

<b>APPLICATION FOR EQUIPMENT FREQUENCY ALLOCATION</b>		<b>CLASSIFICATION UNCLASSIFIED</b>		<b>DATE</b> 04/26/2005		<b>J/F 12/09130</b>	
						<b>Page 1 of 21 Pages</b>	
<b>DOD GENERAL INFORMATION</b>							
<b>TO</b> Navy Marine Corps Spectrum Center NMSC 2461 Eisenhower Ave, Suite 1202 Alexandria, VA 22331-1400				<b>FROM</b> MARCORSYSCOM-BMADS 2033 Barnett Ave, Suite 315 Quantico, VA 22134			
<b>1. APPLICATION TITLE</b> (U) Marine Corps Wideband Communication System							
<b>2. SYSTEM NOMENCLATURE</b> (U) Marine Corps Wideband Communication System							
<b>3. STAGE OF ALLOCATION</b> (U) <input type="checkbox"/> <b>a. STAGE 1 CONCEPTUAL</b> <input type="checkbox"/> <b>b. STAGE 2 EXPERIMENTAL</b> <input checked="" type="checkbox"/> <b>c. STAGE 3 DEVELOPMENTAL</b> <input type="checkbox"/> <b>d. STAGE 4 OPERATIONAL</b>							
<b>4. FREQUENCY REQUIREMENTS</b> <b>a. FREQUENCY(IES)</b> (U) 4.5 GHz - 4.7 GHz <b>b. EMISSION DESIGNATORS</b> (U) 4M00G1D 12M0G1D 18M0G1D 84M0G1D 9M72D1D <small>See Data Overflow Page</small>							
<b>5. TARGET STARTING DATE FOR SUBSEQUENT STAGES</b>							
<b>a. STAGE 2</b> (U) NA		<b>b. STAGE 3</b> (U) ASAP			<b>c. STAGE 4</b> (U) 07-01-2006		
<b>6. EXTENT OF USE</b> (U) Occasional and temporary usage for training exercises							
<b>7. GEOGRAPHICAL AREA FOR</b>							
<b>a. STAGE 2</b> (U) NA							
<b>b. STAGE 3</b> (U) DoD Test and Training Ranges and Military Bases in US & P							
<b>c. STAGE 4</b> (U) US&P							
<b>8. NUMBER OF UNITS</b>							
<b>a. STAGE 2</b> (U) 1		<b>b. STAGE 3</b> (U) 10			<b>c. STAGE 4</b> (U) 10		
<b>9. NUMBER OF UNITS OPERATING SIMULTANEOUSLY IN THE SAME ENVIRONMENT</b> (U) 1							
<b>10. OTHER J/F 12 APPLICATION ID(S) TO BE</b> (U) <input type="checkbox"/> <b>a. SUPERSEDED</b> <input type="checkbox"/> <b>b. RELATED</b> NONE /				<b>11. IS THERE ANY OPERATIONAL REQUIREMENT AS DESCRIBED IN THE INSTRUCTIONS FOR PARAGRAPH 11?</b> (U) <input type="checkbox"/> <b>a. YES</b> <input checked="" type="checkbox"/> <b>b. NO</b> <input type="checkbox"/> <b>c. NAVAIL</b>			
<b>12. NAMES AND TELEPHONE NUMBERS</b> (U)							
<b>a. PROGRAM MANAGER</b> Ted Stanford				<b>(1) COMMERCIAL</b> 703-472-6386		<b>(2) DSN</b>	
<b>b. PROJECT ENGINEER</b> Steve Hussmann				<b>(1) COMMERCIAL</b> 540-653-7545		<b>(2) DSN</b> 249-7545	
<b>13. REMARKS</b> (U) The MCWC mission is to automatically form a timely, accurate, and distributed communication network of mobile, high bandwidth communications nodes. The system shall also provide a "bridge" by which existing USMC tactical communications assets may connect to the network.  The system will utilize an omni link for acquisition and a directional link for data transfer. 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							
<b>DOWNGRADING INSTRUCTIONS</b>						<b>J/F 12/09130</b>	
						<b>CLASSIFICATION UNCLASSIFIED</b>	

