DASY/EASY - Parameters of Probe: ES3DV3 - SN:3279

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	41.9	0.89	6.58	6.58	6.58	0.80	1.19	± 12.0 %
835	41.5	0.90	6.38	6.38	6.38	0.80	1.21	± 12.0 %
1750	40.1	1.37	5.59	5.59	5.59	0.64	1.37	± 12.0 %
1900	40.0	1.40	5.35	5.35	5.35	0.57	1.45	± 12.0 %
2000	40.0	1.40	5.25	5.25	5.25	0.80	1.22	± 12.0 %
2300	39.5	1.67	5.02	5.02	5.02	0.78	1.30	± 12.0 %
2450	39.2	1.80	4.77	4.77	4.77	0.67	1.44	± 12.0 %
2600	39.0	1.96	4.58	4.58	4.58	0.73	1.39	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

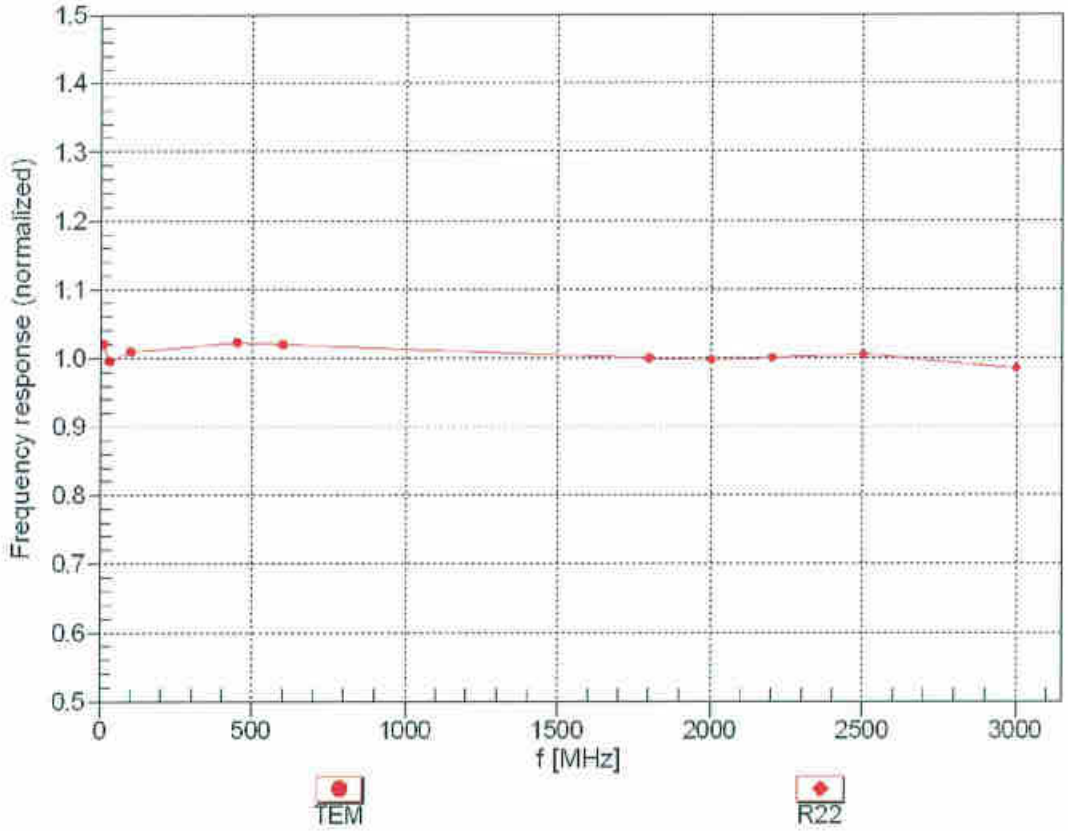
DASY/EASY - Parameters of Probe: ES3DV3 - SN:3279

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
750	55.5	0.96	6.40	6.40	6.40	0.68	1.25	± 12.0 %
835	55.2	0.97	6.23	6.23	6.23	0.70	1.22	± 12.0 %
1750	53.4	1.49	5.08	5.08	5.08	0.61	1.42	± 12.0 %
1900	53.3	1.52	4.85	4.85	4.85	0.41	1.84	± 12.0 %
2300	52.9	1.81	4.66	4.66	4.66	0.80	1.24	± 12.0 %
2450	52.7	1.95	4.50	4.50	4.50	0.80	1.25	± 12.0 %
2600	52.5	2.16	4.34	4.34	4.34	0.80	1.25	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

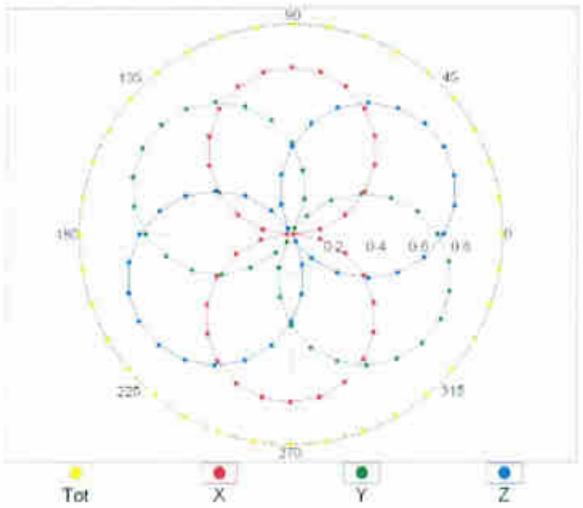
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



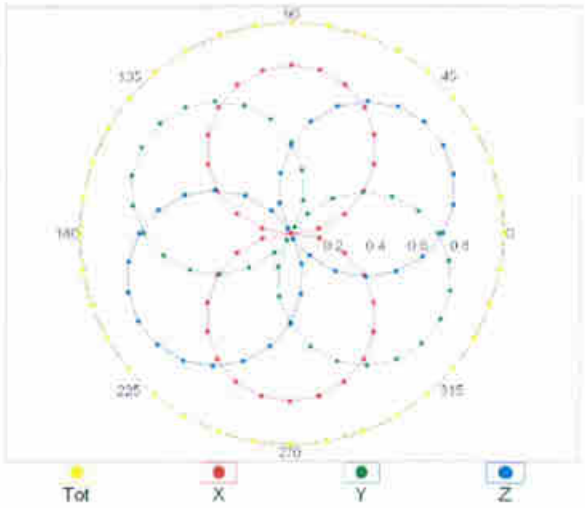
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

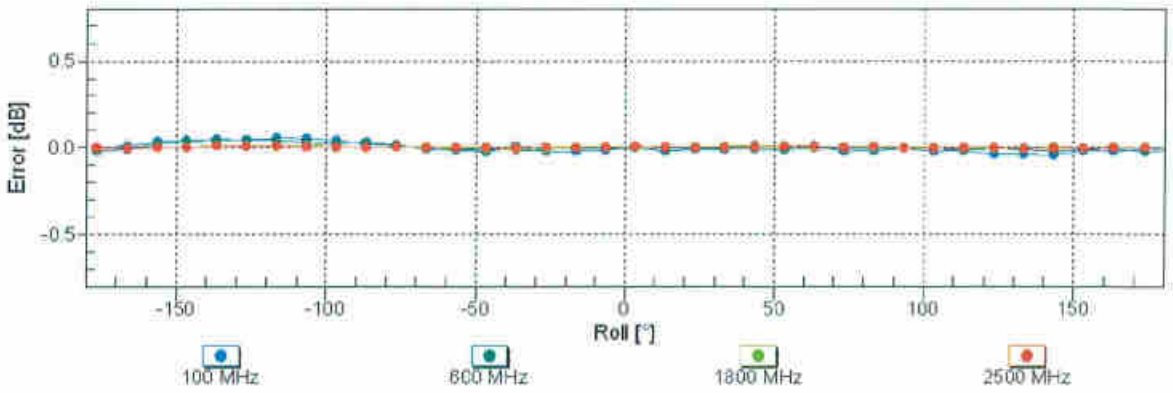
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



