.32	22.92	21.86	23.40
EDGE 1 Tx slot	26.30	26.86	26.81	27.00	17.30	17.86	17.81	18.00
EDGE 2 Tx slots	25.67	26.41	25.92	26.50	19.67	20.41	19.92	20.50
EDGE 3 Tx slots	24.34	24.93	24.56	25.00	20.08	20.67	20.30	20.74
EDGE 4 Tx slots	23.51	24.08	23.85	24.50	20.51	21.08	20.85	21.50



GSM850 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	31.92	32.44	32.22	32.50	22.92	23.44	23.22	23.50
GPRS 1 Tx slot	31.93	32.45	32.25	32.50	22.93	23.45	23.25	23.50
GPRS 2 Tx slots	28.24	28.80	28.46	29.00	22.24	22.80	22.46	23.00
GPRS 3 Tx slots	26.64	26.70	27.18	28.00	22.38	22.44	22.92	23.74
GPRS 4 Tx slots	25.29	25.10	24.89	25.50	22.29	22.10	21.89	22.50
EDGE 1 Tx slot	26.01	26.83	26.77	27.00	17.01	17.83	17.77	18.00
EDGE 2 Tx slots	25.88	26.19	26.13	26.50	19.88	20.19	20.13	20.50
EDGE 3 Tx slots	24.74	24.95	24.74	25.00	20.48	20.69	20.48	20.74
EDGE 4 Tx slots	23.77	24.00	23.99	24.00	20.77	21.00	20.99	21.00

GSM1900 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	28.33	28.35	28.37	28.40	19.33	19.35	19.37	19.40
GPRS 1 Tx slot	28.35	28.36	28.39	28.40	19.35	19.36	19.39	19.40
GPRS 2 Tx slots	25.32	25.29	25.40	26.40	19.32	19.29	19.40	20.40
GPRS 3 Tx slots	23.48	23.60	23.64	25.00	19.22	19.34	19.38	20.74
GPRS 4 Tx slots	22.11	22.42	22.54	23.40	19.11	19.42	19.54	20.40
EDGE 1 Tx slot	25.15	25.67	26.13	26.50	16.15	16.67	17.13	17.50
EDGE 2 Tx slots	24.15	24.75	25.13	25.50	18.15	18.75	19.13	19.50
EDGE 3 Tx slots	22.87	23.39	23.70	24.00	18.61	19.13	19.44	19.74
EDGE 4 Tx slots	22.22	22.61	22.94	23.00	19.22	19.61	19.94	20.00



GSM850 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.76	33.04	33.26	33.50	23.76	24.04	24.26	24.50
GPRS 1 Tx slot	32.80	33.11	33.28	33.50	23.80	24.11	24.28	24.50
GPRS 2 Tx slots	30.65	30.84	30.95	31.50	24.65	24.84	24.95	25.50
GPRS 3 Tx slots	28.97	29.54	29.58	30.50	24.71	25.28	25.32	26.24
GPRS 4 Tx slots	27.67	28.20	28.34	29.00	24.67	25.20	25.34	26.00
EDGE 1 Tx slot	26.36	26.96	26.95	28.00	17.36	17.96	17.95	19.00
EDGE 2 Tx slots	26.02	26.46	26.38	27.50	20.02	20.46	20.38	21.50
EDGE 3 Tx slots	24.67	25.16	25.13	26.00	20.41	20.90	20.87	21.74
EDGE 4 Tx slots	23.87	24.22	24.14	25.50	20.87	21.22	21.14	22.50

GSM1900 TX Channel	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	26.76	27.32	27.85	28.50	17.76	18.32	18.85	19.50
GPRS 1 Tx slot	26.78	27.35	27.88	28.50	17.78	18.35	18.88	19.50
GPRS 2 Tx slots	25.28	25.19	25.52	26.50	19.28	19.19	19.52	20.50
GPRS 3 Tx slots	22.67	23.78	24.29	24.50	18.41	19.52	20.03	20.24
GPRS 4 Tx slots	23.53	22.77	23.36	24.00	20.53	19.77	20.36	21.00
EDGE 1 Tx slot	22.89	23.14	23.58	24.50	13.89	14.14	14.58	15.50
EDGE 2 Tx slots	22.18	22.24	22.30	23.00	16.18	16.24	16.30	17.00
EDGE 3 Tx slots	20.87	20.82	20.77	21.50	16.61	16.56	16.51	17.24
EDGE 4 Tx slots	19.97	20.07	20.42	21.00	16.97	17.07	17.42	18.00

<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)
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.
4. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
5. 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 $\leq 1/4$ 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 (HSUPA, HSDPA, DC-HSDPA) are less than $1/4$ dB

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} (Note 1, 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: $\Delta_{ACK}, \Delta_{NACK}$ and $\Delta_{CQI} = 30/15$ 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 $\Delta_{NACK} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$, and $\Delta_{CQI} = 24/15$ with $\beta_{HS} = 24/15 * \beta_c$.

Note 3: CM = 1 for $\beta_c/\beta_d = 12/15, \beta_{HS}/\beta_c = 24/15$. 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 $\beta_c = 11/15$ and $\beta_d = 15/15$.

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 tab
 - 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	β_{ed1} : 47/15 β_{ed2} : 47/15	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 $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{hs} = 5/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. 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 $\beta_c = 10/15$ and $\beta_d = 15/15$.

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 T
 - a). Subtest 1: $\beta_c/\beta_d=2/15$
 - b). Subtest 2: $\beta_c/\beta_d=12/15$
 - c). Subtest 3: $\beta_c/\beta_d=15/8$
 - d). Subtest 4: $\beta_c/\beta_d=15/4$
 - 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	Processes	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.		

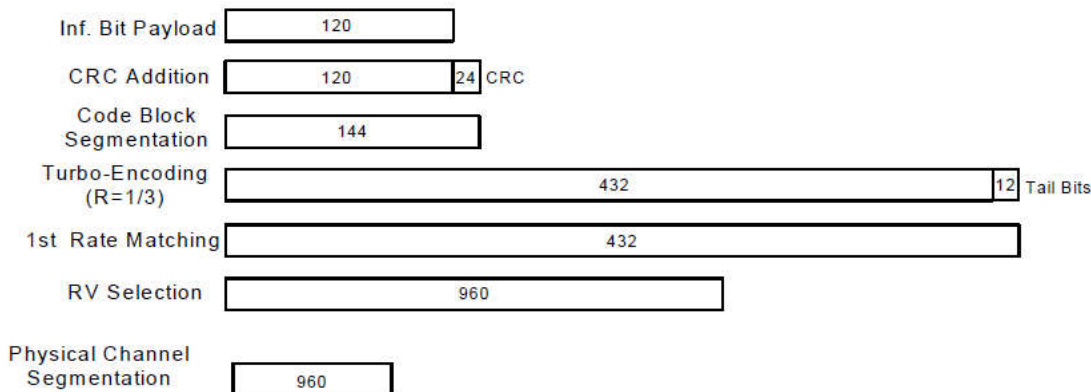


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK) Setup Configuration



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	AMR 12.2Kbps	23.12	23.13	23.15	23.50	23.17	23.21	23.17	23.30	23.13	23.20	23.15	23.80
3GPP Rel 99	RMC 12.2Kbps	23.14	23.17	23.19	23.50	23.18	23.22	23.19	23.30	23.14	23.23	23.17	23.80
3GPP Rel 6	HSDPA Subtest-1	23.12	23.17	23.15	23.30	22.97	22.99	23.00	23.00	22.16	22.21	22.15	22.80
3GPP Rel 6	HSDPA Subtest-2	22.86	23.18	23.13	23.30	22.95	22.97	22.98	23.00	22.14	22.19	22.12	22.80
3GPP Rel 6	HSDPA Subtest-3	22.63	22.68	22.64	22.80	22.50	22.49	22.48	22.50	21.62	21.65	21.66	22.30
3GPP Rel 6	HSDPA Subtest-4	22.67	22.67	22.65	22.80	22.47	22.47	22.46	22.50	21.60	21.60	21.63	22.30
3GPP Rel 8	DC-HSDPA Subtest-1	23.14	23.15	23.16	23.30	22.91	22.91	23.00	23.00	22.07	22.09	22.05	22.80
3GPP Rel 8	DC-HSDPA Subtest-2	22.91	23.18	23.10	23.30	22.99	22.90	22.99	23.00	22.03	22.06	22.03	22.80
3GPP Rel 8	DC-HSDPA Subtest-3	22.55	22.72	22.73	22.80	22.38	22.40	22.48	22.50	21.51	21.54	21.53	22.30
3GPP Rel 8	DC-HSDPA Subtest-4	22.66	22.77	22.69	22.80	22.37	22.42	22.45	22.50	21.50	21.51	21.52	22.30
3GPP Rel 6	HSUPA Subtest-1	22.26	22.20	22.19	23.50	22.03	22.02	22.01	23.00	22.17	22.22	22.17	22.80
3GPP Rel 6	HSUPA Subtest-2	21.91	21.87	21.86	22.50	21.68	21.76	21.74	22.50	20.15	20.23	20.18	20.80
3GPP Rel 6	HSUPA Subtest-3	22.46	22.44	22.49	22.50	22.27	22.32	22.49	22.50	21.15	21.22	21.18	21.80
3GPP Rel 6	HSUPA Subtest-4	22.48	22.42	22.45	22.50	22.45	22.43	22.48	22.50	20.17	20.23	20.19	20.80
3GPP Rel 6	HSUPA Subtest-5	23.15	23.15	23.15	23.50	22.92	22.94	22.93	23.00	22.20	22.30	22.20	22.80



Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513	
Rx Channel		9662	9800	9938		1537	1638	1738	
Frequency (MHz)		1852.4	1880	1907.6	1712.4	1732.6	1752.6		
3GPP Rel 99	AMR 12.2Kbps	20.65	20.72	20.73	21.70	21.55	21.60	21.60	22.50
3GPP Rel 99	RMC 12.2Kbps	20.70	20.80	20.78	21.70	21.63	21.65	21.70	22.50
3GPP Rel 6	HSDPA Subtest-1	20.72	20.75	20.77	21.70	21.54	21.58	21.65	22.50
3GPP Rel 6	HSDPA Subtest-2	20.75	20.76	20.76	21.70	21.57	21.54	21.64	22.50
3GPP Rel 6	HSDPA Subtest-3	20.26	20.28	20.30	21.20	21.05	21.07	21.12	22.00
3GPP Rel 6	HSDPA Subtest-4	20.22	20.28	20.25	21.20	21.05	21.07	21.11	22.00
3GPP Rel 8	DC-HSDPA Subtest-1	20.73	20.73	20.73	21.70	21.57	21.59	21.64	22.50
3GPP Rel 8	DC-HSDPA Subtest-2	20.71	20.71	20.73	21.70	21.56	21.57	21.63	22.50
3GPP Rel 8	DC-HSDPA Subtest-3	20.22	20.21	20.26	21.20	21.07	21.08	21.10	22.00
3GPP Rel 8	DC-HSDPA Subtest-4	20.26	20.27	20.28	21.20	21.06	21.09	21.10	22.00
3GPP Rel 6	HSUPA Subtest-1	20.19	20.26	20.29	21.70	21.04	21.06	21.06	22.50
3GPP Rel 6	HSUPA Subtest-2	19.43	19.49	19.47	19.70	20.23	20.26	20.31	22.00
3GPP Rel 6	HSUPA Subtest-3	19.97	20.12	20.09	20.70	21.34	21.40	21.37	22.00
3GPP Rel 6	HSUPA Subtest-4	20.24	20.30	20.33	20.70	21.00	21.16	21.10	22.00
3GPP Rel 6	HSUPA Subtest-5	20.60	20.70	20.70	21.70	21.55	21.65	21.65	22.50



Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513	
Rx Channel		9662	9800	9938	1537	1638	1738		
Frequency (MHz)		1852.4	1880	1907.6	1712.4	1732.6	1752.6		
3GPP Rel 99	AMR 12.2Kbps	16.62	16.69	16.68	17.70	16.19	16.23	16.21	17.10
3GPP Rel 99	RMC 12.2Kbps	16.63	16.70	16.69	17.70	16.20	16.25	16.22	17.10
3GPP Rel 6	HSDPA Subtest-1	16.60	16.68	16.65	17.20	16.19	16.23	16.20	16.60
3GPP Rel 6	HSDPA Subtest-2	16.59	16.67	16.62	17.20	16.16	16.21	16.19	16.60
3GPP Rel 6	HSDPA Subtest-3	16.08	16.18	16.14	16.70	15.68	15.74	15.70	16.10
3GPP Rel 6	HSDPA Subtest-4	16.11	16.19	16.13	16.70	15.67	15.73	15.69	16.10
3GPP Rel 8	DC-HSDPA Subtest-1	16.50	16.59	16.55	17.20	16.08	16.14	16.11	16.60
3GPP Rel 8	DC-HSDPA Subtest-2	16.47	16.57	16.53	17.20	16.06	16.11	16.09	16.60
3GPP Rel 8	DC-HSDPA Subtest-3	15.96	16.07	16.05	16.70	15.56	15.65	15.59	16.10
3GPP Rel 8	DC-HSDPA Subtest-4	15.95	16.04	16.04	16.70	15.55	15.63	15.57	16.10
3GPP Rel 6	HSUPA Subtest-1	16.38	16.05	16.10	17.20	16.02	16.01	16.00	16.60
3GPP Rel 6	HSUPA Subtest-2	15.23	15.36	15.37	16.20	15.02	15.05	15.01	16.10
3GPP Rel 6	HSUPA Subtest-3	15.88	15.97	15.98	16.20	15.96	15.55	16.04	16.10
3GPP Rel 6	HSUPA Subtest-4	15.94	15.97	16.09	16.20	16.03	15.58	16.04	16.10
3GPP Rel 6	HSUPA Subtest-5	16.50	16.61	16.62	17.20	16.15	16.18	16.15	16.60



Band		WCDMA V			Tune-up Limit (dBm)
TX Channel		4132	4182	4233	
Rx Channel		4357	4407	4458	
Frequency (MHz)		826.4	836.4	846.6	
3GPP Rel 99	AMR 12.2Kbps	21.15	21.18	21.12	22.00
3GPP Rel 99	RMC 12.2Kbps	21.18	21.19	21.13	22.00
3GPP Rel 6	HSDPA Subtest-1	20.17	20.13	20.07	21.00
3GPP Rel 6	HSDPA Subtest-2	20.16	20.11	20.06	21.00
3GPP Rel 6	HSDPA Subtest-3	19.66	19.50	19.58	20.50
3GPP Rel 6	HSDPA Subtest-4	19.64	19.48	19.56	20.50
3GPP Rel 8	DC-HSDPA Subtest-1	20.09	20.04	19.95	21.00
3GPP Rel 8	DC-HSDPA Subtest-2	20.05	20.02	19.93	21.00
3GPP Rel 8	DC-HSDPA Subtest-3	19.55	19.42	19.47	20.50
3GPP Rel 8	DC-HSDPA Subtest-4	19.54	19.39	19.42	20.50
3GPP Rel 6	HSUPA Subtest-1	20.17	20.20	20.11	21.00
3GPP Rel 6	HSUPA Subtest-2	18.17	18.18	18.13	19.00
3GPP Rel 6	HSUPA Subtest-3	19.14	19.13	19.15	20.00
3GPP Rel 6	HSUPA Subtest-4	18.17	18.19	18.16	19.00
3GPP Rel 6	HSUPA Subtest-5	20.10	20.13	20.05	21.00



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	AMR 12.2Kbps	18.03	18.12	18.09	19.00	17.64	17.68	17.63	18.50	23.13	23.20	23.15	23.80
3GPP Rel 99	RMC 12.2Kbps	18.04	18.13	18.11	19.00	17.65	17.70	17.64	18.50	23.14	23.23	23.17	23.80
3GPP Rel 6	HSDPA Subtest-1	18.04	18.07	18.03	19.00	17.57	17.62	17.62	18.50	22.16	22.21	22.15	22.80
3GPP Rel 6	HSDPA Subtest-2	18.08	17.98	18.03	19.00	17.60	17.63	17.64	18.50	22.14	22.19	22.12	22.80
3GPP Rel 6	HSDPA Subtest-3	17.56	17.57	17.54	18.50	17.08	17.11	17.15	18.00	21.62	21.65	21.66	22.30
3GPP Rel 6	HSDPA Subtest-4	17.50	17.56	17.51	18.50	17.05	17.10	17.13	18.00	21.60	21.60	21.63	22.30
3GPP Rel 8	DC-HSDPA Subtest-1	18.06	18.07	18.04	19.00	17.59	17.65	17.63	18.50	22.07	22.09	22.05	22.80
3GPP Rel 8	DC-HSDPA Subtest-2	18.03	18.00	18.05	19.00	17.61	17.65	17.62	18.50	22.03	22.06	22.03	22.80
3GPP Rel 8	DC-HSDPA Subtest-3	17.53	17.58	17.52	18.50	17.08	17.12	17.14	18.00	21.51	21.54	21.53	22.30
3GPP Rel 8	DC-HSDPA Subtest-4	17.54	17.56	17.52	18.50	17.09	17.11	17.14	18.00	21.50	21.51	21.52	22.30
3GPP Rel 6	HSUPA Subtest-1	17.78	18.10	18.10	19.00	17.40	17.29	17.34	18.50	22.17	22.22	22.17	22.80
3GPP Rel 6	HSUPA Subtest-2	16.82	16.92	16.83	18.00	16.66	16.63	16.61	18.00	20.15	20.23	20.18	20.80
3GPP Rel 6	HSUPA Subtest-3	17.39	17.48	17.73	18.00	16.95	17.42	17.38	18.00	21.15	21.22	21.18	21.80
3GPP Rel 6	HSUPA Subtest-4	17.60	17.66	17.69	18.00	17.02	17.50	17.12	18.00	20.17	20.23	20.19	20.80
3GPP Rel 6	HSUPA Subtest-5	17.99	18.09	18.09	19.00	17.60	17.60	17.60	18.50	22.20	22.30	22.20	22.80

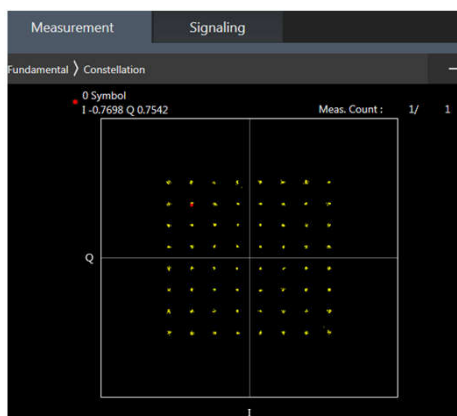


Band		WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
TX Channel		9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel		9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)		1852.4	1880	1907.6	1712.4	1732.6	1752.6	826.4	836.4	846.6			
3GPP Rel 99	AMR 12.2Kbps	20.87	20.96	20.92	21.50	20.99	21.05	21.01	21.50	23.34	23.38	23.30	23.50
3GPP Rel 99	RMC 12.2Kbps	20.89	20.97	20.94	21.50	21.00	21.06	21.04	21.50	23.37	23.39	23.31	23.50
3GPP Rel 6	HSDPA Subtest-1	20.86	20.89	20.93	21.00	20.99	20.99	20.99	21.00	22.37	22.40	22.34	22.50
3GPP Rel 6	HSDPA Subtest-2	20.84	20.87	20.94	21.00	20.99	20.98	20.99	21.00	22.42	22.40	22.35	22.50
3GPP Rel 6	HSDPA Subtest-3	20.37	20.43	20.44	20.50	20.43	20.17	20.48	20.50	21.89	21.94	21.84	22.00
3GPP Rel 6	HSDPA Subtest-4	20.38	20.40	20.46	20.50	20.42	20.18	20.50	20.50	21.88	21.94	21.84	22.00
3GPP Rel 8	DC-HSDPA Subtest-1	20.83	20.84	20.90	21.00	20.99	20.98	20.93	21.00	22.40	22.38	22.35	22.50
3GPP Rel 8	DC-HSDPA Subtest-2	20.89	20.90	20.88	21.00	20.89	20.94	20.95	21.00	22.39	22.42	22.38	22.50
3GPP Rel 8	DC-HSDPA Subtest-3	20.32	20.40	20.42	20.50	20.42	20.26	20.46	20.50	21.82	21.88	21.85	22.00
3GPP Rel 8	DC-HSDPA Subtest-4	20.28	20.35	20.41	20.50	20.41	20.23	20.45	20.50	21.97	21.91	21.78	22.00
3GPP Rel 6	HSUPA Subtest-1	20.36	19.93	19.95	21.00	19.98	20.02	20.00	21.00	22.38	22.38	22.36	22.50
3GPP Rel 6	HSUPA Subtest-2	19.56	19.69	19.68	20.50	19.67	19.43	19.52	20.50	20.42	20.40	20.35	20.50
3GPP Rel 6	HSUPA Subtest-3	20.18	20.27	20.25	20.50	20.49	20.50	20.43	20.50	21.41	21.32	21.33	21.50
3GPP Rel 6	HSUPA Subtest-4	20.36	20.43	20.47	20.50	20.50	20.49	20.48	20.50	20.34	20.39	20.34	20.50
3GPP Rel 6	HSUPA Subtest-5	20.86	20.91	20.95	21.00	20.99	20.89	20.99	21.00	22.41	22.43	22.33	22.50

<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
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements,
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
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
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same
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
8. For LTE B5 / B12 / B26 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
9. LTE band 2/4/17/38 SAR test was covered by Band 25/66/17/41; according to April 2015 TCB workshop, SAR test for overlapping LTE
 - 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 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



Band 2								
Band	BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
23.3	Channel				18700	18800	19100	
	Frequency (MHz)				1860	180	1900	
	20	QPSK	1	0	22.68	22.73	22.74	
	20	QPSK	1	49	22.62	22.69	22.68	
	20	QPSK	1	99	22.67	22.72	22.70	
	20	QPSK	50	0	21.61	21.68	21.64	
	20	QPSK	50	24	21.81	21.77	21.76	
	20	QPSK	50	50	21.76	21.81	21.81	
	20	QPSK	100	0	21.70	21.73	21.68	
	20	16QAM	1	0	22.01	22.06	22.05	
	20	16QAM	1	49	21.98	22.02	22.04	
	20	16QAM	1	99	21.98	22.06	22.07	
	20	16QAM	50	0	20.85	20.89	20.86	
	20	16QAM	50	24	20.81	20.77	20.77	
	20	16QAM	50	50	20.78	20.85	20.84	
	20	16QAM	100	0	20.74	20.72	20.70	
	20	64QAM	1	0	20.94	20.93	20.94	
	20	64QAM	1	49	20.87	20.85	20.92	
	20	64QAM	1	99	20.92	20.95	20.97	
	20	64QAM	50	0	19.67	19.71	19.69	
	20	64QAM	50	24	19.83	19.79	19.78	
	20	64QAM	50	50	19.79	19.83	19.84	
	20	64QAM	100	0	19.76	19.72	19.72	
	22.8	Channel				18675	18900	
Frequency (MHz)				1857.5	1880	1902.5		
15		QPSK	1	0	22.53	22.68	22.84	
15		QPSK	1	37	22.68	22.70	22.83	
15		QPSK	1	74	22.68	22.70	22.99	
15		QPSK	36	0	21.62	21.70	21.68	
15		QPSK	36	20	21.83	21.77	21.73	
15		QPSK	36	39	21.79	21.83	21.78	
15		QPSK	75	0	21.77	21.72	21.68	
15		16QAM	1	0	21.86	21.96	21.98	
15		16QAM	1	37	21.96	21.98	21.98	
15		16QAM	1	74	21.94	22.02	22.05	
15		16QAM	36	0	20.67	20.68	20.63	
15		16QAM	36	20	20.81	20.75	20.72	
15		16QAM	36	39	20.81	20.82	20.78	
15		16QAM	75	0	20.78	20.75	20.72	
15		64QAM	1	0	20.64	20.92	20.79	
15		64QAM	1	37	20.91	20.84	20.88	
15		64QAM	1	74	20.85	20.88	20.89	
15		64QAM	36	0	19.72	19.79	19.70	
15		64QAM	36	20	19.84	19.84	19.78	
15		64QAM	36	39	19.86	19.86	19.90	
15		64QAM	75	0	19.83	19.71	19.73	
22.3		Channel				18650	18900	19150
	Frequency (MHz)				1855	1880	1905	
	10	QPSK	1	0	22.37	22.45	22.67	
	10	QPSK	1	25	22.73	22.66	22.68	
	10	QPSK	1	49	22.46	22.53	22.89	
	10	QPSK	25	0	21.66	21.74	21.68	
	10	QPSK	25	12	21.86	21.82	21.92	
	10	QPSK	25	25	21.76	21.81	21.76	
	10	QPSK	50	0	21.77	21.75	21.78	
	10	16QAM	1	0	21.82	21.83	21.98	
	10	16QAM	1	25	22.04	22.18	22.05	
	10	16QAM	1	49	21.79	21.85	22.10	
	10	16QAM	25	0	20.68	20.70	20.70	
	10	16QAM	25	12	20.86	20.84	20.90	
	10	16QAM	25	25	20.73	20.79	20.72	
	10	16QAM	50	0	20.81	20.71	20.82	
	10	64QAM	1	0	20.53	20.61	21.01	
	10	64QAM	1	25	20.91	21.12	21.02	
	10	64QAM	1	49	20.90	20.75	21.05	
	10	64QAM	25	0	19.75	19.81	19.72	
	10	64QAM	25	12	19.91	19.91	19.93	
	10	64QAM	25	25	19.78	19.85	19.76	
	10	64QAM	50	0	19.86	19.78	19.80	
	21.3	Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5		
5		QPSK	1	0	22.49	22.49	22.51	
5		QPSK	1	12	22.57	22.67	22.59	
5		QPSK	1	24	22.42	22.42	22.47	
5		QPSK	12	0	21.67	21.67	21.65	
5		QPSK	12	7	21.67	21.67	21.67	
5		QPSK	12	13	21.59	21.59	21.63	
5		QPSK	25	0	21.62	21.62	21.60	
5		16QAM	1	0	21.83	21.83	21.80	
5		16QAM	1	12	21.86	21.85	21.93	
5		16QAM	1	24	21.73	21.73	21.81	
5		16QAM	12	0	20.68	20.68	20.64	
5		16QAM	12	7	20.68	20.68	20.66	
5		16QAM	12	13	20.60	20.60	20.66	
5		16QAM	25	0	20.62	20.62	20.62	
5		64QAM	1	0	20.75	20.75	20.74	
5		64QAM	1	12	20.78	20.78	20.86	
5		64QAM	1	24	20.65	20.65	20.72	
5		64QAM	12	0	19.62	19.62	19.74	
5		64QAM	12	7	19.67	19.67	19.72	
5		64QAM	13	0	19.54	19.54	19.72	
5		64QAM	25	0	20.60	20.60	19.54	
23.3		Channel				18615	18900	19185
	Frequency (MHz)				1851.5	1880	1908.5	
	3	QPSK	1	0	22.43	22.45	22.52	
	3	QPSK	1	8	22.48	22.51	22.56	
	3	QPSK	1	14	22.30	22.43	22.40	
	3	QPSK	8	0	21.53	21.50	21.58	
	3	QPSK	8	4	21.54	21.67	21.62	
	3	QPSK	8	7	21.45	21.54	21.55	
	3	QPSK	15	0	21.48	21.50	21.55	
	3	16QAM	1	0	21.75	21.78	21.83	
	3	16QAM	1	8	21.76	21.87	21.86	
	3	16QAM	1	14	21.64	21.72	21.77	
	3	16QAM	8	0	20.58	20.63	20.69	
	3	16QAM	8	4	20.59	20.67	20.66	
	3	16QAM	8	7	20.52	20.62	20.61	
	3	16QAM	15	0	20.55	20.54	20.63	
	3	64QAM	1	0	20.69	20.69	20.79	
	3	64QAM	1	8	20.70	20.77	20.80	
	3	64QAM	1	14	20.58	20.64	20.69	
	3	64QAM	8	0	19.59	19.60	19.67	
	3	64QAM	8	4	19.59	19.68	19.67	
	3	64QAM	8	7	19.54	19.61	19.61	
	3	64QAM	15	0	19.54	19.54	19.61	
	22.8	Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3		
1.4		QPSK	1	0	22.34	22.35	22.39	
1.4		QPSK	1	3	22.34	22.40	22.43	
1.4		QPSK	1	5	22.26	22.29	22.35	
1.4		QPSK	3	0	22.33	22.40	22.41	
1.4		QPSK	3	1	22.36	22.41	22.42	
1.4		QPSK	3	3	22.28	22.35	22.37	
1.4		QPSK	6	0	21.38	21.44	21.45	
1.4		16QAM	1	0	21.61	21.69	21.73	
1.4		16QAM	1	3	21.65	21.79	21.74	
1.4		16QAM	1	5	21.57	21.63	21.67	
1.4		16QAM	3	0	21.40	21.49	21.49	
1.4		16QAM	3	1	21.45	21.53	21.53	
1.4		16QAM	3	3	21.37	21.46	21.48	
1.4		16QAM	6	0	20.47	20.54	20.54	
1.4		64QAM	1	0	20.57	20.63	20.62	
1.4		64QAM	1	3	20.60	20.65	20.67	
1.4		64QAM	1	5	20.52	20.57	20.59	
1.4		64QAM	3	0	20.51	20.61	20.60	
1.4		64QAM	3	1	20.57	20.63	20.63	
1.4		64QAM	3	3	20.49	20.58	20.55	
1.4		64QAM	6	0	19.40	19.48	19.48	