## DOD REMARK OVERFLOW PAGE

12M0G1D	QPSK	12.0 Mbps
18M0G1D	QPSK	18.0 Mbps
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
17M1D1D	64QAM	63.5 Mbps
17M7D1D	64QAM	65.5 Mbps

DOD DATA OVERFLOW PAGE

2. SYSTEM NOMENCLATURE

4. FREQUENCY REQUIREMENTS

b. EMISSION DESIGNATORS (U)	14M6D1D	12M9D1D	14M4D1D	16M2D1D
b. EMISSION DESIGNATORS	17M1D1D	17M7D1D		

10. OTHER J/F 12 APPLICATION NUMBER(S) TO BE

b. RELATED J/F 12/

**TRANSMITTER EQUIPMENT CHARACTERISTICS**

<b>1. NOMENCLATURE, MANUFACTURER'S MODEL NO.</b> (U) Marine Corps Wideband Communication System *(221-0230500-001, Modem Module_60Mbps)	<b>2. MANUFACTURER'S NAME</b> (U) SAIC
<b>3. TRANSMITTER INSTALLATION</b> (U) Mobile Ground Station	<b>4. TRANSMITTER TYPE</b> (U) Digital PM Communication
<b>5. TUNING RANGE</b> (U) 4.5 GHz - 4.7 GHz	<b>6. METHOD OF TUNING</b> (U) Digital Synthesizer
<b>7. RF CHANNELING CAPABILITY</b> (U) 4.5 GHz, 20 MHz channels	<b>8. EMISSION DESIGNATORS</b> See Data Overflow Page (U) 4M00G1D (U) 12M0G1D (U) 12M0G1D
<b>9. FREQUENCY TOLERANCE</b> (U) 2.5 ppm	<b>12. EMISSION BANDWIDTH</b> See Data Overflow Page <div style="display: flex; justify-content: space-around;"> <input checked="" type="checkbox"/> <b>CALCULATED</b> <input type="checkbox"/> <b>MEASURED</b> </div>
<b>10. FILTER EMPLOYED</b> (U) <input checked="" type="checkbox"/> a. YES <input type="checkbox"/> b. NO	<b>a. -3 dB</b> (U) 1.75 MHz (U) 5.3 MHz (U) 5.25 MHz <b>b. -20 dB</b> (U) 12.7 MHz (U) 38.2 MHz (U) 38.2 MHz <b>c. -40 dB</b> (U) 127 MHz (U) 382 MHz (U) 382 MHz <b>d. -60 dB</b> (U) 1270 MHz (U) 3820 MHz (U) 3820 MHz <b>e. OC-BW</b> (U) 38.6 MHz (U) 115 MHz (U) 115.8 MHz
<b>11. SPREAD SPECTRUM</b> (U) <input type="checkbox"/> a. YES <input checked="" type="checkbox"/> b. NO	<b>15. MAXIMUM MODULATION FREQUENCY</b> (U) 4.5 MHz
<b>13. MAXIMUM BIT RATE</b> (U) 65.5 Mbps	<b>17. DEVIATION RATIO</b> (U) NAvail
<b>14. MODULATION TECHNIQUES AND CODING</b> (U) BPSK, QPSK, 16-QAM, 64-QAM (See Remarks)	<b>18. PULSE CHARACTERISTICS</b> See Data Overflow Page <b>a. RATE</b> (U) NA (U) NA (U) NA <b>b. WIDTH</b> (U) NA (U) NA (U) NA <b>c. RISE TIME</b> (U) NA (U) NA (U) NA <b>d. FALL TIME</b> (U) NA (U) NA (U) NA <b>e. COMP RATIO</b> (U) NA (U) NA (U) NA
<b>16. PRE-EMPHASIS</b> (U) <input type="checkbox"/> a. YES <input checked="" type="checkbox"/> b. NO	<b>21. HARMONIC LEVEL</b> <b>a. 2nd</b> (U) -80 dB <b>b. 3rd</b> (U) -80 dB <b>c. OTHER</b> (U) -80 dB
<b>19. POWER</b> See Data Overflow Page <b>a. MEAN</b> (U) 63.1 W (U) 63.1 W (U) 63.1 W <b>b. PEP</b> (U) NA (U) NA (U) NA	<b>20. OUTPUT DEVICE</b> (U) Solid State
<b>22. SPURIOUS LEVEL</b> (U) -80 dB	<b>23. FCC TYPE ACCEPTANCE NO.</b> (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