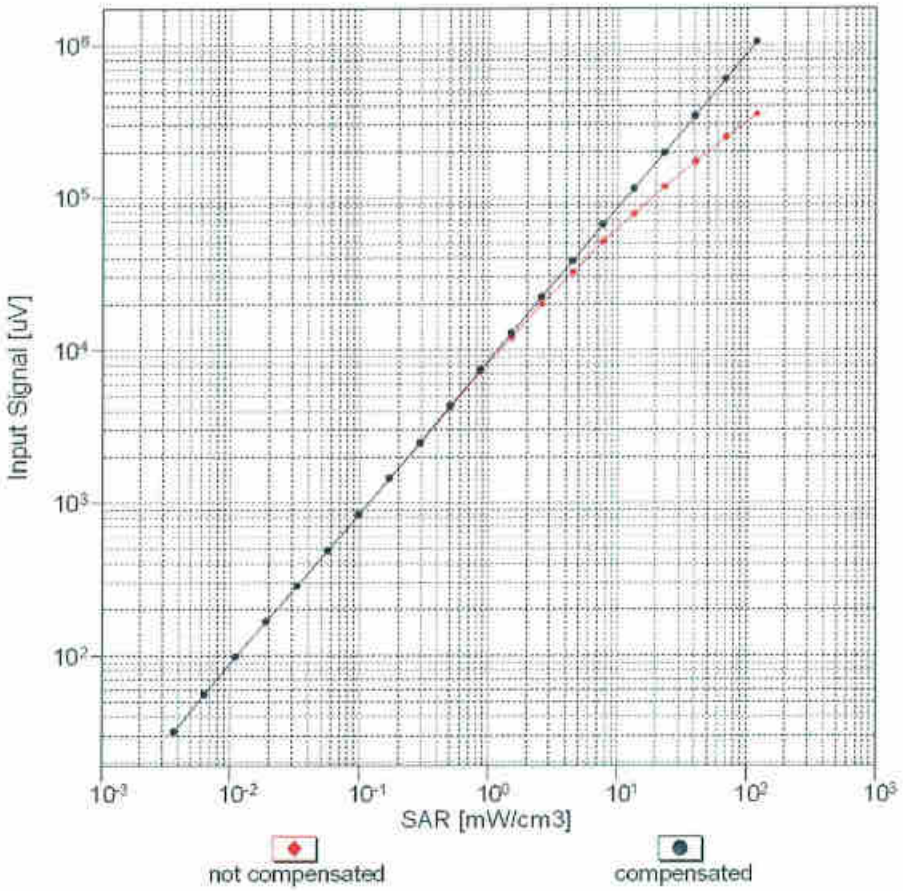
f=1800 MHz,R22

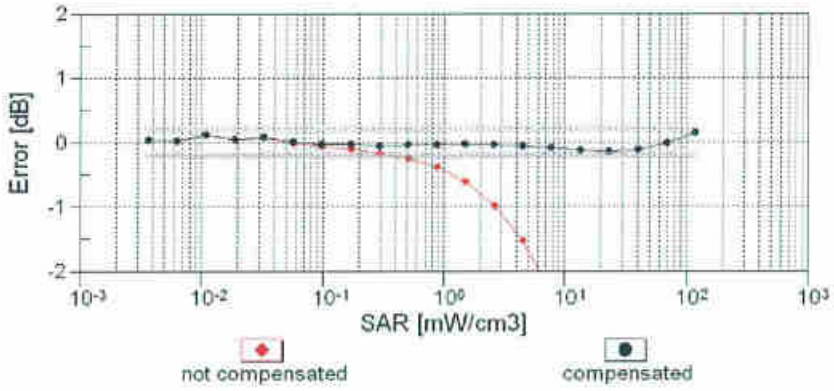




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})
(TEM cell , f_{eval}= 1900 MHz)

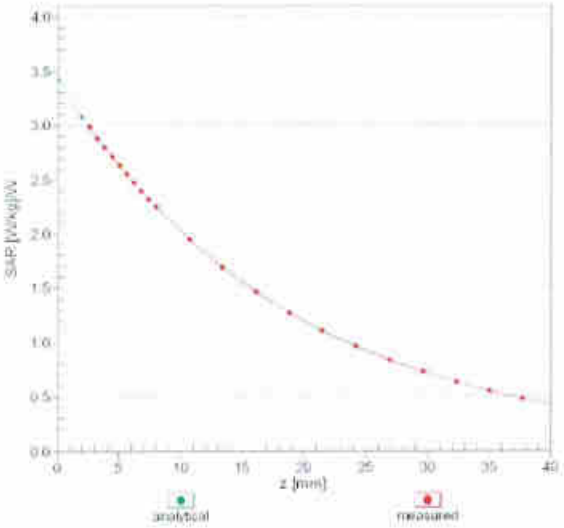




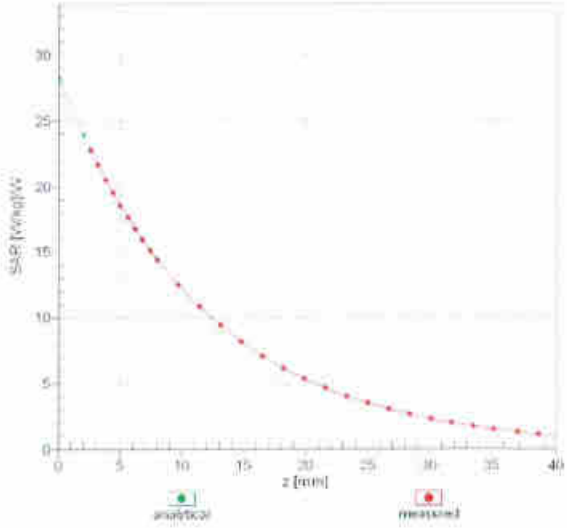
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

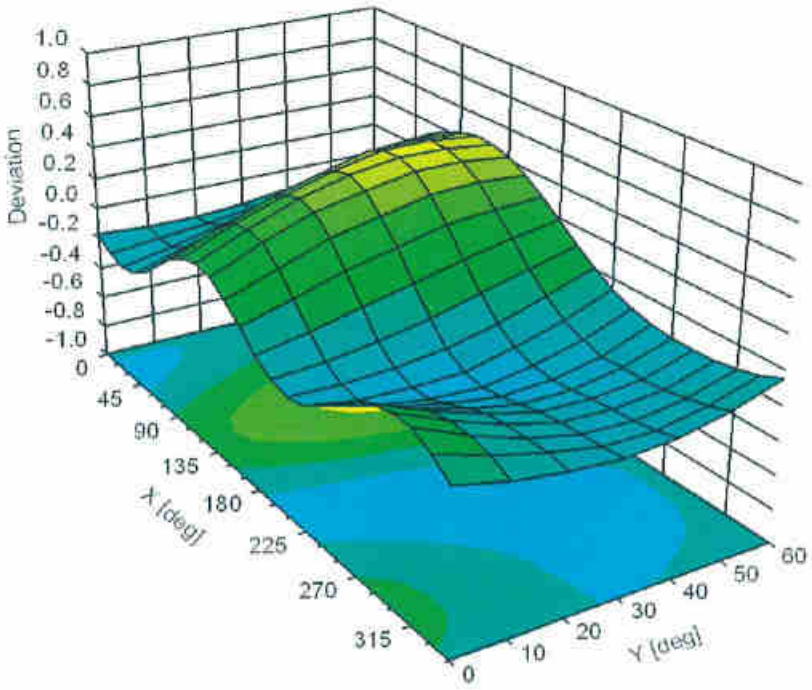


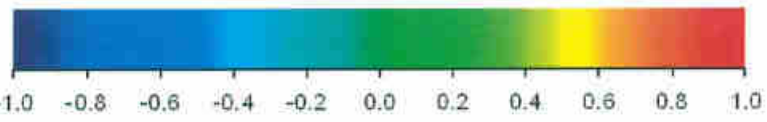
f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

Appendix E. Conducted RF Output Power Table

The detailed power table are shown as follows.

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GSM 1 Tx slot	32.99	32.89	32.96	34.00	23.99	23.89	23.96	25.00
GPRS 1 Tx slot	32.96	32.88	32.94	34.00	23.96	23.88	23.94	25.00
GPRS 2 Tx slots	31.68	31.58	31.65	32.50	25.68	25.58	25.65	26.50
GPRS 3 Tx slots	30.26	30.15	30.22	30.70	26.00	25.89	25.96	26.44
GPRS 4 Tx slots	28.76	28.83	28.87	29.50	25.76	25.83	25.87	26.50
EDGE 1 Tx slot	26.36	26.28	26.31	28.00	17.36	17.28	17.31	19.00
EDGE 2 Tx slots	25.28	25.19	25.21	26.50	19.28	19.19	19.21	20.50
EDGE 3 Tx slots	24.15	24.08	24.08	24.70	19.89	19.82	19.82	20.44
EDGE 4 Tx slots	23.07	23.16	23.01	23.50	20.07	20.16	20.01	20.50

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM 1 Tx slot	29.53	29.57	29.93	31.00	20.53	20.57	20.93	22.00
GPRS 1 Tx slot	29.48	29.55	29.92	31.00	20.48	20.55	20.92	22.00
GPRS 2 Tx slots	28.07	28.10	28.48	29.50	22.07	22.10	22.48	23.50
GPRS 3 Tx slots	26.58	26.62	27.02	27.70	22.32	22.36	22.76	23.44
GPRS 4 Tx slots	25.05	25.12	25.51	26.50	22.05	22.12	22.51	23.50
EDGE 1 Tx slot	25.95	25.70	25.74	27.00	16.95	16.70	16.74	18.00
EDGE 2 Tx slots	24.10	23.82	23.91	25.50	18.10	17.82	17.91	19.50
EDGE 3 Tx slots	23.21	22.88	23.01	23.70	18.95	18.62	18.75	19.44
EDGE 4 Tx slots	22.25	22.14	22.11	22.50	19.25	19.14	19.11	19.50