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)
Channel				20450	20525	20600	
Frequency (MHz)				826	836.5	846	
10	QPSK	1	0	23.99	23.90	23.94	24.8
10	QPSK	1	25	23.91	23.91	23.86	
10	QPSK	1	49	23.88	23.88	23.82	
10	QPSK	25	0	23.00	23.00	22.97	23.8
10	QPSK	25	12	23.05	22.97	22.97	
10	QPSK	25	25	23.00	23.00	22.95	
10	QPSK	50	0	22.99	22.90	22.84	23.8
10	16QAM	1	0	23.38	23.28	23.29	
10	16QAM	1	25	23.29	23.30	23.27	
10	16QAM	1	49	23.30	23.28	23.20	22.8
10	16QAM	25	0	21.89	22.02	21.96	
10	16QAM	25	12	22.07	22.00	21.96	
10	16QAM	25	25	22.00	22.02	21.97	21.8
10	16QAM	50	0	21.97	21.87	21.85	
10	64QAM	1	0	21.86	22.17	22.19	
10	64QAM	1	25	22.17	22.20	21.62	22.8
10	64QAM	1	49	22.22	22.16	21.58	
10	64QAM	25	0	20.82	21.03	20.82	
10	64QAM	25	12	21.12	21.04	20.58	21.8
10	64QAM	25	25	21.04	21.03	20.70	
10	64QAM	50	0	21.02	20.90	20.73	
Channel				20425	20525	20625	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	0	23.94	23.83	23.80	24.8
5	QPSK	1	12	23.97	23.97	23.83	
5	QPSK	1	24	23.88	23.90	23.81	
5	QPSK	12	0	23.04	22.98	22.91	23.8
5	QPSK	12	7	23.06	23.06	22.96	
5	QPSK	12	13	23.02	22.98	22.94	
5	QPSK	25	0	23.02	22.95	22.89	23.8
5	16QAM	1	0	23.25	23.16	23.12	
5	16QAM	1	12	23.28	23.25	23.23	
5	16QAM	1	24	23.22	23.23	23.13	22.8
5	16QAM	12	0	22.06	21.96	21.93	
5	16QAM	12	7	22.11	22.06	21.99	
5	16QAM	12	13	22.05	22.04	21.99	22.8
5	16QAM	25	0	22.07	21.99	21.94	
5	64QAM	1	0	21.63	22.12	21.73	
5	64QAM	1	12	21.81	22.20	21.74	22.8
5	64QAM	1	24	21.79	22.19	21.64	
5	64QAM	12	0	20.89	21.04	20.55	
5	64QAM	12	7	20.84	21.13	20.76	21.8
5	64QAM	12	13	20.88	21.09	20.91	
5	64QAM	25	0	20.72	20.98	20.70	
Channel				20415	20525	20635	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	847.5	
3	QPSK	1	0	23.97	23.87	23.88	24.8
3	QPSK	1	8	23.98	23.96	23.94	
3	QPSK	1	14	23.93	23.92	23.84	
3	QPSK	8	0	23.08	22.96	22.98	23.8
3	QPSK	8	4	23.08	23.06	22.97	
3	QPSK	8	7	23.04	23.03	22.94	
3	QPSK	15	0	23.07	22.97	22.94	23.8
3	16QAM	1	0	23.29	23.18	23.21	
3	16QAM	1	8	23.37	23.33	23.27	
3	16QAM	1	14	23.25	23.23	23.17	22.8
3	16QAM	8	0	22.14	22.04	22.96	
3	16QAM	8	4	22.16	22.15	22.04	
3	16QAM	8	7	22.12	22.07	22.00	22.8
3	16QAM	15	0	22.08	22.01	21.98	
3	64QAM	1	0	21.60	22.13	21.88	
3	64QAM	1	8	21.77	22.25	21.95	22.8
3	64QAM	1	14	21.77	22.22	21.92	
3	64QAM	8	0	20.52	21.02	20.80	
3	64QAM	8	4	20.67	21.12	20.98	21.8
3	64QAM	8	7	20.76	21.12	20.99	
3	64QAM	15	0	20.62	20.99	20.90	
Channel				20407	20525	20643	Tune-up limit (dBm)
Frequency (MHz)				824.7	836.5	848.3	
1.4	QPSK	1	0	23.89	23.81	23.78	24.8
1.4	QPSK	1	3	23.83	23.93	23.82	
1.4	QPSK	1	5	23.88	23.88	23.74	
1.4	QPSK	3	0	23.90	23.80	23.80	23.8
1.4	QPSK	3	1	23.97	23.88	23.74	
1.4	QPSK	3	3	23.93	23.89	23.81	
1.4	QPSK	6	0	23.01	22.94	22.88	23.8
1.4	16QAM	1	0	23.23	23.17	23.10	
1.4	16QAM	1	3	23.28	23.28	23.18	
1.4	16QAM	1	5	23.23	23.21	23.13	23.8
1.4	16QAM	3	0	22.99	22.93	22.90	
1.4	16QAM	3	1	23.05	22.97	22.93	
1.4	16QAM	3	3	22.98	22.97	22.87	22.8
1.4	16QAM	6	0	22.07	21.98	21.96	
1.4	64QAM	1	0	21.51	22.10	22.03	
1.4	64QAM	1	3	21.51	22.19	22.10	22.8
1.4	64QAM	1	5	21.51	22.12	22.02	
1.4	64QAM	3	0	21.47	22.04	22.03	
1.4	64QAM	3	1	21.53	22.11	22.05	22.8
1.4	64QAM	3	3	21.53	22.09	21.99	
1.4	64QAM	6	0	20.40	20.93	20.89	



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)
Channel				20850	21100	21350	
Frequency (MHz)				2510	2535	2560	
20	QPSK	1	0	22.07	22.04	22.12	22.8
20	QPSK	1	49	22.15	22.11	22.16	
20	QPSK	1	99	22.23	22.20	22.24	
20	QPSK	50	0	22.18	22.16	22.20	22.8
20	QPSK	50	24	22.30	22.23	22.32	
20	QPSK	50	50	22.31	22.31	22.33	
20	QPSK	100	0	22.21	22.14	22.16	22.8
20	16QAM	1	0	22.41	22.39	22.45	
20	16QAM	1	49	22.50	22.46	22.49	
20	16QAM	1	99	22.59	22.56	22.58	21.8
20	16QAM	50	0	21.16	21.20	21.20	
20	16QAM	50	24	21.29	21.21	21.33	
20	16QAM	50	50	21.32	21.33	21.35	21.8
20	16QAM	100	0	21.23	21.14	21.17	
20	64QAM	1	0	21.35	21.26	21.34	
20	64QAM	1	49	21.36	21.37	21.41	21.8
20	64QAM	1	99	21.53	21.47	21.49	
20	64QAM	50	0	20.20	20.20	20.25	
20	64QAM	50	24	20.32	20.24	20.37	20.8
20	64QAM	50	50	20.35	20.35	20.38	
20	64QAM	100	0	20.25	20.18	20.20	
Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	22.13	22.10	22.16	22.8
15	QPSK	1	37	22.15	22.12	22.19	
15	QPSK	1	74	22.24	22.25	22.26	
15	QPSK	36	0	22.18	22.18	22.22	22.8
15	QPSK	36	20	22.30	22.22	22.33	
15	QPSK	36	39	22.29	22.29	22.34	
15	QPSK	75	0	22.26	22.17	22.27	22.8
15	16QAM	1	0	22.44	22.39	22.46	
15	16QAM	1	37	22.50	22.48	22.51	
15	16QAM	1	74	22.57	22.55	22.57	21.8
15	16QAM	36	0	21.19	21.18	21.22	
15	16QAM	36	20	21.31	21.20	21.33	
15	16QAM	36	39	21.30	21.30	21.34	21.8
15	16QAM	75	0	21.27	21.16	21.30	
15	64QAM	1	0	21.33	21.30	21.33	
15	64QAM	1	37	21.40	21.40	21.42	21.8
15	64QAM	1	74	21.48	21.43	21.48	
15	64QAM	36	0	20.22	20.22	20.25	
15	64QAM	36	20	20.35	20.26	20.36	20.8
15	64QAM	36	39	20.36	20.34	20.38	
15	64QAM	75	0	20.26	20.17	20.29	
Channel				20800	21100	21400	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	21.94	21.97	22.00	22.8
10	QPSK	1	25	21.94	21.98	22.00	
10	QPSK	1	49	22.02	22.06	22.06	
10	QPSK	25	0	21.98	22.00	22.00	22.8
10	QPSK	25	12	22.10	22.03	22.04	
10	QPSK	25	25	22.06	22.11	22.10	
10	QPSK	50	0	22.03	21.97	21.98	22.8
10	16QAM	1	0	22.29	22.29	22.32	
10	16QAM	1	25	22.34	22.36	22.38	
10	16QAM	1	49	22.39	22.41	22.44	21.8
10	16QAM	25	0	20.96	21.01	21.01	
10	16QAM	25	12	21.08	21.05	21.05	
10	16QAM	25	25	21.06	21.07	21.10	21.8
10	16QAM	50	0	21.03	20.97	20.97	
10	64QAM	1	0	21.15	21.13	21.18	
10	64QAM	1	25	21.27	21.27	21.27	21.8
10	64QAM	1	49	21.27	21.33	21.29	
10	64QAM	25	0	20.02	20.03	20.04	
10	64QAM	25	12	20.17	20.09	20.09	20.8
10	64QAM	25	25	20.12	20.15	20.14	
10	64QAM	50	0	20.06	20.00	20.01	
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	21.91	21.93	22.01	22.8
5	QPSK	1	12	22.01	22.02	22.04	
5	QPSK	1	24	22.02	22.06	22.06	
5	QPSK	12	0	22.00	22.04	22.07	22.8
5	QPSK	12	7	22.07	22.07	22.11	
5	QPSK	12	13	22.04	22.07	22.09	
5	QPSK	25	0	22.04	22.01	22.08	22.8
5	16QAM	1	0	22.28	22.24	22.35	
5	16QAM	1	12	22.30	22.36	22.32	
5	16QAM	1	24	22.36	22.36	22.37	21.8
5	16QAM	12	0	21.03	21.05	21.11	
5	16QAM	12	7	21.11	21.10	21.12	
5	16QAM	12	13	21.10	21.09	21.12	21.8
5	16QAM	25	0	21.06	21.02	21.11	
5	64QAM	1	0	21.22	21.21	21.25	
5	64QAM	1	12	21.23	21.24	21.24	21.8
5	64QAM	1	24	21.26	21.28	21.24	
5	64QAM	12	0	20.06	20.10	20.12	
5	64QAM	12	7	20.16	20.14	20.20	20.8
5	64QAM	12	13	20.13	20.15	20.15	
5	64QAM	25	0	20.11	20.04	20.11	



Band 12							
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23050	23055	23150	
Frequency (MHz)				704	707.5	711	
10	QPSK	1	0	23.08	23.04	23.04	23.8
10	QPSK	1	25	23.04	23.05	23.00	
10	QPSK	1	49	23.05	23.03	23.02	
10	QPSK	25	0	22.05	22.06	22.00	22.8
10	QPSK	25	12	22.25	22.15	22.07	
10	QPSK	25	25	22.21	22.16	22.11	
10	QPSK	50	0	22.18	22.05	22.03	22.8
10	16QAM	1	0	22.45	22.38	22.36	
10	16QAM	1	25	22.43	22.42	22.36	
10	16QAM	1	49	22.45	22.45	22.36	21.8
10	16QAM	25	0	21.05	21.04	20.99	
10	16QAM	25	12	21.25	21.15	21.10	
10	16QAM	25	25	21.18	21.14	21.10	21.8
10	16QAM	50	0	21.15	21.08	21.04	
10	64QAM	1	0	21.29	21.29	21.24	
10	64QAM	1	25	21.39	21.34	21.31	21.8
10	64QAM	1	49	21.37	21.33	21.27	
10	64QAM	25	0	20.08	20.08	20.04	
10	64QAM	25	12	20.28	20.20	20.10	20.8
10	64QAM	25	25	20.21	20.18	20.13	
10	64QAM	50	0	20.13	20.07	20.08	
Channel				23035	23095	23155	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	QPSK	1	0	23.01	22.99	22.96	23.8
5	QPSK	1	12	23.06	23.02	23.03	
5	QPSK	1	24	22.98	23.04	23.03	
5	QPSK	12	0	22.24	22.14	22.05	22.8
5	QPSK	12	7	22.21	22.14	22.08	
5	QPSK	12	13	22.18	22.16	22.09	
5	QPSK	25	0	22.23	22.13	22.07	22.8
5	16QAM	1	0	22.45	22.36	22.32	
5	16QAM	1	12	22.45	22.42	22.37	
5	16QAM	1	24	22.46	22.38	22.36	21.8
5	16QAM	12	0	21.25	21.13	21.12	
5	16QAM	12	7	21.26	21.17	21.11	
5	16QAM	12	13	21.23	21.18	21.08	21.8
5	16QAM	25	0	21.25	21.15	21.09	
5	64QAM	1	0	21.35	21.30	21.27	
5	64QAM	1	12	21.33	21.32	21.32	21.8
5	64QAM	1	24	21.34	21.36	21.20	
5	64QAM	12	0	20.28	20.21	20.15	
5	64QAM	12	7	20.32	20.23	20.13	20.8
5	64QAM	12	13	20.25	20.23	20.13	
5	64QAM	25	0	20.24	20.16	20.13	
Channel				23025	23095	23155	Tune-up limit (dBm)
Frequency (MHz)				700.5	707.5	714.5	
3	QPSK	1	0	23.04	23.05	23.01	23.8
3	QPSK	1	8	23.06	23.07	23.07	
3	QPSK	1	14	23.02	23.07	22.99	
3	QPSK	8	0	22.21	22.12	22.09	22.8
3	QPSK	8	4	22.22	22.19	22.12	
3	QPSK	8	7	22.22	22.16	22.06	
3	QPSK	15	0	22.26	22.13	22.09	22.8
3	16QAM	1	0	22.49	22.37	22.35	
3	16QAM	1	8	22.50	22.49	22.43	
3	16QAM	1	14	22.45	22.40	22.32	21.8
3	16QAM	8	0	21.29	21.16	21.14	
3	16QAM	8	4	21.29	21.28	21.19	
3	16QAM	8	7	21.26	21.23	21.16	21.8
3	16QAM	15	0	21.23	21.14	21.12	
3	64QAM	1	0	21.43	21.26	21.29	
3	64QAM	1	8	21.46	21.39	21.28	21.8
3	64QAM	1	14	21.39	21.33	21.23	
3	64QAM	8	0	20.27	20.18	20.15	
3	64QAM	8	4	20.31	20.25	20.15	20.8
3	64QAM	8	7	20.28	20.23	20.08	
3	64QAM	15	0	20.27	20.16	20.16	
Channel				23017	23095	23173	Tune-up limit (dBm)
Frequency (MHz)				699.7	707.5	715.3	
1.4	QPSK	1	0	23.04	22.95	22.87	23.8
1.4	QPSK	1	3	23.06	23.03	22.97	
1.4	QPSK	1	5	23.05	22.97	22.88	
1.4	QPSK	3	0	23.05	22.94	22.89	22.8
1.4	QPSK	3	1	23.07	23.00	22.94	
1.4	QPSK	3	3	23.06	23.03	22.90	
1.4	QPSK	6	0	22.15	22.05	21.98	22.8
1.4	16QAM	1	0	22.38	22.24	22.24	
1.4	16QAM	1	3	22.45	22.40	22.27	
1.4	16QAM	1	5	22.40	22.32	22.23	22.8
1.4	16QAM	3	0	22.18	22.07	21.99	
1.4	16QAM	3	1	22.22	22.10	22.02	
1.4	16QAM	3	3	22.18	22.11	21.97	21.8
1.4	16QAM	6	0	21.23	21.11	21.03	
1.4	64QAM	1	0	21.33	21.23	21.17	
1.4	64QAM	1	3	21.38	21.31	21.19	21.8
1.4	64QAM	1	5	21.32	21.27	21.14	
1.4	64QAM	3	0	21.28	21.16	21.12	
1.4	64QAM	3	1	21.35	21.21	21.16	21.8
1.4	64QAM	3	3	21.29	21.23	21.12	
1.4	64QAM	6	0	20.20	20.05	20.01	



Band 13								
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				25	0	-25	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2.5	0	-2.5		
10	QPSK	1	0	23.89	23.81	23.85	24.8	0
10	QPSK	1	25	23.77				
10	QPSK	1	49	23.75				
10	QPSK	25	0	22.93			23.8	1
10	QPSK	25	12	22.92				
10	QPSK	25	25	23.76				
10	QPSK	50	0	23.02			23.8	1
10	16QAM	1	0	23.35				
10	16QAM	1	25	23.28				
10	16QAM	1	49	23.22			22.8	2
10	16QAM	25	0	21.99				
10	16QAM	25	12	21.95				
10	16QAM	25	25	22.01			21.8	3
10	16QAM	50	0	21.93				
10	64QAM	1	0	21.44				
10	64QAM	1	25	22.21			22.8	2
10	64QAM	1	49	22.13				
10	64QAM	25	0	20.96				
10	64QAM	25	12	21.00			21.8	3
10	64QAM	25	25	21.00				
10	64QAM	50	0	20.94				
Channel				25	0	-25	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2.5	0	-2.5		
5	QPSK	1	0	23.89	23.81	23.85	24.8	0
5	QPSK	1	12	23.86	23.86	23.84		
5	QPSK	1	24	23.86	23.82	23.79		
5	QPSK	12	0	23.09	22.97	22.95	23.8	1
5	QPSK	12	7	23.10	23.02	23.03		
5	QPSK	12	13	23.05	23.04	22.96		
5	QPSK	25	0	23.08	22.95	22.99	23.8	1
5	16QAM	1	0	23.20	23.23	23.30		
5	16QAM	1	12	23.27	23.28	23.21		
5	16QAM	1	24	23.29	23.26	23.19	22.8	2
5	16QAM	12	0	22.14	22.01	21.99		
5	16QAM	12	7	22.15	22.05	22.03		
5	16QAM	12	13	22.10	22.05	21.97	22.8	2
5	16QAM	25	0	22.07	21.97	22.02		
5	64QAM	1	0	21.14	22.19	22.26		
5	64QAM	1	12	22.19	22.22	22.17	22.8	2
5	64QAM	1	24	22.27	22.20	22.13		
5	64QAM	12	0	20.94	21.06	21.02		
5	64QAM	12	7	21.18	21.06	21.04	21.8	3
5	64QAM	12	13	21.15	21.09	21.00		
5	64QAM	25	0	21.07	20.98	21.03		



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)
Channel				50	0	50	
Frequency (MHz)				5	0	-5	
10	QPSK	1	0	23.08	22.99	22.95	23.8
10	QPSK	1	25	23.01	23.01	22.98	
10	QPSK	1	49	23.03	23.02	22.98	
10	QPSK	25	0	22.10	22.08	22.05	22.8
10	QPSK	25	12	22.16	22.10	22.09	
10	QPSK	25	25	22.14	22.15	22.15	
10	QPSK	50	0	22.09	22.08	22.07	22.8
10	16QAM	1	0	22.39	22.38	22.33	
10	16QAM	1	25	22.40	22.37	22.37	
10	16QAM	1	49	22.44	22.42	22.36	21.8
10	16QAM	25	0	21.09	21.08	21.06	
10	16QAM	25	12	21.18	21.11	21.11	
10	16QAM	25	25	21.15	21.15	21.14	21.8
10	16QAM	50	0	21.10	21.10	21.08	
10	64QAM	1	0	21.27	21.18	21.19	
10	64QAM	1	25	21.31	21.32	21.30	21.8
10	64QAM	1	49	21.29	21.29	21.24	
10	64QAM	25	0	20.12	20.12	20.09	
10	64QAM	25	12	20.23	20.15	20.13	20.8
10	64QAM	25	25	20.18	20.17	20.16	
10	64QAM	50	0	20.13	20.12	20.11	
Channel				25	0	-25	
Frequency (MHz)				2.5	0	-2.5	
5	QPSK	1	0	23.02	22.94	22.98	23.8
5	QPSK	1	12	23.07	23.06	23.06	
5	QPSK	1	24	23.07	23.05	22.98	
5	QPSK	12	0	22.12	22.07	22.08	22.8
5	QPSK	12	7	22.16	22.12	22.12	
5	QPSK	12	13	22.15	22.14	22.08	
5	QPSK	25	0	22.18	22.08	22.11	22.8
5	16QAM	1	0	22.36	22.29	22.30	
5	16QAM	1	12	22.36	22.42	22.34	
5	16QAM	1	24	22.41	22.37	22.32	21.8
5	16QAM	12	0	21.15	21.13	21.12	
5	16QAM	12	7	21.18	21.13	21.12	
5	16QAM	12	13	21.17	21.18	21.08	21.8
5	16QAM	25	0	21.14	21.10	21.08	
5	64QAM	1	0	21.27	21.19	21.23	
5	64QAM	1	12	21.28	21.34	21.27	21.8
5	64QAM	1	24	21.36	21.39	21.19	
5	64QAM	12	0	20.16	20.13	20.18	
5	64QAM	12	7	20.20	20.18	20.18	20.8
5	64QAM	12	13	20.22	20.22	20.08	
5	64QAM	25	0	20.16	20.10	20.14	



Band 26							
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				26765	26865	26965	
Frequency (MHz)				831.5	831.5	841.5	
15	QPSK	1	0	23.01	22.99	22.98	23.8
15	QPSK	1	37	22.96	22.98	22.95	
15	QPSK	1	74	22.98	23.00	22.94	
15	QPSK	36	0	21.98	22.00	21.91	22.8
15	QPSK	36	20	22.13	22.04	22.96	
15	QPSK	36	39	22.02	22.02	21.97	
15	QPSK	75	0	22.08	21.98	22.03	22.8
15	16QAM	1	0	22.39	22.35	22.32	
15	16QAM	1	37	22.35	22.33	22.28	
15	16QAM	1	74	22.33	22.25	22.18	21.8
15	16QAM	36	0	20.97	21.01	20.94	
15	16QAM	36	20	21.13	21.05	21.08	
15	16QAM	36	39	21.04	21.01	20.98	21.8
15	16QAM	75	0	21.07	20.99	21.04	
15	64QAM	1	0	21.20	21.19	21.14	
15	64QAM	1	37	21.18	21.30	21.18	21.8
15	64QAM	1	74	21.21	21.23	21.17	
15	64QAM	36	0	20.04	20.03	19.99	
15	64QAM	36	20	20.15	20.08	20.12	20.8
15	64QAM	36	39	20.08	20.07	20.06	
15	64QAM	75	0	20.09	20.00	20.07	
Channel				26740	26865	26990	
Frequency (MHz)				819	831.5	844	
10	QPSK	1	0	22.83	22.85	22.88	23.8
10	QPSK	1	25	22.86	22.89	22.81	
10	QPSK	1	49	22.92	22.85	22.90	
10	QPSK	25	0	21.82	21.81	21.82	22.8
10	QPSK	25	12	22.01	21.91	21.99	
10	QPSK	25	25	21.92	21.93	21.90	
10	QPSK	50	0	21.92	21.84	21.81	22.8
10	16QAM	1	0	22.30	22.24	22.23	
10	16QAM	1	25	22.24	22.23	22.18	
10	16QAM	1	49	22.28	22.25	22.14	21.8
10	16QAM	25	0	20.81	20.83	20.83	
10	16QAM	25	12	21.02	20.95	20.99	
10	16QAM	25	25	20.93	20.91	20.90	21.8
10	16QAM	50	0	20.91	20.84	20.81	
10	64QAM	1	0	21.17	21.17	21.10	
10	64QAM	1	25	21.17	21.19	21.18	21.8
10	64QAM	1	49	21.18	21.16	21.08	
10	64QAM	25	0	19.86	19.85	19.83	
10	64QAM	25	12	20.06	19.98	20.06	20.8
10	64QAM	25	25	19.94	19.96	19.93	
10	64QAM	50	0	19.95	19.89	19.87	
Channel				26715	26865	27015	
Frequency (MHz)				816.5	831.5	846.5	
5	QPSK	1	0	22.82	22.86	22.80	23.8
5	QPSK	1	12	22.94	22.90	22.88	
5	QPSK	1	24	22.84	22.91	22.82	
5	QPSK	12	0	21.95	21.90	21.90	22.8
5	QPSK	12	7	22.03	22.02	21.94	
5	QPSK	12	13	21.97	21.97	21.92	
5	QPSK	25	0	21.98	21.91	21.90	22.8
5	16QAM	1	0	22.16	22.22	22.15	
5	16QAM	1	12	22.25	22.25	22.23	
5	16QAM	1	24	22.22	22.24	22.17	21.8
5	16QAM	12	0	21.00	20.91	20.82	
5	16QAM	12	7	21.02	21.06	20.96	
5	16QAM	12	13	20.99	20.98	20.95	21.8
5	16QAM	25	0	21.00	20.93	20.92	
5	64QAM	1	0	21.10	21.12	21.08	
5	64QAM	1	12	21.16	21.22	21.10	21.8
5	64QAM	1	24	21.09	21.22	21.12	
5	64QAM	12	0	20.07	20.00	19.95	
5	64QAM	12	7	20.10	20.13	19.99	20.8
5	64QAM	12	13	20.04	20.06	20.00	
5	64QAM	25	0	19.98	19.94	19.92	
Channel				26705	26865	27025	
Frequency (MHz)				815.5	831.5	847.5	
3	QPSK	1	0	22.89	22.86	22.80	23.8
3	QPSK	1	5	22.97	22.96	22.86	
3	QPSK	1	14	22.88	22.89	22.82	
3	QPSK	8	0	22.01	21.92	21.88	22.8
3	QPSK	8	4	22.02	22.02	21.99	
3	QPSK	8	7	22.01	22.00	21.93	
3	QPSK	15	0	22.03	21.91	21.88	22.8
3	16QAM	1	0	22.22	22.23	22.15	
3	16QAM	1	5	22.33	22.36	22.22	
3	16QAM	1	14	22.23	22.24	22.15	21.8
3	16QAM	8	0	21.08	21.01	20.95	
3	16QAM	8	4	21.08	21.08	21.03	
3	16QAM	8	7	21.03	21.03	20.99	21.8
3	16QAM	15	0	21.04	20.97	20.91	
3	64QAM	1	0	21.15	21.14	21.06	
3	64QAM	1	8	21.26	21.24	21.17	21.8
3	64QAM	1	14	21.18	21.18	21.09	
3	64QAM	8	0	20.09	20.00	19.96	
3	64QAM	8	4	20.11	20.11	20.01	20.8
3	64QAM	8	7	20.07	20.04	19.98	
3	64QAM	15	0	20.01	19.98	19.94	
Channel				26597	26865	27033	
Frequency (MHz)				814.7	831.5	848.3	
1.4	QPSK	1	0	22.84	22.79	22.72	23.8
1.4	QPSK	1	3	22.91	22.89	22.80	
1.4	QPSK	1	5	22.83	22.83	22.88	
1.4	QPSK	3	0	22.83	22.82	22.76	22.8
1.4	QPSK	3	1	22.96	22.83	22.81	
1.4	QPSK	3	3	22.89	22.85	22.75	
1.4	QPSK	6	0	21.94	21.92	21.85	22.8
1.4	16QAM	1	0	22.17	22.08	22.05	
1.4	16QAM	1	3	22.25	22.25	22.14	
1.4	16QAM	1	5	22.20	22.14	22.05	22.8
1.4	16QAM	3	0	21.99	21.91	21.85	
1.4	16QAM	3	1	22.04	21.95	21.89	
1.4	16QAM	3	3	21.98	21.94	21.83	21.8
1.4	16QAM	6	0	21.03	21.02	20.95	
1.4	64QAM	1	0	21.13	21.08	21.00	
1.4	64QAM	1	3	21.18	21.17	21.05	21.8
1.4	64QAM	1	5	21.11	21.07	20.96	
1.4	64QAM	3	0	21.08	21.01	20.99	
1.4	64QAM	3	1	21.15	21.07	21.02	20.8
1.4	64QAM	3	3	21.08	21.10	20.98	
1.4	64QAM	6	0	19.97	19.95	19.88	



Band 30							
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				27710			
Frequency (MHz)				2310			
10	QPSK	1	0		23.03		23.8
10	QPSK	1	25		22.93		
10	QPSK	1	49		22.98		
10	QPSK	25	0		21.93		22.8
10	QPSK	25	12		21.98		
10	QPSK	25	25		21.89		
10	QPSK	50	0		21.66		22.8
10	16QAM	1	0		22.31		
10	16QAM	1	25		22.33		
10	16QAM	1	49		22.35		21.8
10	16QAM	25	0		20.92		
10	16QAM	25	12		21.04		
10	16QAM	25	25		21.00		21.8
10	16QAM	50	0		20.65		
10	64QAM	1	0		21.18		
10	64QAM	1	25		21.29		21.8
10	64QAM	1	49		21.24		
10	64QAM	25	0		19.88		
10	64QAM	25	12		20.04		20.8
10	64QAM	25	25		20.03		
10	64QAM	50	0		19.88		
Channel				27685	27710	27735	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	QPSK	1	0	22.74	22.79	22.83	23.8
5	QPSK	1	12	22.90	22.91	22.92	
5	QPSK	1	24	22.86	22.84	22.83	
5	QPSK	12	0	21.89	21.91	21.94	22.8
5	QPSK	12	7	22.01	21.97	22.02	
5	QPSK	12	13	21.95	21.98	21.98	
5	QPSK	25	0	21.96	21.91	21.96	22.8
5	16QAM	1	0	22.11	22.13	22.18	
5	16QAM	1	12	22.23	22.23	22.23	
5	16QAM	1	24	22.17	22.22	22.21	21.8
5	16QAM	12	0	20.91	20.94	21.00	
5	16QAM	12	7	21.04	20.98	21.03	
5	16QAM	12	13	20.99	20.99	20.99	21.8
5	16QAM	25	0	20.96	20.94	20.98	
5	64QAM	1	0	20.95	21.01	21.05	
5	64QAM	1	12	21.07	21.10	21.08	21.8
5	64QAM	1	24	21.06	21.00	20.95	
5	64QAM	12	0	19.91	19.97	20.00	
5	64QAM	12	7	20.01	20.01	20.04	20.8
5	64QAM	12	13	20.00	19.96	19.98	
5	64QAM	25	0	19.94	19.91	19.94	