## TRANSMITTER REMARK OVERFLOW PAGE

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
17M1D1D	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

**TRANSMITTER DATA OVERFLOW PAGE**

**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



**RECEIVER EQUIPMENT CHARACTERISTICS**

<b>1. NOMENCLATURE, MANUFACTURER'S MODEL NO.</b> (U) Marine Corps Wideband Communication System * (221-0230500-001, Modem Module_60Mbps)				<b>2. MANUFACTURER'S NAME</b> (U) SAIC																			
<b>3. RECEIVER INSTALLATION</b> (U) Airborne				<b>4. RECEIVER TYPE</b> (U) Single Conversion Superheterodyne																			
<b>5. TUNING RANGE</b> (U) 4.5 GHz - 4.7 GHz				<b>6. METHOD OF TUNING</b> (U) Digital Synthesizer																			
<b>7. RF CHANNELING CAPABILITY</b> (U) 4.5 GHz, 20 MHz channels				<b>8. EMISSION DESIGNATORS</b> (U) 4M00G1D 12M0G1D See Data Overflow Page																			
				<b>11. RF SELECTIVITY</b> <input checked="" type="checkbox"/> CALCULATED <input type="checkbox"/> MEASURED																			
<b>9. FREQUENCY TOLERANCE</b> (U) 2.5 ppm				<b>a. -3 dB</b> (U) 335 MHz																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;"><b>10. IF SELECTIVITY</b></td> <td style="width:15%;"><b>1st (U)</b></td> <td style="width:15%;"><b>2nd (U)</b></td> <td style="width:15%;"><b>3rd (U)</b></td> </tr> <tr> <td><b>a. -3 dB</b></td> <td>18 MHz</td> <td></td> <td></td> </tr> <tr> <td><b>b. -20 dB</b></td> <td>20 MHz</td> <td></td> <td></td> </tr> <tr> <td><b>c. -60 dB</b></td> <td>27 MHz</td> <td></td> <td></td> </tr> </table>				<b>10. IF SELECTIVITY</b>	<b>1st (U)</b>	<b>2nd (U)</b>	<b>3rd (U)</b>	<b>a. -3 dB</b>	18 MHz			<b>b. -20 dB</b>	20 MHz			<b>c. -60 dB</b>	27 MHz			<b>b. -20 dB</b> (U) 410 MHz			
				<b>10. IF SELECTIVITY</b>	<b>1st (U)</b>	<b>2nd (U)</b>	<b>3rd (U)</b>																
				<b>a. -3 dB</b>	18 MHz																		
<b>b. -20 dB</b>	20 MHz																						
<b>c. -60 dB</b>	27 MHz																						
<b>c. -60 dB</b> (U) 630 MHz																							
<b>12. IF FREQUENCY</b> <b>a. 1st (U)</b> 570 MHz <b>b. 2nd (U)</b> NA <b>c. 3rd (U)</b> NA				<b>d. Preselection Type</b> (U) NAvail																			
				<b>13. MAXIMUM POST DETECTION FREQUENCY</b> (U) 4.5 MHz																			
<b>15. OSCILLATOR TUNED</b>				<b>14. MINIMUM POST DETECTION FREQUENCY</b> (U) NA																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;"></td> <td style="width:15%;"><b>1st (U)</b></td> <td style="width:15%;"><b>2nd (U)</b></td> <td style="width:15%;"><b>3rd (U)</b></td> </tr> <tr> <td><b>a. ABOVE TUNED FREQUENCY</b></td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td><b>b. BELOW TUNED FREQUENCY</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>c. EITHER ABOVE OR BELOW THE FREQUENCY</b></td> <td></td> <td></td> <td></td> </tr> </table>					<b>1st (U)</b>	<b>2nd (U)</b>	<b>3rd (U)</b>	<b>a. ABOVE TUNED FREQUENCY</b>	X			<b>b. BELOW TUNED FREQUENCY</b>				<b>c. EITHER ABOVE OR BELOW THE FREQUENCY</b>				<b>16. MAXIMUM BIT RATE</b> (U) 65 Mbps			
					<b>1st (U)</b>	<b>2nd (U)</b>	<b>3rd (U)</b>																
				<b>a. ABOVE TUNED FREQUENCY</b>	X																		
<b>b. BELOW TUNED FREQUENCY</b>																							
<b>c. EITHER ABOVE OR BELOW THE FREQUENCY</b>																							
<b>17. SENSITIVITY</b>				<b>a. SENSITIVITY</b> (U) (See Remarks)																			
<b>18. DE-EMPHASIS</b> (U) <input type="checkbox"/> a. YES <input checked="" type="checkbox"/> b. NO				<b>b. CRITERIA</b> (U) (See Remarks)																			
<b>19. IMAGE REJECTION</b> (U) 55 dB				<b>c. NOISE FIG</b> (U) 6.5 dB																			
<b>20. SPURIOUS REJECTION</b> (U) 65 dB				<b>d. NOISE TEMP</b> (U) NA																			
				<b>21. REMARKS (U)</b>																			

