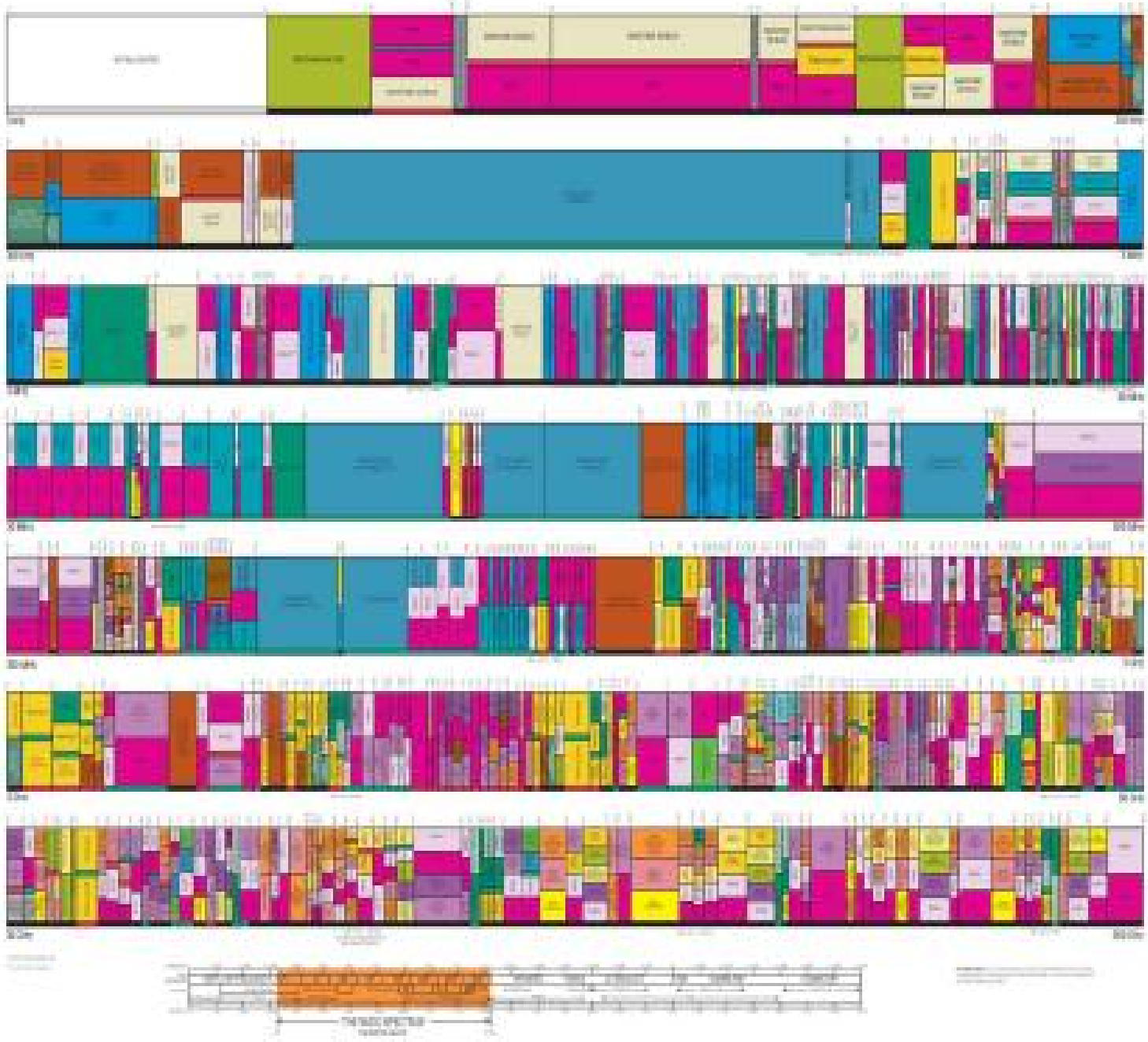
