

| <b>General:</b>                         | <b>Units</b> | <b>Clear Sky</b> | <b>Faded</b> |
|---|--------------|------------------|--------------|
| Emission Designator                     |              | 110MG7D          | 110MG7D      |
| Data Rate                               | Mbit/s       | 203.2            | 203.2        |
| Modulation                              |              | 8PSK             | 8PSK         |
| Coding Rate                             |              | 0.8869           | 0.8869       |
| Carrier Bandwidth                       | MHz          | 110              | 110          |
| Uplink Frequency                        | GHz          | 29.75            | 29.75        |
| Downlink Frequency                      | GHz          | 19.95            | 19.95        |
| <b>Uplink:</b>                          |              |                  |              |
| Tx E/S Antenna Diameter                 | m            | 7.3              | 7.3          |
| Tx E/S Power to Antenna                 | W            | 19.2             | 192.2        |
| Tx E/S Antenna Gain                     | dBi          | 65.3             | 65.3         |
| Tx E/S EIRP per Carrier                 | dBW          | 78.1             | 88.1         |
| Tx E/S Antenna Pointing Loss            | dB           | 1.2              | 1.2          |
| Atmospheric and Rain Losses             | dB           | 0.5              | 10.5         |
| Free Space Loss                         | dB           | 213.6            | 213.6        |
| G/T toward Tx E/S (-3 dB)               | dB/K         | 3.5              | 3.5          |
| C/I - Intra-system                      | dB           | 30.0             | 30.0         |
| <b>Downlink:</b>                        |              |                  |              |
| EIRP per Carrier towards Rx E/S (-3 dB) | dBW          | 58.2             | 58.2         |
| Atmospheric and Rain Losses             | dB           | 0.3              | 17.5         |
| Free Space Loss                         | dB           | 210.1            | 210.1        |
| Rx E/S Antenna Pointing Loss            | dB           | 0.8              | 0.8          |
| Rx E/S Antenna Diameter                 | m            | 7.3              | 7.3          |
| Rx E/S Antenna Gain                     | dBi          | 61.8             | 61.8         |
| Rx E/S G/T                              | dB/K         | 37.8             | 34.9         |
| System Noise Temp (LNA+Sky)             | K            | 250              | 484          |
| C/I - Intra-system                      | dB           | 30.0             | 30.0         |
| <b>End-to-End:</b>                      |              |                  |              |
| C/N - Thermal Uplink                    | dB           | 15.3             | 15.3         |
| C/I Up - ASI                            | dB           | 28.6             | 28.6         |
| C/N - Thermal Downlink                  | dB           | 33.8             | 13.7         |
| C/I Down - ASI                          | dB           | 33.1             | 33.1         |
| C/(N+I) - Total Actual                  | dB           | 14.7             | 11.2         |
| C/N - Required                          | dB           | 11.2             | 11.2         |
| Excess Margin                           | dB           | 3.5              | 0.0          |