2. Science Applications International Corporation (SAIC)

7. Nine equally spaced channels.

Item 8: BPSK, QPSK, and QAM Modulations are used. Initial prototype units will use BPSK waveform 4M00G1D, 16-QAM waveform 9M72D1D, and 64-QAM waveform 17M7D1D. The other waveforms will be used for future enhancements.

Item 17a, 17b:

EMISSION DESIGNATOR	MODULATION TYPE	DATA RATE	SENSITIVITY	CRITERION*
4M00G1D	BPSK	2.0 Mbps	-84.9 dBm	11.2 SNR
12M0G1D	BPSK	6.0 Mbps	-84.9 dBm	11.2 SNR
12M0G1D	QPSK	12.0 Mbps	-84.9 dBm	11.2 SNR
18M0G1D	QPSK	18.0 Mbps	-84.9 dBm	11.2 SNR
9M72D1D	16-QAM	24.0 Mbps	-77.9 dBm	18.2 SNR

**RECEIVER REMARK OVERFLOW PAGE**

14M6D1D	16-QAM	36.0 Mbps	-77.9 dBm	18.2 SNR
12M9D1D	64-QAM	48.0 Mbps	-71.7 dBm	24.4 SNR
14M4D1D	64-QAM	53.3 Mbps	-71.7 dBm	24.4 SNR
16M2D1D	64-QAM	60.0 Mbps	-71.7 dBm	24.4 SNR
17M1D1D	64-QAM	63.5 Mbps	-71.7 dBm	24.4 SNR
17M7D1D	64-QAM	65.5 Mbps	-71.7 dBm	24.4 SNR

\* The Signal To Noise Ratio (SNR) is in accordance with IEEE 802.16 High-speed Unlicensed Metropolitan Area Network (HUMAN) waveform.