Band 71							
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				133222	133322	133372	
Frequency (MHz)				673	683	688	
20	QPSK	1	0	23.74	23.56	23.53	23.8
20	QPSK	1	49	23.70	23.56	23.53	
20	QPSK	1	99	23.71	23.55	23.54	
20	QPSK	50	0	22.82	22.66	22.67	22.8
20	QPSK	50	24	22.86	22.67	22.65	
20	QPSK	50	50	22.91	22.64	22.66	
20	QPSK	100	0	22.83	22.55	22.65	22.8
20	16QAM	1	0	23.03	22.86	22.87	
20	16QAM	1	49	23.07	22.91	22.90	
20	16QAM	1	99	23.06	22.88	22.90	21.8
20	16QAM	50	0	21.85	21.69	21.67	
20	16QAM	50	24	21.93	21.66	21.66	
20	16QAM	50	50	21.92	21.65	21.68	21.8
20	16QAM	100	0	21.86	21.57	21.65	
20	64QAM	1	0	21.91	21.72	21.71	
20	64QAM	1	49	21.92	21.83	21.73	21.8
20	64QAM	1	99	21.97	21.77	21.75	
20	64QAM	50	0	20.87	20.70	20.69	
20	64QAM	50	24	20.83	20.68	20.67	20.8
20	64QAM	50	50	20.83	20.69	20.70	
20	64QAM	100	0	20.85	20.61	20.65	
Channel				133197	133297	133397	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	QPSK	1	0	23.70	23.53	23.58	23.8
15	QPSK	1	37	23.71	23.56	23.54	
15	QPSK	1	74	23.70	23.49	23.58	
15	QPSK	36	0	22.84	22.66	22.63	22.8
15	QPSK	36	20	22.91	22.72	22.69	
15	QPSK	36	39	22.85	22.67	22.67	
15	QPSK	75	0	22.87	22.58	22.67	22.8
15	16QAM	1	0	23.04	22.85	22.86	
15	16QAM	1	37	23.04	22.89	22.94	
15	16QAM	1	74	23.09	22.94	22.94	21.8
15	16QAM	36	0	21.85	21.66	21.64	
15	16QAM	36	20	21.91	21.72	21.71	
15	16QAM	36	39	21.85	21.68	21.68	21.8
15	16QAM	75	0	21.86	21.61	21.64	
15	64QAM	1	0	21.89	21.71	21.75	
15	64QAM	1	37	21.98	21.83	21.79	21.8
15	64QAM	1	74	22.00	21.79	21.84	
15	64QAM	36	0	20.87	20.69	20.69	
15	64QAM	36	20	20.86	20.77	20.74	20.8
15	64QAM	36	39	20.89	20.75	20.67	
15	64QAM	75	0	20.89	20.64	20.65	
Channel				133172	133272	133422	Tune-up limit (dBm)
Frequency (MHz)				688	678	693	
10	QPSK	1	0	23.51	23.43	23.39	23.8
10	QPSK	1	25	23.54	23.40	23.37	
10	QPSK	1	49	23.55	23.44	23.36	
10	QPSK	25	0	22.63	22.46	22.39	22.8
10	QPSK	25	12	22.73	22.53	22.39	
10	QPSK	25	25	22.70	22.49	22.47	
10	QPSK	50	0	22.66	22.46	22.35	22.8
10	16QAM	1	0	22.91	22.82	22.77	
10	16QAM	1	25	22.95	22.77	22.72	
10	16QAM	1	49	22.93	22.78	22.76	21.8
10	16QAM	25	0	21.81	21.44	21.40	
10	16QAM	25	12	21.78	21.56	21.41	
10	16QAM	25	25	21.72	21.51	21.46	21.8
10	16QAM	50	0	21.67	21.45	21.33	
10	64QAM	1	0	21.79	21.67	21.61	
10	64QAM	1	25	21.86	21.70	21.66	21.8
10	64QAM	1	49	21.85	21.66	21.64	
10	64QAM	25	0	20.86	20.49	20.43	
10	64QAM	25	12	20.79	20.58	20.44	20.8
10	64QAM	25	25	20.72	20.54	20.49	
10	64QAM	50	0	20.65	20.49	20.40	
Channel				133147	133247	133447	Tune-up limit (dBm)
Frequency (MHz)				665.5	675.5	685.5	
5	QPSK	1	0	23.52	23.27	23.21	23.8
5	QPSK	1	12	23.55	23.53	23.41	
5	QPSK	1	24	23.62	23.45	23.42	
5	QPSK	12	0	22.59	22.43	22.36	22.8
5	QPSK	12	7	22.75	22.55	22.50	
5	QPSK	12	13	22.72	22.53	22.46	
5	QPSK	25	0	22.68	22.50	22.42	22.8
5	16QAM	1	0	22.86	22.60	22.56	
5	16QAM	1	12	22.92	22.79	22.68	
5	16QAM	1	24	22.93	22.80	22.72	21.8
5	16QAM	12	0	21.65	21.48	21.41	
5	16QAM	12	7	21.77	21.58	21.52	
5	16QAM	12	13	21.72	21.59	21.47	21.8
5	16QAM	25	0	21.72	21.54	21.40	
5	64QAM	1	0	21.78	21.55	21.46	
5	64QAM	1	12	21.90	21.74	21.62	21.8
5	64QAM	1	24	21.83	21.75	21.59	
5	64QAM	12	0	20.70	20.50	20.44	
5	64QAM	12	7	20.78	20.63	20.58	20.8
5	64QAM	12	13	20.79	20.61	20.51	
5	64QAM	25	0	20.71	20.51	20.43	



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)
Channel				20850	21100	21350	
Frequency (MHz)				2510	2535	2560	
20	QPSK	1	0	18.89	18.88	18.92	19.8
20	QPSK	1	49	18.97	18.86	19.00	
20	QPSK	1	99	19.06	18.96	19.10	
20	QPSK	50	0	19.00	18.93	19.04	19.8
20	QPSK	50	24	19.12	19.96	19.17	
20	QPSK	50	50	19.13	19.06	19.17	
20	QPSK	100	0	19.04	18.89	18.99	19.8
20	16QAM	1	0	19.27	19.15	19.30	
20	16QAM	1	49	19.33	19.18	19.37	
20	16QAM	1	99	19.40	19.29	19.50	19.8
20	16QAM	50	0	19.01	18.92	19.05	
20	16QAM	50	24	19.13	19.96	19.15	
20	16QAM	50	50	19.14	19.08	19.18	19.8
20	16QAM	100	0	19.03	18.89	18.90	
20	64QAM	1	0	19.14	18.98	19.01	
20	64QAM	1	49	19.16	19.07	19.13	19.8
20	64QAM	1	99	19.30	19.34	19.24	
20	64QAM	50	0	19.04	19.07	19.28	
20	64QAM	50	24	19.10	19.10	19.11	19.8
20	64QAM	50	50	19.07	19.19	19.11	
20	64QAM	100	0	18.96	19.01	18.94	
Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	19.04	18.93	19.07	19.8
15	QPSK	1	37	19.05	19.33	19.12	
15	QPSK	1	74	19.15	19.08	19.19	
15	QPSK	36	0	19.09	18.99	19.13	19.8
15	QPSK	36	20	19.22	19.07	19.26	
15	QPSK	36	39	19.21	19.13	19.27	
15	QPSK	75	0	19.16	18.99	19.22	19.8
15	16QAM	1	0	19.34	19.24	19.40	
15	16QAM	1	37	19.39	19.30	19.43	
15	16QAM	1	74	19.47	19.40	19.49	19.8
15	16QAM	36	0	19.09	19.02	19.14	
15	16QAM	36	20	19.21	19.04	19.25	
15	16QAM	36	39	19.21	19.14	19.27	19.8
15	16QAM	75	0	19.16	19.01	19.22	
15	64QAM	1	0	19.24	19.09	19.17	
15	64QAM	1	37	19.30	19.18	19.23	19.8
15	64QAM	1	74	19.36	19.36	19.37	
15	64QAM	36	0	19.15	19.18	19.11	
15	64QAM	36	20	19.19	19.18	19.21	19.8
15	64QAM	36	39	19.17	19.27	19.20	
15	64QAM	75	0	19.07	19.12	19.15	
Channel				20800	21100	21400	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	18.81	18.87	18.88	19.8
10	QPSK	1	25	18.87	18.80	18.84	
10	QPSK	1	49	18.95	18.90	18.98	
10	QPSK	25	0	18.91	18.82	18.94	19.8
10	QPSK	25	12	19.01	18.87	18.97	
10	QPSK	25	25	18.99	18.95	19.05	
10	QPSK	50	0	18.93	18.81	18.91	19.8
10	16QAM	1	0	19.21	19.10	19.26	
10	16QAM	1	25	19.25	19.19	19.31	
10	16QAM	1	49	19.30	19.25	19.37	19.8
10	16QAM	25	0	18.88	18.84	18.93	
10	16QAM	25	12	18.99	18.85	19.00	
10	16QAM	25	25	19.00	18.94	19.05	19.8
10	16QAM	50	0	18.92	18.79	18.91	
10	64QAM	1	0	19.08	19.05	19.07	
10	64QAM	1	25	19.19	19.11	19.15	19.8
10	64QAM	1	49	19.22	19.21	19.26	
10	64QAM	25	0	19.04	18.95	18.85	
10	64QAM	25	12	19.04	19.02	18.94	19.8
10	64QAM	25	25	18.93	19.09	19.01	
10	64QAM	50	0	18.85	18.96	18.87	
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	18.85	18.79	18.95	19.8
5	QPSK	1	12	18.93	18.90	19.01	
5	QPSK	1	24	18.95	18.91	19.01	
5	QPSK	12	0	18.93	18.87	19.03	19.8
5	QPSK	12	7	19.05	18.92	19.06	
5	QPSK	12	13	19.02	18.93	19.05	
5	QPSK	25	0	18.98	18.86	19.04	19.8
5	16QAM	1	0	19.16	19.10	19.30	
5	16QAM	1	12	19.24	19.13	19.30	
5	16QAM	1	24	19.28	19.23	19.38	19.8
5	16QAM	12	0	18.95	18.89	19.05	
5	16QAM	12	7	19.05	18.94	19.12	
5	16QAM	12	13	19.03	18.96	19.07	19.8
5	16QAM	25	0	18.99	18.91	19.04	
5	64QAM	1	0	19.13	19.06	19.32	
5	64QAM	1	12	19.17	19.08	19.26	19.8
5	64QAM	1	24	19.18	19.10	19.15	
5	64QAM	12	0	18.99	18.93	19.02	
5	64QAM	12	7	19.12	19.11	19.05	19.8
5	64QAM	12	13	19.01	19.11	18.99	
5	64QAM	25	0	18.93	19.01	18.96	



Band 30							
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				27710			
Frequency (MHz)				2310			
10	QPSK	1	0	20.73			21.7
10	QPSK	1	25	20.71			
10	QPSK	1	49	20.72			
10	QPSK	25	0	20.67			21.7
10	QPSK	25	12	20.76			
10	QPSK	25	25	20.75			
10	QPSK	50	0	20.70			
10	16QAM	1	0	21.10			
10	16QAM	1	25	21.09			21.7
10	16QAM	1	49	21.11			
10	16QAM	25	0	20.68			
10	16QAM	25	12	20.77			21.7
10	16QAM	25	25	20.73			
10	16QAM	50	0	20.67			
10	64QAM	1	0	20.94			
10	64QAM	1	25	21.02			
10	64QAM	1	49	21.00			21.7
10	64QAM	25	0	19.98			
10	64QAM	25	12	20.09			
10	64QAM	25	25	20.07			20.7
10	64QAM	50	0	20.03			
Channel				27685	27710	27735	Tune-up limit (dBm)
Frequency (MHz)				2307.5	2310	2312.5	
5	QPSK	1	0	20.59	20.62	20.66	21.7
5	QPSK	1	12	20.74	20.76	20.74	
5	QPSK	1	24	20.70	20.70	20.66	
5	QPSK	12	0	20.73	20.76	20.82	21.7
5	QPSK	12	7	20.89	20.82	20.81	
5	QPSK	12	13	20.82	20.83	20.82	
5	QPSK	25	0	20.81	20.73	20.80	
5	16QAM	1	0	20.94	20.94	20.97	
5	16QAM	1	12	21.05	21.08	21.06	21.7
5	16QAM	1	24	21.00	20.96	21.00	
5	16QAM	12	0	20.75	20.77	20.82	
5	16QAM	12	7	20.85	20.83	20.86	21.7
5	16QAM	12	13	20.84	20.84	20.83	
5	16QAM	25	0	20.81	20.74	20.79	
5	64QAM	1	0	20.95	20.87	20.95	
5	64QAM	1	12	20.98	20.99	20.98	
5	64QAM	1	24	20.95	20.93	20.91	21.7
5	64QAM	12	0	20.07	20.10	20.14	
5	64QAM	12	7	20.19	20.14	20.19	
5	64QAM	12	13	20.16	20.17	20.16	
5	64QAM	25	0	20.12	20.06	20.10	



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)
Channel				20450	20525	20600	
Frequency (MHz)				849	833.5	844	
10	QPSK	1	0	22.66	22.65	22.55	23.6
10	QPSK	1	25	22.53	22.50	22.51	
10	QPSK	1	49	22.50	22.50	22.37	
10	QPSK	25	0	22.56	22.59	22.56	
10	QPSK	25	12	22.62	22.58	22.61	23.6
10	QPSK	25	25	22.59	22.61	22.56	
10	QPSK	50	0	22.57	22.54	22.54	
10	16QAM	1	0	22.94	22.88	22.86	
10	16QAM	1	25	22.85	22.91	22.86	23.6
10	16QAM	1	49	23.00	22.82	22.87	
10	16QAM	25	0	22.07	22.09	22.05	
10	16QAM	25	12	22.15	22.07	22.12	
10	16QAM	25	25	22.07	22.10	22.04	22.6
10	16QAM	50	0	22.08	22.04	22.07	
10	64QAM	1	0	21.89	22.42	22.29	
10	64QAM	1	25	22.12	22.29	21.66	
10	64QAM	1	49	22.23	22.29	21.91	21.6
10	64QAM	25	0	20.81	21.13	21.02	
10	64QAM	25	12	21.14	21.11	20.72	
10	64QAM	25	25	21.13	21.12	20.94	
10	64QAM	50	0	21.09	21.07	20.95	
Channel				20425	20525	20625	Tune-up limit (dBm)
Frequency (MHz)				826.5	838.5	846.5	
5	QPSK	1	0	22.48	22.52	22.48	23.6
5	QPSK	1	12	22.66	22.61	22.61	
5	QPSK	1	24	22.55	22.56	22.49	
5	QPSK	12	0	22.62	22.62	22.58	
5	QPSK	12	7	22.73	22.73	22.63	23.6
5	QPSK	12	13	22.68	22.68	22.63	
5	QPSK	25	0	22.65	22.68	22.54	
5	16QAM	1	0	22.85	22.83	22.87	
5	16QAM	1	12	22.87	22.91	22.86	23.6
5	16QAM	1	24	22.94	22.82	22.85	
5	16QAM	12	0	22.15	22.17	22.13	
5	16QAM	12	7	22.27	22.18	22.16	
5	16QAM	12	13	22.22	22.23	22.14	22.6
5	16QAM	25	0	22.21	22.15	22.12	
5	64QAM	1	0	21.86	22.30	21.76	
5	64QAM	1	12	21.79	22.36	21.83	
5	64QAM	1	24	21.76	22.32	21.98	21.6
5	64QAM	12	0	20.64	21.20	20.73	
5	64QAM	12	7	20.85	21.31	21.06	
5	64QAM	12	13	21.00	21.22	21.23	
5	64QAM	25	0	20.71	21.17	21.03	
Channel				20415	20525	20635	Tune-up limit (dBm)
Frequency (MHz)				825.5	838.5	847.5	
3	QPSK	1	0	22.54	22.55	22.50	23.6
3	QPSK	1	8	22.64	22.67	22.58	
3	QPSK	1	14	22.56	22.59	22.54	
3	QPSK	8	0	22.62	22.61	22.59	
3	QPSK	8	4	22.71	22.67	22.68	23.6
3	QPSK	8	7	22.67	22.65	22.61	
3	QPSK	15	0	22.71	22.64	22.59	
3	16QAM	1	0	22.85	22.85	22.80	
3	16QAM	1	8	22.94	22.99	22.97	23.6
3	16QAM	1	14	22.87	22.96	22.87	
3	16QAM	8	0	22.22	22.22	22.17	
3	16QAM	8	4	22.30	22.30	22.26	
3	16QAM	8	7	22.28	22.26	22.16	22.6
3	16QAM	15	0	22.22	22.23	22.11	
3	64QAM	1	0	21.85	22.33	22.24	
3	64QAM	1	8	21.86	22.42	22.45	
3	64QAM	1	14	21.76	22.33	22.41	21.6
3	64QAM	8	0	20.52	21.16	21.14	
3	64QAM	8	4	20.68	21.28	21.24	
3	64QAM	8	7	20.72	21.25	21.18	
3	64QAM	15	0	20.60	21.21	21.13	
Channel				20407	20529	20643	Tune-up limit (dBm)
Frequency (MHz)				824.7	838.5	848.3	
1.4	QPSK	1	0	22.42	22.44	22.48	23.6
1.4	QPSK	1	3	22.55	22.55	22.49	
1.4	QPSK	1	5	22.45	22.52	22.43	
1.4	QPSK	3	0	22.43	22.47	22.46	
1.4	QPSK	3	1	22.57	22.58	22.55	23.6
1.4	QPSK	3	3	22.54	22.54	22.48	
1.4	QPSK	6	0	22.57	22.60	22.52	
1.4	16QAM	1	0	22.78	22.78	22.77	
1.4	16QAM	1	3	22.89	22.85	22.82	23.6
1.4	16QAM	1	5	22.79	22.81	22.75	
1.4	16QAM	3	0	22.53	22.58	22.60	
1.4	16QAM	3	1	22.66	22.63	22.61	
1.4	16QAM	3	3	22.61	22.60	22.58	22.6
1.4	16QAM	6	0	22.21	22.17	22.13	
1.4	64QAM	1	0	21.58	22.21	22.23	
1.4	64QAM	1	3	21.61	22.28	22.33	
1.4	64QAM	1	5	21.54	22.28	22.28	22.6
1.4	64QAM	3	0	21.48	22.16	22.17	
1.4	64QAM	3	1	21.51	22.29	22.24	
1.4	64QAM	3	3	21.52	22.19	22.18	
1.4	64QAM	6	0	20.43	21.15	21.03	21.6



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)
Channel				20650	21100	21350	
Frequency (MHz)				2510	2535	2560	
20	QPSK	1	0	15.82	15.58	15.64	16.5
20	QPSK	1	49	15.66	15.64	15.68	
20	QPSK	1	99	15.74	15.73	15.75	
20	QPSK	50	0	15.71	15.72	15.74	16.5
20	QPSK	50	24	15.80	15.76	15.79	
20	QPSK	50	50	15.83	15.85	15.86	
20	QPSK	100	0	15.71	15.67	15.72	16.5
20	16QAM	1	0	15.99	15.95	16.00	
20	16QAM	1	49	16.04	16.03	16.04	
20	16QAM	1	99	16.08	16.07	16.14	16.5
20	16QAM	50	0	15.74	15.74	15.75	
20	16QAM	50	24	15.83	15.79	15.80	
20	16QAM	50	50	15.86	15.89	15.89	16.5
20	16QAM	100	0	15.73	15.69	15.69	
20	64QAM	1	0	15.81	15.80	15.82	
20	64QAM	1	49	15.91	15.87	15.90	16.5
20	64QAM	1	99	16.01	15.97	16.04	
20	64QAM	50	0	15.79	15.78	15.80	
20	64QAM	50	24	15.87	15.81	15.82	16.5
20	64QAM	50	50	15.90	15.90	15.93	
20	64QAM	100	0	15.76	15.69	15.71	
Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	15.67	15.64	15.68	16.5
15	QPSK	1	37	15.70	15.68	15.67	
15	QPSK	1	74	15.77	15.76	15.78	
15	QPSK	36	0	15.76	15.73	15.75	16.5
15	QPSK	36	20	15.83	15.80	15.81	
15	QPSK	36	39	15.86	15.87	15.88	
15	QPSK	75	0	15.77	15.70	15.73	16.5
15	16QAM	1	0	15.95	15.97	15.97	
15	16QAM	1	37	16.04	15.99	16.01	
15	16QAM	1	74	16.08	16.09	16.07	16.5
15	16QAM	36	0	15.78	15.76	15.78	
15	16QAM	36	20	15.87	15.78	15.80	
15	16QAM	36	39	15.91	15.89	15.90	16.5
15	16QAM	75	0	15.81	15.74	15.74	
15	64QAM	1	0	15.84	15.82	15.85	
15	64QAM	1	37	15.94	15.94	15.92	16.5
15	64QAM	1	74	16.01	15.99	16.04	
15	64QAM	36	0	15.80	15.83	15.83	
15	64QAM	36	20	15.92	15.86	15.89	16.5
15	64QAM	36	39	15.92	15.94	15.94	
15	64QAM	75	0	15.82	15.76	15.76	
Channel				20950	21100	21400	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	15.49	15.50	15.47	16.5
10	QPSK	1	25	15.49	15.54	15.48	
10	QPSK	1	49	15.56	15.60	15.57	
10	QPSK	25	0	15.56	15.58	15.56	16.5
10	QPSK	25	12	15.64	15.61	15.60	
10	QPSK	25	25	15.63	15.66	15.65	
10	QPSK	50	0	15.57	15.51	15.51	16.5
10	16QAM	1	0	15.87	15.87	15.87	
10	16QAM	1	25	15.89	15.91	15.90	
10	16QAM	1	49	15.95	16.00	15.93	16.5
10	16QAM	25	0	15.56	15.61	15.60	
10	16QAM	25	12	15.65	15.63	15.63	
10	16QAM	25	25	15.66	15.67	15.67	16.5
10	16QAM	50	0	15.56	15.53	15.51	
10	64QAM	1	0	15.72	15.73	15.71	
10	64QAM	1	25	15.81	15.82	15.86	16.5
10	64QAM	1	49	15.84	15.86	15.83	
10	64QAM	25	0	15.81	15.82	15.59	
10	64QAM	25	12	15.70	15.64	15.61	16.5
10	64QAM	25	25	15.68	15.73	15.67	
10	64QAM	50	0	15.61	15.55	15.56	
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	15.48	15.52	15.54	16.5
5	QPSK	1	12	15.55	15.57	15.56	
5	QPSK	1	24	15.58	15.60	15.57	
5	QPSK	12	0	15.59	15.56	15.60	16.5
5	QPSK	12	7	15.64	15.61	15.66	
5	QPSK	12	13	15.60	15.67	15.63	
5	QPSK	25	0	15.61	15.58	15.62	16.5
5	16QAM	1	0	15.82	15.82	15.87	
5	16QAM	1	12	15.86	15.91	15.85	
5	16QAM	1	24	15.98	15.95	15.88	16.5
5	16QAM	12	0	15.64	15.59	15.68	
5	16QAM	12	7	15.67	15.66	15.68	
5	16QAM	12	13	15.65	15.65	15.61	16.5
5	16QAM	25	0	15.63	15.59	15.62	
5	64QAM	1	0	15.79	15.84	15.86	
5	64QAM	1	12	15.83	15.86	15.79	16.5
5	64QAM	1	24	15.83	15.85	15.82	
5	64QAM	12	0	15.68	15.64	15.68	
5	64QAM	12	7	15.74	15.70	15.70	16.5
5	64QAM	12	13	15.68	15.71	15.68	
5	64QAM	25	0	15.63	15.60	15.64	



Band 30						
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				27710		
Frequency (MHz)				2310		
10	QPSK	1	0		17.07	
10	QPSK	1	25		17.09	
10	QPSK	1	49		17.06	
10	QPSK	25	0		17.03	
10	QPSK	25	12		17.08	
10	QPSK	25	25		17.10	
10	QPSK	50	0		17.05	
10	16QAM	1	0		17.46	
10	16QAM	1	25		17.47	
10	16QAM	1	49		17.48	
10	16QAM	25	0		17.05	
10	16QAM	25	12		17.12	
10	16QAM	25	25		17.13	
10	16QAM	50	0		17.07	
10	64QAM	1	0		17.30	
10	64QAM	1	25		17.38	
10	64QAM	1	49		17.39	
10	64QAM	25	0		17.06	
10	64QAM	25	12		17.17	
10	64QAM	25	25		17.15	
10	64QAM	50	0		17.09	
Channel				27685	27710	27735
Frequency (MHz)				2307.5	2310	2312.5
5	QPSK	1	0	16.95	16.95	16.99
5	QPSK	1	12	17.09	17.14	17.09
5	QPSK	1	24	17.07	17.05	17.01
5	QPSK	12	0	17.09	17.10	17.13
5	QPSK	12	7	17.20	17.16	17.19
5	QPSK	12	13	17.15	17.17	17.16
5	QPSK	25	0	17.15	17.07	17.13
5	16QAM	1	0	17.25	17.29	17.36
5	16QAM	1	12	17.39	17.38	17.39
5	16QAM	1	24	17.38	17.38	17.34
5	16QAM	12	0	17.12	17.13	17.16
5	16QAM	12	7	17.20	17.17	17.21
5	16QAM	12	13	17.18	17.18	17.15
5	16QAM	25	0	17.16	17.12	17.16
5	64QAM	1	0	17.21	17.21	17.28
5	64QAM	1	12	17.31	17.31	17.31
5	64QAM	1	24	17.28	17.28	17.27
5	64QAM	12	0	17.17	17.19	17.24
5	64QAM	12	7	17.28	17.23	17.29
5	64QAM	12	13	17.21	17.24	17.23
5	64QAM	25	0	17.16	17.14	17.19



Band 13							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23205	23230	23255	Tune-up limit (dBm)
Frequency (MHz)				762	762	764.5	
10	QPSK	1	0		20.95		21.5
10	QPSK	1	25		21.08		
10	QPSK	1	49		21.02		
10	QPSK	25	0		21.10		21.5
10	QPSK	25	12		21.10		
10	QPSK	25	25		21.18		
10	QPSK	50	0		21.14		21.5
10	16QAM	1	0		21.32		
10	16QAM	1	25		21.49		
10	16QAM	1	49		21.42		21.5
10	16QAM	25	0		21.12		
10	16QAM	25	12		21.13		
10	16QAM	25	25		21.21		21.5
10	16QAM	50	0		21.07		
10	64QAM	1	0		21.23		
10	64QAM	1	25		21.42		21.5
10	64QAM	1	49		21.32		
10	64QAM	25	0		21.00		
10	64QAM	25	12		21.20		21.5
10	64QAM	25	25		21.23		
10	64QAM	50	0		21.14		
Channel				23205	23230	23255	Tune-up limit (dBm)
Frequency (MHz)				779.5	782	784.5	
5	QPSK	1	0	20.88	20.89	20.85	21.5
5	QPSK	1	12	21.04	21.07	21.01	
5	QPSK	1	24	20.97	20.93	20.97	
5	QPSK	12	0	21.08	21.01	21.01	21.5
5	QPSK	12	7	21.04	21.10	21.09	
5	QPSK	12	13	21.18	21.14	21.17	
5	QPSK	25	0	21.11	21.09	21.04	21.5
5	16QAM	1	0	21.27	21.25	21.25	
5	16QAM	1	12	21.45	21.45	21.46	
5	16QAM	1	24	21.42	21.36	21.40	21.5
5	16QAM	12	0	21.07	21.05	21.03	
5	16QAM	12	7	21.13	21.08	21.09	
5	16QAM	12	13	21.11	21.20	21.17	21.5
5	16QAM	25	0	21.01	21.07	21.07	
5	64QAM	1	0	21.21	21.15	21.16	
5	64QAM	1	12	21.40	21.41	21.40	21.5
5	64QAM	1	24	21.22	21.22	21.24	
5	64QAM	12	0	20.98	21.00	20.95	
5	64QAM	12	7	21.17	21.18	21.15	21.5
5	64QAM	12	13	21.17	21.13	21.23	
5	64QAM	25	0	21.07	21.06	21.07	



Band 30						
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				27710		
Frequency (MHz)				2310		
10	QPSK	1	0	14.90		
10	QPSK	1	25	14.85		
10	QPSK	1	49	14.81		
10	QPSK	25	0	14.85		
10	QPSK	25	12	14.94		
10	QPSK	25	25	14.83		
10	QPSK	50	0	14.87		
10	16QAM	1	0	15.32		
10	16QAM	1	25	15.34		
10	16QAM	1	49	15.28		
10	16QAM	25	0	14.91		
10	16QAM	25	12	14.96		
10	16QAM	25	25	14.87		
10	16QAM	50	0	14.92		
10	64QAM	1	0	15.19		
10	64QAM	1	25	15.26		
10	64QAM	1	49	15.16		
10	64QAM	25	0	14.94		
10	64QAM	25	12	15.04		
10	64QAM	25	25	14.93		
10	64QAM	50	0	14.97		
Channel				27685	27710	27735
Frequency (MHz)				2307.5	2310	2312.5
5	QPSK	1	0	14.89	14.81	14.82
5	QPSK	1	12	14.77	14.79	14.80
5	QPSK	1	24	14.71	14.76	14.78
5	QPSK	12	0	14.77	14.79	14.83
5	QPSK	12	7	14.84	14.84	14.88
5	QPSK	12	13	14.76	14.80	14.80
5	QPSK	25	0	14.82	14.78	14.83
5	16QAM	1	0	15.24	15.28	15.32
5	16QAM	1	12	15.28	15.33	15.24
5	16QAM	1	24	15.25	15.25	15.27
5	16QAM	12	0	14.83	14.89	14.87
5	16QAM	12	7	14.86	14.95	14.90
5	16QAM	12	13	14.77	14.78	14.78
5	16QAM	25	0	14.91	14.88	14.87
5	64QAM	1	0	15.16	15.11	15.17
5	64QAM	1	12	15.17	15.17	15.23
5	64QAM	1	24	15.12	15.06	15.15
5	64QAM	12	0	14.86	14.91	14.92
5	64QAM	12	7	14.99	15.04	15.04
5	64QAM	12	13	14.89	14.91	14.87
5	64QAM	25	0	14.86	14.92	14.91