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	23.31	23.31	23.43	24.50	23.36	23.42	23.45	24.50	24.22	24.29	24.43	25.00
3GPP Rel 99	RMC 12.2Kbps	23.33	23.32	23.45	24.50	23.38	23.44	23.46	24.50	24.23	24.31	24.45	25.00
3GPP Rel 6	HSDPA Subtest-1	23.16	23.16	23.12	24.50	23.24	23.26	23.36	24.50	24.09	24.15	24.21	25.00
3GPP Rel 6	HSDPA Subtest-2	23.16	23.11	23.07	24.50	23.18	23.26	23.30	24.50	24.12	24.09	24.23	25.00
3GPP Rel 6	HSDPA Subtest-3	22.69	22.64	22.61	24.00	22.67	22.75	22.83	24.00	23.60	23.64	23.74	24.50
3GPP Rel 6	HSDPA Subtest-4	22.68	22.64	22.61	24.00	22.70	22.74	22.84	24.00	23.61	23.57	23.62	24.50
3GPP Rel 8	DC-HSDPA Subtest-1	23.11	23.15	23.13	24.50	23.22	23.21	23.33	24.50	24.02	24.11	24.21	25.00
3GPP Rel 8	DC-HSDPA Subtest-2	23.13	23.14	23.11	24.50	23.19	23.24	23.31	24.50	24.05	24.09	24.21	25.00
3GPP Rel 8	DC-HSDPA Subtest-3	22.66	22.64	22.60	24.00	22.63	22.71	22.83	24.00	23.61	23.61	23.73	24.50
3GPP Rel 8	DC-HSDPA Subtest-4	22.67	22.62	22.61	24.00	22.67	22.69	22.81	24.00	23.60	23.65	23.71	24.50
3GPP Rel 6	HSUPA Subtest-1	22.65	22.73	22.84	24.50	22.70	22.80	22.84	24.50	23.06	23.01	23.02	25.00
3GPP Rel 6	HSUPA Subtest-2	21.25	21.15	21.14	22.50	21.26	21.31	21.34	22.50	21.93	22.00	22.03	23.00
3GPP Rel 6	HSUPA Subtest-3	22.15	22.12	22.12	23.50	22.22	22.33	22.38	23.50	22.92	22.89	23.01	24.00
3GPP Rel 6	HSUPA Subtest-4	20.76	20.65	20.66	22.50	20.78	20.80	20.84	22.50	21.51	21.36	21.53	23.00
3GPP Rel 6	HSUPA Subtest-5	22.70	22.60	22.60	24.50	22.70	22.80	22.80	24.50	23.40	23.50	23.50	25.00

Band 2 (1900MHz Band) Part 24E

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.23	23.35	23.32	24.5	0
20	QPSK	1	49	23.30	23.18	23.14		
20	QPSK	1	99	22.92	22.90	22.91		
20	QPSK	50	0	22.15	22.20	22.18	23.5	1
20	QPSK	50	24	22.19	22.19	22.17		
20	QPSK	50	50	22.16	22.13	22.13		
20	QPSK	100	0	22.16	22.17	22.14		
20	16QAM	1	0	22.41	22.27	22.30	23.5	1
20	16QAM	1	49	22.56	22.43	22.44		
20	16QAM	1	99	22.24	22.20	22.14		
20	16QAM	50	0	21.17	21.08	21.19	22.5	2
20	16QAM	50	24	21.22	21.20	21.18		
20	16QAM	50	50	21.18	21.12	21.12		
20	16QAM	100	0	21.17	21.07	21.13		
20	64QAM	1	0	21.52	21.54	21.43	22.5	2
20	64QAM	1	49	21.76	21.72	21.63		
20	64QAM	1	99	21.52	21.50	21.41		
20	64QAM	50	0	20.44	20.45	20.50	21.5	3
20	64QAM	50	24	20.53	20.55	20.51		
20	64QAM	50	50	20.53	20.47	20.45		
20	64QAM	100	0	20.50	20.45	20.48		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.15	23.02	23.08	24.5	0
15	QPSK	1	37	23.26	23.22	23.20		
15	QPSK	1	74	23.02	22.98	22.96		
15	QPSK	36	0	22.21	22.15	22.13	23.5	1
15	QPSK	36	20	22.21	22.18	22.14		
15	QPSK	36	39	22.18	22.15	22.15		
15	QPSK	75	0	22.19	22.16	22.14		
15	16QAM	1	0	22.45	22.35	22.38	23.5	1
15	16QAM	1	37	22.54	22.50	22.38		
15	16QAM	1	74	22.36	22.27	22.20		
15	16QAM	36	0	21.21	21.16	21.13	22.5	2
15	16QAM	36	20	21.22	21.16	21.11		
15	16QAM	36	39	21.18	21.11	21.11		
15	16QAM	75	0	21.21	21.16	21.11		
15	64QAM	1	0	21.62	21.63	21.52	22.5	2
15	64QAM	1	37	21.82	21.76	21.63		
15	64QAM	1	74	21.59	21.57	21.44		
15	64QAM	36	0	20.51	20.52	20.44	21.5	3
15	64QAM	36	20	20.52	20.55	20.44		
15	64QAM	36	39	20.54	20.49	20.43		
15	64QAM	75	0	20.54	20.52	20.46		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.17	23.09	23.03	24.5	0
10	QPSK	1	25	23.25	23.19	23.14		
10	QPSK	1	49	23.09	23.04	23.02		
10	QPSK	25	0	22.18	22.14	22.14	23.5	1
10	QPSK	25	12	22.20	22.17	22.15		
10	QPSK	25	25	22.20	22.17	22.14		
10	QPSK	50	0	22.20	22.18	22.11		
10	16QAM	1	0	22.44	22.33	22.28	23.5	1
10	16QAM	1	25	22.60	22.42	22.28		
10	16QAM	1	49	22.44	22.32	22.25		
10	16QAM	25	0	21.21	21.15	21.09	22.5	2
10	16QAM	25	12	21.21	21.17	21.15		
10	16QAM	25	25	21.25	21.20	21.13		
10	16QAM	50	0	21.21	21.19	21.11		
10	64QAM	1	0	21.94	21.86	21.76	22.5	2
10	64QAM	1	25	22.05	21.93	21.85		
10	64QAM	1	49	21.88	21.82	21.77		
10	64QAM	25	0	20.78	20.76	20.69	21.5	3
10	64QAM	25	12	20.83	20.78	20.73		
10	64QAM	25	25	20.84	20.78	20.73		
10	64QAM	50	0	20.81	20.77	20.69		
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	23.06	22.97	22.95	24.5	0
5	QPSK	1	12	23.24	23.24	23.24		
5	QPSK	1	24	23.07	22.94	22.92		
5	QPSK	12	0	22.16	22.09	22.07	23.5	1
5	QPSK	12	7	22.26	22.17	22.15		
5	QPSK	12	13	22.26	22.17	22.10		
5	QPSK	25	0	22.22	22.14	22.10		
5	16QAM	1	0	22.35	22.21	22.15	23.5	1
5	16QAM	1	12	22.59	22.51	22.39		
5	16QAM	1	24	22.36	22.24	22.17		
5	16QAM	12	0	21.19	21.11	21.06	22.5	2
5	16QAM	12	7	21.30	21.18	21.14		
5	16QAM	12	13	21.28	21.18	21.11		
5	16QAM	25	0	21.23	21.15	21.10		
5	64QAM	1	0	21.62	21.64	21.41	22.5	2
5	64QAM	1	12	21.79	21.70	21.56		
5	64QAM	1	24	21.65	21.61	21.53		
5	64QAM	12	0	20.48	20.55	20.41	21.5	3
5	64QAM	12	7	20.54	20.58	20.47		
5	64QAM	12	13	20.61	20.55	20.46		
5	64QAM	25	0	20.55	20.52	20.43		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.19	23.10	23.05	24.5	0
3	QPSK	1	8	23.20	23.09	23.05		
3	QPSK	1	14	23.18	23.07	23.03		
3	QPSK	8	0	22.21	22.10	22.10	23.5	1
3	QPSK	8	4	22.27	22.16	22.11		
3	QPSK	8	7	22.22	22.13	22.07		
3	QPSK	15	0	22.24	22.14	22.11		
3	16QAM	1	0	22.46	22.34	22.28	23.5	1
3	16QAM	1	8	22.47	22.35	22.24		
3	16QAM	1	14	22.50	22.35	22.28		
3	16QAM	8	0	21.32	21.20	21.16	22.5	2
3	16QAM	8	4	21.35	21.24	21.18		
3	16QAM	8	7	21.31	21.20	21.13		
3	16QAM	15	0	21.25	21.16	21.10		
3	64QAM	1	0	21.63	21.63	21.43	22.5	2
3	64QAM	1	8	21.73	21.60	21.52		
3	64QAM	1	14	21.74	21.63	21.52		
3	64QAM	8	0	20.55	20.55	20.43	21.5	3
3	64QAM	8	4	20.60	20.60	20.46		
3	64QAM	8	7	20.64	20.51	20.41		
3	64QAM	15	0	20.57	20.47	20.41		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	23.07	22.96	22.91	24.5	0
1.4	QPSK	1	3	23.18	23.06	23.03		
1.4	QPSK	1	5	23.07	22.96	22.91		
1.4	QPSK	3	0	23.16	23.08	23.02		
1.4	QPSK	3	1	23.22	23.12	23.06		
1.4	QPSK	3	3	23.17	23.07	23.03		
1.4	QPSK	6	0	22.19	22.09	22.05	23.5	1
1.4	16QAM	1	0	22.31	22.20	22.14	23.5	1
1.4	16QAM	1	3	22.45	22.36	22.20		
1.4	16QAM	1	5	22.38	22.25	22.14		
1.4	16QAM	3	0	22.19	22.06	21.99		
1.4	16QAM	3	1	22.22	22.13	22.04		
1.4	16QAM	3	3	22.16	22.05	22.01		
1.4	16QAM	6	0	21.28	21.18	21.11	22.5	2
1.4	64QAM	1	0	21.55	21.56	21.27	22.5	2
1.4	64QAM	1	3	21.70	21.59	21.46		
1.4	64QAM	1	5	21.60	21.47	21.44		
1.4	64QAM	3	0	21.48	21.51	21.33		
1.4	64QAM	3	1	21.56	21.56	21.42		
1.4	64QAM	3	3	21.59	21.45	21.34		
1.4	64QAM	6	0	20.55	20.44	20.40	21.5	3