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

RECEIVER DATA OVERFLOW PAGE

1. NOMENCLATURE,  
MANUFACTURER'S MODEL NO.

221-0230500-001, Modem Module\_60Mbps installed

5. TUNING RANGE

8. EMISSION DESIGNATORS (U)

18M0G1D	9M72D1D	14M6D1D	12M9D1D	14M4D1D
16M2D1D	17M1D1D	17M7D1D		

**TRANSMITTER EQUIPMENT CHARACTERISTICS**

<b>1. NOMENCLATURE, MANUFACTURER'S MODEL NO.</b> (U) Marine Corps Wideband Communication System *(221-0230525-001, Modem Module_250 Mbps)	<b>2. MANUFACTURER'S NAME</b> (U) SAIC
<b>3. TRANSMITTER INSTALLATION</b> (U) Mobile Ground Station	<b>4. TRANSMITTER TYPE</b> (U) Single Conversion Superheterodyne
<b>5. TUNING RANGE</b> (U) 4.5 GHz-4.7 GHz	<b>6. METHOD OF TUNING</b> (U) Synthesizer
<b>7. RF CHANNELING CAPABILITY</b> (U) 4.545GHz, 110 MHz increments	<b>8. EMISSION DESIGNATOR(S)</b>  84M0G1D
<b>9. FREQUENCY TOLERANCE</b> (U) 2.5 ppm	
<b>10. FILTER EMPLOYED (X one) (U)</b> <input checked="" type="checkbox"/> a. YES <input type="checkbox"/> b. NO	
<b>11. SPREAD SPECTRUM (X one)</b> <input type="checkbox"/> a. YES <input checked="" type="checkbox"/> b. NO	<b>12. EMISSION BANDWIDTH (X and complete as applicable)</b> <input checked="" type="checkbox"/> CALCULATED <input type="checkbox"/> MEASURED
<b>13. MAXIMUM BIT RATE</b> (U) 1Mbps	a. -3 dB (U) 84 MHz b. -20 dB (U) 120 MHz c. -40 dB (U) NA d. -60 dB (U) 160 MHz e. OC-BW
<b>14. MODULATION TECHNIQUES AND CODING</b> (U) QPSK	<b>15. MAXIMUM MODULATION FREQUENCY</b> (U) 142 MHz
<b>16. PRE-EMPHASIS (X one)</b> <input type="checkbox"/> a. YES <input checked="" type="checkbox"/> b. NO	<b>17. DEVIATION RATIO</b> (U) NAvail
<b>19. POWER</b> a. MEAN (U) 63.1 W b. PEP	<b>18. PULSE CHARACTERISTICS</b> a. RATE (U) NA b. WIDTH (U) NA c. RISE TIME (U) NA d. FALL TIME (U) NA e. COMP RATIO (U) NA
<b>20. OUTPUT DEVICE</b> (U) Solid State	<b>21. HARMONIC LEVEL</b> a. 2ND (U) -80 dB b. 3RD (U) -80 dB c. OTHER (U) -80 dB
<b>22. SPURIOUS LEVEL</b> (U) -65 dB	(U) NA
<b>23. FCC TYPE ACCEPTANCE NO.</b>  (U) NA	(U) NA

**24. REMARKS** 2. Science Application International Corporation (SAIC)  
 7. Two channels, Channel 1 center frequency @ 4.545 GHz  
 Channel 2 center frequency @ 4.655 GHz

\* Transmitter characteristics specified are unique to having  
 a 221-0230525-001, modem Module\_250 Mbps installed

**RECEIVER EQUIPMENT CHARACTERISTICS**

<b>1. NOMENCLATURE, MANUFACTURER'S MODEL NO.</b> (U)Marine Corps Wideband Communication System *(221-0230525-001, Modem Module_250 Mbps)				<b>2. MANUFACTURER'S NAME</b> (U) SAIC	
<b>3. RECEIVER INSTALLATION</b> (U) Mobile Ground Station				<b>4. RECEIVER TYPE</b> (U) Single Conversion Superheterodyne	
<b>5. TUNING RANGE</b> (U) 4.5 GHz-4.7 GHz				<b>6. METHOD OF TUNING</b> (U) Synthesizer	
<b>7. RF CHANNELING CAPABILITY</b> (U) 4.545GHz, 110 MHz increments				<b>8. EMISSION DESIGNATOR(S)</b>  84M0G1D	
<b>9. FREQUENCY TOLERANCE</b> (U) 2.5 ppm					
<b>10. IF SELECTIVITY</b>		<b>1ST (U)</b>	<b>2ND</b>	<b>3RD</b>	<b>11. RF SELECTIVITY</b> ( <i>X and complete as applicable</i> ) <input checked="" type="checkbox"/> CALCULATED <input type="checkbox"/> MEASURED  a. -3 dB      (U)    335 MHz b. -20 dB     (U)    410 MHz c. -60 dB     (U)    630 MHz d. PRESELECTION TYPE
a. -3 dB		84 MHz			
b. -20 dB		120 MHz			
c. -60 dB		160 MHz			
<b>12. IF FREQUENCY</b>					<b>13. MAXIMUM POST DETECTION FREQUENCY</b> (U) 142 MHz
a. 1ST (U) 2.441 GHz					
b. 2ND (U) NA					
c. 3RD (U) NA					<b>14. MINIMUM POST DETECTION FREQUENCY</b> (U) NA
<b>15. OSCILLATOR TUNED</b>		<b>1ST (U)</b>	<b>2ND</b>	<b>3RD</b>	<b>16. MAXIMUM BIT RATE</b> 65 Mbps
a. ABOVE TUNED FREQUENCY		X			
b. BELOW TUNED FREQUENCY					
c. EITHER ABOVE OR BELOW TUNED FREQUENCY					<b>17. SENSITIVITY</b> a. SENSITIVITY (U) -80 (see Remarks)      dBm b. CRITERIA (U) (see Remarks)
<b>18. DE-EMPHASIS</b> ( <i>X one</i> )					
<input type="checkbox"/> a. YES		<input checked="" type="checkbox"/> b. NO			c. NOISE FIG (U) 12      dB
					d. NOISE TEMP (U) NA      Kelvin
<b>19. IMAGE REJECTION</b> (U) 55 dBm				<b>20. SPURIOUS REJECTION</b> (U) 65 dBm	