Band 7							
BW (MHz)	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.	
Channel				20850	21100	21350	
Frequency (MHz)				2510	2535	2560	
20	QPSK	1	0	17.06	17.02	17.08	18
20	QPSK	1	49	17.10	17.07	17.12	
20	QPSK	1	99	17.19	17.15	17.15	
20	QPSK	50	0	17.18	17.15	17.17	18
20	QPSK	50	24	17.25	17.20	17.23	
20	QPSK	50	50	17.28	17.28	17.28	
20	QPSK	100	0	17.17	17.09	17.13	18
20	16QAM	1	0	17.42	17.36	17.38	
20	16QAM	1	49	17.50	17.42	17.47	
20	16QAM	1	99	17.46	17.46	17.53	18
20	16QAM	50	0	17.23	17.17	17.17	
20	16QAM	50	24	17.27	17.23	17.25	
20	16QAM	50	50	17.32	17.27	17.30	18
20	16QAM	100	0	17.17	17.08	17.12	
20	64QAM	1	0	17.28	17.25	17.28	
20	64QAM	1	49	17.28	17.32	17.34	18
20	64QAM	1	99	17.40	17.40	17.39	
20	64QAM	50	0	17.19	17.19	17.19	
20	64QAM	50	24	17.28	17.24	17.23	18
20	64QAM	50	50	17.28	17.29	17.30	
20	64QAM	100	0	17.18	17.11	17.10	
Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	17.04	16.96	17.04	18
15	QPSK	1	37	17.01	17.02	17.07	
15	QPSK	1	74	17.12	17.12	17.10	
15	QPSK	36	0	17.12	17.05	17.12	18
15	QPSK	36	20	17.20	17.10	17.22	
15	QPSK	36	39	17.23	17.23	17.21	
15	QPSK	75	0	17.17	16.99	17.04	18
15	16QAM	1	0	17.34	17.28	17.32	
15	16QAM	1	37	17.47	17.40	17.46	
15	16QAM	1	74	17.46	17.45	17.48	18
15	16QAM	36	0	17.14	17.17	17.10	
15	16QAM	36	20	17.17	17.17	17.23	
15	16QAM	36	39	17.26	17.27	17.27	18
15	16QAM	75	0	17.15	17.02	17.08	
15	64QAM	1	0	17.27	17.23	17.23	
15	64QAM	1	37	17.27	17.32	17.31	18
15	64QAM	1	74	17.39	17.31	17.36	
15	64QAM	36	0	17.18	17.09	17.10	
15	64QAM	36	20	17.18	17.24	17.17	18
15	64QAM	36	39	17.21	17.28	17.24	
15	64QAM	75	0	17.18	17.11	17.03	
Channel				20800	21100	21400	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	16.99	17.02	16.99	18
10	QPSK	1	25	17.01	17.05	17.03	
10	QPSK	1	49	17.09	17.09	17.08	
10	QPSK	25	0	17.13	17.07	17.14	18
10	QPSK	25	12	17.19	17.17	17.14	
10	QPSK	25	25	17.18	17.20	17.26	
10	QPSK	50	0	17.07	17.04	17.07	18
10	16QAM	1	0	17.32	17.33	17.33	
10	16QAM	1	25	17.44	17.33	17.47	
10	16QAM	1	49	17.40	17.40	17.52	18
10	16QAM	25	0	17.14	17.11	17.10	
10	16QAM	25	12	17.19	17.20	17.16	
10	16QAM	25	25	17.25	17.24	17.23	18
10	16QAM	50	0	17.09	17.04	17.03	
10	64QAM	1	0	17.21	17.18	17.21	
10	64QAM	1	25	17.23	17.22	17.28	18
10	64QAM	1	49	17.37	17.35	17.38	
10	64QAM	25	0	17.09	17.18	17.12	
10	64QAM	25	12	17.25	17.22	17.17	18
10	64QAM	25	25	17.27	17.26	17.22	
10	64QAM	50	0	17.13	17.04	17.02	
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	16.98	16.94	17.06	18
5	QPSK	1	12	17.10	17.06	17.07	
5	QPSK	1	24	17.11	17.06	17.12	
5	QPSK	12	0	17.14	17.09	17.14	18
5	QPSK	12	7	17.20	17.14	17.13	
5	QPSK	12	13	17.24	17.25	17.28	
5	QPSK	25	0	17.15	17.04	17.10	18
5	16QAM	1	0	17.37	17.34	17.38	
5	16QAM	1	12	17.49	17.35	17.46	
5	16QAM	1	24	17.41	17.46	17.49	18
5	16QAM	12	0	17.22	17.07	17.07	
5	16QAM	12	7	17.21	17.17	17.21	
5	16QAM	12	13	17.27	17.20	17.21	18
5	16QAM	25	0	17.10	17.00	17.09	
5	64QAM	1	0	17.22	17.20	17.21	
5	64QAM	1	12	17.28	17.27	17.32	18
5	64QAM	1	24	17.34	17.35	17.31	
5	64QAM	12	0	17.16	17.11	17.11	
5	64QAM	12	7	17.28	17.14	17.16	18
5	64QAM	12	13	17.25	17.28	17.22	
5	64QAM	25	0	17.08	17.01	17.07	



Band 12							
BW (MHz)	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.	
Channel				23060	23096	23130	
Frequency (MHz)				704	707.5	711	
10	QPSK	1	0	23.08	23.04	23.04	23.8
10	QPSK	1	25	23.04	23.05	23.00	
10	QPSK	1	49	23.05	23.03	23.02	
10	QPSK	25	0	22.05	22.06	22.00	22.8
10	QPSK	25	12	22.25	22.15	22.07	
10	QPSK	25	25	22.21	22.16	22.11	
10	QPSK	50	0	22.18	22.05	22.03	22.8
10	16QAM	1	0	22.45	22.35	22.36	
10	16QAM	1	25	22.43	22.42	22.36	
10	16QAM	1	49	22.45	22.45	22.36	21.8
10	16QAM	25	0	21.05	21.04	20.99	
10	16QAM	25	12	21.25	21.15	21.10	
10	16QAM	25	25	21.18	21.14	21.10	21.8
10	16QAM	50	0	21.15	21.08	21.04	
10	64QAM	1	0	21.29	21.29	21.24	
10	64QAM	1	25	21.39	21.34	21.31	21.8
10	64QAM	1	49	21.37	21.33	21.27	
10	64QAM	25	0	20.09	20.08	20.04	
10	64QAM	25	12	20.28	20.20	20.10	20.8
10	64QAM	25	25	20.21	20.15	20.13	
10	64QAM	50	0	20.13	20.07	20.08	
Channel				23038	23096	23155	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	QPSK	1	0	23.01	22.99	22.96	23.8
5	QPSK	1	12	23.06	23.02	23.03	
5	QPSK	1	24	22.98	23.04	23.03	
5	QPSK	12	0	22.24	22.14	22.05	22.8
5	QPSK	12	7	22.21	22.14	22.08	
5	QPSK	12	13	22.18	22.16	22.09	
5	QPSK	25	0	22.23	22.13	22.07	22.8
5	16QAM	1	0	22.45	22.35	22.32	
5	16QAM	1	12	22.45	22.42	22.37	
5	16QAM	1	24	22.46	22.38	22.36	21.8
5	16QAM	12	0	21.25	21.13	21.12	
5	16QAM	12	7	21.28	21.17	21.11	
5	16QAM	12	13	21.23	21.18	21.08	21.8
5	16QAM	25	0	21.25	21.15	21.09	
5	64QAM	1	0	21.35	21.30	21.27	
5	64QAM	1	12	21.33	21.32	21.32	21.8
5	64QAM	1	24	21.34	21.35	21.20	
5	64QAM	12	0	20.28	20.21	20.15	
5	64QAM	12	7	20.32	20.23	20.13	20.8
5	64QAM	12	13	20.25	20.23	20.13	
5	64QAM	25	0	20.24	20.16	20.13	
Channel				23025	23096	23165	Tune-up limit (dBm)
Frequency (MHz)				700.5	707.5	714.5	
3	QPSK	1	0	23.04	23.05	23.01	23.8
3	QPSK	1	8	23.06	23.07	23.07	
3	QPSK	1	14	23.02	23.07	22.99	
3	QPSK	8	0	22.21	22.12	22.09	22.8
3	QPSK	8	4	22.22	22.19	22.12	
3	QPSK	8	7	22.22	22.16	22.06	
3	QPSK	15	0	22.26	22.13	22.09	22.8
3	16QAM	1	0	22.49	22.37	22.35	
3	16QAM	1	8	22.50	22.45	22.43	
3	16QAM	1	14	22.45	22.40	22.32	21.8
3	16QAM	8	0	21.29	21.18	21.14	
3	16QAM	8	4	21.29	21.28	21.19	
3	16QAM	8	7	21.26	21.23	21.16	21.8
3	16QAM	15	0	21.23	21.14	21.12	
3	64QAM	1	0	21.43	21.28	21.29	
3	64QAM	1	8	21.46	21.39	21.28	21.8
3	64QAM	1	14	21.36	21.33	21.23	
3	64QAM	8	0	20.27	20.18	20.15	
3	64QAM	8	4	20.31	20.25	20.15	20.8
3	64QAM	8	7	20.28	20.23	20.08	
3	64QAM	15	0	20.27	20.15	20.15	
Channel				23017	23096	23173	Tune-up limit (dBm)
Frequency (MHz)				699.7	707.5	715.3	
1.4	QPSK	1	0	23.04	22.95	22.87	23.8
1.4	QPSK	1	3	23.06	23.03	22.97	
1.4	QPSK	1	5	23.05	22.97	22.88	
1.4	QPSK	3	0	23.05	22.94	22.89	22.8
1.4	QPSK	3	1	23.07	23.00	22.94	
1.4	QPSK	3	3	23.06	23.03	22.90	
1.4	QPSK	6	0	22.15	22.05	21.98	22.8
1.4	16QAM	1	0	22.38	22.24	22.24	
1.4	16QAM	1	3	22.45	22.40	22.27	
1.4	16QAM	1	5	22.40	22.32	22.23	22.8
1.4	16QAM	3	0	22.18	22.07	21.99	
1.4	16QAM	3	1	22.22	22.10	22.02	
1.4	16QAM	3	3	22.18	22.11	21.97	21.8
1.4	16QAM	6	0	21.23	21.11	21.03	
1.4	64QAM	1	0	21.33	21.23	21.17	
1.4	64QAM	1	3	21.38	21.31	21.19	21.8
1.4	64QAM	1	5	21.32	21.27	21.14	
1.4	64QAM	3	0	21.28	21.16	21.12	
1.4	64QAM	3	1	21.35	21.21	21.16	21.8
1.4	64QAM	3	3	21.29	21.23	21.12	
1.4	64QAM	6	0	20.20	20.05	20.01	



Band 13							
BW (MHz)	Modulation	RB Size	RB Offset	Power	Power	Tune-up limit (dBm)	
				Low Ch. / Freq.	Middle Ch. / Freq.		High Ch. / Freq.
Channel				23230			
Frequency (MHz)				762			
10	QPSK	1	0	23.91		24.8	
10	QPSK	1	25	23.77			
10	QPSK	1	49	23.75			
10	QPSK	25	0	22.93		23.8	
10	QPSK	25	12	22.92			
10	QPSK	25	25	23.18			
10	QPSK	50	0	23.02		23.8	
10	16QAM	1	0	23.35			
10	16QAM	1	25	23.28			
10	16QAM	1	49	23.22		22.8	
10	16QAM	25	0	21.99			
10	16QAM	25	12	21.95			
10	16QAM	25	25	22.01		22.8	
10	16QAM	50	0	21.83			
10	64QAM	1	0	21.44			
10	64QAM	1	25	22.21		22.8	
10	64QAM	1	49	22.13			
10	64QAM	25	0	20.96			
10	64QAM	25	12	21.00		21.8	
10	64QAM	25	25	21.00			
10	64QAM	50	0	20.94			
Channel				23205	23230	23255	
Frequency (MHz)				779.5	762	784.5	
5	QPSK	1	0	23.89	23.81	23.85	24.8
5	QPSK	1	12	23.86	23.86	23.84	
5	QPSK	1	24	23.86	23.82	23.79	
5	QPSK	12	0	23.09	22.97	22.95	23.8
5	QPSK	12	7	23.10	23.02	23.03	
5	QPSK	12	13	23.05	23.04	22.96	
5	QPSK	25	0	23.08	22.95	22.99	23.8
5	16QAM	1	0	23.20	23.23	23.30	
5	16QAM	1	12	23.27	23.28	23.21	
5	16QAM	1	24	23.29	23.28	23.19	22.8
5	16QAM	12	0	22.14	22.01	21.98	
5	16QAM	12	7	22.15	22.05	22.03	
5	16QAM	12	13	22.10	22.05	21.97	22.8
5	16QAM	25	0	22.07	21.97	22.02	
5	64QAM	1	0	21.14	22.19	22.28	
5	64QAM	1	12	22.19	22.22	22.17	22.8
5	64QAM	1	24	22.27	22.25	22.13	
5	64QAM	12	0	20.84	21.05	21.02	
5	64QAM	12	7	21.18	21.08	21.04	21.8
5	64QAM	12	13	21.15	21.09	21.00	
5	64QAM	25	0	21.07	20.96	21.03	



Band 17							
BW (MHz)	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.	
Channel				23780	23790	23800	
Frequency (MHz)				709	710	711	
10	QPSK	1	0	23.08	22.99	22.95	23.8
10	QPSK	1	25	23.01	23.01	22.98	
10	QPSK	1	49	23.03	23.02	22.98	
10	QPSK	25	0	22.10	22.08	22.05	22.8
10	QPSK	25	12	22.18	22.10	22.09	
10	QPSK	25	25	22.14	22.15	22.15	
10	QPSK	50	0	22.09	22.08	22.07	22.8
10	16QAM	1	0	22.39	22.36	22.33	
10	16QAM	1	25	22.40	22.37	22.37	
10	16QAM	1	49	22.44	22.42	22.36	21.8
10	16QAM	25	0	21.09	21.08	21.06	
10	16QAM	25	12	21.18	21.11	21.11	
10	16QAM	25	25	21.15	21.15	21.14	21.8
10	16QAM	50	0	21.10	21.10	21.08	
10	64QAM	1	0	21.27	21.18	21.19	
10	64QAM	1	25	21.31	21.32	21.30	21.8
10	64QAM	1	49	21.29	21.29	21.24	
10	64QAM	25	0	20.12	20.12	20.09	
10	64QAM	25	12	20.23	20.15	20.13	20.8
10	64QAM	25	25	20.18	20.17	20.16	
10	64QAM	50	0	20.13	20.12	20.11	
Channel				23758	23790	23825	Tune-up limit (dBm)
Frequency (MHz)				706.5	710	713.5	
5	QPSK	1	0	23.02	22.94	22.98	23.8
5	QPSK	1	12	23.07	23.06	23.00	
5	QPSK	1	24	23.07	23.05	22.98	
5	QPSK	12	0	22.12	22.07	22.08	22.8
5	QPSK	12	7	22.16	22.12	22.12	
5	QPSK	12	13	22.15	22.14	22.06	
5	QPSK	25	0	22.18	22.08	22.11	22.8
5	16QAM	1	0	22.36	22.29	22.30	
5	16QAM	1	12	22.36	22.42	22.34	
5	16QAM	1	24	22.41	22.37	22.32	21.8
5	16QAM	12	0	21.15	21.13	21.12	
5	16QAM	12	7	21.18	21.13	21.12	
5	16QAM	12	13	21.17	21.18	21.08	21.8
5	16QAM	25	0	21.14	21.10	21.08	
5	64QAM	1	0	21.27	21.19	21.23	
5	64QAM	1	12	21.28	21.34	21.27	21.8
5	64QAM	1	24	21.36	21.35	21.19	
5	64QAM	12	0	20.16	20.13	20.18	
5	64QAM	12	7	20.20	20.18	20.18	20.8
5	64QAM	12	13	20.22	20.22	20.08	
5	64QAM	25	0	20.18	20.10	20.14	



Band 30						
BW (MHz)	Modulation	RB Size	RB Offset	Power	Power	Tune-up limit (dBm)
				Low Ch. / Freq.	Middle Ch. / Freq.	
Channel				2771.0		
Frequency (MHz)				231.0		
10	QPSK	1	0	16.94		18
10	QPSK	1	25	16.90		
10	QPSK	1	49	16.86		
10	QPSK	25	0	16.91		18
10	QPSK	25	12	16.96		
10	QPSK	25	25	16.86		
10	QPSK	50	0	16.93		18
10	16QAM	1	0	17.23		
10	16QAM	1	25	17.23		
10	16QAM	1	49	17.23		18
10	16QAM	25	0	16.91		
10	16QAM	25	12	16.97		
10	16QAM	25	25	16.87		18
10	16QAM	50	0	16.96		
10	64QAM	1	0	17.15		
10	64QAM	1	25	17.21		18
10	64QAM	1	49	17.09		
10	64QAM	25	0	16.93		
10	64QAM	25	12	17.03		17.8
10	64QAM	25	25	16.91		
10	64QAM	50	0	16.96		
Channel				2768.5	2771.0	2773.5
Frequency (MHz)				2307.5	231.0	2312.5
5	QPSK	1	0	16.92	16.86	16.87
5	QPSK	1	12	16.90	16.85	16.83
5	QPSK	1	24	16.77	16.86	16.86
5	QPSK	12	0	16.86	16.81	16.85
5	QPSK	12	7	16.95	16.96	16.90
5	QPSK	12	13	16.82	16.78	16.79
5	QPSK	25	0	16.83	16.90	16.93
5	16QAM	1	0	17.30	17.28	17.27
5	16QAM	1	12	17.19	17.22	17.28
5	16QAM	1	24	17.21	17.18	17.16
5	16QAM	12	0	16.91	16.86	16.85
5	16QAM	12	7	16.90	16.93	16.92
5	16QAM	12	13	16.87	16.81	16.83
5	16QAM	25	0	16.76	16.86	16.82
5	64QAM	1	0	17.16	17.16	17.14
5	64QAM	1	12	17.19	17.12	17.21
5	64QAM	1	24	17.07	16.95	17.04
5	64QAM	12	0	16.87	16.89	16.83
5	64QAM	12	7	17.01	17.01	16.99
5	64QAM	12	13	16.88	16.89	16.84
5	64QAM	25	0	16.91	16.87	16.87



Band 71							
BW (MHz)	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)
				Low Ch. / Freq.	Mid-High Ch. / Freq.	High Ch. / Freq.	
Channel				133222	133322	133372	
Frequency (MHz)				673	683	688	
20	QPSK	1	0	23.74	23.56	23.53	23.8
20	QPSK	1	49	23.70	23.56	23.53	
20	QPSK	1	99	23.71	23.55	23.54	
20	QPSK	50	0	22.82	22.66	22.67	22.8
20	QPSK	50	24	22.86	22.67	22.63	
20	QPSK	50	50	22.91	22.64	22.66	
20	QPSK	100	0	22.83	22.55	22.65	22.8
20	16QAM	1	0	23.05	22.86	22.87	
20	16QAM	1	49	23.07	22.91	22.90	
20	16QAM	1	99	23.08	22.88	22.90	21.8
20	16QAM	50	0	21.85	21.69	21.67	
20	16QAM	50	24	21.93	21.66	21.66	
20	16QAM	50	50	21.92	21.65	21.68	21.8
20	16QAM	100	0	21.96	21.57	21.65	
20	64QAM	1	0	21.91	21.72	21.71	
20	64QAM	1	49	21.92	21.83	21.73	21.8
20	64QAM	1	99	21.97	21.77	21.75	
20	64QAM	50	0	20.87	20.70	20.69	
20	64QAM	50	24	20.93	20.68	20.67	20.8
20	64QAM	50	50	20.93	20.69	20.70	
20	64QAM	100	0	20.85	20.61	20.65	
Channel				133197	133297	133397	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	QPSK	1	0	23.70	23.63	23.58	23.8
15	QPSK	1	37	23.71	23.56	23.54	
15	QPSK	1	74	23.70	23.49	23.58	
15	QPSK	36	0	22.84	22.66	22.63	22.8
15	QPSK	36	20	22.91	22.72	22.69	
15	QPSK	36	39	22.85	22.67	22.67	
15	QPSK	75	0	22.87	22.58	22.67	22.8
15	16QAM	1	0	23.04	22.85	22.88	
15	16QAM	1	37	23.04	22.89	22.94	
15	16QAM	1	74	23.09	22.94	22.94	21.8
15	16QAM	36	0	21.85	21.66	21.64	
15	16QAM	36	20	21.91	21.72	21.71	
15	16QAM	36	39	21.85	21.68	21.68	21.8
15	16QAM	75	0	21.88	21.61	21.64	
15	64QAM	1	0	21.89	21.71	21.75	
15	64QAM	1	37	21.98	21.83	21.79	21.8
15	64QAM	1	74	22.00	21.78	21.84	
15	64QAM	36	0	20.87	20.69	20.69	
15	64QAM	36	20	20.96	20.77	20.74	20.8
15	64QAM	36	39	20.89	20.75	20.67	
15	64QAM	75	0	20.89	20.64	20.66	
Channel				133172	133272	133422	Tune-up limit (dBm)
Frequency (MHz)				668	678	693	
10	QPSK	1	0	23.51	23.43	23.39	23.8
10	QPSK	1	25	23.54	23.40	23.37	
10	QPSK	1	49	23.55	23.44	23.36	
10	QPSK	25	0	22.63	22.46	22.39	22.8
10	QPSK	25	12	22.73	22.53	22.39	
10	QPSK	25	25	22.70	22.49	22.47	
10	QPSK	50	0	22.66	22.46	22.35	22.8
10	16QAM	1	0	22.91	22.82	22.77	
10	16QAM	1	25	22.96	22.77	22.72	
10	16QAM	1	49	22.93	22.78	22.76	21.8
10	16QAM	25	0	21.61	21.44	21.40	
10	16QAM	25	12	21.76	21.56	21.41	
10	16QAM	25	25	21.72	21.51	21.46	21.8
10	16QAM	50	0	21.67	21.45	21.33	
10	64QAM	1	0	21.79	21.67	21.61	
10	64QAM	1	25	21.88	21.70	21.66	21.8
10	64QAM	1	49	21.85	21.68	21.64	
10	64QAM	25	0	20.66	20.49	20.43	
10	64QAM	25	12	20.79	20.58	20.44	20.8
10	64QAM	25	25	20.72	20.54	20.49	
10	64QAM	50	0	20.65	20.49	20.40	
Channel				133147	133247	133447	Tune-up limit (dBm)
Frequency (MHz)				665.5	675.5	685.5	
5	QPSK	1	0	23.52	23.27	23.21	23.8
5	QPSK	1	12	23.55	23.53	23.41	
5	QPSK	1	24	23.62	23.45	23.42	
5	QPSK	12	0	22.59	22.43	22.36	22.8
5	QPSK	12	7	22.75	22.55	22.50	
5	QPSK	12	13	22.72	22.53	22.46	
5	QPSK	25	0	22.68	22.50	22.42	22.8
5	16QAM	1	0	22.86	22.60	22.56	
5	16QAM	1	12	22.92	22.79	22.68	
5	16QAM	1	24	22.93	22.80	22.72	21.8
5	16QAM	12	0	21.66	21.48	21.41	
5	16QAM	12	7	21.77	21.58	21.52	
5	16QAM	12	13	21.72	21.59	21.47	21.8
5	16QAM	25	0	21.72	21.54	21.40	
5	64QAM	1	0	21.78	21.55	21.46	
5	64QAM	1	12	21.90	21.74	21.62	21.8
5	64QAM	1	24	21.83	21.75	21.59	
5	64QAM	12	0	20.70	20.50	20.44	
5	64QAM	12	7	20.78	20.63	20.58	20.8
5	64QAM	12	13	20.79	20.61	20.51	
5	64QAM	25	0	20.71	20.51	20.43	



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)
Channel				20850	21100	21350	
Frequency (MHz)				2510	2535	2560	
20	QPSK	1	0	20.68	20.68	20.75	21.8
20	QPSK	1	49	20.72	20.72	20.80	
20	QPSK	1	99	20.84	20.82	20.89	
20	QPSK	50	0	19.75	19.79	19.81	20.8
20	QPSK	50	24	19.86	19.84	19.85	
20	QPSK	50	50	19.89	19.83	19.84	
20	QPSK	100	0	19.80	19.79	19.81	20.8
20	16QAM	1	0	20.04	20.01	20.09	
20	16QAM	1	49	20.09	20.08	20.15	
20	16QAM	1	99	20.15	20.15	20.21	19.8
20	16QAM	50	0	18.77	18.90	18.81	
20	16QAM	50	24	18.88	18.84	18.87	
20	16QAM	50	50	18.89	18.84	18.87	19.8
20	16QAM	100	0	18.80	18.76	18.79	
20	64QAM	1	0	18.87	18.89	18.93	
20	64QAM	1	49	18.86	18.98	19.06	19.8
20	64QAM	1	99	19.09	19.06	19.13	
20	64QAM	50	0	17.78	17.83	17.83	
20	64QAM	50	24	17.90	17.85	17.87	18.8
20	64QAM	50	50	17.90	17.96	17.97	
20	64QAM	100	0	17.83	17.80	17.81	
Channel				20825	21100	21375	Tune-up limit (dBm)
Frequency (MHz)				2507.5	2535	2562.5	
15	QPSK	1	0	20.72	20.70	20.76	21.8
15	QPSK	1	37	20.72	20.74	20.79	
15	QPSK	1	74	20.82	20.85	20.88	
15	QPSK	36	0	19.75	19.79	19.82	20.8
15	QPSK	36	20	19.89	19.83	19.87	
15	QPSK	36	39	19.90	19.92	19.94	
15	QPSK	75	0	19.83	19.78	19.82	20.8
15	16QAM	1	0	20.00	20.03	20.07	
15	16QAM	1	37	20.08	20.12	20.12	
15	16QAM	1	74	20.13	20.18	20.20	19.8
15	16QAM	36	0	18.76	18.79	18.83	
15	16QAM	36	20	18.88	18.84	18.86	
15	16QAM	36	39	18.89	18.93	18.93	19.8
15	16QAM	75	0	18.84	18.90	18.83	
15	64QAM	1	0	18.92	18.91	18.97	
15	64QAM	1	37	18.98	19.05	19.09	19.8
15	64QAM	1	74	19.07	19.09	19.09	
15	64QAM	36	0	17.84	17.86	17.88	
15	64QAM	36	20	17.93	17.90	17.92	18.8
15	64QAM	36	39	17.92	17.96	17.98	
15	64QAM	75	0	17.86	17.81	17.84	
Channel				20900	21100	21400	Tune-up limit (dBm)
Frequency (MHz)				2505	2535	2565	
10	QPSK	1	0	20.50	20.57	20.58	21.8
10	QPSK	1	25	20.54	20.61	20.61	
10	QPSK	1	49	20.60	20.66	20.64	
10	QPSK	25	0	19.55	19.61	19.61	20.8
10	QPSK	25	12	19.67	19.65	19.64	
10	QPSK	25	25	19.66	19.73	19.71	
10	QPSK	50	0	19.62	19.58	19.58	20.8
10	16QAM	1	0	19.89	19.92	19.94	
10	16QAM	1	25	19.88	19.94	19.97	
10	16QAM	1	49	20.00	20.05	20.01	19.8
10	16QAM	25	0	18.95	18.61	18.61	
10	16QAM	25	12	18.88	18.64	18.67	
10	16QAM	25	25	18.69	18.73	18.72	19.8
10	16QAM	50	0	18.81	18.59	18.61	
10	64QAM	1	0	18.75	18.79	18.82	
10	64QAM	1	25	18.87	18.90	18.92	19.8
10	64QAM	1	49	18.89	18.96	18.93	
10	64QAM	25	0	17.59	17.54	17.65	
10	64QAM	25	12	17.71	17.69	17.69	18.8
10	64QAM	25	25	17.69	17.76	17.76	
10	64QAM	50	0	17.64	17.61	17.62	
Channel				20775	21100	21425	Tune-up limit (dBm)
Frequency (MHz)				2502.5	2535	2567.5	
5	QPSK	1	0	20.52	20.57	20.65	21.8
5	QPSK	1	12	20.60	20.64	20.67	
5	QPSK	1	24	20.82	20.70	20.65	
5	QPSK	12	0	19.64	19.63	19.69	20.8
5	QPSK	12	7	19.69	19.69	19.77	
5	QPSK	12	13	19.69	19.73	19.67	
5	QPSK	25	0	19.62	19.65	19.71	20.8
5	16QAM	1	0	18.83	19.91	19.93	
5	16QAM	1	12	19.97	19.97	19.97	
5	16QAM	1	24	19.95	20.03	19.99	19.8
5	16QAM	12	0	18.67	18.68	18.70	
5	16QAM	12	7	18.73	18.70	18.74	
5	16QAM	12	13	18.71	18.76	18.70	19.8
5	16QAM	25	0	18.96	18.64	18.72	
5	64QAM	1	0	18.79	18.85	18.89	
5	64QAM	1	12	18.82	18.88	19.90	19.8
5	64QAM	1	24	18.90	18.92	18.89	
5	64QAM	12	0	17.70	17.69	17.74	
5	64QAM	12	7	17.76	17.74	17.79	18.8
5	64QAM	12	13	17.73	17.80	17.77	
5	64QAM	25	0	17.68	17.65	17.74	