Band 4 (AWS Band) Part 27L (only on channel required)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	23.12	23.24	23.10	24.5	0
20	QPSK	1	49	23.11	23.13	23.23		
20	QPSK	1	99	22.83	22.83	22.85		
20	QPSK	50	0	22.12	22.21	22.19	23.5	1
20	QPSK	50	24	22.08	22.12	22.14		
20	QPSK	50	50	22.03	22.06	22.09		
20	QPSK	100	0	22.05	22.12	22.11		
20	16QAM	1	0	22.26	22.26	22.34	23.5	1
20	16QAM	1	49	22.44	22.47	22.52		
20	16QAM	1	99	22.19	22.22	22.23		
20	16QAM	50	0	21.15	21.15	21.25	22.5	2
20	16QAM	50	24	21.17	21.16	21.21		
20	16QAM	50	50	21.07	21.10	21.13		
20	16QAM	100	0	21.10	21.12	21.15		
20	64QAM	1	0	21.33	21.42	21.42	22.5	2
20	64QAM	1	49	21.59	21.58	21.70		
20	64QAM	1	99	21.38	21.48	21.51		
20	64QAM	50	0	20.38	20.40	20.47	21.5	3
20	64QAM	50	24	20.42	20.43	20.46		
20	64QAM	50	50	20.34	20.40	20.42		
20	64QAM	100	0	20.36	20.38	20.44		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.94	23.01	23.05	24.5	0
15	QPSK	1	37	23.15	23.12	23.17		
15	QPSK	1	74	22.86	22.92	22.95		
15	QPSK	36	0	22.12	22.11	22.14	23.5	1
15	QPSK	36	20	22.11	22.11	22.13		
15	QPSK	36	39	22.06	22.09	22.12		
15	QPSK	75	0	22.07	22.10	22.13		
15	16QAM	1	0	22.25	22.31	22.38	23.5	1
15	16QAM	1	37	22.43	22.51	22.54		
15	16QAM	1	74	22.20	22.26	22.29		
15	16QAM	36	0	21.16	21.14	21.19	22.5	2
15	16QAM	36	20	21.14	21.16	21.18		
15	16QAM	36	39	21.09	21.13	21.14		
15	16QAM	75	0	21.12	21.16	21.20		
15	64QAM	1	0	21.36	21.49	21.49	22.5	2
15	64QAM	1	37	21.60	21.66	21.79		
15	64QAM	1	74	21.40	21.52	21.60		
15	64QAM	36	0	20.39	20.36	20.42	21.5	3
15	64QAM	36	20	20.43	20.43	20.43		
15	64QAM	36	39	20.38	20.44	20.45		
15	64QAM	75	0	20.39	20.38	20.47		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.94	23.02	23.03	24.5	0
10	QPSK	1	25	23.12	23.10	23.18		
10	QPSK	1	49	22.92	22.96	23.00		
10	QPSK	25	0	22.05	22.09	22.16	23.5	1
10	QPSK	25	12	22.07	22.08	22.16		
10	QPSK	25	25	22.10	22.07	22.16		
10	QPSK	50	0	22.10	22.11	22.15		
10	16QAM	1	0	22.26	22.36	22.37	23.5	1
10	16QAM	1	25	22.43	22.46	22.54		
10	16QAM	1	49	22.25	22.33	22.36		
10	16QAM	25	0	21.12	21.16	21.20	22.5	2
10	16QAM	25	12	21.16	21.14	21.22		
10	16QAM	25	25	21.17	21.14	21.23		
10	16QAM	50	0	21.16	21.15	21.19		
10	64QAM	1	0	21.38	21.47	21.43	22.5	2
10	64QAM	1	25	21.54	21.57	21.71		
10	64QAM	1	49	21.45	21.58	21.65		
10	64QAM	25	0	20.37	20.39	20.43	21.5	3
10	64QAM	25	12	20.46	20.41	20.47		
10	64QAM	25	25	20.47	20.43	20.53		
10	64QAM	50	0	20.42	20.39	20.46		
Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.81	22.86	22.92	24.5	0
5	QPSK	1	12	23.13	23.14	23.13		
5	QPSK	1	24	22.84	22.85	22.92		
5	QPSK	12	0	21.96	21.99	22.06	23.5	1
5	QPSK	12	7	22.03	22.06	22.14		
5	QPSK	12	13	22.01	22.03	22.11		
5	QPSK	25	0	21.97	22.00	22.08		
5	16QAM	1	0	22.13	22.21	22.32	23.5	1
5	16QAM	1	12	22.46	22.43	22.56		
5	16QAM	1	24	22.16	22.17	22.29		
5	16QAM	12	0	21.02	21.06	21.15	22.5	2
5	16QAM	12	7	21.09	21.11	21.20		
5	16QAM	12	13	21.06	21.10	21.17		
5	16QAM	25	0	21.03	21.05	21.15		
5	64QAM	1	0	21.27	21.40	21.38	22.5	2
5	64QAM	1	12	21.60	21.62	21.74		
5	64QAM	1	24	21.36	21.44	21.57		
5	64QAM	12	0	20.25	20.27	20.33	21.5	3
5	64QAM	12	7	20.37	20.37	20.44		
5	64QAM	12	13	20.38	20.38	20.47		
5	64QAM	25	0	20.29	20.29	20.39		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	22.89	22.93	23.00	24.5	0
3	QPSK	1	8	22.94	22.94	23.04		
3	QPSK	1	14	22.92	22.95	22.99		
3	QPSK	8	0	21.94	21.99	22.08	23.5	1
3	QPSK	8	4	22.03	22.01	22.10		
3	QPSK	8	7	21.96	22.03	22.05		
3	QPSK	15	0	21.97	21.96	22.07		
3	16QAM	1	0	22.20	22.32	22.33	23.5	1
3	16QAM	1	8	22.26	22.28	22.33		
3	16QAM	1	14	22.27	22.31	22.36		
3	16QAM	8	0	21.07	21.12	21.23	22.5	2
3	16QAM	8	4	21.15	21.15	21.22		
3	16QAM	8	7	21.09	21.13	21.19		
3	16QAM	15	0	21.06	21.04	21.14		
3	64QAM	1	0	21.30	21.43	21.43	22.5	2
3	64QAM	1	8	21.36	21.39	21.55		
3	64QAM	1	14	21.46	21.56	21.64		
3	64QAM	8	0	20.27	20.32	20.38	21.5	3
3	64QAM	8	4	20.39	20.38	20.46		
3	64QAM	8	7	20.34	20.38	20.46		
3	64QAM	15	0	20.29	20.27	20.38		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	22.88	22.92	23.01	24.5	0
1.4	QPSK	1	3	22.99	23.05	23.10		
1.4	QPSK	1	5	22.91	22.93	22.99		
1.4	QPSK	3	0	22.97	23.02	23.10		
1.4	QPSK	3	1	23.07	23.08	23.16		
1.4	QPSK	3	3	22.99	23.03	23.11		
1.4	QPSK	6	0	22.01	22.01	22.10	23.5	1
1.4	16QAM	1	0	22.18	22.29	22.35	23.5	1
1.4	16QAM	1	3	22.34	22.38	22.46		
1.4	16QAM	1	5	22.26	22.25	22.37		
1.4	16QAM	3	0	22.02	22.08	22.13		
1.4	16QAM	3	1	22.04	22.09	22.18		
1.4	16QAM	3	3	21.98	22.01	22.13		
1.4	16QAM	6	0	21.15	21.18	21.26	22.5	2
1.4	64QAM	1	0	21.31	21.43	21.44	22.5	2
1.4	64QAM	1	3	21.42	21.51	21.67		
1.4	64QAM	1	5	21.44	21.54	21.66		
1.4	64QAM	3	0	21.29	21.33	21.41		
1.4	64QAM	3	1	21.37	21.41	21.53		
1.4	64QAM	3	3	21.34	21.39	21.49		
1.4	64QAM	6	0	20.33	20.34	20.44	21.5	3