**21. REMARKS**

2. Science Application International Corporation (SAIC)

7. Two channels, Channel 1 center frequency @ 4.545 GHz  
Channel 2 center frequency @ 4.655 GHz

17a, 17b  
QPSK modulation

\* Receiver characteristics specified are unique to having a 221-0230525-001, modem Module\_250 Mbps installed

ANTENNA EQUIPMENT CHARACTERISTICS

1. (U) <input type="checkbox"/> a. TRANSMITTING	<input type="checkbox"/> b. RECEIVING	<input checked="" type="checkbox"/> c. TRANSMITTING AND RECEIVING
---	---------------------------------------	---

<b>2. NOMENCLATURE, MANUFACTURER'S MODEL NO.</b> (U) 04006A6500-001	<b>3. MANUFACTURER'S NAME</b> (U) SAIC
<b>4. FREQUENCY RANGE</b> (U) 4.5 GHz - 4.7 GHz	<b>5. TYPE</b> (U) Monopole
<b>6. POLARIZATION</b> (U) Linear Vertical	<b>7. SCAN CHARACTERISTICS</b>
<b>8. GAIN</b>	<b>a. TYPE</b> (U) FIXED
<b>a. MAIN BEAM</b> (U) 2.1 dBi	<b>b. VERTICAL SCAN</b> (U) NA
<b>b. 1st MAJOR SIDE LOBE</b> (U) NA	<b>(1) Max Elev</b> (U) NA
<b>9. BEAMWIDTH</b>	<b>(2) Min Elev</b> (U) NA
<b>a. HORIZONTAL</b> (U) 360 deg	<b>(3) Scan Rate</b> (U) NA
<b>b. VERTICAL</b> (U) 70 deg	<b>c. HORIZONTAL SCAN</b> (U) NA
<b>10. REMARKS (U)</b>	<b>(1) Sector Scanned</b> (U) NA
	<b>(2) Scan Rate</b> (U) NA
	<b>d. SECTOR BLANKING</b> (U) <input type="checkbox"/> (1) YES <input checked="" type="checkbox"/> (2) NO

5. The omni antenna will primarily be used for acquisition (at lowest data rate) and Error Vector Magnitude (EVM) sampling at all data rates.

**ANTENNA EQUIPMENT CHARACTERISTICS**

1. <input type="checkbox"/> a. TRANSMITTING <input type="checkbox"/> b. RECEIVING <input checked="" type="checkbox"/> c. TRANSMITTING AND RECEIVING	
2. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U)AD16-24	3. MANUFACTURER'S NAME (U)SAIC
4. FREQUENCY RANGE (U) 4.5 GHz - 4.7 GHz	5. TYPE (U) Cylindrical Array
6. POLARIZATION (U) Linear Vertical	7. SCAN CHARACTERISTICS
8. GAIN	a. TYPE (U) Electronic
a. MAIN BEAM (U)14.5 dBi	b. VERTICAL SCAN (U) Electronic Scan
b. 1ST MAJOR SIDE LOBE (U)5.5 dBi @ 28 deg	(1) MAX ELEV (U) +45 deg
9. BEAMWIDTH	(2) MIN ELEV (U) -45 deg
a. HORIZONTAL (U) 16 deg	(3) SCAN RATE (U) NAvail
b. VERTICAL (U) 54 deg	c. HORIZONTAL SCAN (U) Electronic Scan
10. REMARKS	(1) SECTOR SCANNED (U) 360 degrees
	(2) SCAN RATE (U) NAvail
	d. SECTOR BLANKING (X one)
	<input type="checkbox"/> (1) YES <input checked="" type="checkbox"/> (2) NO