Band 12							
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23050	23055	23150	
Frequency (MHz)				704	707.5	711	
10	QPSK	1	0	22.85	22.85	22.83	23.8
10	QPSK	1	25	22.88	22.86	22.82	
10	QPSK	1	49	22.95	22.98	22.91	
10	QPSK	25	0	21.87	21.87	21.85	22.8
10	QPSK	25	12	22.06	21.98	21.85	
10	QPSK	25	25	22.00	21.89	21.96	
10	QPSK	50	0	21.99	21.89	21.89	22.8
10	16QAM	1	0	22.23	22.23	22.17	
10	16QAM	1	25	22.23	22.23	22.23	
10	16QAM	1	49	22.29	22.28	22.24	21.8
10	16QAM	25	0	20.88	20.85	20.84	
10	16QAM	25	12	21.05	20.98	20.93	
10	16QAM	25	25	21.01	20.97	20.94	21.8
10	16QAM	50	0	20.98	20.91	20.87	
10	64QAM	1	0	21.08	21.10	21.07	
10	64QAM	1	25	21.19	21.19	21.16	21.8
10	64QAM	1	49	21.17	21.19	21.12	
10	64QAM	25	0	19.91	19.90	19.87	
10	64QAM	25	12	20.10	20.03	19.98	20.8
10	64QAM	25	25	20.04	20.03	19.96	
10	64QAM	50	0	20.01	19.92	19.90	
Channel				23035	23095	23155	Tune-up limit (dBm)
Frequency (MHz)				701.5	707.5	713.5	
5	QPSK	1	0	22.93	22.82	22.76	23.8
5	QPSK	1	12	22.91	22.93	22.87	
5	QPSK	1	24	22.90	22.89	22.90	
5	QPSK	12	0	22.03	21.99	21.89	22.8
5	QPSK	12	7	22.05	21.98	21.93	
5	QPSK	12	13	22.01	22.00	21.94	
5	QPSK	25	0	22.04	21.93	21.94	22.8
5	16QAM	1	0	22.22	22.23	22.14	
5	16QAM	1	12	22.26	22.24	22.18	
5	16QAM	1	24	22.24	22.24	22.21	21.8
5	16QAM	12	0	21.02	20.96	20.93	
5	16QAM	12	7	21.05	20.99	20.95	
5	16QAM	12	13	21.05	21.04	20.93	21.8
5	16QAM	25	0	21.02	20.95	20.89	
5	64QAM	1	0	21.21	21.08	21.05	
5	64QAM	1	12	21.14	21.14	21.11	21.8
5	64QAM	1	24	21.14	21.20	21.09	
5	64QAM	12	0	20.10	20.03	19.99	
5	64QAM	12	7	20.11	20.05	20.00	20.8
5	64QAM	12	13	20.09	20.06	20.00	
5	64QAM	25	0	20.06	19.97	19.95	
Channel				23025	23055	23155	Tune-up limit (dBm)
Frequency (MHz)				700.5	707.5	714.5	
3	QPSK	1	0	22.92	22.83	22.86	23.8
3	QPSK	1	8	22.91	22.93	22.92	
3	QPSK	1	14	22.91	22.91	22.85	
3	QPSK	8	0	22.01	21.94	21.91	22.8
3	QPSK	8	4	22.02	22.03	21.94	
3	QPSK	8	7	21.98	21.99	21.92	
3	QPSK	15	0	22.03	21.94	21.98	22.8
3	16QAM	1	0	22.26	22.19	22.19	
3	16QAM	1	8	22.35	22.30	22.25	
3	16QAM	1	14	22.23	22.23	22.17	21.8
3	16QAM	8	0	21.09	21.00	20.99	
3	16QAM	8	4	21.08	21.09	21.02	
3	16QAM	8	7	21.08	21.07	21.00	21.8
3	16QAM	15	0	21.06	20.96	20.95	
3	64QAM	1	0	21.22	21.13	21.14	
3	64QAM	1	8	21.23	21.28	21.14	21.8
3	64QAM	1	14	21.19	21.21	21.06	
3	64QAM	8	0	20.09	20.02	19.98	
3	64QAM	8	4	20.10	20.10	19.99	20.8
3	64QAM	8	7	20.08	20.09	19.96	
3	64QAM	15	0	20.06	19.97	19.96	
Channel				23017	23095	23173	Tune-up limit (dBm)
Frequency (MHz)				699.7	707.5	715.3	
1.4	QPSK	1	0	22.85	22.74	22.73	23.8
1.4	QPSK	1	3	22.86	22.86	22.78	
1.4	QPSK	1	5	22.83	22.81	22.71	
1.4	QPSK	3	0	22.84	22.78	22.71	22.8
1.4	QPSK	3	1	22.90	22.81	22.76	
1.4	QPSK	3	3	22.86	22.83	22.74	
1.4	QPSK	6	0	21.92	21.85	21.81	22.8
1.4	16QAM	1	0	22.18	22.10	22.02	
1.4	16QAM	1	3	22.23	22.24	22.08	
1.4	16QAM	1	5	22.16	22.12	22.02	22.8
1.4	16QAM	3	0	21.95	21.85	21.82	
1.4	16QAM	3	1	22.00	21.91	21.85	
1.4	16QAM	3	3	21.93	21.91	21.82	21.8
1.4	16QAM	6	0	21.05	20.92	20.90	
1.4	64QAM	1	0	21.10	21.02	21.01	
1.4	64QAM	1	3	21.13	21.13	21.07	21.8
1.4	64QAM	1	5	21.08	21.09	20.98	
1.4	64QAM	3	0	21.06	20.97	20.96	
1.4	64QAM	3	1	21.12	21.04	21.00	21.8
1.4	64QAM	3	3	21.09	21.04	20.96	
1.4	64QAM	6	0	19.97	19.88	19.85	



Band 13						
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				23230		
Frequency (MHz)				782		
10	QPSK	1	0	23.89		
10	QPSK	1	25	23.90		
10	QPSK	1	49	23.75		
10	QPSK	25	0	22.92		
10	QPSK	25	12	22.96		
10	QPSK	25	25	23.00		
10	QPSK	50	0	22.96		
10	16QAM	1	0	23.23		
10	16QAM	1	25	23.30		
10	16QAM	1	49	23.21		
10	16QAM	25	0	21.97		
10	16QAM	25	12	21.97		
10	16QAM	25	25	21.98		
10	16QAM	50	0	21.94		
10	64QAM	1	0	21.20		
10	64QAM	1	25	22.23		
10	64QAM	1	49	22.13		
10	64QAM	25	0	21.00		
10	64QAM	25	12	21.01		
10	64QAM	25	25	21.02		
10	64QAM	50	0	20.95		
Channel				23205	23230	23255
Frequency (MHz)				779.5	782	784.5
5	QPSK	1	0	23.79	23.80	23.85
5	QPSK	1	12	23.84	23.90	23.87
5	QPSK	1	24	23.87	23.79	23.78
5	QPSK	12	0	23.09	22.99	23.01
5	QPSK	12	7	23.09	22.98	23.00
5	QPSK	12	13	23.05	23.00	22.96
5	QPSK	25	0	23.09	22.96	23.00
5	16QAM	1	0	23.00	23.25	23.26
5	16QAM	1	12	23.26	23.30	23.24
5	16QAM	1	24	23.30	23.24	23.19
5	16QAM	12	0	22.12	22.01	22.02
5	16QAM	12	7	22.15	22.04	22.01
5	16QAM	12	13	22.09	22.02	21.97
5	16QAM	25	0	22.08	21.96	22.04
5	64QAM	1	0	20.91	22.18	22.24
5	64QAM	1	12	22.20	22.25	22.17
5	64QAM	1	24	22.24	22.20	22.15
5	64QAM	12	0	20.67	21.05	21.07
5	64QAM	12	7	21.19	21.07	21.08
5	64QAM	12	13	21.14	21.08	21.04
5	64QAM	25	0	21.07	21.01	21.06



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)
Channel				23750	23790	23830	
Frequency (MHz)				706	710	715	
10	QPSK	1	0	22.82	22.78	22.76	
10	QPSK	1	25	22.84	22.82	22.82	23.8
10	QPSK	1	49	22.89	22.84	22.85	
10	QPSK	25	0	21.89	21.91	21.88	
10	QPSK	25	12	22.02	21.94	21.91	22.8
10	QPSK	25	25	21.98	21.89	21.99	
10	QPSK	50	0	21.90	21.93	21.91	
10	16QAM	1	0	22.19	22.18	22.14	
10	16QAM	1	25	22.23	22.21	22.21	22.8
10	16QAM	1	49	22.22	22.22	22.20	
10	16QAM	25	0	20.88	20.88	20.89	
10	16QAM	25	12	21.01	20.95	20.91	21.8
10	16QAM	25	25	20.98	21.00	20.98	
10	16QAM	50	0	20.91	20.91	20.89	
10	64QAM	1	0	21.80	21.01	20.97	
10	64QAM	1	25	21.79	21.15	21.14	21.8
10	64QAM	1	49	21.76	21.14	21.11	
10	64QAM	25	0	20.50	19.82	19.91	
10	64QAM	25	12	20.63	19.88	19.86	20.8
10	64QAM	25	25	20.58	20.02	20.02	
10	64QAM	50	0	20.49	19.82	19.93	
Channel				23755	23790	23825	
Frequency (MHz)				706.5	710	713.5	
5	QPSK	1	0	22.84	22.78	22.82	
5	QPSK	1	12	22.87	22.86	22.86	23.8
5	QPSK	1	24	22.88	22.84	22.82	
5	QPSK	12	0	21.94	21.91	21.93	
5	QPSK	12	7	21.98	21.94	21.94	22.8
5	QPSK	12	13	21.88	21.95	21.92	
5	QPSK	25	0	21.97	21.91	21.93	
5	16QAM	1	0	22.16	22.11	22.16	22.8
5	16QAM	1	12	22.19	22.26	22.19	
5	16QAM	1	24	22.22	22.21	22.18	
5	16QAM	12	0	20.99	20.94	20.94	
5	16QAM	12	7	21.02	20.99	20.98	21.8
5	16QAM	12	13	20.99	21.00	20.93	
5	16QAM	25	0	20.98	20.93	20.95	
5	64QAM	1	0	21.13	21.02	21.10	
5	64QAM	1	12	21.09	21.16	21.07	21.8
5	64QAM	1	24	21.19	21.19	21.04	
5	64QAM	12	0	20.04	19.99	19.98	
5	64QAM	12	7	20.06	20.04	20.03	20.8
5	64QAM	12	13	20.02	20.04	19.94	
5	64QAM	25	0	19.99	19.94	19.95	



Band 26									
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)		
Channel				26765	26865	26965			
Frequency (MHz)				831.5	831.5	841.5			
15	QPSK	1	0	22.90	22.92	22.89	23.8		
15	QPSK	1	37	22.88	22.90	22.87			
15	QPSK	1	74	22.95	22.92	22.87			
15	QPSK	36	0	21.87	21.93	21.84	22.8		
15	QPSK	36	20	21.02	21.95	22.90			
15	QPSK	36	39	21.92	21.95	21.91			
15	QPSK	75	0	21.97	21.89	21.96	22.8		
15	16QAM	1	0	22.27	22.27	22.23			
15	16QAM	1	37	22.27	22.23	22.20			
15	16QAM	1	74	22.22	22.23	22.15	21.8		
15	16QAM	36	0	20.88	20.90	20.85			
15	16QAM	36	20	21.02	20.95	21.01			
15	16QAM	36	39	20.94	20.97	20.98	21.8		
15	16QAM	75	0	20.95	20.92	20.97			
15	64QAM	1	0	21.06	21.12	21.08			
15	64QAM	1	37	21.10	21.17	21.13	21.8		
15	64QAM	1	74	21.11	21.15	21.10			
15	64QAM	36	0	19.95	19.93	19.92			
15	64QAM	36	20	20.04	19.98	20.04	20.8		
15	64QAM	36	39	19.97	20.01	19.99			
15	64QAM	75	0	19.98	19.93	19.99			
Channel				26740	26865	26990			
Frequency (MHz)				819	831.5	844			
10	QPSK	1	0	22.83	22.80	22.84	23.8		
10	QPSK	1	25	22.78	22.84	22.77			
10	QPSK	1	49	22.81	22.80	22.76			
10	QPSK	25	0	21.74	21.75	21.77	22.8		
10	QPSK	25	12	21.92	21.85	21.96			
10	QPSK	25	25	21.83	21.87	21.88			
10	QPSK	50	0	21.84	21.79	21.79	22.8		
10	16QAM	1	0	22.21	22.20	22.20			
10	16QAM	1	25	22.18	22.19	22.16			
10	16QAM	1	49	22.21	22.15	22.13	21.8		
10	16QAM	25	0	20.73	20.77	20.78			
10	16QAM	25	12	20.92	20.88	20.96			
10	16QAM	25	25	20.83	20.87	20.87	21.8		
10	16QAM	50	0	20.84	20.78	20.78			
10	64QAM	1	0	21.07	21.07	21.05			
10	64QAM	1	25	21.12	21.14	21.09	21.8		
10	64QAM	1	49	21.13	21.09	21.02			
10	64QAM	25	0	19.78	19.80	19.81			
10	64QAM	25	12	20.00	19.91	20.03	20.8		
10	64QAM	25	25	19.89	19.89	19.90			
10	64QAM	50	0	19.89	19.84	19.84			
Channel				26715	26865	27015			
Frequency (MHz)				816.5	831.5	846.5			
5	QPSK	1	0	22.76	22.81	22.78	23.8		
5	QPSK	1	12	22.89	22.88	22.88			
5	QPSK	1	24	22.80	22.87	22.80			
5	QPSK	12	0	21.88	21.83	21.83	22.8		
5	QPSK	12	7	21.83	22.00	21.92			
5	QPSK	12	13	21.91	21.93	21.94			
5	QPSK	25	0	21.91	21.83	21.88	22.8		
5	16QAM	1	0	22.11	22.18	22.15			
5	16QAM	1	12	22.19	22.20	22.18			
5	16QAM	1	24	22.17	22.24	22.13	21.8		
5	16QAM	12	0	20.94	20.92	20.86			
5	16QAM	12	7	20.95	20.98	20.91			
5	16QAM	12	13	20.92	20.95	20.92	21.8		
5	16QAM	25	0	20.93	20.89	20.89			
5	64QAM	1	0	21.05	21.08	21.08			
5	64QAM	1	12	21.08	21.11	21.09	21.8		
5	64QAM	1	24	21.06	21.12	21.07			
5	64QAM	12	0	19.98	19.92	19.93			
5	64QAM	12	7	20.02	20.05	20.00	20.8		
5	64QAM	12	13	19.99	19.98	20.01			
5	64QAM	25	0	19.96	19.87	19.90			
Channel				26705	26865	27025			
Frequency (MHz)				815.5	831.5	847.5			
3	QPSK	1	0	22.83	22.82	22.75	23.8		
3	QPSK	1	8	22.83	22.91	22.87			
3	QPSK	1	14	22.81	22.87	22.80			
3	QPSK	8	0	21.94	21.91	21.88	22.8		
3	QPSK	8	4	21.98	21.95	21.92			
3	QPSK	8	7	21.90	21.91	21.92			
3	QPSK	15	0	21.95	21.89	21.88	22.8		
3	16QAM	1	0	22.17	22.14	22.11			
3	16QAM	1	8	22.27	22.25	22.20			
3	16QAM	1	14	22.14	22.18	22.11	21.8		
3	16QAM	8	0	21.00	20.96	20.94			
3	16QAM	8	4	21.01	21.07	21.01			
3	16QAM	8	7	21.00	20.99	20.99	21.8		
3	16QAM	15	0	21.00	20.96	20.89			
3	64QAM	1	0	21.10	21.07	21.03			
3	64QAM	1	8	21.20	21.18	21.14	21.8		
3	64QAM	1	14	21.10	21.13	21.05			
3	64QAM	8	0	20.02	19.96	19.94			
3	64QAM	8	4	20.02	20.04	20.02	20.8		
3	64QAM	8	7	20.01	20.03	19.96			
3	64QAM	15	0	19.98	19.94	19.93			
Channel				26597	26865	27033			
Frequency (MHz)				814.7	831.5	848.3			
1.4	QPSK	1	0	22.82	22.73	22.72	23.8		
1.4	QPSK	1	3	22.87	22.85	22.77			
1.4	QPSK	1	5	22.80	22.80	22.88			
1.4	QPSK	3	0	22.85	22.75	22.73	22.8		
1.4	QPSK	3	1	22.88	22.83	22.75			
1.4	QPSK	3	3	22.83	22.80	22.71			
1.4	QPSK	6	0	21.88	21.89	21.85	22.8		
1.4	16QAM	1	0	22.15	22.06	22.02			
1.4	16QAM	1	3	22.20	22.18	22.12			
1.4	16QAM	1	5	22.13	22.11	22.03	22.8		
1.4	16QAM	3	0	21.93	21.85	21.82			
1.4	16QAM	3	1	22.00	21.89	21.87			
1.4	16QAM	3	3	21.94	21.90	21.82	21.8		
1.4	16QAM	6	0	20.95	20.96	20.90			
1.4	64QAM	1	0	21.07	20.99	20.98			
1.4	64QAM	1	3	21.12	21.10	21.03	21.8		
1.4	64QAM	1	5	21.06	21.06	20.97			
1.4	64QAM	3	0	21.05	20.93	20.93			
1.4	64QAM	3	1	21.10	21.02	21.01	20.8		
1.4	64QAM	3	3	21.04	21.01	20.93			
1.4	64QAM	6	0	19.91	19.89	19.87			



Band 30						
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				27710		
Frequency (MHz)				2310		
10	QPSK	1	0		20.64	
10	QPSK	1	25		20.59	
10	QPSK	1	49		20.56	
10	QPSK	25	0		19.58	
10	QPSK	25	12		19.66	
10	QPSK	25	25		19.68	
10	QPSK	50	0		19.27	
10	16QAM	1	0		20.00	
10	16QAM	1	25		19.99	
10	16QAM	1	49		19.97	
10	16QAM	25	0		18.52	
10	16QAM	25	12		18.68	
10	16QAM	25	25		18.55	
10	16QAM	50	0		18.28	
10	64QAM	1	0		18.87	
10	64QAM	1	25		18.91	
10	64QAM	1	49		18.81	
10	64QAM	25	0		17.62	
10	64QAM	25	12		17.71	
10	64QAM	25	25		17.60	
10	64QAM	50	0		17.62	
Channel				27685	27710	27735
Frequency (MHz)				2307.5	2310	2312.5
5	QPSK	1	0	20.55	20.62	20.59
5	QPSK	1	12	20.57	20.63	20.56
5	QPSK	1	24	20.59	20.54	20.48
5	QPSK	12	0	19.65	19.70	19.71
5	QPSK	12	7	19.70	19.72	19.74
5	QPSK	12	13	19.71	19.66	19.68
5	QPSK	25	0	19.65	19.63	19.69
5	16QAM	1	0	18.83	18.94	18.91
5	16QAM	1	12	18.96	18.96	18.96
5	16QAM	1	24	18.91	18.83	18.84
5	16QAM	12	0	18.89	18.72	18.72
5	16QAM	12	7	18.72	18.72	18.78
5	16QAM	12	13	18.73	18.68	18.69
5	16QAM	25	0	18.68	18.66	18.72
5	64QAM	1	0	18.79	18.85	18.82
5	64QAM	1	12	18.86	18.85	18.86
5	64QAM	1	24	18.85	18.74	18.77
5	64QAM	12	0	17.71	17.80	17.75
5	64QAM	12	7	17.76	17.78	17.79
5	64QAM	12	13	17.80	17.75	17.76
5	64QAM	25	0	17.68	17.70	17.72



Band 66									
Channel	Frequency (MHz)	BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel						132072	132322	132572	
Frequency (MHz)						1720	1745	1770	
20	QPSK	1	0	23.29	23.66	24.02			24.8
20	QPSK	1	49	24.08	23.98	24.07			
20	QPSK	1	99	23.52	23.73	24.06			
20	QPSK	50	0	22.73	23.02	23.13			23.8
20	QPSK	50	24	23.15	23.09	23.16			
20	QPSK	50	50	22.84	23.04	23.12			
20	QPSK	100	0	22.81	22.99	23.24			
20	16QAM	1	0	22.81	23.03	23.59			23.8
20	16QAM	1	49	23.02	23.33	23.54			
20	16QAM	1	99	22.87	23.08	23.46			
20	16QAM	50	0	21.75	22.06	22.21			22.8
20	16QAM	50	24	21.89	22.10	22.33			
20	16QAM	50	50	21.87	22.07	22.21			
20	16QAM	100	0	21.79	22.01	22.25			
20	64QAM	1	0	21.52	21.84	22.39			22.8
20	64QAM	1	49	21.92	22.21	22.34			
20	64QAM	1	99	21.76	22.00	22.34			
20	64QAM	50	0	20.78	21.07	21.24			21.8
20	64QAM	50	24	20.91	21.12	21.34			
20	64QAM	50	50	20.87	21.09	21.22			
20	64QAM	100	0	20.82	21.01	21.26			
Channel						132047	132322	132597	
Frequency (MHz)						1717.5	1745	1772.5	
15	QPSK	1	0	23.47	23.82	24.06			24.8
15	QPSK	1	37	23.62	23.99	24.06			
15	QPSK	1	74	23.69	23.85	24.05			
15	QPSK	36	0	22.67	23.08	23.24			23.8
15	QPSK	36	20	22.82	23.07	23.22			
15	QPSK	36	39	22.77	23.07	23.24			
15	QPSK	75	0	22.78	23.01	23.19			
15	16QAM	1	0	22.79	23.15	23.35			23.8
15	16QAM	1	37	22.97	23.33	23.48			
15	16QAM	1	74	22.94	23.15	23.42			
15	16QAM	36	0	21.74	22.07	22.26			22.8
15	16QAM	36	20	21.84	22.07	22.25			
15	16QAM	36	39	21.78	22.10	22.24			
15	16QAM	75	0	21.80	22.05	22.21			
15	64QAM	1	0	21.64	22.00	22.40			22.8
15	64QAM	1	37	21.87	22.23	22.39			
15	64QAM	1	74	21.83	22.10	22.34			
15	64QAM	36	0	20.79	21.11	21.30			21.8
15	64QAM	36	20	20.85	21.10	21.26			
15	64QAM	36	39	20.81	21.11	21.27			
15	64QAM	75	0	20.81	21.06	21.22			
Channel						132022	132322	132622	
Frequency (MHz)						1715	1745	1775	
10	QPSK	1	0	23.26	23.49	23.74			24.8
10	QPSK	1	25	23.43	23.79	23.86			
10	QPSK	1	49	23.33	23.58	23.75			
10	QPSK	25	0	22.46	22.81	22.99			23.8
10	QPSK	25	12	22.81	22.96	23.13			
10	QPSK	25	25	22.51	22.84	23.01			
10	QPSK	50	0	22.55	22.81	23.06			
10	16QAM	1	0	22.46	22.86	23.08			23.8
10	16QAM	1	25	22.81	23.16	23.34			
10	16QAM	1	49	22.59	22.97	23.12			
10	16QAM	25	0	21.46	21.83	21.99			22.8
10	16QAM	25	12	21.81	21.90	22.15			
10	16QAM	25	25	21.51	21.85	22.04			
10	16QAM	50	0	21.54	21.81	22.06			
10	64QAM	1	0	21.40	21.75	21.96			22.8
10	64QAM	1	25	21.72	22.10	22.28			
10	64QAM	1	49	21.53	21.87	22.03			
10	64QAM	25	0	20.50	20.83	21.03			21.8
10	64QAM	25	12	20.65	20.93	21.16			
10	64QAM	25	25	20.53	20.88	21.05			
10	64QAM	50	0	20.57	20.85	21.08			
Channel						131997	132322	132647	
Frequency (MHz)						1712.5	1745	1777.5	
5	QPSK	1	0	23.32	23.76	23.97			24.8
5	QPSK	1	12	23.45	23.86	24.06			
5	QPSK	1	24	23.34	23.76	23.96			
5	QPSK	12	0	22.49	22.90	23.06			23.8
5	QPSK	12	7	22.99	22.90	23.08			
5	QPSK	12	13	22.51	22.89	23.05			
5	QPSK	25	0	22.52	22.85	23.03			
5	16QAM	1	0	22.67	23.06	23.30			23.8
5	16QAM	1	12	22.67	23.14	23.32			
5	16QAM	1	24	22.66	23.05	23.25			
5	16QAM	12	0	21.53	21.94	22.10			22.8
5	16QAM	12	7	21.82	21.94	22.08			
5	16QAM	12	13	21.54	21.91	22.07			
5	16QAM	25	0	21.95	21.89	22.07			
5	64QAM	1	0	21.63	22.04	22.21			22.8
5	64QAM	1	12	21.68	22.08	22.23			
5	64QAM	1	24	21.84	22.03	22.18			
5	64QAM	12	0	20.60	20.99	21.17			21.8
5	64QAM	12	7	20.66	20.97	21.16			
5	64QAM	12	13	20.57	20.94	21.12			
5	64QAM	25	0	20.59	20.89	21.05			
Channel						131977	132322	132657	
Frequency (MHz)						1711.5	1745	1778.5	
3	QPSK	1	0	23.41	23.78	24.02			24.8
3	QPSK	1	8	23.47	23.89	24.05			
3	QPSK	1	14	23.37	23.74	23.94			
3	QPSK	8	0	22.48	22.89	23.05			23.8
3	QPSK	8	4	22.54	22.91	23.08			
3	QPSK	8	7	22.53	22.88	23.07			
3	QPSK	15	0	22.56	22.87	23.05			
3	16QAM	1	0	22.73	23.12	23.32			23.8
3	16QAM	1	8	22.74	23.16	23.39			
3	16QAM	1	14	22.72	23.08	23.30			
3	16QAM	8	0	21.57	21.95	22.14			22.8
3	16QAM	8	4	21.60	22.00	22.12			
3	16QAM	8	7	21.59	21.94	22.12			
3	16QAM	15	0	21.57	21.90	22.08			
3	64QAM	1	0	21.67	22.09	22.28			22.8
3	64QAM	1	8	21.75	22.15	22.31			
3	64QAM	1	14	21.65	22.05	22.21			
3	64QAM	8	0	20.58	20.98	21.15			21.8
3	64QAM	8	4	20.62	21.00	21.14			
3	64QAM	8	7	20.80	20.96	21.13			
3	64QAM	15	0	20.55	20.90	21.08			
Channel						131979	132322	132665	
Frequency (MHz)						1710.7	1745	1779.3	
1.4	QPSK	1	0	23.25	23.74	23.97			24.8
1.4	QPSK	1	3	23.35	23.79	23.99			
1.4	QPSK	1	5	23.27	23.74	23.90			
1.4	QPSK	3	0	23.29	23.73	23.99			23.8
1.4	QPSK	3	1	23.39	23.76	24.00			
1.4	QPSK	3	3	23.33	23.76	23.96			
1.4	QPSK	6	0	22.42	22.78	23.03			
1.4	16QAM	1	0	22.62	23.01	23.31			23.8
1.4	16QAM	1	3	22.70	23.12	23.36			
1.4	16QAM	1	5	22.61	23.02	23.24			
1.4	16QAM	3	0	22.36	22.81	23.06			
1.4	16QAM	3	1	22.45	22.84	23.10			
1.4	16QAM	3	3	22.40	22.80	23.04			
1.4	16QAM	6	0	21.50	21.87	22.12			22.8
1.4	64QAM	1	0	21.57	21.98	22.22			
1.4	64QAM	1	3	21.61	22.05	22.28			
1.4	64QAM	1	5	21.49	21.94	22.16			22.8
1.4	64QAM	3	0	21.51	21.94	22.19			
1.4	64QAM	3	1	21.61	21.98	22.26			
1.4	64QAM	3	3	21.52	21.97	22.18			
1.4	64QAM	6	0	20.45	20.79	21.0			