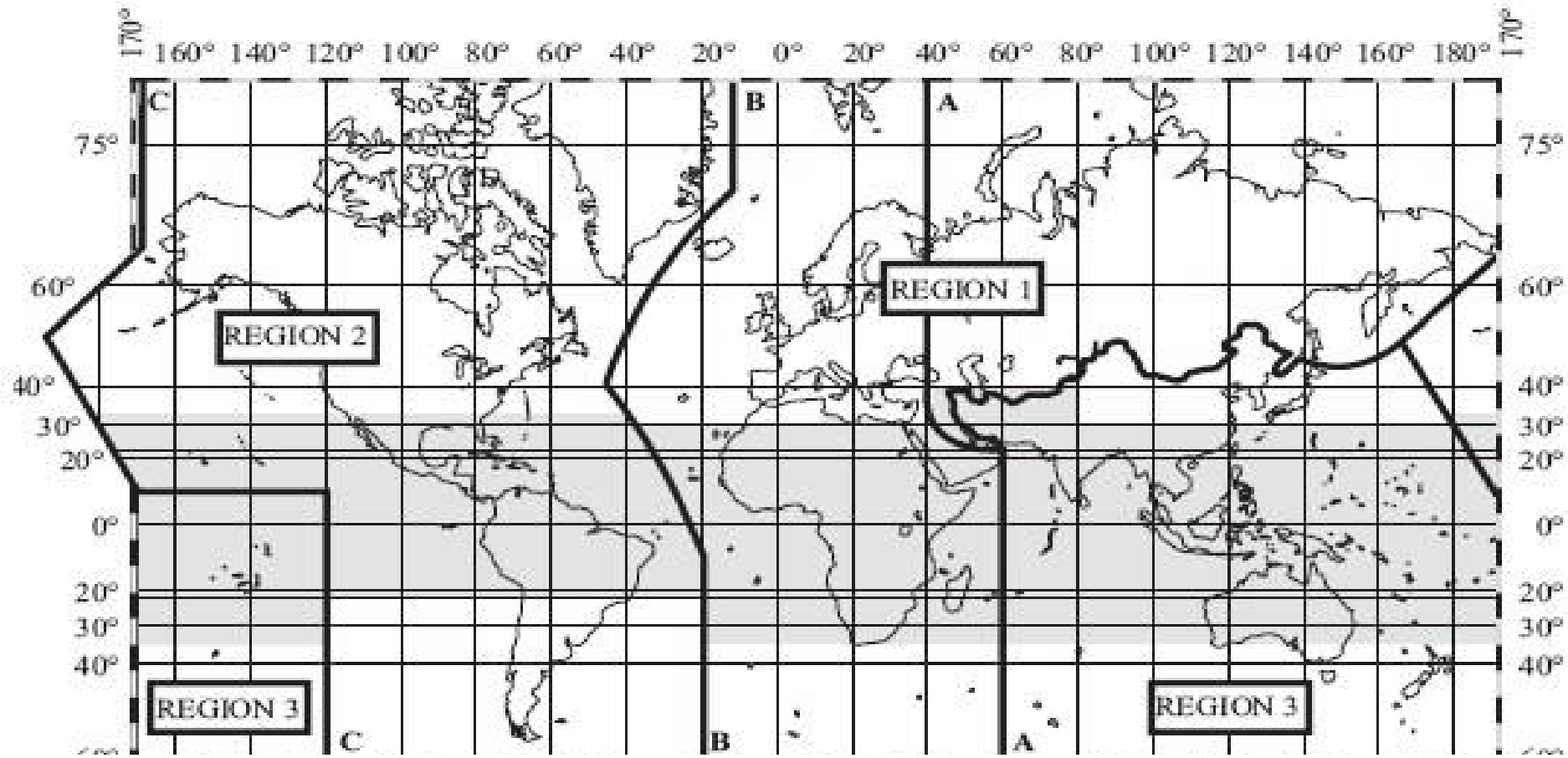
Useful RFI