Band 5 (Celluar Band) Part 22H(only on channel required)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	24.00	24.19	24.10	25	0
10	QPSK	1	25	23.96	24.03	24.00		
10	QPSK	1	49	23.79	23.92	23.90		
10	QPSK	25	0	22.90	23.10	23.08	24	1
10	QPSK	25	12	22.92	22.99	23.04		
10	QPSK	25	25	22.86	22.96	22.95		
10	QPSK	50	0	22.88	23.04	23.00		
10	16QAM	1	0	23.08	23.15	23.18	24	1
10	16QAM	1	25	23.30	23.33	23.38		
10	16QAM	1	49	23.13	23.20	23.15		
10	16QAM	25	0	21.96	22.04	22.10	23	2
10	16QAM	25	12	21.98	22.03	22.09		
10	16QAM	25	25	21.92	21.99	21.97		
10	16QAM	50	0	21.93	22.05	22.03		
10	64QAM	1	0	22.06	22.05	22.07	23	2
10	64QAM	1	25	22.20	22.19	22.24		
10	64QAM	1	49	22.00	22.10	22.14		
10	64QAM	25	0	20.98	21.05	21.10	22	3
10	64QAM	25	12	20.96	21.05	21.09		
10	64QAM	25	25	20.89	21.00	20.99		
10	64QAM	50	0	20.93	21.02	21.06		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	23.82	23.88	23.88	25	0
5	QPSK	1	12	24.12	24.13	24.18		
5	QPSK	1	24	23.84	23.85	23.86		
5	QPSK	12	0	22.94	23.00	23.07	24	1
5	QPSK	12	7	23.03	23.04	23.11		
5	QPSK	12	13	23.00	23.02	23.06		
5	QPSK	25	0	22.96	22.99	23.05		
5	16QAM	1	0	23.08	23.18	23.08	24	1
5	16QAM	1	12	23.40	23.50	23.35		
5	16QAM	1	24	23.02	23.11	23.15		
5	16QAM	12	0	21.97	22.02	22.09	23	2
5	16QAM	12	7	22.06	22.07	22.09		
5	16QAM	12	13	22.01	22.04	22.05		
5	16QAM	25	0	21.99	22.03	22.06		
5	64QAM	1	0	22.02	22.13	22.10	23	2
5	64QAM	1	12	22.26	22.34	22.34		
5	64QAM	1	24	22.05	22.08	22.11		
5	64QAM	12	0	20.98	21.07	21.16	22	3
5	64QAM	12	7	21.07	21.12	21.17		
5	64QAM	12	13	21.01	21.04	21.12		
5	64QAM	25	0	20.97	21.03	21.07		
Channel				20415	20525	20635	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				825.5	836.5	847.5		
3	QPSK	1	0	23.96	23.98	23.99	25	0
3	QPSK	1	8	24.00	24.00	24.00		
3	QPSK	1	14	23.99	23.98	23.99		
3	QPSK	8	0	23.00	23.02	23.05	24	1
3	QPSK	8	4	23.05	23.07	23.12		
3	QPSK	8	7	22.97	23.04	23.05		
3	QPSK	15	0	22.98	23.03	23.07		
3	16QAM	1	0	23.22	23.37	23.14	24	1
3	16QAM	1	8	23.25	23.38	23.22		
3	16QAM	1	14	23.24	23.27	23.16		
3	16QAM	8	0	22.08	22.16	22.12	23	2
3	16QAM	8	4	22.12	22.16	22.17		
3	16QAM	8	7	22.02	22.14	22.14		
3	16QAM	15	0	21.97	22.06	22.08		
3	64QAM	1	0	22.11	22.25	22.15	23	2
3	64QAM	1	8	22.10	22.22	22.13		
3	64QAM	1	14	22.17	22.13	22.22		
3	64QAM	8	0	21.06	21.07	21.12	22	3
3	64QAM	8	4	21.11	21.13	21.18		
3	64QAM	8	7	21.10	21.08	21.12		
3	64QAM	15	0	21.00	21.04	21.07		
Channel				20407	20525	20643	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824.7	836.5	848.3		
1.4	QPSK	1	0	23.85	23.89	23.87	25	0
1.4	QPSK	1	3	23.98	24.04	24.06		
1.4	QPSK	1	5	23.88	23.91	23.92		
1.4	QPSK	3	0	23.96	24.00	24.04		
1.4	QPSK	3	1	24.03	24.05	24.10		
1.4	QPSK	3	3	23.97	24.03	24.03		
1.4	QPSK	6	0	22.97	22.99	23.05	24	1
1.4	16QAM	1	0	23.06	23.28	23.20	24	1
1.4	16QAM	1	3	23.22	23.38	23.22		
1.4	16QAM	1	5	23.09	23.23	23.28		
1.4	16QAM	3	0	22.95	23.01	22.96		
1.4	16QAM	3	1	22.98	23.06	23.03		
1.4	16QAM	3	3	22.97	23.01	22.99		
1.4	16QAM	6	0	22.06	22.16	22.15	23	2
1.4	64QAM	1	0	22.09	22.14	22.09	23	2
1.4	64QAM	1	3	22.11	22.34	22.23		
1.4	64QAM	1	5	22.00	22.14	22.13		
1.4	64QAM	3	0	22.04	22.14	22.11		
1.4	64QAM	3	1	22.06	22.17	22.15		
1.4	64QAM	3	3	22.09	22.16	22.17		
1.4	64QAM	6	0	20.93	21.02	21.07	22	3

Band 7 (2600MHz Band) Part 27

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	21.82	21.72	21.73	23	0
20	QPSK	1	49	22.02	22.02	22.14		
20	QPSK	1	99	21.82	21.83	21.92		
20	QPSK	50	0	20.90	20.90	21.01	22	1
20	QPSK	50	24	20.98	21.00	21.01		
20	QPSK	50	50	20.98	20.96	20.94		
20	QPSK	100	0	20.92	20.92	21.01		
20	16QAM	1	0	21.10	21.03	21.03	22	1
20	16QAM	1	49	21.32	21.33	21.36		
20	16QAM	1	99	21.12	21.10	21.22		
20	16QAM	50	0	19.88	19.91	20.00	21.5	1.5
20	16QAM	50	24	19.98	19.99	20.00		
20	16QAM	50	50	19.97	19.97	19.95		
20	16QAM	100	0	19.93	19.93	19.98		
20	64QAM	1	0	20.18	20.10	20.13	21.5	1.5
20	64QAM	1	49	20.10	20.05	20.06		
20	64QAM	1	99	20.19	20.19	20.31		
20	64QAM	50	0	19.08	19.10	19.18	20.5	2.5
20	64QAM	50	24	19.15	19.16	19.16		
20	64QAM	50	50	19.13	19.15	19.13		
20	64QAM	100	0	19.12	19.13	19.18		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	21.83	21.76	21.79	23	0
15	QPSK	1	37	22.03	22.06	21.99		
15	QPSK	1	74	21.83	21.82	21.96		
15	QPSK	36	0	20.95	20.90	20.99	22	1
15	QPSK	36	20	20.97	20.97	21.01		
15	QPSK	36	39	20.96	20.94	20.98		
15	QPSK	75	0	20.94	20.91	20.96		
15	16QAM	1	0	21.19	21.09	21.12	22	1
15	16QAM	1	37	21.35	21.31	21.42		
15	16QAM	1	74	21.14	21.11	21.24		
15	16QAM	36	0	19.94	19.88	19.98	21.5	1.5
15	16QAM	36	20	19.94	19.92	20.02		
15	16QAM	36	39	19.95	19.91	19.97		
15	16QAM	75	0	19.93	19.92	19.98		
15	64QAM	1	0	20.22	20.12	20.22	21.5	1.5
15	64QAM	1	37	20.10	20.10	20.06		
15	64QAM	1	74	20.20	20.18	20.31		
15	64QAM	36	0	19.13	19.08	19.15	20.5	2.5
15	64QAM	36	20	19.15	19.13	19.19		
15	64QAM	36	39	19.13	19.12	19.16		
15	64QAM	75	0	19.14	19.11	19.16		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	21.83	21.80	21.86	23	0
10	QPSK	1	25	21.95	21.97	22.04		
10	QPSK	1	49	21.83	21.85	21.94		
10	QPSK	25	0	20.92	20.94	21.01	22	1
10	QPSK	25	12	20.96	20.95	20.96		
10	QPSK	25	25	20.96	20.94	20.99		
10	QPSK	50	0	20.92	20.96	21.02		
10	16QAM	1	0	21.18	21.11	21.18	22	1
10	16QAM	1	25	21.25	21.25	21.32		
10	16QAM	1	49	21.14	21.12	21.23		
10	16QAM	25	0	19.93	19.94	20.00	21.5	1.5
10	16QAM	25	12	19.97	19.96	19.99		
10	16QAM	25	25	19.97	19.95	19.99		
10	16QAM	50	0	19.94	19.94	20.02		
10	64QAM	1	0	20.23	20.21	20.27	21.5	1.5
10	64QAM	1	25	20.10	20.02	20.03		
10	64QAM	1	49	20.23	20.22	20.33		
10	64QAM	25	0	19.12	19.13	19.21	20.5	2.5
10	64QAM	25	12	19.15	19.13	19.19		
10	64QAM	25	25	19.17	19.14	19.16		
10	64QAM	50	0	19.13	19.16	19.18		
Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	21.81	21.78	21.80	23	0
5	QPSK	1	12	21.99	22.02	22.08		
5	QPSK	1	24	21.77	21.77	21.87		
5	QPSK	12	0	20.94	20.89	20.98	22	1
5	QPSK	12	7	20.99	20.96	21.03		
5	QPSK	12	13	20.98	20.95	21.03		
5	QPSK	25	0	20.94	20.92	20.97		
5	16QAM	1	0	21.16	21.05	21.14	22	1
5	16QAM	1	12	21.34	21.27	21.44		
5	16QAM	1	24	21.10	21.07	21.22		
5	16QAM	12	0	19.94	19.89	19.97	21.5	1.5
5	16QAM	12	7	19.97	19.96	20.03		
5	16QAM	12	13	19.98	19.96	20.04		
5	16QAM	25	0	19.96	19.92	20.01		
5	64QAM	1	0	20.22	20.10	20.21	21.5	1.5
5	64QAM	1	12	20.11	20.13	20.13		
5	64QAM	1	24	20.15	20.16	20.27		
5	64QAM	12	0	19.10	19.07	19.17	20.5	2.5
5	64QAM	12	7	19.16	19.14	19.21		
5	64QAM	12	13	19.15	19.12	19.22		
5	64QAM	25	0	19.15	19.11	19.17		