Band 71							
BW (MHz)	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				133222	133322	133372	
Frequency (MHz)				673	683	688	
20	QPSK	1	0	23.47	23.35	23.32	23.8
20	QPSK	1	49	23.44	23.38	23.35	
20	QPSK	1	99	23.53	23.39	23.39	
20	QPSK	50	0	22.58	22.48	22.47	22.8
20	QPSK	50	24	22.63	22.57	22.45	
20	QPSK	50	50	22.68	22.53	22.51	
20	QPSK	100	0	22.58	22.43	22.47	22.8
20	16QAM	1	0	22.79	22.71	22.67	
20	16QAM	1	49	22.84	22.76	22.69	
20	16QAM	1	99	22.86	22.73	22.73	21.8
20	16QAM	50	0	21.59	21.52	21.46	
20	16QAM	50	24	21.66	21.58	21.47	
20	16QAM	50	50	21.68	21.53	21.52	21.8
20	16QAM	100	0	21.59	21.42	21.48	
20	64QAM	1	0	21.65	21.53	21.52	
20	64QAM	1	49	21.64	21.59	21.56	21.8
20	64QAM	1	99	21.78	21.67	21.63	
20	64QAM	50	0	20.61	20.53	20.49	
20	64QAM	50	24	20.69	20.60	20.50	20.8
20	64QAM	50	50	20.88	20.55	20.54	
20	64QAM	100	0	20.62	20.44	20.47	
Channel				133197	133297	133397	Tune-up limit (dBm)
Frequency (MHz)				670.5	680.5	690.5	
15	QPSK	1	0	23.46	23.36	23.37	23.8
15	QPSK	1	37	23.46	23.41	23.41	
15	QPSK	1	74	23.52	23.45	23.42	
15	QPSK	36	0	22.57	22.51	22.44	22.8
15	QPSK	36	20	22.65	22.60	22.53	
15	QPSK	36	39	22.60	22.56	22.48	
15	QPSK	75	0	22.63	22.44	22.49	22.8
15	16QAM	1	0	22.79	22.70	22.71	
15	16QAM	1	37	22.85	22.78	22.73	
15	16QAM	1	74	22.86	22.77	22.78	21.8
15	16QAM	36	0	21.57	21.53	21.44	
15	16QAM	36	20	21.67	21.58	21.55	
15	16QAM	36	39	21.61	21.53	21.49	21.8
15	16QAM	75	0	21.64	21.47	21.50	
15	64QAM	1	0	21.69	21.61	21.57	
15	64QAM	1	37	21.71	21.71	21.65	21.8
15	64QAM	1	74	21.76	21.73	21.67	
15	64QAM	36	0	20.63	20.55	20.50	
15	64QAM	36	20	20.70	20.63	20.56	20.8
15	64QAM	36	39	20.64	20.62	20.53	
15	64QAM	75	0	20.64	20.48	20.50	
Channel				133172	133272	133422	Tune-up limit (dBm)
Frequency (MHz)				688	678	693	
10	QPSK	1	0	23.27	23.30	23.21	23.8
10	QPSK	1	25	23.30	23.27	23.19	
10	QPSK	1	49	23.30	23.27	23.23	
10	QPSK	25	0	22.38	22.33	22.24	22.8
10	QPSK	25	12	22.46	22.40	22.25	
10	QPSK	25	25	22.44	22.39	22.30	
10	QPSK	50	0	22.41	22.34	22.20	22.8
10	16QAM	1	0	22.65	22.67	22.59	
10	16QAM	1	25	22.71	22.64	22.57	
10	16QAM	1	49	22.71	22.66	22.59	21.8
10	16QAM	25	0	21.36	21.36	21.24	
10	16QAM	25	12	21.47	21.40	21.27	
10	16QAM	25	25	21.44	21.37	21.30	21.8
10	16QAM	50	0	21.42	21.32	21.20	
10	64QAM	1	0	21.56	21.51	21.41	
10	64QAM	1	25	21.62	21.57	21.50	21.8
10	64QAM	1	49	21.61	21.56	21.50	
10	64QAM	25	0	20.40	20.35	20.27	
10	64QAM	25	12	20.52	20.44	20.32	20.8
10	64QAM	25	25	20.48	20.41	20.36	
10	64QAM	50	0	20.44	20.37	20.22	
Channel				133147	133247	133447	Tune-up limit (dBm)
Frequency (MHz)				665.5	675.5	685.5	
5	QPSK	1	0	23.27	23.30	23.26	23.8
5	QPSK	1	12	23.32	23.33	23.27	
5	QPSK	1	24	23.40	23.33	23.26	
5	QPSK	12	0	22.33	22.31	22.23	22.8
5	QPSK	12	7	22.51	22.41	22.36	
5	QPSK	12	13	22.45	22.38	22.34	
5	QPSK	25	0	22.44	22.34	22.26	22.8
5	16QAM	1	0	22.67	22.48	22.41	
5	16QAM	1	12	22.66	22.66	22.58	
5	16QAM	1	24	22.73	22.66	22.62	21.8
5	16QAM	12	0	21.38	21.33	21.26	
5	16QAM	12	7	21.51	21.47	21.38	
5	16QAM	12	13	21.48	21.44	21.34	21.8
5	16QAM	25	0	21.49	21.35	21.24	
5	64QAM	1	0	21.56	21.44	21.41	
5	64QAM	1	12	21.68	21.62	21.49	21.8
5	64QAM	1	24	21.68	21.64	21.48	
5	64QAM	12	0	20.44	20.35	20.30	
5	64QAM	12	7	20.56	20.49	20.41	20.8
5	64QAM	12	13	20.53	20.46	20.37	
5	64QAM	25	0	20.47	20.43	20.30	



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)
Channel				20350	20175	20350	23
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	21.60	21.54	21.54	23
20	QPSK	1	49	21.79	21.76	21.70	
20	QPSK	1	99	21.54	21.49	21.44	
20	QPSK	50	0	21.80	21.78	21.73	23
20	QPSK	50	24	21.97	21.85	21.79	
20	QPSK	50	50	21.88	21.84	21.77	
20	QPSK	100	0	21.87	21.76	21.71	23
20	16QAM	1	0	21.92	21.91	21.89	
20	16QAM	1	49	22.20	22.16	22.07	
20	16QAM	1	99	21.90	21.81	21.77	22.5
20	16QAM	50	0	21.83	21.81	21.76	
20	16QAM	50	24	21.88	21.86	21.80	
20	16QAM	50	50	21.91	21.85	21.77	22.5
20	16QAM	100	0	21.80	21.78	21.71	
20	64QAM	1	0	21.79	21.77	21.73	
20	64QAM	1	49	22.02	22.00	21.93	22.5
20	64QAM	1	99	21.78	21.74	21.66	
20	64QAM	50	0	20.87	20.83	20.76	
20	64QAM	50	24	21.01	20.89	20.83	21.5
20	64QAM	50	50	20.93	20.86	20.81	
20	64QAM	100	0	20.93	20.81	20.73	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	21.68	21.65	21.59	23
15	QPSK	1	37	21.80	21.78	21.71	
15	QPSK	1	74	21.70	21.68	21.58	
15	QPSK	36	0	21.84	21.80	21.73	23
15	QPSK	36	20	21.96	21.86	21.85	
15	QPSK	36	39	21.91	21.88	21.76	
15	QPSK	75	0	21.91	21.79	21.70	23
15	16QAM	1	0	22.02	21.98	21.94	
15	16QAM	1	37	22.19	22.13	22.10	
15	16QAM	1	74	22.08	21.97	21.96	22.5
15	16QAM	36	0	21.84	21.82	21.74	
15	16QAM	36	20	21.96	21.88	21.89	
15	16QAM	36	39	21.93	21.86	21.80	22.5
15	16QAM	75	0	21.93	21.81	21.75	
15	64QAM	1	0	21.87	21.81	21.79	
15	64QAM	1	37	22.08	22.02	22.00	22.5
15	64QAM	1	74	21.94	21.84	21.85	
15	64QAM	36	0	20.87	20.87	20.80	
15	64QAM	36	20	21.00	20.89	20.91	21.5
15	64QAM	36	39	20.95	20.90	20.84	
15	64QAM	75	0	20.84	20.84	20.76	
Channel				20300	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	21.35	21.37	21.33	23
10	QPSK	1	25	21.68	21.62	21.54	
10	QPSK	1	49	21.37	21.33	21.24	
10	QPSK	25	0	21.65	21.62	21.62	23
10	QPSK	25	12	21.80	21.68	21.68	
10	QPSK	25	25	21.66	21.64	21.55	
10	QPSK	50	0	21.72	21.60	21.61	23
10	16QAM	1	0	21.78	21.77	21.68	
10	16QAM	1	25	22.05	22.03	21.96	
10	16QAM	1	49	21.70	21.71	21.60	22.5
10	16QAM	25	0	21.68	21.62	21.65	
10	16QAM	25	12	21.82	21.71	21.74	
10	16QAM	25	25	21.68	21.67	21.55	22.5
10	16QAM	50	0	21.74	21.59	21.61	
10	64QAM	1	0	21.60	21.60	21.58	
10	64QAM	1	25	21.97	21.94	21.86	22.5
10	64QAM	1	49	21.64	21.60	21.53	
10	64QAM	25	0	20.69	20.67	20.66	
10	64QAM	25	12	20.87	20.74	20.74	21.5
10	64QAM	25	25	20.72	20.70	20.58	
10	64QAM	50	0	20.73	20.62	20.64	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	21.58	21.58	21.52	23
5	QPSK	1	12	21.73	21.64	21.56	
5	QPSK	1	24	21.58	21.56	21.45	
5	QPSK	12	0	21.74	21.72	21.67	23
5	QPSK	12	7	21.84	21.79	21.68	
5	QPSK	12	13	21.75	21.68	21.63	
5	QPSK	25	0	21.76	21.66	21.60	23
5	16QAM	1	0	21.95	21.90	21.84	
5	16QAM	1	12	21.95	21.99	21.90	
5	16QAM	1	24	21.88	21.96	21.76	22.5
5	16QAM	12	0	21.76	21.76	21.69	
5	16QAM	12	7	21.85	21.82	21.71	
5	16QAM	12	13	21.77	21.75	21.62	22.5
5	16QAM	25	0	21.78	21.70	21.66	
5	64QAM	1	0	21.68	21.68	21.61	
5	64QAM	1	12	21.93	21.87	21.78	22.5
5	64QAM	1	24	21.87	21.81	21.66	
5	64QAM	12	0	20.83	20.83	20.75	
5	64QAM	12	7	20.90	20.86	20.74	21.5
5	64QAM	12	13	20.85	20.80	20.65	
5	64QAM	25	0	20.82	20.72	20.65	
Channel				19955	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	21.67	21.69	21.56	23
3	QPSK	1	8	21.77	21.73	21.61	
3	QPSK	1	14	21.64	21.62	21.53	
3	QPSK	8	0	21.83	21.80	21.66	23
3	QPSK	8	4	21.84	21.61	21.66	
3	QPSK	8	7	21.76	21.70	21.60	
3	QPSK	15	0	21.80	21.78	21.64	23
3	16QAM	1	0	21.98	22.04	21.92	
3	16QAM	1	8	22.02	22.08	21.88	
3	16QAM	1	14	21.99	21.95	21.84	22.5
3	16QAM	8	0	21.89	21.85	21.72	
3	16QAM	8	4	21.87	21.85	21.72	
3	16QAM	8	7	21.86	21.80	21.66	22.5
3	16QAM	15	0	21.85	21.80	21.68	
3	64QAM	1	0	21.93	21.93	21.83	
3	64QAM	1	8	22.02	21.99	21.81	22.5
3	64QAM	1	14	21.95	21.90	21.74	
3	64QAM	8	0	20.86	20.88	20.75	
3	64QAM	8	4	20.91	20.85	20.74	21.5
3	64QAM	8	7	20.83	20.82	20.69	
3	64QAM	15	0	20.84	20.79	20.69	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	21.62	21.61	21.48	23
1.4	QPSK	1	3	21.71	21.66	21.52	
1.4	QPSK	1	5	21.65	21.67	21.44	
1.4	QPSK	3	0	21.62	21.64	21.49	23
1.4	QPSK	3	1	21.68	21.63	21.50	
1.4	QPSK	3	3	21.67	21.60	21.48	
1.4	QPSK	6	0	21.73	21.71	21.54	23
1.4	16QAM	1	0	21.93	21.95	21.80	
1.4	16QAM	1	3	22.03	22.00	21.89	
1.4	16QAM	1	5	21.95	21.90	21.76	23
1.4	16QAM	3	0	21.72	21.75	21.58	
1.4	16QAM	3	1	21.82	21.77	21.61	
1.4	16QAM	3	3	21.74	21.70	21.53	22.5
1.4	16QAM	6	0	21.84	21.78	21.66	
1.4	64QAM	1	0	21.83	21.88	21.72	
1.4	64QAM	1	3	21.97	21.93	21.77	22.5
1.4	64QAM	1	5	21.83	21.81	21.70	
1.4	64QAM	3	0	21.81	21.83	21.69	
1.4	64QAM	3	1	21.91	21.89	21.76	21.5
1.4	64QAM	3	3	21.84	21.82	21.70	
1.4	64QAM	6	0	20.74	20.69	20.60	



Band 66										
BW (MHz)	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up			
				Low	Middle	High				
Channel				130372	132322	132572	limit	(dBm)		
Frequency (MHz)				1720	1745	1770				
20	QPSK	1	0	21.33	21.71	22.11	23			
20	QPSK	1	49	21.71	22.02	22.12				
20	QPSK	1	99	21.59	21.79	21.99				
20	QPSK	50	0	21.76	22.06	22.11	23			
20	QPSK	50	24	21.89	22.12	22.22				
20	QPSK	50	50	21.94	22.07	22.12				
20	QPSK	100	0	21.81	22.04	22.15	23			
20	16QAM	1	0	21.88	22.08	22.52				
20	16QAM	1	49	22.09	22.42	22.41				
20	16QAM	1	99	21.96	22.12	22.38	22.5			
20	16QAM	50	0	21.78	22.08	22.14				
20	16QAM	50	24	21.91	22.14	22.23				
20	16QAM	50	50	21.88	22.11	22.14	22.5			
20	16QAM	100	0	21.84	22.04	22.17				
20	64QAM	1	0	21.58	21.91	22.38				
20	64QAM	1	49	21.92	22.23	22.27	22.5			
20	64QAM	1	99	21.81	22.01	22.23				
20	64QAM	50	0	20.80	21.11	21.16				
20	64QAM	50	24	20.83	21.16	21.26	21.5			
20	64QAM	50	50	20.91	21.12	21.14				
20	64QAM	100	0	20.85	21.08	21.18				
Channel				132047	132322	132597	Tune-up	limit	(dBm)	
Frequency (MHz)				1717.5	1745	1772.5				
15	QPSK	1	0	21.51	21.87	22.15	23			
15	QPSK	1	37	21.67	22.03	22.36				
15	QPSK	1	74	21.64	21.89	22.05				
15	QPSK	36	0	21.75	22.10	22.15	23			
15	QPSK	36	20	21.84	22.11	22.14				
15	QPSK	36	39	21.78	22.11	22.15				
15	QPSK	75	0	21.80	22.07	22.11	23			
15	16QAM	1	0	21.84	22.20	22.47				
15	16QAM	1	37	22.05	22.40	22.42				
15	16QAM	1	74	22.04	22.22	22.40	22.5			
15	16QAM	36	0	21.78	22.11	22.16				
15	16QAM	36	20	21.87	22.12	22.16				
15	16QAM	36	39	21.82	22.11	22.15	22.5			
15	16QAM	75	0	21.83	22.08	22.14				
15	64QAM	1	0	21.68	22.08	22.32				
15	64QAM	1	37	21.95	22.32	22.31	22.5			
15	64QAM	1	74	21.86	22.11	22.27				
15	64QAM	36	0	20.83	21.15	21.21				
15	64QAM	36	20	20.91	21.14	21.18	21.5			
15	64QAM	36	39	20.94	21.19	21.20				
15	64QAM	75	0	20.86	21.10	21.14				
Channel				132022	132322	132592	Tune-up	limit	(dBm)	
Frequency (MHz)				1715	1745	1775				
10	QPSK	1	0	21.15	21.53	21.67	23			
10	QPSK	1	25	21.46	21.84	21.91				
10	QPSK	1	49	21.30	21.61	21.70				
10	QPSK	25	0	21.49	21.85	21.93	23			
10	QPSK	25	12	21.61	21.90	22.38				
10	QPSK	25	25	21.54	21.89	21.96				
10	QPSK	50	0	21.57	21.84	22.00	23			
10	16QAM	1	0	21.64	21.92	22.01				
10	16QAM	1	25	21.87	22.25	22.28				
10	16QAM	1	49	21.68	21.95	22.03	22.5			
10	16QAM	25	0	21.50	21.88	21.82				
10	16QAM	25	12	21.67	21.93	22.06				
10	16QAM	25	25	21.55	21.91	21.96	22.5			
10	16QAM	50	0	21.59	21.86	21.99				
10	64QAM	1	0	21.43	21.78	21.89				
10	64QAM	1	25	21.77	22.16	22.18	22.5			
10	64QAM	1	49	21.54	21.90	21.96				
10	64QAM	25	0	20.53	20.90	20.86				
10	64QAM	25	12	20.69	20.98	21.11	21.5			
10	64QAM	25	25	20.58	20.93	20.97				
10	64QAM	50	0	20.61	20.89	21.01				
Channel				131997	132322	132647	Tune-up	limit	(dBm)	
Frequency (MHz)				1712.5	1745	1777.5				
5	QPSK	1	0	21.37	21.78	21.94	23			
5	QPSK	1	12	21.51	21.92	22.01				
5	QPSK	1	24	21.41	21.83	21.91				
5	QPSK	12	0	21.55	21.95	22.03	23			
5	QPSK	12	7	21.60	21.97	22.02				
5	QPSK	12	13	21.55	21.91	22.00				
5	QPSK	25	0	21.55	21.89	21.98	23			
5	16QAM	1	0	21.73	22.13	22.22				
5	16QAM	1	12	21.81	22.17	22.20				
5	16QAM	1	24	21.78	22.13	22.18	22.5			
5	16QAM	12	0	21.59	21.98	22.04				
5	16QAM	12	7	21.65	21.99	22.03				
5	16QAM	12	13	21.58	21.94	22.01	22.5			
5	16QAM	25	0	21.61	21.92	21.97				
5	64QAM	1	0	21.65	22.09	22.14				
5	64QAM	1	12	21.69	22.10	22.18	22.5			
5	64QAM	1	24	21.66	22.05	22.10				
5	64QAM	12	0	20.65	21.02	21.08				
5	64QAM	12	7	20.70	21.05	21.10	21.5			
5	64QAM	12	13	20.61	21.02	21.07				
5	64QAM	25	0	20.61	20.95	21.00				
Channel				131997	132322	132657	Tune-up	limit	(dBm)	
Frequency (MHz)				1711.5	1745	1778.5				
3	QPSK	1	0	21.48	21.84	21.97	23			
3	QPSK	1	8	21.54	21.96	22.04				
3	QPSK	1	14	21.42	21.84	21.91				
3	QPSK	8	0	21.51	21.94	22.04	23			
3	QPSK	8	4	21.60	22.00	22.03				
3	QPSK	8	7	21.53	21.94	22.05				
3	QPSK	15	0	21.55	21.93	22.01	23			
3	16QAM	1	0	21.77	22.21	22.24				
3	16QAM	1	8	21.87	22.28	22.29				
3	16QAM	1	14	21.78	22.17	22.24	22.5			
3	16QAM	8	0	21.81	22.02	22.07				
3	16QAM	8	4	21.67	22.05	22.08				
3	16QAM	8	7	21.62	22.01	22.06	22.5			
3	16QAM	15	0	21.62	21.96	22.01				
3	64QAM	1	0	21.72	22.14	22.18				
3	64QAM	1	8	21.79	22.21	22.26	22.5			
3	64QAM	1	14	21.69	22.07	22.16				
3	64QAM	8	0	20.62	21.02	21.09				
3	64QAM	8	4	20.68	21.07	21.06	21.5			
3	64QAM	8	7	20.80	21.03	21.07				
3	64QAM	15	0	20.64	20.98	21.01				
Channel				131979	132322	132665	Tune-up	limit	(dBm)	
Frequency (MHz)				1710.7	1745	1778.3				
1.4	QPSK	1	0	21.38	21.85	21.96	23			
1.4	QPSK	1	3	21.42	21.85	21.98				
1.4	QPSK	1	5	21.37	21.77	21.87				
1.4	QPSK	3	0	21.36	21.80	21.95	23			
1.4	QPSK	3	1	21.42	21.81	21.96				
1.4	QPSK	3	3	21.40	21.81	21.93				
1.4	QPSK	6	0	21.48	21.83	21.98	23			
1.4	16QAM	1	0	21.70	22.13	22.25				
1.4	16QAM	1	3	21.80	22.17	22.27				
1.4	16QAM	1	5	21.69	22.15	22.20	23			
1.4	16QAM	3	0	21.47	21.89	21.99				
1.4	16QAM	3	1	21.57	21.91	22.04				
1.4	16QAM	3	3	21.48	21.89	21.96	22.5			
1.4	16QAM	6	0	21.59	21.94	22.06				
1.4	64QAM	1	0	21.60	22.04	22.15				
1.4	64QAM	1	3	21.71	22.14	22.19	22.5			
1.4	64QAM	1	5	21.58	22.00	22.10				
1.4	64QAM	3	0	21.55	22.01	22.11				
1.4	64QAM	3	1	21.65	22.04	22.17	22.5			
1.4	64QAM	3	3	21.58	22.02	22.11				
1.4	64QAM	6	0	20.52	20.88	21.00				



Band 4							
Band	Modulation	RB Size	RB Offset	Power Low Ch./Freq.	Power Middle Ch./Freq.	Power High Ch./Freq.	Tune-up limit (dBm)
Channel				20050	20175	20300	
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	22.83	22.82	22.75	23.2
20	QPSK	1	49	23.05	22.99	22.92	
20	QPSK	1	99	22.77	22.69	22.66	
20	QPSK	50	0	22.87	22.83	22.77	23.2
20	QPSK	50	24	23.01	22.91	22.86	
20	QPSK	50	50	22.91	22.87	22.82	
20	QPSK	100	0	22.93	22.79	22.74	23.2
20	16QAM	1	0	22.96	22.95	22.89	
20	16QAM	1	49	23.18	23.16	23.06	
20	16QAM	1	99	22.94	22.84	22.78	22.2
20	16QAM	50	0	21.87	21.84	21.79	
20	16QAM	50	24	22.01	21.92	21.86	
20	16QAM	50	50	21.94	21.89	21.83	22.2
20	16QAM	100	0	21.83	21.82	21.74	
20	64QAM	1	0	21.83	21.82	21.73	
20	64QAM	1	49	22.1	22.07	21.95	22.2
20	64QAM	1	99	21.85	21.8	21.73	
20	64QAM	50	0	20.9	20.87	20.81	
20	64QAM	50	24	21.04	20.83	20.85	21.2
20	64QAM	50	50	20.95	20.83	20.85	
20	64QAM	100	0	20.97	20.83	20.77	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	22.91	22.88	22.82	23.2
15	QPSK	1	37	23.03	22.99	22.93	
15	QPSK	1	74	22.92	22.87	22.79	
15	QPSK	36	0	22.86	22.85	22.74	23.2
15	QPSK	36	20	22.99	22.90	22.88	
15	QPSK	36	39	22.92	22.89	22.80	
15	QPSK	75	0	22.94	22.82	22.74	23.2
15	16QAM	1	0	22.96	23.00	22.95	
15	16QAM	1	37	23.14	23.06	23.03	
15	16QAM	1	74	23.04	22.96	22.90	22.2
15	16QAM	36	0	21.86	21.85	21.76	
15	16QAM	36	20	21.97	21.85	21.88	
15	16QAM	36	39	21.92	21.89	21.82	22.2
15	16QAM	75	0	21.94	21.83	21.76	
15	64QAM	1	0	21.85	21.83	21.79	
15	64QAM	1	37	22.10	22.06	22.01	22.2
15	64QAM	1	74	21.95	21.90	21.85	
15	64QAM	36	0	20.88	20.89	20.81	
15	64QAM	36	20	21.01	20.91	20.92	21.2
15	64QAM	36	39	20.95	20.92	20.86	
15	64QAM	75	0	20.84	20.84	20.78	
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	22.60	22.60	22.57	23.2
10	QPSK	1	25	22.89	22.86	22.77	
10	QPSK	1	49	22.59	22.53	22.48	
10	QPSK	25	0	22.68	22.66	22.66	23.2
10	QPSK	25	12	22.81	22.71	22.71	
10	QPSK	25	25	22.70	22.68	22.58	
10	QPSK	50	0	22.73	22.64	22.62	23.2
10	16QAM	1	0	22.77	22.74	22.72	
10	16QAM	1	25	23.05	23.03	22.93	
10	16QAM	1	49	22.77	22.71	22.65	22.2
10	16QAM	25	0	21.69	21.65	21.69	
10	16QAM	25	12	21.85	21.75	21.74	
10	16QAM	25	25	21.71	21.67	21.59	22.2
10	16QAM	50	0	21.75	21.65	21.65	
10	64QAM	1	0	21.62	21.59	21.61	
10	64QAM	1	25	21.95	21.97	21.88	22.2
10	64QAM	1	49	21.66	21.61	21.56	
10	64QAM	25	0	20.72	20.69	20.71	
10	64QAM	25	12	20.88	20.78	20.76	21.2
10	64QAM	25	25	20.73	20.69	20.62	
10	64QAM	50	0	20.78	20.67	20.66	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	22.85	22.84	22.80	23.2
5	QPSK	1	12	22.97	22.88	22.82	
5	QPSK	1	24	22.86	22.78	22.70	
5	QPSK	12	0	22.79	22.76	22.70	23.2
5	QPSK	12	7	22.86	22.84	22.74	
5	QPSK	12	13	22.81	22.77	22.65	
5	QPSK	25	0	22.83	22.72	22.66	23.2
5	16QAM	1	0	23.00	22.98	22.86	
5	16QAM	1	12	23.06	23.06	22.84	
5	16QAM	1	24	22.98	22.96	22.79	22.2
5	16QAM	12	0	21.81	21.79	21.74	
5	16QAM	12	7	21.87	21.84	21.74	
5	16QAM	12	13	21.82	21.76	21.65	22.2
5	16QAM	25	0	21.86	21.76	21.71	
5	64QAM	1	0	21.91	21.89	21.85	
5	64QAM	1	12	21.98	21.96	21.80	22.2
5	64QAM	1	24	21.89	21.84	21.70	
5	64QAM	12	0	20.84	20.88	20.80	
5	64QAM	12	7	20.92	20.94	20.80	21.2
5	64QAM	12	13	20.86	20.86	20.71	
5	64QAM	25	0	20.87	20.78	20.73	
Channel				19955	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	22.90	22.95	22.84	23.2
3	QPSK	1	8	22.97	22.97	22.85	
3	QPSK	1	14	22.92	22.84	22.78	
3	QPSK	8	0	22.86	22.84	22.72	23.2
3	QPSK	8	4	22.86	22.85	22.72	
3	QPSK	8	7	22.81	22.79	22.67	
3	QPSK	15	0	22.86	22.77	22.70	23.2
3	16QAM	1	0	23.02	23.06	22.96	
3	16QAM	1	8	23.15	23.11	22.94	
3	16QAM	1	14	23.06	22.99	22.87	22.2
3	16QAM	8	0	21.82	21.90	21.77	
3	16QAM	8	4	21.91	21.90	21.77	
3	16QAM	8	7	21.90	21.86	21.70	22.2
3	16QAM	15	0	21.85	21.85	21.73	
3	64QAM	1	0	21.97	22.00	21.87	
3	64QAM	1	8	22.08	22.05	21.81	22.2
3	64QAM	1	14	21.95	21.93	21.74	
3	64QAM	8	0	20.94	20.89	20.80	
3	64QAM	8	4	20.94	20.92	20.80	21.2
3	64QAM	8	7	20.90	20.88	20.74	
3	64QAM	15	0	20.87	20.85	20.74	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	22.82	22.88	22.73	23.2
1.4	QPSK	1	3	22.92	22.91	22.76	
1.4	QPSK	1	5	22.81	22.79	22.68	
1.4	QPSK	3	0	22.84	22.88	22.74	23.2
1.4	QPSK	3	1	22.90	22.89	22.76	
1.4	QPSK	3	3	22.87	22.88	22.73	
1.4	QPSK	6	0	22.78	22.74	22.60	23.2
1.4	16QAM	1	0	22.91	23.00	22.79	
1.4	16QAM	1	3	23.06	23.03	22.86	
1.4	16QAM	1	5	22.96	22.93	22.79	23.2
1.4	16QAM	3	0	22.73	22.78	22.60	
1.4	16QAM	3	1	22.81	22.82	22.65	
1.4	16QAM	3	3	22.75	22.75	22.58	22.2
1.4	16QAM	6	0	21.84	21.83	21.74	
1.4	64QAM	1	0	21.85	21.83	21.78	
1.4	64QAM	1	3	21.96	21.95	21.80	22.2
1.4	64QAM	1	5	21.90	21.83	21.70	
1.4	64QAM	3	0	21.84	21.88	21.78	
1.4	64QAM	3	1	21.93	21.93	21.81	22.2
1.4	64QAM	3	3	21.88	21.85	21.74	
1.4	64QAM	6	0	20.79	20.78	20.64	



