TRANSMITTER EQUIPMENT CHARACTERISTICS

1. NOMENCLATURE, MANUFACTURER'S MODEL NO.
(U) Marine Corps Wideband Communication System
*(221-0230500-001, Modem Module_60Mbps)

2. MANUFACTURER'S NAME
(U) SAIC

3. TRANSMITTER INSTALLATION
(U) Mobile Ground Station

4. TRANSMITTER TYPE
(U) Digital PM Communication

5. TUNING RANGE
(U) 4.5 GHz - 4.7 GHz

6. METHOD OF TUNING
(U) Digital Synthesizer

7. RF CHANNELING CAPABILITY
(U) 4.5 GHz, 20 MHz channels

8. EMISSION DESIGNATORS See Data Overflow Page
(U) 4M00G1D (U) 12M0G1D (U) 12M0G1D

9. FREQUENCY TOLERANCE
(U) 2.5 ppm

10. FILTER EMPLOYED
(U) [X] a. YES [ ] b. NO

11. SPREAD SPECTRUM
(U) [ ] a. YES [X] b. NO

12. EMISSION BANDWIDTH See Data Overflow Page
[X] CALCULATED [ ] MEASURED

a. -3 dB	(U) 1.75 MHz	(U) 5.3 MHz	(U) 5.25 MHz
b. -20 dB	(U) 12.7 MHz	(U) 38.2 MHz	(U) 38.2 MHz
c. -40 dB	(U) 127 MHz	(U) 382 MHz	(U) 382 MHz
d. -60 dB	(U) 1270 MHz	(U) 3820 MHz	(U) 3820 MHz
e. OC-BW	(U) 38.6 MHz	(U) 115 MHz	(U) 115.8 MHz

13. MAXIMUM BIT RATE
(U) 65.5 Mbps

14. MODULATION TECHNIQUES AND CODING
(U) BPSK, QPSK, 16-QAM, 64-QAM
(See Remarks)

15. MAXIMUM MODULATION FREQUENCY
(U) 4.5 MHz

16. PRE-EMPHASIS
(U) [ ] a. YES [X] b. NO

17. DEVIATION RATIO
(U) NAvail

18. PULSE CHARACTERISTICS See Data Overflow Page

a. RATE	(U) NA	(U) NA	(U) NA
b. WIDTH	(U) NA	(U) NA	(U) NA
c. RISE TIME	(U) NA	(U) NA	(U) NA
d. FALL TIME	(U) NA	(U) NA	(U) NA
e. COMP RATIO	(U) NA	(U) NA	(U) NA

19. POWER See Data Overflow Page

a. MEAN	(U) 63.1 W	(U) 63.1 W	(U) 63.1 W
b. PEP	(U) NA	(U) NA	(U) NA

20. OUTPUT DEVICE
(U) Solid State

21. HARMONIC LEVEL
a. 2nd (U) -80 dB
b. 3rd (U) -80 dB
c. OTHER (U) -80 dB

22. SPURIOUS LEVEL
(U) -80 dB

23. FCC TYPE ACCEPTANCE NO.
(U) NA

24. REMARKS (U)

Item 2: Science Applications International Corporation (SAIC)

Item 7: Nine equally spaced channels.
Item 10: Lowpass/Highpass filter for half-duplex.
Item 13: Multiple bit rates are used but only the max bit rate is listed.
Below are the emission designators with the corresponding modulation type and the data rate. The Modulation Type used are subsets of Orthogonal Frequency Division Multiplexing (OFDM).

EMISSION DESIGNATOR	MODULATION TYPE	DATA RATE
4M00G1D	BPSK	2.0 Mbps
12M0G1D	BPSK	6.0 Mbps
12M0G1D	QPSK	12.0 Mbps
18M0G1D	QPSK	18.0 Mbps

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9M72D1D	16QAM	24.0 Mbps
14M6D1D	16QAM	36.0 Mbps
12M9D1D	64QAM	48.0 Mbps
14M4D1D	64QAM	53.3 Mbps
16M2D1D	64QAM	60.0 Mbps
17M1DID	64QAM	63.5 Mbps
17M7D1D	64QAM	65.5 Mbps

Item 14: Initial prototype units will use BPSK waveform 4M00G1D, 16-QAM waveform 9M72D1D, and the 64-QAM waveform 17M7D1D. The other waveforms are for future enhancements.