Band 12 (700MHz Low Band) Part 27F(only on channel required)

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				23060	23095	23130		
Frequency (MHz)				704	707.5	711		
10	QPSK	1	0	23.77	23.75	23.77		
10	QPSK	1	25	23.95	23.90	24.22	25	0
10	QPSK	1	49	23.76	23.78	24.02		
10	QPSK	25	0	23.01	22.88	23.06		
10	QPSK	25	12	22.92	22.91	22.88	24	1
10	QPSK	25	25	22.95	22.89	22.83		
10	QPSK	50	0	22.93	22.90	22.96		
10	16QAM	1	0	23.04	23.05	23.15		
10	16QAM	1	25	23.30	23.17	23.26	24	1
10	16QAM	1	49	23.08	23.02	23.16		
10	16QAM	25	0	22.00	21.93	21.88		
10	16QAM	25	12	21.96	21.96	21.90	23	2
10	16QAM	25	25	21.98	21.92	21.84		
10	16QAM	50	0	22.01	21.92	21.85		
10	64QAM	1	0	22.06	21.95	22.03		
10	64QAM	1	25	22.14	22.08	22.14	23	2
10	64QAM	1	49	21.98	21.95	22.22		
10	64QAM	25	0	20.98	20.88	20.85		
10	64QAM	25	12	20.94	20.92	20.87	22	3
10	64QAM	25	25	20.91	20.89	20.83		
10	64QAM	50	0	20.94	20.90	20.84		
Channel				23035	23095	23155	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				701.5	707.5	713.5		
5	QPSK	1	0	23.70	23.71	23.64		
5	QPSK	1	12	23.89	23.93	23.85	25	0
5	QPSK	1	24	23.68	23.65	23.96		
5	QPSK	12	0	22.87	22.88	22.87		
5	QPSK	12	7	22.91	22.96	22.87	24	1
5	QPSK	12	13	22.82	22.86	22.84		
5	QPSK	25	0	22.85	22.87	22.87		
5	16QAM	1	0	22.97	23.13	22.92		
5	16QAM	1	12	23.26	23.26	23.19	24	1
5	16QAM	1	24	22.95	22.96	23.38		
5	16QAM	12	0	21.87	21.86	21.88		
5	16QAM	12	7	21.91	21.90	21.89	23	2
5	16QAM	12	13	21.82	21.85	21.88		
5	16QAM	25	0	21.86	21.88	21.92		
5	64QAM	1	0	21.86	21.91	21.85		
5	64QAM	1	12	22.21	22.15	22.11	23	2
5	64QAM	1	24	21.90	21.93	22.28		
5	64QAM	12	0	20.89	20.88	20.89		
5	64QAM	12	7	20.90	20.89	20.90	22	3
5	64QAM	12	13	20.84	20.91	20.90		
5	64QAM	25	0	20.84	20.86	20.87		
Channel				23025	23095	23165	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				700.5	707.5	714.5		
3	QPSK	1	0	23.76	23.78	23.73		
3	QPSK	1	8	23.76	23.74	23.78	25	0
3	QPSK	1	14	23.77	23.72	24.20		
3	QPSK	8	0	22.81	22.84	22.86		
3	QPSK	8	4	22.87	22.84	22.92	24	1
3	QPSK	8	7	22.84	22.82	23.07		
3	QPSK	15	0	22.83	22.82	22.96		
3	16QAM	1	0	23.06	23.00	22.96		
3	16QAM	1	8	23.01	23.03	22.97	24	1
3	16QAM	1	14	23.11	23.09	23.25		
3	16QAM	8	0	21.90	21.93	21.89		
3	16QAM	8	4	21.95	21.90	22.01	23	2
3	16QAM	8	7	21.90	21.91	22.16		
3	16QAM	15	0	21.88	21.84	22.00		
3	64QAM	1	0	22.01	22.01	21.91		
3	64QAM	1	8	22.01	22.03	21.96	23	2
3	64QAM	1	14	22.00	21.90	22.27		
3	64QAM	8	0	20.86	20.87	20.90		
3	64QAM	8	4	20.88	20.90	20.97	22	3
3	64QAM	8	7	20.83	20.85	21.17		
3	64QAM	15	0	20.77	20.77	20.94		
Channel				23017	23095	23173	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				699.7	707.5	715.3		
1.4	QPSK	1	0	23.68	23.70	23.69		
1.4	QPSK	1	3	23.84	23.82	24.13		
1.4	QPSK	1	5	23.69	23.68	24.00	25	0
1.4	QPSK	3	0	23.80	23.79	23.95		
1.4	QPSK	3	1	23.84	23.88	24.09		
1.4	QPSK	3	3	23.82	23.85	24.22		
1.4	QPSK	6	0	22.80	22.85	23.10	24	1
1.4	16QAM	1	0	22.99	22.97	22.99		
1.4	16QAM	1	3	23.18	23.14	23.40		
1.4	16QAM	1	5	22.94	22.99	23.32	24	1
1.4	16QAM	3	0	22.82	22.86	22.90		
1.4	16QAM	3	1	22.80	22.91	23.03		
1.4	16QAM	3	3	22.86	22.80	23.14		
1.4	16QAM	6	0	21.92	21.91	22.20	23	2
1.4	64QAM	1	0	21.82	21.93	21.96		
1.4	64QAM	1	3	22.04	22.02	22.18		
1.4	64QAM	1	5	21.92	21.89	22.31	23	2
1.4	64QAM	3	0	21.89	21.92	22.11		
1.4	64QAM	3	1	21.97	21.93	22.19		
1.4	64QAM	3	3	21.95	21.89	22.37		
1.4	64QAM	6	0	20.76	20.82	21.06	22	3

Band 13(700MHz Band) Part 27F

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					23230			
Frequency (MHz)					782			
10	QPSK	1	0		23.84			
10	QPSK	1	25		23.97		25	0
10	QPSK	1	49		23.78			
10	QPSK	25	0		22.85			
10	QPSK	25	12		22.91		24	1
10	QPSK	25	25		22.84			
10	QPSK	50	0		22.88			
10	16QAM	1	0		23.17			
10	16QAM	1	25		23.12		24	1
10	16QAM	1	49		22.96			
10	16QAM	25	0		21.88			
10	16QAM	25	12		21.92		23	2
10	16QAM	25	25		21.84			
10	16QAM	50	0		21.85			
10	64QAM	1	0		22.02			
10	64QAM	1	25		22.10		23	2
10	64QAM	1	49		21.94			
10	64QAM	25	0		20.85			
10	64QAM	25	12		20.91		22	3
10	64QAM	25	25		20.83			
10	64QAM	50	0		20.84			
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	23.69	23.68	23.65		
5	QPSK	1	12	23.95	23.95	23.90	25	0
5	QPSK	1	24	23.68	23.65	23.61		
5	QPSK	12	0	22.82	22.80	22.79		
5	QPSK	12	7	22.84	22.88	22.85	24	1
5	QPSK	12	13	22.86	22.83	22.79		
5	QPSK	25	0	22.80	22.79	22.78		
5	16QAM	1	0	22.95	22.81	22.84		
5	16QAM	1	12	23.20	23.15	23.15	24	1
5	16QAM	1	24	22.84	22.75	22.85		
5	16QAM	12	0	21.84	21.77	21.79		
5	16QAM	12	7	21.91	21.89	21.85	23	2
5	16QAM	12	13	21.88	21.86	21.81		
5	16QAM	25	0	21.84	21.84	21.80		
5	64QAM	1	0	21.89	21.85	21.84		
5	64QAM	1	12	22.12	22.10	22.06	23	2
5	64QAM	1	24	21.81	21.80	21.77		
5	64QAM	12	0	20.81	20.81	20.82		
5	64QAM	12	7	20.92	20.87	20.87	22	3
5	64QAM	12	13	20.87	20.85	20.81		
5	64QAM	25	0	20.80	20.79	20.79		