**ANTENNA EQUIPMENT CHARACTERISTICS**

1.  a. TRANSMITTING                       b. RECEIVING                       c. TRANSMITTING AND RECEIVING

<b>2. NOMENCLATURE, MANUFACTURER'S MODEL NO.</b> (U) AD16-Planar	<b>3. MANUFACTURER'S NAME</b> (U) SAIC
---	---

<b>4. FREQUENCY RANGE</b> (U) 4.5 GHz - 4.7 GHz	<b>5. TYPE</b> (U) Planar Array
--	------------------------------------

<b>6. POLARIZATION</b> (U) Linear Vertical	<b>7. SCAN CHARACTERISTICS</b>
---	--------------------------------

<b>8. GAIN</b>	<b>a. TYPE</b> (U) Electronic
a. MAIN BEAM (U) 16.5 dBi	<b>b. VERTICAL SCAN</b> (U) Electronic Scan
b. 1ST MAJOR SIDE LOBE (U) 6.5 dBi @ 15 deg	(1) MAX ELEV (U) +30 deg
	(2) MIN ELEV (U) -30 deg
	(3) SCAN RATE (U) NAvail

<b>9. BEAMWIDTH</b>	<b>c. HORIZONTAL SCAN</b> (U) Electronic Scan
a. HORIZONTAL (U) 20 deg	(1) SECTOR SCANNED (U) 90 degrees
b. VERTICAL (U) 90 deg	(2) SCAN RATE (U) NAvail
	<b>d. SECTOR BLANKING</b> ( <i>X one</i> ) <input type="checkbox"/> (1) YES <input checked="" type="checkbox"/> (2) NO

**10. REMARKS**



ANTENNA EQUIPMENT CHARACTERISTICS

1. (U) <input type="checkbox"/> a. TRANSMITTING	<input type="checkbox"/> b. RECEIVING	<input checked="" type="checkbox"/> c. TRANSMITTING AND RECEIVING
---	---------------------------------------	---

2. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) AD16-36	3. MANUFACTURER'S NAME (U) SAIC
4. FREQUENCY RANGE (U) 4.5 GHz - 4.7 GHz	5. TYPE (U) Cylindrical Array
6. POLARIZATION (U) Linear Vertical	7. SCAN CHARACTERISTICS a. TYPE (U) ELECTRONIC
8. GAIN a. MAIN BEAM (U) 18 dBi	b. VERTICAL SCAN (U) Electronic Scan (1) Max Elev (U) +45 deg (2) Min Elev (U) -45 deg (3) Scan Rate (U) NAvail
b. 1st MAJOR SIDE LOBE (U) 6.4 dBi @ 31.5 deg	c. HORIZONTAL SCAN (U) Electronic Scan (1) Sector Scanned (U) 360 degrees (2) Scan Rate (U) NAvail
9. BEAMWIDTH a. HORIZONTAL (U) 11 deg	d. SECTOR BLANKING (U) <input type="checkbox"/> (1) YES <input checked="" type="checkbox"/> (2) NO
b. VERTICAL (U) 20 deg	

