

| <b>General:</b>                 | <b>Units</b> | <b>Clear Sky</b> | <b>Faded</b> |
|---------------------------------|--------------|------------------|--------------|
| Emission Designator             |              | 1M57G7D          | 1M57G7D      |
| Data Rate                       | kbit/s       | 937.5            | 937.5        |
| Modulation                      |              | QPSK             | QPSK         |
| Coding Rate                     |              | 0.3750           | 0.3750       |
| Carrier Bandwidth               | kHz          | 1562.5           | 1562.5       |
| Uplink Frequency                | GHz          | 29.75            | 29.75        |
| Downlink Frequency              | GHz          | 19.95            | 19.95        |
| Uplink Elevation Angle          | degrees      | 35               | 35           |
| Downlink Elevation Angle        | degrees      | 35               | 35           |
| <b>Uplink:</b>                  |              |                  |              |
| Tx E/S Antenna Diameter         | m            | 0.67             | 0.67         |
| Tx E/S Power to Antenna         | W            | 2.8              | 2.8          |
| Tx E/S Antenna Gain             | dBi          | 44.4             | 44.4         |
| Tx E/S EIRP per Carrier         | dBW          | 48.9             | 48.9         |
| Tx E/S Antenna Pointing Loss    | dB           | 0.5              | 0.5          |
| Atmospheric and Rain Losses     | dB           | 0.5              | 13           |
| Free Space Loss                 | dB           | 213.6            | 213.6        |
| G/T toward Tx E/S               | dB/K         | 19.5             | 19.5         |
| C/I - Intra-system              | dB           | 14.3             | 14.3         |
| <b>Downlink:</b>                |              |                  |              |
| EIRP per Carrier towards Rx E/S | dBW          | 33.1             | 20.6         |
| Atmospheric and Rain Losses     | dB           | 0.5              | 11.1         |
| Free Space Loss                 | dB           | 210.1            | 210.1        |
| Rx E/S Antenna Pointing Loss    | dB           | 0.55             | 0.55         |
| Rx E/S Antenna Diameter         | m            | 7.3              | 7.3          |
| Rx E/S Antenna Gain             | dBi          | 61.5             | 61.5         |
| Rx E/S G/T                      | dB/K         | 38.0             | 34.5         |
| System Noise Temp (LNA+Sky)     | K            | 250              | 506          |
| C/I - Intra-system              | dB           | 13.3             | 13.3         |
| <b>End-to-End:</b>              |              |                  |              |
| C/N - Thermal Uplink            | dB           | 21.4             | 8.9          |
| C/I Up - ASI                    | dB           | 18.5             | 18.5         |
| C/N - Thermal Downlink          | dB           | 27.6             | 1.0          |
| C/I Down - ASI                  | dB           | 27.8             | 27.8         |
| C/(N+I) - Total Actual          | dB           | 9.6              | -0.1         |
| C/N - Required                  | dB           | -0.1             | -0.1         |
| Excess Margin                   | dB           | 9.8              | 0.0          |