Band 17 (700MHz Band) Part 27H(only on channel required)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	23.76	23.78	23.76		
10	QPSK	1	25	23.93	23.82	23.84	25	0
10	QPSK	1	49	23.69	23.67	23.85		
10	QPSK	25	0	22.84	22.80	22.81		
10	QPSK	25	12	22.85	22.84	22.85	24	1
10	QPSK	25	25	22.77	22.78	22.75		
10	QPSK	50	0	22.82	22.79	22.80		
10	16QAM	1	0	22.99	23.02	23.04		
10	16QAM	1	25	23.08	23.06	23.05	24	1
10	16QAM	1	49	23.02	22.94	22.89		
10	16QAM	25	0	21.85	21.84	21.80		
10	16QAM	25	12	21.87	21.85	21.86	23	2
10	16QAM	25	25	21.80	21.80	21.80		
10	16QAM	50	0	21.82	21.77	21.77		
10	64QAM	1	0	21.95	21.96	22.01		
10	64QAM	1	25	22.01	22.06	22.08	23	2
10	64QAM	1	49	21.90	21.87	21.78		
10	64QAM	25	0	20.79	20.77	20.84		
10	64QAM	25	12	20.83	20.81	20.82	22	3
10	64QAM	25	25	20.76	20.76	20.75		
10	64QAM	50	0	20.79	20.76	20.73		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	23.64	23.64	23.83		
5	QPSK	1	12	23.90	23.89	23.91	25	0
5	QPSK	1	24	23.61	23.63	23.56		
5	QPSK	12	0	22.75	22.80	22.86		
5	QPSK	12	7	22.81	22.83	22.84	24	1
5	QPSK	12	13	22.81	22.79	22.75		
5	QPSK	25	0	22.75	22.77	22.78		
5	16QAM	1	0	22.92	22.95	22.87		
5	16QAM	1	12	23.10	23.24	23.25	24	1
5	16QAM	1	24	22.89	22.91	22.77		
5	16QAM	12	0	21.77	21.76	21.86		
5	16QAM	12	7	21.82	21.86	21.81	23	2
5	16QAM	12	13	21.81	21.78	21.76		
5	16QAM	25	0	21.81	21.77	21.79		
5	64QAM	1	0	21.86	21.83	21.81		
5	64QAM	1	12	22.05	22.13	22.12	23	2
5	64QAM	1	24	21.86	21.82	21.72		
5	64QAM	12	0	20.76	20.77	20.85		
5	64QAM	12	7	20.82	20.81	20.86	22	3
5	64QAM	12	13	20.79	20.78	20.74		
5	64QAM	25	0	20.74	20.75	20.78		

Band 66

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				132072	132322	132572		
Frequency (MHz)				1720	1745	1770		
20	QPSK	1	0	23.11	23.13	23.22		
20	QPSK	1	49	23.30	23.28	23.46	24.5	0
20	QPSK	1	99	23.01	22.99	23.11		
20	QPSK	50	0	22.26	22.29	22.42		
20	QPSK	50	24	22.24	22.25	22.38		
20	QPSK	50	50	22.22	22.26	22.32	23.5	1
20	QPSK	100	0	22.18	22.22	22.33		
20	16QAM	1	0	22.38	22.50	22.60		
20	16QAM	1	49	22.59	22.64	22.68	23.5	1
20	16QAM	1	99	22.33	22.35	22.35		
20	16QAM	50	0	21.30	21.36	21.45		
20	16QAM	50	24	21.29	21.38	21.40	22.5	2
20	16QAM	50	50	21.25	21.36	21.34		
20	16QAM	100	0	21.24	21.31	21.38		
20	64QAM	1	0	21.60	21.70	21.70		
20	64QAM	1	49	21.78	21.88	21.88	22.5	2
20	64QAM	1	99	21.59	21.60	21.65		
20	64QAM	50	0	20.52	20.65	20.72		
20	64QAM	50	24	20.57	20.65	20.71	21.5	3
20	64QAM	50	50	20.50	20.60	20.65		
20	64QAM	100	0	20.49	20.61	20.65		
Channel				132047	132322	132597	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	QPSK	1	0	23.10	23.24	23.22		
15	QPSK	1	37	23.26	23.39	23.41	24.5	0
15	QPSK	1	74	23.03	23.16	23.15		
15	QPSK	36	0	22.24	22.34	22.41		
15	QPSK	36	20	22.26	22.33	22.35	23.5	1
15	QPSK	36	39	22.25	22.31	22.33		
15	QPSK	75	0	22.24	22.31	22.35		
15	16QAM	1	0	22.43	22.60	22.62		
15	16QAM	1	37	22.59	22.75	22.72	23.5	1
15	16QAM	1	74	22.38	22.47	22.44		
15	16QAM	36	0	21.28	21.38	21.42		
15	16QAM	36	20	21.27	21.37	21.36	22.5	2
15	16QAM	36	39	21.30	21.33	21.37		
15	16QAM	75	0	21.30	21.35	21.37		
15	64QAM	1	0	21.61	21.74	21.70		
15	64QAM	1	37	21.80	22.00	21.86	22.5	2
15	64QAM	1	74	21.64	21.69	21.75		
15	64QAM	36	0	20.53	20.68	20.66		
15	64QAM	36	20	20.58	20.64	20.71	21.5	3
15	64QAM	36	39	20.55	20.65	20.67		
15	64QAM	75	0	20.54	20.63	20.68		
Channel				132022	132322	132622	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	QPSK	1	0	23.10	23.22	23.17		
10	QPSK	1	25	23.24	23.33	23.30	24.5	0
10	QPSK	1	49	23.08	23.23	23.16		
10	QPSK	25	0	22.18	22.31	22.29		
10	QPSK	25	12	22.22	22.33	22.29	23.5	1
10	QPSK	25	25	22.24	22.31	22.30		
10	QPSK	50	0	22.25	22.35	22.31		
10	16QAM	1	0	22.45	22.57	22.53		
10	16QAM	1	25	22.58	22.70	22.62	23.5	1
10	16QAM	1	49	22.45	22.60	22.49		
10	16QAM	25	0	21.28	21.39	21.35		
10	16QAM	25	12	21.31	21.40	21.33	22.5	2
10	16QAM	25	25	21.31	21.38	21.33		
10	16QAM	50	0	21.33	21.39	21.32		
10	64QAM	1	0	21.66	21.74	21.67		
10	64QAM	1	25	21.73	21.93	21.87	22.5	2
10	64QAM	1	49	21.73	21.80	21.74		
10	64QAM	25	0	20.52	20.69	20.61		
10	64QAM	25	12	20.62	20.66	20.69	21.5	3
10	64QAM	25	25	20.59	20.68	20.68		
10	64QAM	50	0	20.59	20.66	20.61		
Channel				131997	132322	132647	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	QPSK	1	0	22.97	23.14	23.12		
5	QPSK	1	12	23.24	23.40	23.41	24.5	0
5	QPSK	1	24	22.99	23.13	23.12		
5	QPSK	12	0	22.11	22.27	22.26		
5	QPSK	12	7	22.17	22.32	22.32	23.5	1
5	QPSK	12	13	22.14	22.33	22.33		
5	QPSK	25	0	22.14	22.31	22.28		
5	16QAM	1	0	22.33	22.51	22.45		
5	16QAM	1	12	22.56	22.72	22.73	23.5	1
5	16QAM	1	24	22.31	22.44	22.45		
5	16QAM	12	0	21.20	21.34	21.32		
5	16QAM	12	7	21.26	21.40	21.36	22.5	2
5	16QAM	12	13	21.22	21.39	21.35		
5	16QAM	25	0	21.22	21.39	21.34		
5	64QAM	1	0	21.50	21.68	21.55		
5	64QAM	1	12	21.82	21.99	21.93	22.5	2
5	64QAM	1	24	21.59	21.69	21.72		
5	64QAM	12	0	20.42	20.62	20.57		
5	64QAM	12	7	20.52	20.65	20.69	21.5	3
5	64QAM	12	13	20.46	20.68	20.68		
5	64QAM	25	0	20.45	20.66	20.63		
Channel				131987	132322	132657	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1745	1778.5		
3	QPSK	1	0	23.10	23.25	23.17		
3	QPSK	1	8	23.09	23.24	23.20	24.5	0
3	QPSK	1	14	23.09	23.23	23.22		
3	QPSK	8	0	22.13	22.28	22.27		
3	QPSK	8	4	22.15	22.31	22.29	23.5	1
3	QPSK	8	7	22.13	22.29	22.27		
3	QPSK	15	0	22.12	22.29	22.28		
3	16QAM	1	0	22.42	22.61	22.53		
3	16QAM	1	8	22.42	22.51	22.55	23.5	1
3	16QAM	1	14	22.45	22.61	22.53		
3	16QAM	8	0	21.28	21.42	21.39		
3	16QAM	8	4	21.29	21.44	21.41	22.5	2
3	16QAM	8	7	21.25	21.42	21.37		
3	16QAM	15	0	21.19	21.40	21.33		
3	64QAM	1	0	21.59	21.76	21.60		
3	64QAM	1	8	21.55	21.83	21.76	22.5	2
3	64QAM	1	14	21.73	21.79	21.81		
3	64QAM	8	0	20.51	20.68	20.61		
3	64QAM	8	4	20.57	20.68	20.72	21.5	3
3	64QAM	8	7	20.50	20.68	20.66		
3	64QAM	15	0	20.48	20.62	20.60		
Channel				131979	132322	132665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1745	1779.3		
1.4	QPSK	1	0	22.99	23.11	23.16		
1.4	QPSK	1	3	23.08	23.25	23.31		
1.4	QPSK	1	5	22.99	23.12	23.17	24.5	0
1.4	QPSK	3	0	23.11	23.19	23.29		
1.4	QPSK	3	1	23.15	23.28	23.33		
1.4	QPSK	3	3	23.11	23.24	23.30		
1.4	QPSK	6	0	22.09	22.22	22.29	23.5	1
1.4	16QAM	1	0	22.32	22.47	22.48		
1.4	16QAM	1	3	22.42	22.61	22.57		
1.4	16QAM	1	5	22.26	22.49	22.46	23.5	1
1.4	16QAM	3	0	22.14	22.28	22.26		
1.4	16QAM	3	1	22.17	22.33	22.32		
1.4	16QAM	3	3	22.13	22.25	22.28		
1.4	16QAM	6	0	21.27	21.40	21.37	22.5	2
1.4	64QAM	1	0	21.50	21.67	21.58		
1.4	64QAM	1	3	21.55	21.86	21.82		
1.4	64QAM	1	5	21.60	21.73	21.72	22.5	2
1.4	64QAM	3	0	21.42	21.65	21.60		
1.4	64QAM	3	1	21.52	21.61	21.74		
1.4	64QAM	3	3	21.44	21.59	21.65		
1.4	64QAM	6	0	20.45	20.63	20.66	21.5	3