Tom Clark
NASA/GSFC & NVI

UNITED STATES FREQUENCY ALLOCATIONS

THE RADIO SPECTRUM





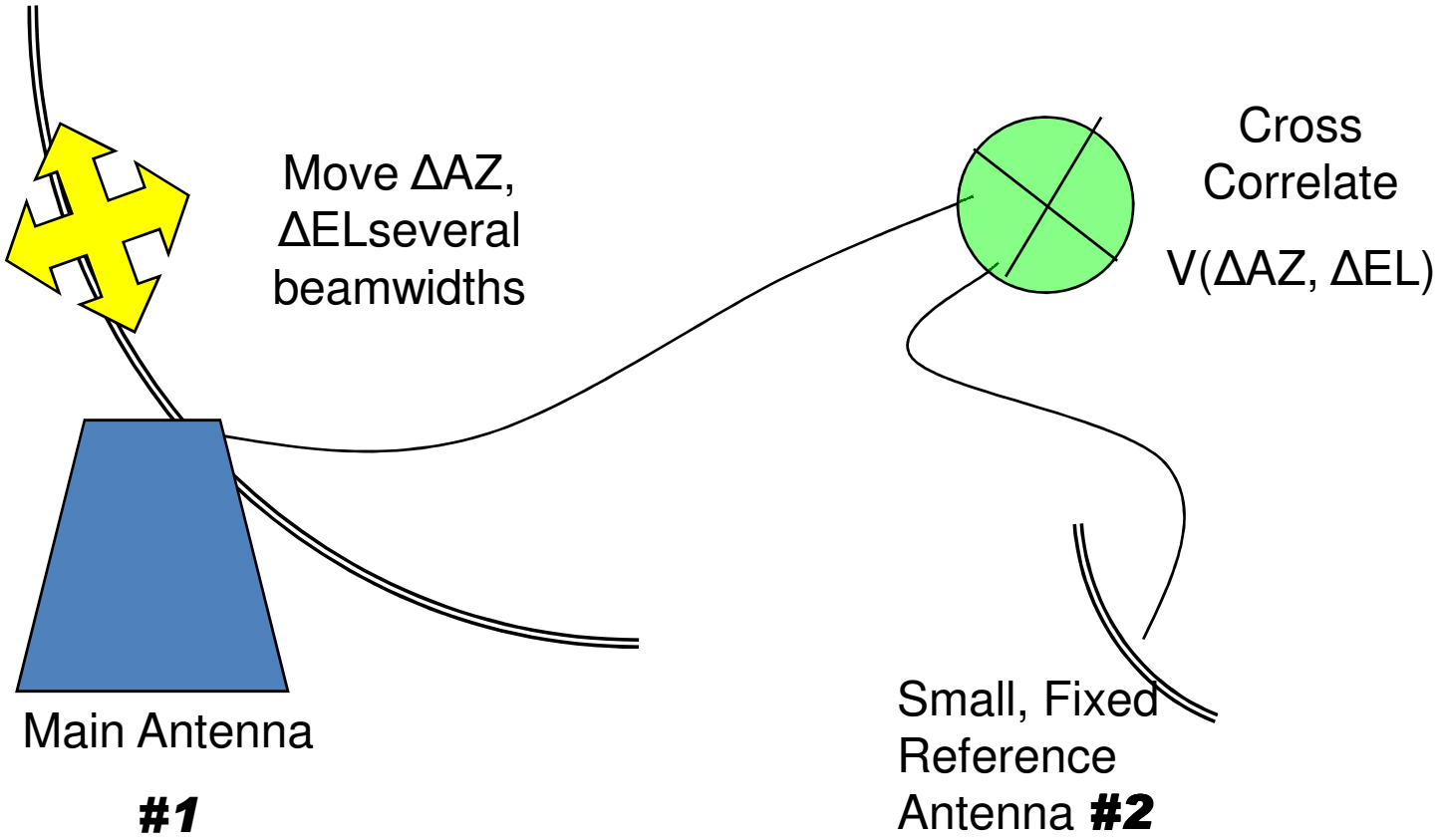
Region 1: Region 1 includes the area limited on the east by line A (lines A, B and C are defined below) and on the west by line B, excluding any of the territory of the Islamic Republic of Iran which lies between these limits. It also includes the whole of the territory of Armenia, Azerbaijan, Russian Federation, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Ukraine and the area to the north of Russian Federation which lies between lines A and C.

Region 2*:* Region 2 includes the area limited on the east by line B and on the west by line C.