Band 66									
BW (MHz)	Modulation	RB Size	RB Offset	Power			Tune-up limit (dBm)		
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.			
Channel				132072	132322	132572			
Frequency (MHz)				1720	1745	1770			
20	QPSK	1	0	22.54	22.91	23.14	23.2		
20	QPSK	1	49	22.92	23.06	23.15			
20	QPSK	1	99	22.78	22.81	22.96			
20	QPSK	50	0	22.72	22.90	22.90	23.2		
20	QPSK	50	24	22.87	22.96	23.01			
20	QPSK	50	50	22.83	22.92	22.95			
20	QPSK	100	0	22.77	22.85	22.94	23.2		
20	16QAM	1	0	22.83	22.87	23.17			
20	16QAM	1	49	23.07	23.20	23.19			
20	16QAM	1	99	22.92	22.91	23.12	22.2		
20	16QAM	50	0	21.74	21.93	21.91			
20	16QAM	50	24	21.85	21.98	22.03			
20	16QAM	50	50	21.83	21.93	21.91	21.2		
20	16QAM	100	0	21.83	21.88	21.95			
20	64QAM	1	0	21.57	21.70	22.10			
20	64QAM	1	49	21.90	22.11	22.08	22.2		
20	64QAM	1	99	21.80	21.85	22.02			
20	64QAM	50	0	20.82	20.93	20.93			
20	64QAM	50	24	20.82	20.88	21.06	21.2		
20	64QAM	50	50	20.89	20.94	20.94			
20	64QAM	100	0	20.86	20.89	20.97			
Channel				132047	132322	132597			
Frequency (MHz)				1717.5	1745	1772.5			
15	QPSK	1	0	22.54	22.89	23.18	23.2		
15	QPSK	1	37	22.86	23.05	23.11			
15	QPSK	1	74	22.63	22.95	23.09			
15	QPSK	36	0	22.50	22.93	23.01	23.2		
15	QPSK	36	20	22.62	22.94	23.00			
15	QPSK	36	39	22.56	22.94	22.99			
15	QPSK	75	0	22.56	22.91	22.96	23.2		
15	16QAM	1	0	22.98	23.01	23.14			
15	16QAM	1	37	22.78	23.19	23.18			
15	16QAM	1	74	22.72	23.02	23.12	22.2		
15	16QAM	36	0	21.51	21.94	22.02			
15	16QAM	36	20	21.60	21.95	22.00			
15	16QAM	36	39	21.55	21.98	22.02	22.2		
15	16QAM	75	0	21.59	21.93	21.97			
15	64QAM	1	0	21.49	21.88	22.13			
15	64QAM	1	37	21.71	22.13	22.19	22.2		
15	64QAM	1	74	21.64	21.95	22.12			
15	64QAM	36	0	20.57	21.00	21.07			
15	64QAM	36	20	20.64	20.98	21.02	21.2		
15	64QAM	36	39	20.60	21.01	21.05			
15	64QAM	75	0	20.59	20.94	20.99			
Channel				132022	132322	132622			
Frequency (MHz)				1715	1745	1775			
10	QPSK	1	0	22.18	22.54	22.71	23.2		
10	QPSK	1	25	22.48	22.88	22.95			
10	QPSK	1	49	22.30	22.65	22.74			
10	QPSK	25	0	22.30	22.69	22.77	23.2		
10	QPSK	25	12	22.43	22.75	22.88			
10	QPSK	25	25	22.37	22.72	22.79			
10	QPSK	50	0	22.36	22.66	22.82	23.2		
10	16QAM	1	0	22.28	22.70	22.87			
10	16QAM	1	25	22.64	23.05	23.12			
10	16QAM	1	49	22.41	22.84	22.89	22.2		
10	16QAM	25	0	21.27	21.69	21.78			
10	16QAM	25	12	21.46	21.77	21.92			
10	16QAM	25	25	21.33	21.74	21.79	22.2		
10	16QAM	50	0	21.37	21.69	21.84			
10	64QAM	1	0	21.20	21.66	21.74			
10	64QAM	1	25	21.58	21.99	22.05	22.2		
10	64QAM	1	49	21.34	21.73	21.81			
10	64QAM	25	0	20.33	20.73	20.80			
10	64QAM	25	12	20.50	20.80	20.98	21.2		
10	64QAM	25	25	20.38	20.74	20.83			
10	64QAM	50	0	20.41	20.72	20.86			
Channel				131997	132322	132647			
Frequency (MHz)				1712.5	1745	1777.5			
5	QPSK	1	0	22.40	22.84	22.97	23.2		
5	QPSK	1	12	22.51	22.94	23.04			
5	QPSK	1	24	22.45	22.85	22.96			
5	QPSK	12	0	22.35	22.78	22.88	23.2		
5	QPSK	12	7	22.43	22.79	22.84			
5	QPSK	12	13	22.36	22.76	22.85			
5	QPSK	25	0	22.37	22.74	22.82	23.2		
5	16QAM	1	0	22.52	22.94	23.11			
5	16QAM	1	12	22.51	23.00	23.12			
5	16QAM	1	24	22.55	22.98	23.08	22.2		
5	16QAM	12	0	21.39	21.82	21.89			
5	16QAM	12	7	21.43	21.82	21.88			
5	16QAM	12	13	21.42	21.78	21.86	22.2		
5	16QAM	25	0	21.39	21.77	21.84			
5	64QAM	1	0	21.44	21.91	22.03			
5	64QAM	1	12	21.50	21.99	22.05	22.2		
5	64QAM	1	24	21.48	21.91	21.95			
5	64QAM	12	0	20.42	20.86	20.92			
5	64QAM	12	7	20.49	20.87	20.92	21.2		
5	64QAM	12	13	20.40	20.86	20.89			
5	64QAM	25	0	20.43	20.78	20.85			
Channel				131977	132322	132657			
Frequency (MHz)				1711.5	1745	1778.5			
3	QPSK	1	0	22.44	22.88	22.97	23.2		
3	QPSK	1	8	22.51	22.94	23.06			
3	QPSK	1	14	22.46	22.84	22.91			
3	QPSK	8	0	22.33	22.78	22.86	23.2		
3	QPSK	8	4	22.41	22.85	22.85			
3	QPSK	8	7	22.34	22.78	22.85			
3	QPSK	15	0	22.38	22.74	22.83	23.2		
3	16QAM	1	0	22.55	23.00	23.09			
3	16QAM	1	8	22.66	23.04	23.18			
3	16QAM	1	14	22.55	23.00	23.11	22.2		
3	16QAM	8	0	21.42	21.85	21.82			
3	16QAM	8	4	21.46	21.89	21.92			
3	16QAM	8	7	21.45	21.81	21.90	22.2		
3	16QAM	15	0	21.42	21.79	21.87			
3	64QAM	1	0	21.52	21.98	22.02			
3	64QAM	1	8	21.58	22.07	22.09	22.2		
3	64QAM	1	14	21.48	21.95	22.00			
3	64QAM	8	0	20.40	20.85	20.95			
3	64QAM	8	4	20.49	20.91	20.92	21.2		
3	64QAM	8	7	20.45	20.85	20.93			
3	64QAM	15	0	20.41	20.80	20.85			
Channel				131979	132322	132665			
Frequency (MHz)				1710.7	1745	1779.3			
1.4	QPSK	1	0	22.39	22.81	22.96	23.2		
1.4	QPSK	1	3	22.44	22.92	22.99			
1.4	QPSK	1	5	22.37	22.78	22.89			
1.4	QPSK	3	0	22.39	22.82	22.95	23.2		
1.4	QPSK	3	1	22.46	22.86	22.97			
1.4	QPSK	3	3	22.39	22.85	22.92			
1.4	QPSK	6	0	22.28	22.69	22.84	23.2		
1.4	16QAM	1	0	22.47	22.93	23.06			
1.4	16QAM	1	3	22.57	23.04	23.10			
1.4	16QAM	1	5	22.46	22.91	23.01	23.2		
1.4	16QAM	3	0	22.27	22.71	22.88			
1.4	16QAM	3	1	22.34	22.74	22.92			
1.4	16QAM	3	3	22.28	22.73	22.81	22.2		
1.4	16QAM	6	0	21.37	21.77	21.91			
1.4	64QAM	1	0	21.40	21.90	22.01			
1.4	64QAM	1	3	21.47	21.95	22.03	22.2		
1.4	64QAM	1	5	21.43	21.89	21.96			
1.4	64QAM	3	0	21.34	21.83	21.95			
1.4	64QAM	3	1	21.46	21.88	22.02	21.2		
1.4	64QAM	3	3	21.39	21.85	21.96			
1.4	64QAM	6	0	20.33	20.70	20.86			

<TDD LTE SAR Measurement>

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP

- a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
- b. "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
- c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

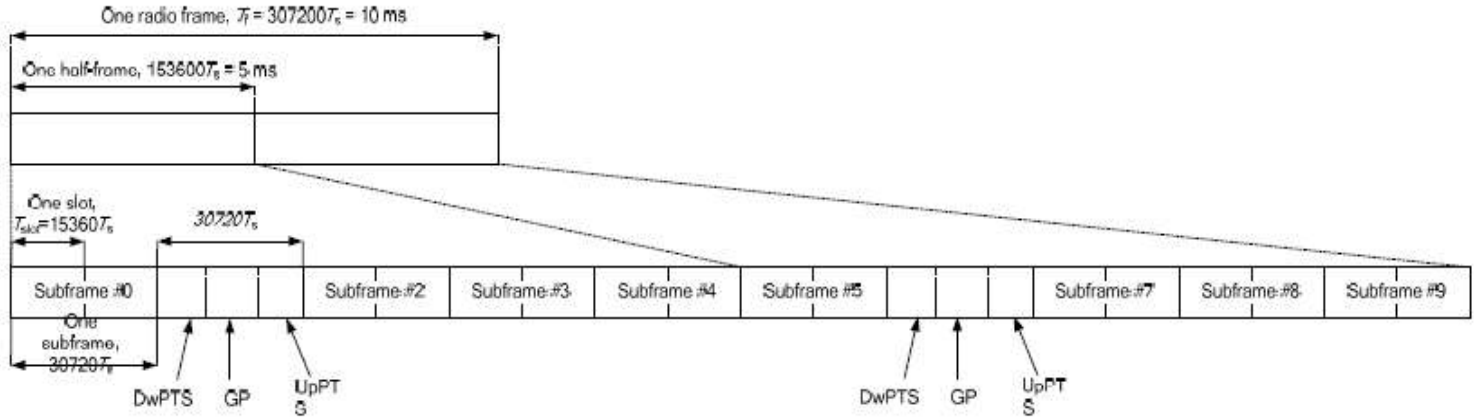


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$	-	-	-	-	-
9	$13168 \cdot T_s$	-	-	-	-	-

Special subframe (30720·T _s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~4	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T _s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~3	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

- i. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special
- ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.167)/5 = 63.3\%$
- iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: $(3+0.143)/5 = 62.9\%$
- v. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.



Band 38						
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				100	0	-100
Frequency (MHz)				10	0	-10
20	QPSK	1	0	22.96	23.03	22.98
20	QPSK	1	49	23.05	23.12	23.02
20	QPSK	1	99	23.03	23.08	22.99
20	QPSK	50	0	21.88	21.92	21.87
20	QPSK	50	24	22.08	22.04	22.07
20	QPSK	50	50	22.02	22.03	21.98
20	QPSK	100	0	21.97	21.96	21.98
20	16QAM	1	0	22.15	22.13	22.11
20	16QAM	1	49	22.10	22.17	22.06
20	16QAM	1	99	22.17	22.19	22.15
20	16QAM	50	0	20.93	20.95	20.90
20	16QAM	50	24	21.12	21.07	21.10
20	16QAM	50	50	21.04	21.05	21.00
20	16QAM	100	0	21.00	20.97	20.99
20	64QAM	1	0	20.83	20.90	20.83
20	64QAM	1	49	20.89	20.92	20.86
20	64QAM	1	99	20.88	20.99	20.94
20	64QAM	50	0	19.91	19.96	19.92
20	64QAM	50	24	20.12	20.09	20.11
20	64QAM	50	50	20.04	20.08	20.01
20	64QAM	100	0	20.00	19.97	20.01
Channel				37825	38000	38175
Frequency (MHz)				2577.5	2595	2512.5
15	QPSK	1	0	22.92	23.00	22.92
15	QPSK	1	37	22.97	23.01	22.95
15	QPSK	1	74	22.99	23.01	22.98
15	QPSK	36	0	21.90	21.95	21.89
15	QPSK	36	20	22.06	22.13	22.05
15	QPSK	36	39	22.03	22.06	22.01
15	QPSK	75	0	22.01	21.98	22.01
15	16QAM	1	0	22.08	22.17	22.06
15	16QAM	1	37	22.04	22.10	22.07
15	16QAM	1	74	22.15	22.19	22.16
15	16QAM	36	0	20.87	20.92	20.88
15	16QAM	36	20	21.05	21.10	21.05
15	16QAM	36	39	20.96	21.03	20.96
15	16QAM	75	0	21.03	21.00	21.03
15	64QAM	1	0	20.77	20.80	20.80
15	64QAM	1	37	20.86	20.90	20.85
15	64QAM	1	74	20.89	20.91	20.90
15	64QAM	36	0	19.82	19.86	19.94
15	64QAM	36	20	20.08	20.17	20.09
15	64QAM	36	39	20.02	20.08	20.01
15	64QAM	75	0	20.01	20.01	20.03
Channel				37800	38000	38200
Frequency (MHz)				2575	2595	2515
10	QPSK	1	0	22.85	23.05	22.97
10	QPSK	1	25	22.99	23.04	23.02
10	QPSK	1	49	22.83	23.11	23.10
10	QPSK	25	0	22.01	22.19	22.13
10	QPSK	25	12	22.19	22.29	22.33
10	QPSK	25	25	22.13	22.30	22.24
10	QPSK	50	0	22.13	22.30	22.23
10	16QAM	1	0	22.03	22.49	22.48
10	16QAM	1	25	22.38	22.50	22.45
10	16QAM	1	49	22.09	22.54	22.50
10	16QAM	25	0	21.03	21.21	21.16
10	16QAM	25	12	21.25	21.30	21.37
10	16QAM	25	25	21.16	21.32	21.28
10	16QAM	50	0	21.16	21.30	21.28
10	64QAM	1	0	20.90	21.38	21.33
10	64QAM	1	25	21.28	21.50	21.46
10	64QAM	1	49	21.04	21.47	21.46
10	64QAM	25	0	20.09	20.26	20.22
10	64QAM	25	12	20.30	20.39	20.43
10	64QAM	25	25	20.23	20.40	20.33
10	64QAM	50	0	20.17	20.35	20.28
Channel				37775	38000	38225
Frequency (MHz)				2572.5	2595	2517.5
5	QPSK	1	0	23.03	23.09	23.05
5	QPSK	1	12	23.10	23.11	23.07
5	QPSK	1	24	23.11	23.10	23.07
5	QPSK	12	0	22.13	22.25	22.22
5	QPSK	12	7	22.25	22.36	22.29
5	QPSK	12	13	22.24	22.31	22.26
5	QPSK	25	0	22.10	22.32	22.24
5	16QAM	1	0	22.10	22.20	22.19
5	16QAM	1	12	22.33	22.43	22.38
5	16QAM	1	24	22.24	22.38	22.30
5	16QAM	12	0	21.14	21.19	21.14
5	16QAM	12	7	21.25	21.32	21.27
5	16QAM	12	13	21.19	21.28	21.25
5	16QAM	25	0	21.20	21.36	21.33
5	64QAM	1	0	20.87	20.97	20.92
5	64QAM	1	12	21.00	21.10	21.06
5	64QAM	1	24	20.97	21.07	21.05
5	64QAM	12	0	20.19	20.26	20.22
5	64QAM	12	7	20.30	20.37	20.33
5	64QAM	12	13	20.26	20.34	20.31
5	64QAM	25	0	20.28	20.39	20.34

Band 38							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				37850	38000	38150	
Frequency (MHz)				2590	2595	2610	
20	QPSK	1	0	16.47	16.49	16.51	18
20	QPSK	1	49	16.51	16.52	16.49	
20	QPSK	1	99	16.49	16.50	16.47	18
20	QPSK	50	0	16.35	16.38	16.36	
20	QPSK	50	24	16.55	16.47	16.47	18
20	QPSK	50	50	16.47	16.46	16.45	
20	QPSK	100	0	16.45	16.38	16.37	18
20	16QAM	1	0	16.62	16.55	16.54	
20	16QAM	1	49	16.59	16.59	16.54	18
20	16QAM	1	99	16.58	16.58	16.58	
20	16QAM	50	0	16.38	16.39	16.40	18
20	16QAM	50	24	16.57	16.49	16.48	
20	16QAM	50	50	16.46	16.48	16.46	18
20	16QAM	190	0	16.45	16.39	16.39	
20	64QAM	1	0	16.39	16.35	16.32	18
20	64QAM	1	49	16.40	16.32	16.33	
20	64QAM	1	99	16.37	16.36	16.37	18
20	64QAM	50	0	16.39	16.40	16.40	
20	64QAM	50	24	16.58	16.51	16.50	18
20	64QAM	50	50	16.47	16.49	16.47	
20	64QAM	100	0	16.47	16.39	16.42	18
Channel				37825	38000	38175	
Frequency (MHz)				2577.5	2595	2612.5	
15	QPSK	1	0	16.39	16.46	16.48	18
15	QPSK	1	37	16.39	16.43	16.43	
15	QPSK	1	74	16.44	16.45	16.46	18
15	QPSK	36	0	16.38	16.40	16.40	
15	QPSK	36	20	16.53	16.47	16.56	18
15	QPSK	36	39	16.46	16.46	16.47	
15	QPSK	75	0	16.46	16.42	16.48	18
15	16QAM	1	0	16.55	16.55	16.57	
15	16QAM	1	37	16.46	16.48	16.44	18
15	16QAM	1	74	16.58	16.54	16.53	
15	16QAM	36	0	16.34	16.34	16.36	18
15	16QAM	36	20	16.47	16.42	16.50	
15	16QAM	36	39	16.41	16.43	16.43	18
15	16QAM	75	0	16.47	16.41	16.48	
15	64QAM	1	0	16.28	16.28	16.28	18
15	64QAM	1	37	16.31	16.32	16.29	
15	64QAM	1	74	16.35	16.30	16.32	18
15	64QAM	36	0	16.39	16.40	16.41	
15	64QAM	36	20	16.56	16.47	16.56	18
15	64QAM	36	39	16.47	16.48	16.47	
15	64QAM	75	0	16.48	16.41	16.48	18
Channel				37800	38000	38200	
Frequency (MHz)				2575	2595	2615	
10	QPSK	1	0	16.34	16.35	16.39	18
10	QPSK	1	25	16.38	16.33	16.40	
10	QPSK	1	49	16.44	16.35	16.44	18
10	QPSK	25	0	16.38	16.38	16.30	
10	QPSK	25	12	16.46	16.43	16.48	18
10	QPSK	25	25	16.43	16.45	16.45	
10	QPSK	50	0	16.43	16.35	16.43	18
10	16QAM	1	0	16.47	16.55	16.55	
10	16QAM	1	25	16.46	16.45	16.38	18
10	16QAM	1	49	16.57	16.48	16.44	
10	16QAM	25	0	16.30	16.31	16.30	18
10	16QAM	25	12	16.37	16.42	16.44	
10	16QAM	25	25	16.39	16.39	16.40	18
10	16QAM	50	0	16.43	16.35	16.39	
10	64QAM	1	0	16.24	16.21	16.21	18
10	64QAM	1	25	16.21	16.29	16.26	
10	64QAM	1	49	16.28	16.24	16.22	18
10	64QAM	25	0	16.38	16.36	16.35	
10	64QAM	25	12	16.53	16.44	16.50	18
10	64QAM	25	25	16.44	16.38	16.42	
10	64QAM	50	0	16.38	16.38	16.38	18
Channel				37775	38000	38225	
Frequency (MHz)				2572.5	2595	2617.5	
5	QPSK	1	0	16.10	16.11	16.10	18
5	QPSK	1	12	16.15	16.20	16.21	
5	QPSK	1	24	16.13	16.16	16.15	18
5	QPSK	12	0	16.22	16.24	16.24	
5	QPSK	12	7	16.32	16.32	16.27	18
5	QPSK	12	13	16.26	16.33	16.31	
5	QPSK	25	0	16.26	16.24	16.23	18
5	16QAM	1	0	16.17	16.24	16.29	
5	16QAM	1	12	16.34	16.39	16.47	18
5	16QAM	1	24	16.33	16.36	16.37	
5	16QAM	12	0	16.13	16.22	16.27	18
5	16QAM	12	7	16.26	16.26	16.29	
5	16QAM	12	13	16.24	16.29	16.29	18
5	16QAM	25	0	16.28	16.25	16.31	
5	64QAM	1	0	16.02	15.95	15.91	18
5	64QAM	1	12	16.15	16.13	16.07	
5	64QAM	1	24	16.12	16.07	16.05	18
5	64QAM	12	0	16.25	16.28	16.25	
5	64QAM	12	7	16.32	16.30	16.32	18
5	64QAM	12	13	16.32	16.36	16.32	
5	64QAM	25	0	16.30	16.30	16.31	18
Channel				37750	38000	38250	
Frequency (MHz)				2570	2595	2620	

Band 38							
BW [MHz]	Modulation	RB Size	RB Offset	Power	Power	Power	Tune-up limit (dBm)
				Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.	
Channel				37850	38000	38150	
Frequency (MHz)				2590	2595	2610	
20	QPSK	1	0	19.72	19.79	19.81	20.5
20	QPSK	1	49	19.83	19.86	19.84	
20	QPSK	1	99	19.87	19.86	19.80	
20	QPSK	50	0	19.69	19.70	19.72	
20	QPSK	50	24	19.87	19.82	19.84	20.5
20	QPSK	50	50	19.80	19.81	19.83	
20	QPSK	100	0	19.78	19.71	19.73	
20	16QAM	1	0	19.83	19.84	19.97	
20	16QAM	1	49	19.83	19.83	19.94	20.5
20	16QAM	1	99	19.94	19.98	19.99	
20	16QAM	50	0	19.71	19.75	19.74	
20	16QAM	50	24	19.91	19.85	19.87	
20	16QAM	50	50	19.84	19.85	19.86	20.5
20	16QAM	190	0	19.80	19.75	19.74	
20	64QAM	1	0	19.65	19.65	19.64	
20	64QAM	1	49	19.68	19.69	19.72	
20	64QAM	1	99	19.70	19.71	19.77	20.5
20	64QAM	50	0	19.73	19.76	19.75	
20	64QAM	50	24	19.86	19.89	19.89	
20	64QAM	50	50	19.87	19.88	19.88	
20	64QAM	100	0	19.82	19.78	19.77	19.8-19.9
Channel				37825	38000	38175	
Frequency (MHz)				2577.5	2595	2612.5	
15	QPSK	1	0	19.64	19.78	19.81	20.5
15	QPSK	1	37	19.80	19.80	19.82	
15	QPSK	1	74	19.81	19.80	19.71	
15	QPSK	36	0	19.64	19.60	19.70	
15	QPSK	36	20	19.82	19.73	19.78	20.5
15	QPSK	36	39	19.72	19.71	19.77	
15	QPSK	75	0	19.71	19.69	19.73	
15	16QAM	1	0	19.91	19.89	19.95	
15	16QAM	1	37	19.89	19.91	19.84	20.5
15	16QAM	1	74	19.94	19.90	19.94	
15	16QAM	36	0	19.88	19.65	19.65	
15	16QAM	36	20	19.67	19.84	19.82	
15	16QAM	36	39	19.76	19.77	19.77	20.5
15	16QAM	75	0	19.80	19.76	19.65	
15	64QAM	1	0	19.62	19.61	19.56	
15	64QAM	1	37	19.61	19.64	19.82	
15	64QAM	1	74	19.69	19.68	19.77	20.5
15	64QAM	36	0	19.66	19.67	19.67	
15	64QAM	36	20	19.83	19.79	19.85	
15	64QAM	36	39	19.85	19.83	19.81	
15	64QAM	75	0	19.81	19.74	19.68	19.8-19.9
Channel				37800	38000	38200	
Frequency (MHz)				2575	2595	2615	
10	QPSK	1	0	19.69	19.74	19.79	20.5
10	QPSK	1	25	19.82	19.86	19.80	
10	QPSK	1	49	19.77	19.78	19.74	
10	QPSK	25	0	19.68	19.70	19.68	
10	QPSK	25	12	19.80	19.77	19.82	20.5
10	QPSK	25	25	19.76	19.75	19.78	
10	QPSK	50	0	19.74	19.71	19.71	
10	16QAM	1	0	19.83	19.92	19.94	
10	16QAM	1	25	19.92	19.85	19.87	20.5
10	16QAM	1	49	19.94	19.97	19.89	
10	16QAM	25	0	19.70	19.65	19.68	
10	16QAM	25	12	19.90	19.76	19.76	
10	16QAM	25	25	19.77	19.76	19.81	20.5
10	16QAM	50	0	19.73	19.66	19.71	
10	64QAM	1	0	19.59	19.59	19.54	
10	64QAM	1	25	19.58	19.67	19.67	
10	64QAM	1	49	19.64	19.67	19.77	20.5
10	64QAM	25	0	19.72	19.71	19.67	
10	64QAM	25	12	19.90	19.82	19.82	
10	64QAM	25	25	19.87	19.84	19.86	
10	64QAM	50	0	19.79	19.74	19.73	19.8-19.9
Channel				3777.5	38000	38225	
Frequency (MHz)				2572.5	2595	2617.5	
5	QPSK	1	0	19.65	19.79	19.75	20.5
5	QPSK	1	12	19.78	19.82	19.79	
5	QPSK	1	24	19.81	19.79	19.74	
5	QPSK	12	0	19.63	19.68	19.69	
5	QPSK	12	7	19.84	19.76	19.77	20.5
5	QPSK	12	13	19.70	19.75	19.75	
5	QPSK	25	0	19.75	19.63	19.64	
5	16QAM	1	0	19.88	19.87	19.95	
5	16QAM	1	12	19.83	19.93	19.84	20.5
5	16QAM	1	24	19.88	19.94	19.94	
5	16QAM	12	0	19.70	19.72	19.66	
5	16QAM	12	7	19.91	19.81	19.81	
5	16QAM	12	13	19.76	19.79	19.82	20.5
5	16QAM	25	0	19.72	19.72	19.69	
5	64QAM	1	0	19.56	19.63	19.64	
5	64QAM	1	12	19.62	19.64	19.68	
5	64QAM	1	24	19.60	19.71	19.72	20.5
5	64QAM	12	0	19.63	19.72	19.65	
5	64QAM	12	7	19.91	19.88	19.84	
5	64QAM	12	13	19.80	19.88	19.85	
5	64QAM	25	0	19.80	19.71	19.77	

General Note:

1. NR implementation of n5, n66, n2 is limited to EN-DC operations only (NSA), with LTE Bands 2/5/13/66/48 acting as anchor bands, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
2. Following 5G NR n2/n5/n66 support SCS 15KHz DFT/CP-OFDM, QPSK/16QAM/64QAM/256QAM, Bandwidth 5M/10M/15M/20M.
3. Following 5G NR n41 support SCS 30KHz DFT/CP-OFDM, QPSK/16QAM/64QAM/256QAM, Bandwidth 20M/40M/50M/60M/80M/90M/100M.
4. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
 - a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
 - b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QMA/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QMA/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
 - c. SAR testing 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
 - d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
 - e. 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
 - f. 16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, 16QAM/64QAM/256QAM SAR testing are not required.
 - g. Smaller bandwidth output power for each RB allocation configuration for this device will 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, smaller bandwidth SAR testing is not required for this device
5. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.

<3GPP 38.101 MPR for EN-DC>

Table 6.2.2-1 Maximum power reduction (MPR) for power class 3

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	$\leq 3.5^1$	$\leq 1.2^1$	$\leq 0.2^1$
		$\leq 0.5^2$	$\leq 0.5^2$	0^2
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		
NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability <i>powerBoosting-pi2BPSK</i> and if the IE <i>powerBoostPi2BPSK</i> is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.				
NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE <i>powerBoostPi2BPSK</i> is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.				