Item 15: Different max modulation frequencies are used for different modulation type:

MODULATION TYPE	MAX MODULATION FREQUENCY
BPSK	3 MHz
QPSK	4.5 MHz
16QAM	NAvail
64QAM	NAvail

* Transmitter characteristics specified are unique to having a 221-0230500-001, Modem Module-60Mbps installed.

TRANSMITTER DATA OVERFLOW PAGE

1. NOMENCLATURE, MANUFACTURER'S MODEL NO.

221-0230500-001, Modem Module_60Mbps Installed

5. TUNING RANGE

8. EMISSION DESIGNATORS

	(U)	18M0G1D	(U)	9M72D1D	(U) 14M6D1D

12. EMISSION BANDWIDTH

a. -3 dB	(U)	7.9 MHz	(U)	5.5 MHz	(U)	8.3 MHz
b. -20 dB		57.2 MHz		38.2 MHz		57.3 MHz
c. -40 dB		572 MHz		382 MHz		572.9 MHz
d. -60 dB		5728 MHz		3820 MHz		5729 MHz
e. OC-BW		173.7 MHz		115.8 MHz		173.7 MHz

18. PULSE CHARACTERISTICS

a. RATE	(U)	NA	(U)	NA	(U)	NA
b. WIDTH	(U)	NA	(U)	NA	(U)	NA
c. RISE TIME	(U)	NA	(U)	NA	(U)	NA
d. FALL TIME	(U)	NA	(U)	NA	(U)	NA
e. COMP RATIO	(U)	NA	(U)	NA	(U)	NA

19. POWER

a. MEAN	(U)	63.1 W	(U)	15.9 W	(U)	15.9 W
b. PEP	(U)	NA	(U)	NA	(U)	NA

TRANSMITTER DATA OVERFLOW PAGE

1. NOMENCLATURE, MANUFACTURER'S MODEL NO.

221-0230500-001, Modem Module_60Mbps installed

5. TUNING RANGE

8. EMISSION DESIGNATORS

	(U)	12M9D1D	(U)	14M4D1D	(U) 16M2D1D

12. EMISSION BANDWIDTH

a. -3 dB	(U)	7.2 MHz	(U)	8 MHz	(U)	9 MHz
b. -20 dB		50.9 MHz		56 MHz		63.6 MHz
c. -40 dB		509 MHz		565 MHz		636 MHz
d. -60 dB		5090 MHz		5660 MHz		6370 MHz
e. OC-BW		154 MHz		171.4 MHz		193 MHz

18. PULSE CHARACTERISTICS

a. RATE	(U)	NA	(U)	NA	(U)	NA
b. WIDTH	(U)	NA	(U)	NA	(U)	NA
c. RISE TIME	(U)	NA	(U)	NA	(U)	NA
d. FALL TIME	(U)	NA	(U)	NA	(U)	NA
e. COMP RATIO	(U)	NA	(U)	NA	(U)	NA

19. POWER

a. MEAN	(U)	15.9 W	(U)	15.9 W	(U)	15.9 W
b. PEP	(U)	NA	(U)	NA	(U)	NA

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1. NOMENCLATURE, MANUFACTURER'S MODEL NO.

221-0230500-001, Modem Module_60Mbps installed

5. TUNING RANGE

8. EMISSION DESIGNATORS

	(U)	17M1D1D	(U)	17M7D1D

12. EMISSION BANDWIDTH

a. -3 dB	(U)	9.5 MHz	(U)	9.8 MHz
b. -20 dB		67.3 MHz		69.5 MHz
c. -40 dB		673 MHz		695 MHz
d. -60 dB		6740 MHz		6950 MHz
e. OC-BW		204.3 MHz		210.7 MHz

18. PULSE CHARACTERISTICS

a. RATE	(U)	NA	(U)	NA
b. WIDTH	(U)	NA	(U)	NA
c. RISE TIME	(U)	NA	(U)	NA
d. FALL TIME	(U)	NA	(U)	NA
e. COMP RATIO	(U)	NA	(U)	NA

19. POWER

a. MEAN	(U)	15.9 W	(U)	15.9 W
b. PEP	(U)	NA	(U)	NA