Region 3*:* Region 3 includes the area limited on the east by line C and on the west by line A, except any of the territory of Armenia, Azerbaijan, Russian Federation, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Ukraine and the area to the north of Russian Federation. It also includes that part of the territory of the Islamic Republic of Iran lying outside of those limits.

Use RFI for Calibration

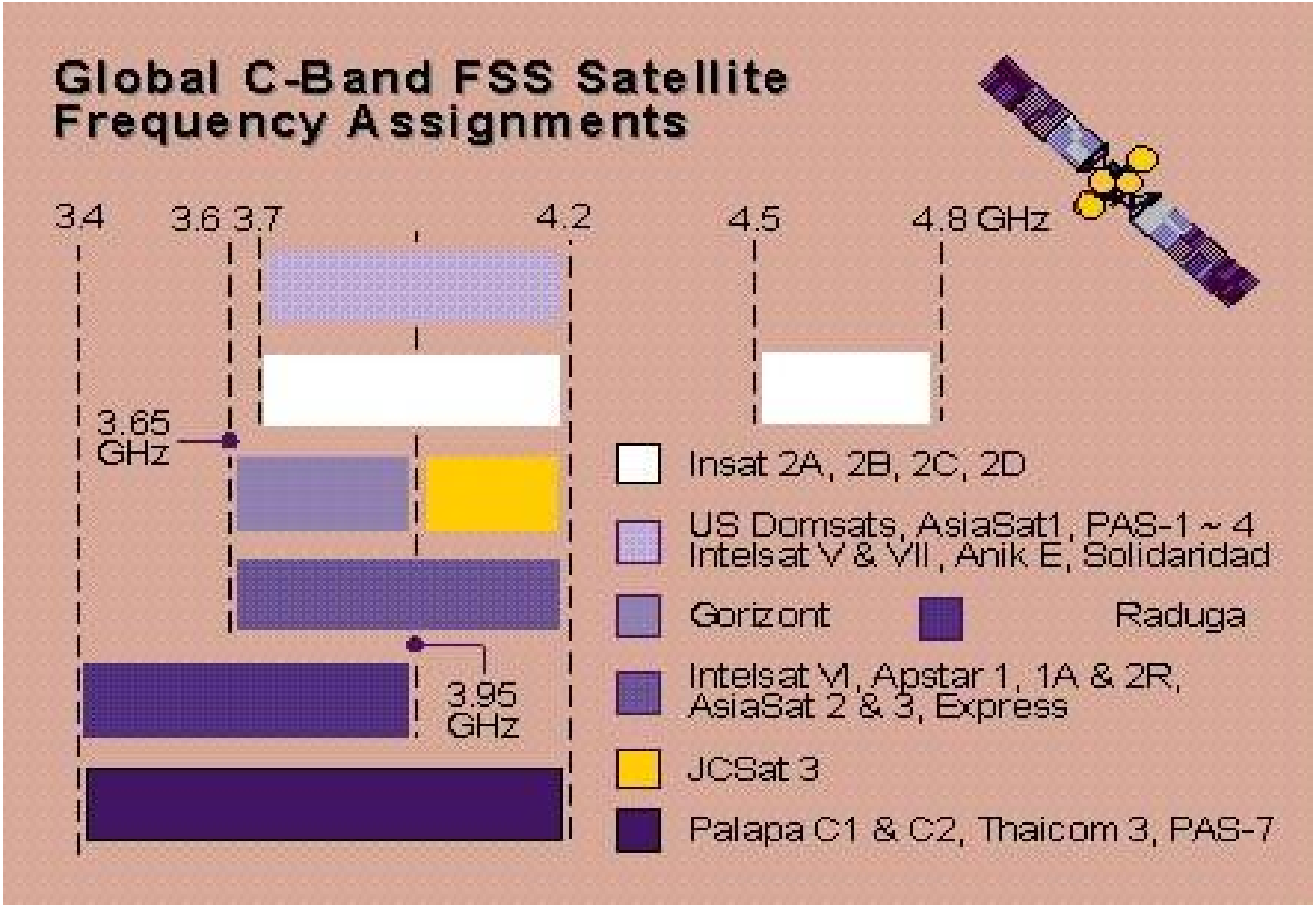
Holography



Holography

- Cross Correlate to get $V_1V_2(\Delta AZ, \Delta EL)$
- Fourier Transform is a map of the big dish's surface:

$$\gg \mathcal{F}\left\{ V_1V_2(\Delta AZ, \Delta EL) \right\}$$



http://www.mlesat.com/Article9.html

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Holography and local Geodetic survey – Geostationary & High-Incl