Table 6.2.2-2 Maximum power reduction (MPR) for power class 2

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5	≤ 0.5	0
	QPSK	≤ 3.5	≤ 1	0
	16 QAM	≤ 3.5	≤ 2	≤ 1
	64 QAM	≤ 3.5	≤ 2.5	
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3.5	≤ 3	≤ 1.5
	16 QAM	≤ 3.5	≤ 3	≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		



n2							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				37200	37600	38000	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	1	22.75	22.76	22.85	
20	QPSK	1	53	22.56	22.72	22.76	23.8
20	QPSK	1	104	22.48	22.53	22.69	
20	QPSK	50	0	22.06	22.10	22.18	
20	QPSK	50	28	22.47	22.49	22.67	23.8
20	QPSK	50	56	21.91	22.02	22.08	
20	QPSK	100	0	21.92	21.95	21.13	22.8
20	16QAM	1	1	21.75	21.77	21.95	22.8
20	64QAM	1	1	20.45	20.48	20.65	21.8
20	256QAM	1	1	18.92	18.94	19.11	19.8
Channel				371500	376000	380500	limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	1	22.53	22.59	22.74	23.8
Channel				371000	376000	381000	limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	1	22.42	22.44	22.65	23.8
Channel				370500	376000	381500	limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	1	22.46	22.49	22.69	23.8

n5							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	
Frequency (MHz)				834	838.5	839	
20	QPSK	1	1	22.61	22.72	22.65	
20	QPSK	1	53	22.37	22.43	22.45	23.8
20	QPSK	1	104	22.42	22.45	22.32	
20	QPSK	50	0	22.15	22.24	22.16	
20	QPSK	50	28	22.42	22.48	22.41	23.8
20	QPSK	50	56	21.89	21.95	21.92	
20	QPSK	100	0	21.88	22.05	21.95	22.8
20	16QAM	1	1	22.32	22.42	22.33	22.8
20	64QAM	1	1	19.98	20.06	19.99	20.8
20	256QAM	1	1	19.02	19.12	19.05	19.8
Channel				166300	167300	168300	limit (dBm)
Frequency (MHz)				831.5	838.5	841.5	
15	QPSK	1	1	22.63	22.69	22.88	23.8
Channel				165800	167300	168800	limit (dBm)
Frequency (MHz)				829	838.5	844	
10	QPSK	1	1	22.61	22.68	22.67	23.8
Channel				165300	167300	169300	limit (dBm)
Frequency (MHz)				826.5	838.5	846.5	
5	QPSK	1	1	22.58	22.65	22.55	23.8

n66							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				344000	349000	354000	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	1	22.73	22.75	22.70	
20	QPSK	1	53	22.74	22.74	22.69	23.8
20	QPSK	1	104	22.42	22.49	22.46	
20	QPSK	50	0	22.07	22.08	22.03	
20	QPSK	50	28	22.48	22.52	22.44	23.8
20	QPSK	50	56	21.92	21.95	21.88	
20	QPSK	100	0	21.88	21.92	21.84	22.8
20	16QAM	1	1	22.16	22.22	22.15	22.8
20	64QAM	1	1	20.68	20.69	20.62	20.8
20	256QAM	1	1	18.99	19.00	18.95	19.8
Channel				343500	349000	354500	limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	1	22.57	22.58	22.51	23.8
Channel				343000	349000	355000	limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	1	22.54	22.55	22.52	23.8
Channel				342500	349000	355500	limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	1	22.47	22.49	22.44	23.8



n2							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	378000	380000	
Frequency (MHz)				1860	1900	1900	
20	QPSK	1	1	21.18	21.22	21.35	
20	QPSK	1	53	21.09	21.13	21.27	22.2
20	QPSK	1	104	21.10	21.17	21.28	
20	QPSK	50	0	21.05	21.07	21.16	
20	QPSK	50	28	20.99	21.02	21.18	22.2
20	QPSK	50	56	21.03	21.06	21.21	
20	QPSK	100	0	21.01	21.05	21.15	22.2
20	16QAM	1	1	20.95	21.02	21.17	22.2
20	64QAM	1	1	20.37	20.45	20.56	21.7
20	256QAM	1	1	18.77	18.81	18.96	19.2
Channel				371500	376000	380500	limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	1	21.19	21.17	21.27	22.2
Channel				371000	376000	381000	limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	1	20.94	21.01	21.15	22.2
Channel				370500	376000	381500	limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	1	20.91	20.97	21.14	22.2

n66							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				344000	349000	354000	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	1	21.16	21.24	21.13	
20	QPSK	1	53	20.96	21.04	20.95	22.4
20	QPSK	1	104	20.93	21.03	20.92	
20	QPSK	50	0	20.86	20.95	20.96	
20	QPSK	50	28	20.78	20.88	20.77	22.4
20	QPSK	50	56	20.84	20.93	20.84	
20	QPSK	100	0	20.81	20.91	20.79	22.4
20	16QAM	1	1	20.91	21.02	20.91	22.4
20	64QAM	1	1	20.46	20.52	20.44	21.9
20	256QAM	1	1	18.75	18.81	18.74	19.4
Channel				343500	349000	354500	limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	1	21.09	21.15	21.06	22.4
Channel				343000	349000	355000	limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	1	21.02	21.08	21.00	22.4
Channel				342500	349000	355500	limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	1	21.04	21.11	21.03	22.4



n2							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				37200	37600	38000	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	1	17.09	17.21	17.24	
20	QPSK	1	53	17.07	17.20	17.22	18.2
20	QPSK	1	104	17.01	17.12	17.18	
20	QPSK	50	0	17.07	17.18	17.21	
20	QPSK	50	28	16.95	17.08	17.12	18.2
20	QPSK	50	56	16.89	17.03	17.09	
20	QPSK	100	0	16.88	17.02	17.08	17.2
20	16QAM	1	1	17.08	17.19	17.21	17.2
20	64QAM	1	1	16.91	17.02	17.05	16.2
20	256QAM	1	1	17.04	17.16	17.21	14.2
Channel				371500	376000	380500	limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	1	17.05	17.21	17.22	18.2
Channel				371000	376000	381000	limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	1	17.03	17.13	17.19	18.2
Channel				370500	376000	381500	limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	1	17.04	17.15	17.18	18.2

n5							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	
Frequency (MHz)				834	836.5	839	
20	QPSK	1	1	22.61	22.72	22.65	
20	QPSK	1	53	22.37	22.43	22.45	23.8
20	QPSK	1	104	22.42	22.45	22.32	
20	QPSK	50	0	22.15	22.24	22.16	
20	QPSK	50	28	22.42	22.48	22.41	23.8
20	QPSK	50	56	21.89	21.95	21.92	
20	QPSK	100	0	21.88	22.05	21.95	22.8
20	16QAM	1	1	22.32	22.42	22.33	22.8
20	64QAM	1	1	19.98	20.06	19.99	20.8
20	256QAM	1	1	19.02	19.12	19.05	19.8
Channel				166300	167300	168300	limit (dBm)
Frequency (MHz)				831.5	836.5	841.5	
15	QPSK	1	1	22.63	22.69	22.68	23.8
Channel				165800	167300	168800	limit (dBm)
Frequency (MHz)				829	836.5	844	
10	QPSK	1	1	22.61	22.68	22.67	23.8
Channel				165300	167300	169300	limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	1	22.58	22.65	22.55	23.8

n66							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				344000	349000	354000	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	1	16.32	16.34	16.25	
20	QPSK	1	53	16.29	16.33	16.22	17.5
20	QPSK	1	104	16.15	16.22	16.13	
20	QPSK	50	0	16.06	16.08	16.08	
20	QPSK	50	28	15.98	16.02	15.91	17.5
20	QPSK	50	56	16.03	16.06	15.97	
20	QPSK	100	0	15.99	16.03	15.92	16.5
20	16QAM	1	1	16.21	16.28	16.15	16.5
20	64QAM	1	1	15.92	15.93	15.85	14.5
20	256QAM	1	1	16.24	16.29	16.20	13.5
Channel				343500	349000	354500	limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	1	16.22	16.28	16.17	17.5
Channel				343000	349000	355000	limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	1	16.23	16.25	16.14	17.5
Channel				342500	349000	355500	limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	1	16.11	16.16	16.09	17.5



n2							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				37200	37600	38000	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	1	15.19	15.23	15.26	
20	QPSK	1	53	15.06	15.14	15.21	16.0
20	QPSK	1	104	15.02	15.06	15.19	
20	QPSK	50	0	15.06	15.08	15.20	
20	QPSK	50	28	14.98	15.04	15.11	16.0
20	QPSK	50	56	14.90	14.99	15.08	
20	QPSK	100	0	14.87	15.02	15.03	16.0
20	16QAM	1	1	15.05	15.17	15.22	16.0
20	64QAM	1	1	14.87	15.03	15.06	16.0
20	256QAM	1	1	15.00	15.14	15.13	16.0
Channel				371500	376000	380500	limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	1	15.07	15.18	15.16	16.0
Channel				371000	376000	381000	limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	1	15.01	15.14	15.22	16.0
Channel				370500	376000	381500	limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	1	15.01	15.13	15.15	16.0

n5							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	
Frequency (MHz)				834	836.5	839	
20	QPSK	1	1	21.65	21.74	21.68	
20	QPSK	1	53	21.44	21.58	21.49	22.8
20	QPSK	1	104	21.48	21.59	21.50	
20	QPSK	50	0	21.51	21.63	21.53	
20	QPSK	50	28	21.56	21.65	21.58	22.8
20	QPSK	50	56	21.47	21.54	21.48	
20	QPSK	100	0	21.58	21.64	21.58	22.8
20	16QAM	1	1	21.57	21.68	21.55	22.8
20	64QAM	1	1	20.03	20.11	20.06	22.8
20	256QAM	1	1	18.79	18.85	18.82	22.8
Channel				166300	167300	168300	limit (dBm)
Frequency (MHz)				831.5	836.5	841.5	
15	QPSK	1	1	21.52	21.63	21.54	22.8
Channel				165800	167300	168800	limit (dBm)
Frequency (MHz)				829	836.5	844	
10	QPSK	1	1	21.49	21.56	21.52	22.8
Channel				165300	167300	169300	limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	1	21.52	21.58	21.53	22.8

n66							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				344000	349000	354000	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	1	14.28	14.36	14.25	
20	QPSK	1	53	14.26	14.29	14.19	15.5
20	QPSK	1	104	14.16	14.21	14.18	
20	QPSK	50	0	14.05	14.10	14.05	
20	QPSK	50	28	13.98	14.03	13.95	15.5
20	QPSK	50	56	14.04	14.07	13.98	
20	QPSK	100	0	14.00	14.04	14.01	15.5
20	16QAM	1	1	14.19	14.29	14.09	15.5
20	64QAM	1	1	13.94	13.95	13.92	15.5
20	256QAM	1	1	14.23	14.27	14.18	15.5
Channel				343500	349000	354500	limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	1	14.19	14.25	14.16	15.5
Channel				343000	349000	355000	limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	1	14.18	14.23	14.17	15.5
Channel				342500	349000	355500	limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	1	14.07	14.14	14.05	15.5



n2							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				37200	37600	38000	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	1	18.72	18.75	18.83	
20	QPSK	1	53	18.69	18.73	18.81	19.5
20	QPSK	1	104	18.63	18.67	18.63	
20	QPSK	50	0	18.47	18.51	18.55	
20	QPSK	50	28	18.35	18.43	18.49	19.5
20	QPSK	50	56	18.45	18.44	18.54	
20	QPSK	100	0	18.43	18.46	18.53	19.5
20	16QAM	1	1	18.62	18.69	18.74	19.5
20	64QAM	1	1	18.33	18.37	18.42	19.5
20	256QAM	1	1	18.69	18.71	18.80	19.5
Channel				37150	37600	38050	limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	1	18.69	18.74	18.79	19.5
Channel				37100	37600	38100	limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	1	18.54	18.59	18.68	19.5
Channel				37050	37600	38150	limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	1	18.56	18.54	18.69	19.5

n5							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	
Frequency (MHz)				834	838.5	839	
20	QPSK	1	1	22.61	22.72	22.65	
20	QPSK	1	53	22.37	22.43	22.45	23.8
20	QPSK	1	104	22.42	22.45	22.32	
20	QPSK	50	0	22.15	22.24	22.16	
20	QPSK	50	28	22.42	22.48	22.41	23.8
20	QPSK	50	56	21.89	21.95	21.92	
20	QPSK	100	0	21.88	22.05	21.95	23.8
20	16QAM	1	1	22.32	22.42	22.33	23.8
20	64QAM	1	1	19.98	20.06	19.99	23.8
20	256QAM	1	1	19.02	19.12	19.05	23.8
Channel				166300	167300	168300	limit (dBm)
Frequency (MHz)				831.5	838.5	841.5	
15	QPSK	1	1	22.63	22.69	22.68	23.8
Channel				165800	167300	168800	limit (dBm)
Frequency (MHz)				829	838.5	844	
10	QPSK	1	1	22.61	22.68	22.67	23.8
Channel				165300	167300	169300	limit (dBm)
Frequency (MHz)				826.5	838.5	846.5	
5	QPSK	1	1	22.58	22.65	22.55	23.8

n66							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				344000	349000	354000	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	1	17.79	17.84	17.74	
20	QPSK	1	53	17.89	17.76	17.65	19.1
20	QPSK	1	104	17.53	17.56	17.49	
20	QPSK	50	0	17.43	17.48	17.37	
20	QPSK	50	28	17.41	17.47	17.38	19.1
20	QPSK	50	56	17.45	17.48	17.36	
20	QPSK	100	0	17.35	17.45	17.34	19.1
20	16QAM	1	1	17.89	17.72	17.64	19.1
20	64QAM	1	1	17.32	17.36	17.27	19.1
20	256QAM	1	1	17.66	17.73	17.63	19.1
Channel				343500	349000	354500	limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	1	17.62	17.71	17.59	19.1
Channel				343000	349000	355000	limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	1	17.61	17.63	17.64	19.1
Channel				342500	349000	355500	limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	1	17.59	17.66	17.63	19.1



n2							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				37200	37600	38000	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	1	20.60	20.58	20.75	
20	QPSK	1	53	20.60	20.55	20.72	22.4
20	QPSK	1	104	20.45	20.41	20.61	
20	QPSK	50	0	19.52	19.53	19.66	
20	QPSK	50	28	20.32	20.28	20.46	22.4
20	QPSK	50	56	19.45	19.46	19.61	
20	QPSK	100	0	19.48	19.44	19.62	21.4
20	16QAM	1	1	19.58	19.55	19.75	21.4
20	64QAM	1	1	17.86	17.85	18.03	20.4
20	256QAM	1	1	16.49	16.45	16.65	18.4
Channel				371500	376000	380500	limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	1	20.49	20.47	20.62	22.4
Channel				371000	376000	381000	limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	1	20.35	20.36	20.49	22.4
Channel				379500	379000	381500	limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	QPSK	1	1	20.37	20.35	20.54	22.4

n5							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	
Frequency (MHz)				834	836.5	839	
20	QPSK	1	1	22.65	22.62	22.56	
20	QPSK	1	53	22.38	22.54	22.47	23.8
20	QPSK	1	104	22.42	22.44	22.38	
20	QPSK	50	0	22.12	22.41	22.45	
20	QPSK	50	28	22.44	22.42	22.38	23.8
20	QPSK	50	56	21.89	21.85	21.81	
20	QPSK	100	0	22.04	22.01	21.95	22.8
20	16QAM	1	1	22.33	22.35	22.25	22.8
20	64QAM	1	1	20.05	20.04	20.00	20.8
20	256QAM	1	1	18.85	18.97	19.89	19.8
Channel				166300	167300	168300	limit (dBm)
Frequency (MHz)				831.5	836.5	841.5	
15	QPSK	1	1	22.62	22.59	22.51	23.8
Channel				165800	167300	168800	limit (dBm)
Frequency (MHz)				829	836.5	844	
10	QPSK	1	1	22.51	22.52	22.42	23.8
Channel				165300	167300	169300	limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	1	22.46	22.42	22.38	23.8

n66							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				344000	349000	354000	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	1	22.73	22.75	22.70	
20	QPSK	1	53	22.74	22.74	22.69	23.8
20	QPSK	1	104	22.42	22.49	22.46	
20	QPSK	50	0	22.07	22.08	22.03	
20	QPSK	50	28	22.48	22.52	22.44	23.8
20	QPSK	50	56	21.92	21.95	21.88	
20	QPSK	100	0	21.88	21.92	21.84	22.8
20	16QAM	1	1	22.16	22.22	22.15	22.8
20	64QAM	1	1	20.68	20.69	20.62	20.8
20	256QAM	1	1	18.99	19.00	18.85	19.8
Channel				343500	349000	354500	limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	1	22.57	22.58	22.51	23.8
Channel				343000	349000	355000	limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	1	22.54	22.55	22.52	23.8
Channel				342500	349000	355500	limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	1	22.47	22.49	22.44	23.8

General Note:

1. For each antenna, transmit power in SISO operation is larger than (or equal to) the power in MIMO operation, RF exposure compliance of MIMO mode can be deduced from the compliance simultaneous transmission of antennas operating in SISO mode.
2. Per KDB 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is $< 1.6\text{W/kg}$ and SAR peak to location ratio ≤ 0.04 , no additional SAR measurements for MIMO.
3. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
4. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
5. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
6. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:
 - a. When the reported SAR of the initial test position is $\leq 0.4\text{ W/kg}$, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
 - b. When the reported SAR of the test position is $> 0.4\text{ W/kg}$, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closest/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is $\leq 0.8\text{ W/kg}$ or all required test position are tested.
 - c. For all positions/configurations, when the reported SAR is $> 0.8\text{ W/kg}$, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is $\leq 1.2\text{ W/kg}$ or all required channels are tested.
7. Per 201904 TCBC workshops, General principles of FCC KDB Publication 248227 D01 can be applied to determine the SAR Initial Test Configurations and test reduction for 802.11ax SAR testing. For the table below the 802.11ax maximum power is SU (non-OFDMA)
8. In applying the test guidance, the IEEE 802.11 mode with the maximum output power (out of all modes) should be considered for testing
9. For modes with the same maximum output power, the guidance from section 5.3.2 a) of FCC KDB Publication 248227 D01 should be applied, with 802.11ax being considered as the highest 802.11 mode for the appropriate frequency bands
10. When SAR testing for 802.11ax is required
 - a. If the maximum output power is highest for OFDMA scenarios, choose the tone size with the maximum number of tones and the highest maximum output power
 - b. Otherwise, consider the fully allocated channel for SAR testing
 - c. When SAR testing is required on RU sizes less than the fully allocated channel, use the RU number closest to the middle of the channel, choosing the higher RU number when two RUs are equidistant to the middle of the channel
10. The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.



	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN ANT 7+9	802.11b 1Mbps	1	2412	21.66	22.00	100.00
		6	2437	21.81	22.00	
		11	2462	21.91	22.00	
	802.11g 6Mbps	1	2412	Not Required	21.00	100.00
		6	2437		21.00	
		11	2462		21.00	
	802.11n-HT20 MCS0	1	2412		19.00	100.00
		6	2437		21.00	
		11	2462		19.00	
	802.11n-HT40 MCS0	3	2422		19.00	100.00
		6	2437		19.00	
		9	2452		19.00	
	802.11ac-VHT20 MCS0	1	2412		19.00	100.00
		6	2437		21.00	
		11	2462		19.00	
	802.11ac-VHT40 MCS0	3	2422		19.00	100.00
		6	2437		19.00	
		9	2452		19.00	
	802.11ax-HE20 MCS0	1	2412		19.50	100.00
		6	2437		21.00	
		11	2462		19.50	
	802.11ax-HE40 MCS0	3	2422		19.00	100.00
		6	2437		19.00	
		9	2452		19.00	

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
5.2GHz WLAN ANT 7+8	802.11a 6Mbps	36	5180	Not Required	20.00	100.00	
		40	5200		20.00		
		44	5220		20.00		
		48	5240		20.00		
	802.11n-HT20 MCS0	36	5180		17.50	100.00	
		40	5200		20.00		
		44	5220		20.00		
	802.11n-HT40 MCS0	38	5190		16.26	16.50	100.00
		46	5230		19.36	20.00	
	802.11ac-VHT20 MCS0	36	5180		Not Required	17.00	100.00
		40	5200			20.00	
		44	5220			20.00	
	802.11ac-VHT40 MCS0	38	5190			17.00	100.00
		46	5230			20.00	
		42	5210			17.00	
	802.11ac-VHT80 MCS0	36	5180			17.50	100.00
		40	5200			20.00	
		44	5220			20.00	
	802.11ax-HE20 MCS0	48	5240			20.00	100.00
		38	5190			17.00	
		46	5230			20.00	
	802.11ax-HE40 MCS0	42	5210			17.00	100.00
		42	5210			17.00	



WLAN Power Table 1

Report No.: FA9D0701

	Mode	Channel	Frequency (MHz)	Average power (dBm) 1+2	Tune-Up Limit 1+2	Duty Cycle %
5.3GHz WLAN ANT 7+8	802.11a 6Mbps	52	5260	Not Required	20.00	98.59
		56	5280		20.00	
		60	5300		20.00	
		64	5320		20.00	
	802.11n-HT20 MCS0	52	5260		20.00	100.00
		56	5280		20.00	
		60	5300		20.00	
		64	5320		20.00	
	802.11n-HT40 MCS0	54	5270	19.51	20.00	100.00
		62	5310	17.41	17.50	
	802.11ac- VHT20 MCS0	52	5260	Not Required	20.00	100.00
		56	5280		20.00	
		60	5300		20.00	
		64	5320		20.00	
	802.11ac- VHT40 MCS0	54	5270		20.00	100.00
		62	5310		17.50	
	802.11ac- VHT80 MCS0	58	5290		17.00	100.00
	802.11ax- HE20 MCS0	52	5260		20.00	100.00
		56	5280	20.00		
		60	5300	20.00		
64		5320	20.00			
802.11ax- HE40 MCS0	54	5270	20.00	100.00		
	62	5310	18.00			
802.11ax- HE80 MCS0	58	5290	17.00	100.00		



WLAN Power Table 1

Report No.: FA9D0701

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN ANT 7+8	802.11a 6Mbps	100	5500	Not Required	20.00	98.58
		116	5580		20.00	
		124	5620		20.00	
		132	5660		20.00	
		144	5720		20.00	
	802.11n-HT20 MCS0	100	5500		20.00	100.00
		116	5580		20.00	
		124	5620		20.00	
		132	5660		20.00	
		144	5720		20.00	
	802.11n-HT40 MCS0	102	5510	17.66	18.00	100.00
		110	5550	19.81	20.00	
		126	5630	19.71	20.00	
		134	5670	19.66	20.00	
		142	5710	19.41	20.00	
	802.11ac- VHT20 MCS0	100	5500	Not Required	20.00	100.00
		116	5580		20.00	
		124	5620		20.00	
		132	5660		20.00	
		144	5720		20.00	
	802.11ac- VHT40 MCS0	102	5510		18.00	100.00
		110	5550		20.00	
		126	5630		20.00	
		134	5670		20.00	
		142	5710		20.00	
	802.11ac- VHT80 MCS0	106	5530	19.00	100.00	
		122	5610	19.00		
		138	5690	19.00		
	802.11ax- HE20 MCS0	100	5500	Not Required	20.00	100.00
		116	5580		20.00	
		124	5620		20.00	
		132	5660		20.00	
		144	5720		20.00	
	802.11ax- HE40 MCS0	102	5510		18.00	100.00
		110	5550		20.00	
		126	5630		20.00	
134		5670	20.00			
142		5710	20.00			
802.11ax- HE80 MCS0	106	5530	19.00	100.00		
	122	5610	19.00			
	138	5690	19.00			



WLAN Power Table 1

Report No.: FA9D0701

	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN ANT 7+8	802.11a 6Mbps	149	5745	Not Required	20.00	100.00
		157	5785		20.00	
		165	5825		20.00	
	802.11n-HT20 MCS0	149	5745	Not Required	20.00	100.00
		157	5785		20.00	
		165	5825		20.00	
	802.11n-HT40 MCS0	151	5755	19.71	20.00	100.00
		159	5795	19.66	20.00	
	802.11ac- VHT20 MCS0	149	5745	Not Required	20.00	100.00
		157	5785		20.00	
		165	5825		20.00	
	802.11ac- VHT40 MCS0	151	5755	Not Required	20.00	100.00
		159	5795		20.00	
	802.11ac- VHT80 MCS0	155	5775	Not Required	19.00	100.00
	802.11ax- HE20 MCS0	149	5745	Not Required	20.00	100.00
		157	5785		20.00	
		165	5825		20.00	
	802.11ax- HE40 MCS0	151	5755	Not Required	20.00	100.00
159		5795	20.00			
802.11ax- HE80 MCS0	155	5775	Not Required	19.00	100.00	

2.4GHz WLAN Power Table 3							
2.4GHz WLAN ANT 7+9	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
	802.11b 1Mbps	1	2412	16.26	Not Required	16.50	100.00
		6	2437	16.26		16.50	
		11	2462	16.31		16.50	
	802.11g 6Mbps	1	2412	16.50		100.00	
		6	2437	16.50			
		11	2462	16.50			
	802.11n-HT20 MCS0	1	2412	16.50		100.00	
		6	2437	16.50			
		11	2462	16.50			
	802.11n-HT40 MCS0	3	2422	16.50		100.00	
		6	2437	16.50			
		9	2452	16.50			
	802.11ac-VHT20 MCS0	1	2412	16.50		100.00	
6		2437	16.50				
11		2462	16.50				
802.11ac-VHT40 MCS0	3	2422	16.50	100.00			
	6	2437	16.50				
	9	2452	16.50				
802.11ax-HE20 MCS0	1	2412	16.50	100.00			
	6	2437	16.50				
	11	2462	16.50				
802.11ax-HE40 MCS0	3	2422	16.50	100.00			
	6	2437	16.50				
	9	2452	16.50				

2.4GHz WLAN Power Table 4							
2.4GHz WLAN ANT 7+9	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %	
	802.11b 1Mbps	1	2412	18.61	Not Required	19.00	100.00
		6	2437	18.61		19.00	
		11	2462	18.66		19.00	
	802.11g 6Mbps	1	2412	19.00		100.00	
		6	2437	19.00			
		11	2462	19.00			
	802.11n-HT20 MCS0	1	2412	19.00		100.00	
		6	2437	19.00			
		11	2462	19.00			
	802.11n-HT40 MCS0	3	2422	19.00		100.00	
		6	2437	19.00			
		9	2452	19.00			
	802.11ac-VHT20 MCS0	1	2412	19.00		100.00	
6		2437	19.00				
11		2462	19.00				
802.11ac-VHT40 MCS0	3	2422	19.00	100.00			
	6	2437	19.00				
	9	2452	19.00				
802.11ax-HE20 MCS0	1	2412	19.00	100.00			
	6	2437	19.00				
	11	2462	19.00				
802.11ax-HE40 MCS0	3	2422	19.00	100.00			
	6	2437	19.00				
	9	2452	19.00				



2.4GHz WLAN Power Table 2						
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN ANT 7+9	802.11b 1Mbps	1	2412	19.41	19.50	100.00
		6	2437	19.31	19.50	
		11	2462	19.36	19.50	
	802.11g 6Mbps	1	2412	Not Required	19.50	100.00
		6	2437		19.50	
		11	2462		19.50	
	802.11n-HT20 MCS0	1	2412		19.00	100.00
		6	2437		19.50	
		11	2462		19.00	
	802.11n-HT40 MCS0	3	2422		19.00	100.00
		6	2437		19.00	
		9	2452		19.00	
	802.11ac-VHT20 MCS0	1	2412		19.00	100.00
		6	2437		19.50	
		11	2462		19.00	
	802.11ac-VHT40 MCS0	3	2422		19.00	100.00
		6	2437		19.00	
		9	2452		19.00	
	802.11ax-HE20 MCS0	1	2412		19.50	100.00
		6	2437		19.50	
		11	2462		19.50	
	802.11ax-HE40 MCS0	3	2422		19.00	100.00
		6	2437		19.00	
		9	2452		19.00	

5GHz WLAN Power Table 3 & 4						
5.2GHz WLAN 7+8	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	36	5180	Not Required	17.00	100.00
		40	5200		17.00	
		44	5220		17.00	
		48	5240		17.00	
	802.11n-HT20 MCS0	36	5180		17.00	100.00
		40	5200		17.00	
		44	5220		17.00	
	802.11n-HT40 MCS0	38	5190		17.00	100.00
		46	5230		17.00	
	802.11ac- VHT20 MCS0	36	5180		17.00	100.00
		40	5200		17.00	
		44	5220		17.00	
		48	5240		17.00	
	802.11ac- VHT40 MCS0	38	5190		17.00	100.00
46		5230	17.00			
802.11ac- VHT80 MCS0	42	5210	16.76	17.00	100.00	
802.11ax- HE20 MCS0	36	5180	Not Required	17.00	100.00	
	40	5200		17.00		
	44	5220		17.00		
	48	5240		17.00		
802.11ax- HE40 MCS0	38	5190		17.00	100.00	
	46	5230		17.00		
802.11ax- HE80 MCS0	42	5210		17.00	100.00	

5GHz WLAN Power Table 3 & 4						
5.3GHz WLAN 7+8	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	52	5260	Not Required	17.00	100.00
		56	5280		17.00	
		60	5300		17.00	
		64	5320		17.00	
	802.11n-HT20 MCS0	52	5260		17.00	100.00
		56	5280		17.00	
		60	5300		17.00	
	802.11n-HT40 MCS0	54	5270		17.00	100.00
		62	5310		17.00	
	802.11ac- VHT20 MCS0	52	5260		17.00	100.00
		56	5280		17.00	
		60	5300		17.00	
		64	5320		17.00	
	802.11ac- VHT40 MCS0	54	5270		17.00	100.00
62		5310	17.00			
802.11ac- VHT80 MCS0	58	5290	16.86	17.00	100.00	
802.11ax- HE20 MCS0	52	5260	Not Required	17.00	100.00	
	56	5280		17.00		
	60	5300		17.00		
	64	5320		17.00		
802.11ax- HE40 MCS0	54	5270		17.00	100.00	
	62	5310		17.00		
802.11ax- HE80 MCS0	58	5290		17.00	100.00	



5GHz WLAN Power Table 3 & 4						
5.5GHz WLAN 7+8	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	100	5500	Not Required	17.00	100.00
		116	5580			
		124	5620			
		132	5660			
		144	5720			
	802.11n-HT20 MCS0	100	5500			
		116	5580			
		124	5620			
		132	5660			
		144	5720			
	802.11n-HT40 MCS0	102	5510			
		110	5550			
		126	5630			
		134	5670			
		142	5710			
	802.11ac- VHT20 MCS0	100	5500			
		116	5580			
		124	5620			
132		5660				
144		5720				
802.11ac- VHT40 MCS0	102	5510				
	110	5550				
	126	5630				
	134	5670				
	142	5710				
802.11ac- VHT80 MCS0	106	5530	16.66	17.00	100.00	
	122	5610	16.71	17.00		
	138	5690	16.48	17.00		
802.11ax- HE20 MCS0	100	5500				
	116	5580				
	124	5620				
	132	5660				
	144	5720				
802.11ax- HE40 MCS0	102	5510				
	110	5550				
	126	5630				
	134	5670				
	142	5710				
802.11ax- HE80 MCS0	106	5530				
	122	5610				
	138	5690				



5GHz WLAN Power Table 3 & 4						
5.8GHz WLAN 7+8	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11a 6Mbps	149	5745	Not Required	17.00	98.59
		157	5785		17.00	
		165	5825		17.00	
	802.11n-HT20 MCS0	149	5745		17.00	100.00
		157	5785		17.00	
		165	5825		17.00	
	802.11n-HT40 MCS0	151	5755		17.00	100.00
		159	5795		17.00	
	802.11ac- VHT20 MCS0	149	5745		17.00	100.00
157		5785	17.00			
165		5825	17.00			
802.11ac- VHT40 MCS0	151	5755	17.00	100.00		
	159	5795	17.00			
802.11ac- VHT80 MCS0	155	5775	16.46	17.00	100.00	
802.11ax- HE20 MCS0	149	5745	Not Required	17.00	97.26	
	157	5785		17.00		
	165	5825		17.00		
802.11ax- HE40 MCS0	151	5755		17.00	97.04	
	159	5795		17.00		
802.11ax- HE80 MCS0	155	5775		17.00	97.25	

General Note:

1. For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 76.72% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	13.24	10.60	10.63
	CH 39	2441	14.17	11.60	11.56
	CH 78	2480	12.89	10.36	10.34
Tune-up Limit			14.80	12.00	12.00

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			1Mbps	2Mbps
LE	CH 00	2402	9.90	10.10
	CH 19	2440	10.70	10.90
	CH 39	2480	10.10	10.30
Tune-up Limit			11.00	11.00

