

# RF COM Information: Frequency Bands

## Frequency Bands

Band	Frequency	Name / Usage
HF	3 – 30 MHz	High Frequency – for that time
VHF	30 – 300 MHz	Very High Frequency
UHF	300 – 1000 MHz	Ultra High Frequency
L	1 – 2 GHz	Long wave
S	2 – 4 GHz	Short wave
C	4 – 8 GHz	Compromise between S and X
X	8 – 12 GHz	Used in WW2 for weapons control; "X" refers to the crosshairs
Ku	12 – 18 GHz	Kurz-under – German for "below short"
K	18 – 27 GHz	Kurz – German for short (waves)
Ka	27 – 40 GHz	Kurz-above – above short
V	40 – 75 GHz	Very high frequency – but not the same as VHF
W	75 – 110 GHz	W – After V in the alphabet
mm	110 – 300 GHz	milimeter – the frequency at the end of this band has a 1mm wavelength

## Brazilian Cellular and WLL bands

Serviço	Frequência (MHz)	Banda 3gpp	Subfaixa ANATEL	Canais
SME	U 806-821 D 851-866	-	-	1 - 600 (iDEN)
	U 824-835 D 869-880	V	A	U 4132 - 4163 (UTRAN) D 4357 - 4388 (UTRAN) 128 - 181 (GSM850) 991-1023/1-333 (AMPS)
U 835-845 D 880-890	B		U 4187 - 4213 (UTRAN) D 4412 - 4438 (UTRAN) 182 - 231 (GSM850) 334 - 666 (AMPS)	
U 845-846,5 D 890-891,5	A'		232 - 239 (GSM850) 667 - 716 (AMPS)	
U 846,5-849 D 891,5-894	B'		U 4245 - 4233 (UTRAN) D 4470 - 4458 (UTRAN) 240 - 251 (GSM850) 717 - 799 (AMPS)	
SMP/3G	U 910-912,5 D 955-957,5	VIII	D	U 2862 - 2850 (UTRAN) D 3087 - 3075 (UTRAN) 101 - 112 (GSM)
	U 1710-1725 D 1805-1820	III		U 937 - 988 (UTRAN) D 1162 - 1213 (UTRAN) 512 - 586 (GSM)
	U 912,5-915 D 957,5-960	VIII	E	113 - 124 (GSM)
	U 1740-1755 D 1835-1850	III		U 1087 - 1138 (UTRAN) D 1312 - 1363 (UTRAN) 662 - 736 (GSM)
SMP/3G	U 1920-1935 D 2110-2125	I	F	U 9612 - 9663 (UTRAN) D 10562 - 10613 (UTRAN)
	U 1935-1945 D 2125-2135	I	G	U 9687 - 9713 (UTRAN) D 10637 - 10663 (UTRAN)
	U 1945-1955 D 2135-2145	I	H	U 9737 - 9763 (UTRAN) D 10687 - 10713 (UTRAN)
	U 1955-1965 D 2145-2155	I	I	U 9787 - 9813 (UTRAN) D 10737 - 10763 (UTRAN)
	U 1965-1975 D 2155-2165	I	J	U 9837 - 9863 (UTRAN) D 10787 - 10813 (UTRAN)
	U 1895-1900 D 1975-1980	II	L	U 237 (UTRAN) D 637 (UTRAN)
	U 1755-1765 D 1850-1860	III	M	U 1162 - 1188 (UTRAN) D 1387 - 1413 (UTRAN) 737 - 786 (GSM)
	STFC (WLL)	U 1850-1870 D 1930-1950	II	
1920-1930				
U 1895-1900 D 1975-1980		II	(L)	U 237 (UTRAN) D 637 (UTRAN)

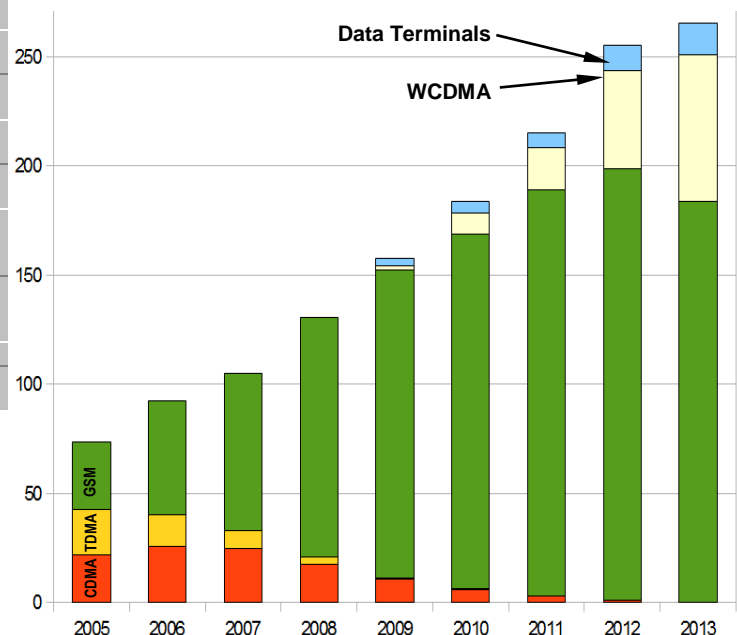
Notas:

- U Uplink
- D Downlink
- SMC: Serviço Móvel Celular - Cellular Mobile Service
- SME: Serviço Móvel Especializado - Specialized Mobile Service (SMR)
- SMP: Serviço Móvel Pessoal - Personal Mobile Service
- STFC: Serviço Telefônico Fixo Comutado - Fixed Telephone Service
- UTRAN: UMTS Terrestrial Radio Access Network (WCDMA)
- GERAN: GSM EDGE Radio Access Network

Extension sub-bands:

Service	Frequencies (MHz)	Channels
SMP/3G	U 907.6 - 910 D 952.6-955	88 - 100 (GSM)
	U 898.4 - 901 D 943.5 - 946	42 - 55 (GSM)
SMP/3G	U 1725-1740 D 1820-1835	U 1012 - 1063 (UTRAN) D 1237 - 1288 (UTRAN) 587 - 661 (GSM)
	U 1765-1785 D 1860-1880	U 1212 - 1288 (UTRAN) D 1437 - 1513 (UTRAN) 786 - 885 (GSM)
	1885-1895 (TDD)	

Number of active cellular terminals in Brasil (millions)  
(numbers for May of each year, January for 2011)



sources: Anatel ([www.anatel.gov.br](http://www.anatel.gov.br)),  
3gpp ([www.3gpp.org](http://www.3gpp.org)), spec 25.101

## 3gpp Bands and UTRAN channels (frequencies in MHz)

Band	Freq	UL band	DL band	chan UL	chan DL
I	2100	1920 - 1980	2110 - 2170	9612-9888	10562-10838
II	1900	1850 - 1910	1930 - 1990	9262-9538	9662-9938
III	1800	1710-1785	1805-1880	937-1288	1162-1513
IV	1700	1710-1755	2110-2155	1312-1513	1537-1738
V	850	824 - 849	869-894	4132-4233	4357-4458
VI	850	830-840	875-885	4162-4188	4387-4413
VII	2600	2500-2570	2620-2690	2012-2338	2237-2563
VIII	900	880 - 915	925 - 960	2712-2863	2937-3088
IX	1800	1749.9-1784.9	1844.9-1879.9	8762-8912	9237-9387
X	1700	1710-1770	2110-2170	2887-3163	3112-3388