- 2.25 GHz – XM & Sirius Music
- 3.5 - 4.0 GHz – TV
- 7.5 GHz – Satellite TT&C
- 8.4-8.5 GHz – LEO, Deep Space
- 11-12 GHz – TV

3.1.6B CHANNEL FREQUENCY PLAN FOR 2, 7, AND 8 GHZ, CATEGORY B (Continued)

TABLE 3.1.6B-1: CHANNEL CENTER FREQUENCIES

Channel	2110 - 2120 MHz Uplink Channel Center Frequency (MHz)	2290 - 2300 MHz Downlink Channel Center Frequency (MHz)	7145 - 7190 MHz Uplink Channel Center Frequency (MHz)	8400 - 8450 MHz Downlink Channel Center Frequency (MHz)
1		2290.185185	7147.286265	
2		2290.555556	7148.442131	
3		2290.925926	7149.597994	
4		2291.296296	7150.753857	
5*	2110.243056	2291.666667	7151.909724	8402.777780
6	2110.584105	2292.037037	7153.065587	8404.135803
7	2110.925154	2292.407407	7154.221450	8405.493826
8	2111.266204	2292.777778	7155.377316	8406.851853
9	2111.607253	2293.148148	7156.533179	8408.209876
10	2111.948303	2293.518519	7157.689045	8409.567903
11	2112.289352	2293.888889	7158.844908	8410.925927
12	2112.630401	2294.259259	7160.000771	8412.283950
13	2112.971451	2294.629630	7161.156637	8413.641977
14	2113.312500	2295.000000	7162.312500	8415.000000
15	2113.653549	2295.370370	7163.468363	8416.358023
16	2113.994599	2295.740741	7164.624229	8417.716050
17	2114.335648	2296.111111	7165.780092	8419.074073
18	2114.676697	2296.481481	7166.935955	8420.432097
19	2115.017747	2296.851852	7168.091821	8421.790124
20	2115.358796	2297.222222	7169.247684	8423.148147
21	2115.699846	2297.592593	7170.403550	8424.506174
22	2116.040895	2297.962963	7171.559413	8425.864197
23	2116.381944	2298.333333	7172.715276	8427.222220
24	2116.722994	2298.703704	7173.871143	8428.580248
25	2117.064043	2299.074074	7175.027006	8429.938271
26	2117.405092	2299.444444	7176.182868	8431.296294
27	2117.746142	2299.814815	7177.338735	8432.654321
28	2118.087191		7178.494597	8434.012344
29	2118.428241		7179.650464	8435.370371
30	2118.769290		7180.814838	8436.738395
31	2119.110339		7181.962190	8438.086418
32	2119.451389		7183.118056	8439.444445
33	2119.792438		7184.273919	8440.802468
34**			7185.429783	8442.160493
35			7186.585617	8443.518517
36			7187.741511	8444.876542
37			7188.897375	8446.234566
38				8447.592591
39				8448.950616

* Channels 5-27 are fully coherent in all four bands.

** Channels 34-39 frequencies are estimates only.

CCSSDS Deep-Space Frequencies

Note: X-band downlink frequencie

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http://public.ccsds.org/publications/archive/401x0b08s.pdf

Notes on 8.4 GHz

- In addition to “Deep Space” probes, there are sources in
  - Lunar orbit
  - Lagrangian points
  - Stereo
  - High Inclination
- These allow for Holography outside Clarke belt

Some sources of info

- http://www.satsig.net/eut2beac.htm
- http://www.uhf-satcom.com
- http://www.satsig.net/sslist.htm
- http://public.ccsds.org/publications/documents/SpectrumManagement101.pdf
- http://classwww.gsfc.nasa.gov/gsams/greet_spectrumAllocationSummary.htm