EXHIBIT 1

EQUIPMENT DESCRIPTION

PROGRAM DESCRIPTION

Comsat Mobile Communications (CMC) will be operating one fixed Satcom pallet equipped with Honeywell Electronics Avionics at their INMARSAT ground earth station at Southbury, CT. The equipment will be operated for the purpose of;

a) Test and demonstrate operation of an INMARSAT aircraft earth station (AES) with terrestrial public switched telephone and data systems (PSTN and PSDN) interfaces for voice/data/fax applications.

b) Provide capability to monitor vendor changes, training capability for the commissioning and Maintenance Terminal (CMT), monitoring of Land Earth Station (LES)/AES interface and confirm AES preference programming specifications.

The equipment shall operate in the Marine and Aeronautical Mobile Satellite band of frequencies. Demonstration of the operational capability of this equipment requires transmitting. No "FOR HIRE" communications are to be provided during any use of this equipment.

DIGITAL VOICE AND DATA

The equipment shall transmit on channel of digital voice or high speed data using 21 Kb/sec (10.5) A-QPSK modulation. The system shall use a high gain stationary helix test antenna. In addition, low speed data will be transmitted using an A-BPSK modulation. All modulation complies with aviation standards. Ground communication services shall be provided by CMC and other INMARSAT land earth station operators (LESOs) as required.

OPERATING DETAILS

The bands comprising 1626.5 to 1660.5 MHz will be used. Specific frequencies and operating schedules will be coordinated with Inmarsat, in cooperation with CMC and other INMARSAT LESOs.

RF Power Output

The maximum RF power output of the equipment will be 60 Watts per carrier (17.8 dBW peak).

Antenna Gain

A high gain helix antenna shall be used to provide a gain of 12 dBic and half power beam width of 28 degrees.

EIRP

The maximum equivalent isotropic radiated power (EIRP) shall be 27.6 dBW (peak) (17.8 + 9.8).

Emission Types

Emission Type	Modulation Type	Symbol Rate	Rate 1/2 Convolutionally Encoded Rate
840HG1D	A-BPSK	600 baud	(600 b/sec)
1K68G1D	A-BPSK	1200 baud	(1200 b/sec)
3K36G1D	A-BPSK	2400 baud	(2400 b/sec)
4K80G1D	A-QPSK	2400 baud	(4800 b/sec)
6K72G1W	A-QPSK	4.2 kbaud	(8400 b/sec)
10K5G1D	A-QPSK	5.25 kbaud	(10.5 kb/sec)
21K0G1W	A-QPSK	10.5 kbaud	(21.0 kb/sec)

Modulation Methods

Type	Description
A-QPSK	Aviation Quadrature Phase Shift Keying uses a specific form of Offset QPSK where the modulation filtering is optimized for satellite communications with aviation applications (Reference: "Quaternary Transmission Over Satellite Channels with Cascaded Non-Linear Elements and Adjacent Channel Interference" by Russel Fang in IEEE Transactions on Communications, May 1981, Vol. COM-29, No. 5, pp. 567-581.)
A-BPSK	Aviation Binary Phase Shift Keying uses a specific form of differentially encoded BPSK where in-phase and quadrature channels are used to transmit alternate symbols. (Referenced: "Differential Detection With Intersymbol Interference and Frequency Uncertainty" by J.H. Wintore in IEEE Transactions on Communications, January 1984, Vol. Comm-32, No. 1, pp. 25-33.)

NECESSARY BANDWIDTH

Radiated bandwidth from the equipment is controlled by the use of raised cosine filters in the transmitter. The A-QPSK are signals subjected to either a 60% or 100% raised cosine filter. A 40% raised cosine filter is used for the A-BPSK signals.

The associated necessary bandwidth calculation is:

$BW=1/T\ (1+r)$

Where 1/T is the symbol transmission rate in symbols per second and r is the rolloff factor.

Symbol Rate (Baud)	Modulation Type	Rolloff (r)	Bandwidth (BW)
600	A-BPSK	0.4	0.840 KHz
1200	A-BPSK	0.4	1.680 KHz
2400	A-BPSK	0.4	3.300 KHz
2400	A-QPSK	1.0	4.800 KHz
4200	A-QPSK	0.6	6.720 KHz
5250	A-QPSK	1.0	10.5 KHz
10.5k	A-QPSK	1.0	21.00 KHz