Configure		CA List	PCC							SCC				Power	
			LTE	BW	UL	UL	Mod.	UL#	UL	LTE	BW	DL	DL	With CA	Without CA
			Band	(MHz)	Freq. (MHz)	Channel		RB	RB Offset	Band	(MHz)	Freq. (MHz)	Channel	Tx. Power (dBm)	Tx. Power (dBm)
Inter-Band		CA_2A-5A	Band 2	20M	1880	18900	QPSK	1	0	Band 5	10M	881.5	2525	23.05	23.35
			Band 5	10M	836.5	20525	QPSK	1	0	Band 2	20M	1960	900	24.01	24.19
		CA_2A-7A	Band 2	20M	1880	18900	QPSK	1	0	Band 7	20M	2655	3100	23.13	23.35
			Band 7	20M	2560	21350	QPSK	1	49	Band 2	20M	1960	900	21.90	22.14
		CA_4A-5A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 5	10M	881.5	2525	23.09	23.24
			Band 5	10M	836.5	20525	QPSK	1	0	Band 4	20M	2132.5	2175	23.93	24.19
		CA_4A-7A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 7	20M	2655	3100	23.03	23.24
			Band 7	20M	2560	21350	QPSK	1	49	Band 4	20M	2132.5	2175	21.82	22.14
		CA_4A-12A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 12	10M	737.5	5095	23.05	23.24
			Band 12	10M	711	23130	QPSK	1	25	Band 4	20M	2132.5	2175	23.74	24.22
		CA_4A-17A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 17	10M	740	5790	23.04	23.24
			Band 17	10M	709	23780	QPSK	1	25	Band 4	10M	2132.5	2175	23.72	23.93
		CA_5A-7A	Band 5	10M	836.5	20525	QPSK	1	0	Band 7	20M	2655	3100	23.97	24.19
			Band 7	20M	2560	21350	QPSK	1	49	Band 5	10M	881.5	2525	22.05	22.14
		CA_5A-66A	Band 5	10M	836.5	20525	QPSK	1	0	Band 66	20M	2155	66886	23.93	24.19
			Band 66	20M	1770	132572	QPSK	1	49	Band 5	10M	881.5	2525	23.21	23.46
		CA_12A-66A	Band 12	10M	711	23130	QPSK	1	25	Band 66	20M	2155	66886	23.89	24.22
			Band 66	20M	1770	132572	QPSK	1	49	Band 12	10M	737.5	5095	23.25	23.46
Intra-Band	Contiguous	CA_2C	Band 2	20M	1880	18900	QPSK	1	0	Band 2	20M	1979.8	1098	23.17	23.35
		CA_7C	Band 7	20M	2560	21350	QPSK	1	49	Band 7	20M	2660.2	3152	21.86	22.14
		CA_66B	Band 66	15M	1772.5	132597	QPSK	1	37	Band 66	5M	2188.2	67218	23.23	23.41
		CA_66C	Band 66	20M	1770	132572	QPSK	1	49	Band 66	20M	2170.2	67038	23.31	23.46
	Non-Contiguous	CA_4A-4A	Band 4	20M	1732.5	20175	QPSK	1	0	Band 4	5M	2152.5	2375	23.15	23.24
		CA_7A-7A	Band 7	20M	2560	21350	QPSK	1	49	Band 7	5M	2622.5	2775	21.92	22.14
		CA_66A-66A	Band 66	20M	1770	132572	QPSK	1	49	Band 66	5M	2112.5	66461	23.34	23.46

2.4GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	15.92	16.50	100.00
		6	2437	15.63	16.50	
		11	2462	15.86	16.50	
	802.11g 6Mbps	1	2412	13.92	14.50	96.94
		6	2437	14.44	14.50	
		11	2462	12.65	14.50	
	802.11n-HT20 MCS0	1	2412	13.76	15.00	96.17
		6	2437	14.52	15.00	
		11	2462	13.09	15.00	

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	12.72	14.50	96.94
		40	5200	13.34	14.50	
		44	5220	13.64	14.50	
		48	5240	14.02	14.50	
	802.11n-HT20 MCS0	36	5180	12.62	14.00	96.72
		40	5200	12.73	14.00	
		44	5220	12.92	14.00	
		48	5240	13.31	14.00	
	802.11n-HT40 MCS0	38	5190	10.71	12.00	87.84
		46	5230	11.90	12.00	
	802.11ac-VHT20 MCS0	36	5180	12.07	13.50	96.63
		40	5200	12.48	13.50	
		44	5220	12.94	13.50	
		48	5240	13.24	13.50	
	802.11ac-VHT40 MCS0	38	5190	10.95	12.00	87.89
		46	5230	11.48	12.00	
	802.11ac-VHT80 MCS0	42	5210	9.92	11.00	78.32

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.3GHz WLAN	802.11a 6Mbps	52	5260	14.79	15.50	96.94
		56	5280	14.42	15.50	
		60	5300	14.88	15.50	
		64	5320	13.76	15.50	
	802.11n-HT20 MCS0	52	5260	13.73	15.00	96.72
		56	5280	13.70	15.00	
		60	5300	13.45	15.00	
		64	5320	13.79	15.00	
	802.11n-HT40 MCS0	54	5270	11.68	12.00	87.84
		62	5310	10.57	12.00	
	802.11ac-VHT20 MCS0	52	5260	14.21	15.00	96.63
		56	5280	13.50	15.00	
		60	5300	13.93	15.00	
		64	5320	12.06	13.00	
	802.11ac-VHT40 MCS0	54	5270	11.22	12.00	87.89
		62	5310	11.45	12.00	
	802.11ac-VHT80 MCS0	58	5290	7.94	9.00	78.32

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.5GHz WLAN	802.11a 6Mbps	100	5500	15.09	15.50	96.94
		116	5580	15.36	15.50	
		132	5660	15.34	15.50	
		140	5700	12.88	14.00	
	802.11n-HT20 MCS0	100	5500	14.61	15.50	96.72
		116	5580	14.37	15.50	
		132	5660	14.41	15.50	
		140	5700	14.17	15.50	
	802.11n-HT40 MCS0	102	5510	9.98	11.00	87.84
		110	5550	13.05	14.00	
		134	5670	12.13	14.00	
	802.11ac-VHT20 MCS0	100	5500	13.84	15.50	96.63
		116	5580	14.44	15.50	
		132	5660	14.56	15.50	
		140	5700	11.78	13.00	
	802.11ac-VHT40 MCS0	102	5510	12.51	14.00	87.89
		110	5550	12.60	14.00	
		134	5670	12.02	14.00	
	802.11ac-VHT80 MCS0	106	5530	11.24	13.00	78.32

5GHz WLAN	Ant 1					
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
5.8GHz WLAN	802.11a 6Mbps	149	5745	15.30	15.50	96.94
		157	5785	15.35	15.50	
		165	5825	14.97	15.50	
	802.11n-HT20 MCS0	149	5745	14.37	15.50	96.72
		157	5785	14.60	15.50	
		165	5825	14.28	15.50	
	802.11n-HT40 MCS0	151	5755	12.31	14.00	87.84
		159	5795	12.60	14.00	
	802.11ac-VHT20 MCS0	149	5745	14.38	15.50	96.63
		157	5785	14.54	15.50	
		165	5825	14.11	15.50	
	802.11ac-VHT40 MCS0	151	5755	12.33	13.00	87.89
		159	5795	12.58	13.00	
	802.11ac-VHT80 MCS0	155	5775	11.75	13.00	78.32

Bluetooth BR/EDR

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	10.32	8.73	8.83
	CH 39	2441	10.15	8.39	8.42
	CH 78	2480	10.49	8.59	8.63
Tune-up Limit			11	11	11

Bluetooth LE v4.0

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	4.66
	CH 19	2440	5.37
	CH 39	2480	4.81
Tune-up Limit			6.5

Bluetooth LE v5.0

Mode	Channel	Frequency (MHz)	Average power (dBm)
LE	CH 00	2402	4.83
	CH 19	2440	5.06
	CH 39	2480	4.66
Tune-up Limit			6.5