10. REMARKS (U)	
-----------------	--

ANTENNA EQUIPMENT CHARACTERISTICS

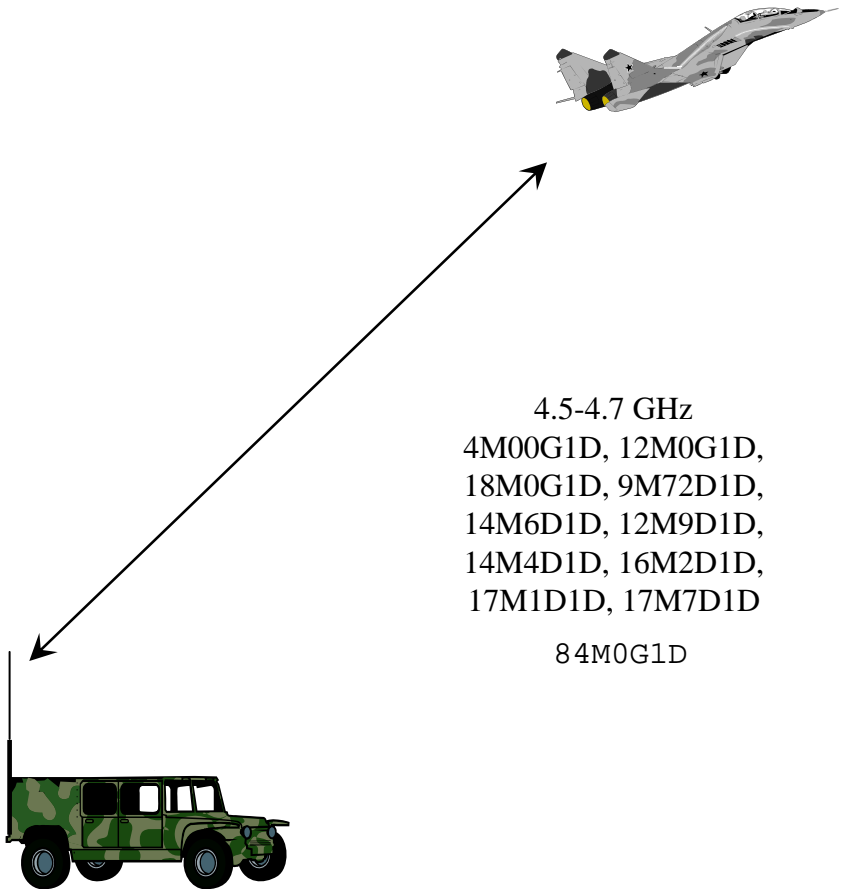
1. (U) <input type="checkbox"/> a. TRANSMITTING	b. RECEIVING <input type="checkbox"/>	c. TRANSMITTING AND RECEIVING <input checked="" type="checkbox"/>
---	---------------------------------------	---

2. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) AD16-72	3. MANUFACTURER'S NAME (U) SAIC
4. FREQUENCY RANGE (U) 4.5 GHz - 4.7 GHz	5. TYPE (U) Cylindrical Array
6. POLARIZATION (U) Linear Vertical	7. SCAN CHARACTERISTICS a. TYPE (U) ELECTRONIC
8. GAIN a. MAIN BEAM (U) 24 dBi	b. VERTICAL SCAN (U) Electronic Scan (1) Max Elev (U) +45 deg (2) Min Elev (U) -45 deg (3) Scan Rate (U) NAvail
b. 1st MAJOR SIDE LOBE (U) 10.9 dBi @ 15.8 deg	c. HORIZONTAL SCAN (U) Electronic Scan (1) Sector Scanned (U) 360 degrees (2) Scan Rate (U) NAvail
9. BEAMWIDTH a. HORIZONTAL (U) 5.5 deg	d. SECTOR BLANKING (U) <input type="checkbox"/> (1) YES <input checked="" type="checkbox"/> (2) NO
b. VERTICAL (U) 20 deg	

10. REMARKS (U)	
-----------------	--

GENERAL CONTINUATION PAGE

**Marine Corps Wideband Communication System**



NTIA GENERAL INFORMATION

1. APPLICATION TITLE (U) Marine Corps Wideband Communication System		
2. SYSTEM NOMENCLATURE (U) Marine Corps Wideband Communication System		
3. STAGE OF ALLOCATION (U) <input type="checkbox"/> a. STAGE 1 CONCEPTUAL <input type="checkbox"/> b. STAGE 2 EXPERIMENTAL <input checked="" type="checkbox"/> c. STAGE 3 DEVELOPMENTAL <input type="checkbox"/> d. STAGE 4 OPERATIONAL		
4. FREQUENCY REQUIREMENTS		
a. FREQUENCY(IES) (U) 4.5 GHz - 4.7 GHz		
b. EMISSION DESIGNATORS (U) 4M00G1D 12M0G1D 18M0G1D 9M72D1D 84M0G1D See Data Overflow Page		
5. PURPOSE OF SYSTEM, OPERATIONAL AND SYSTEM CONCEPTS (U) (See Remarks) (WARTIME USE) <input type="checkbox"/> a. YES <input checked="" type="checkbox"/> b. NO		
6. INFORMATION TRANSFER REQUIREMENTS(U) NAvail		
7. ESTIMATED INITIAL COST OF THE SYSTEM (U) NAvail		
8. TARGET DATE FOR		
a. APPLICATION APPROVAL (U) 07-01-2006	b. SYSTEM ACTIVATION (U) 07-01-2006	c. SYSTEM TERMINATION (U) 07-01-2016
9. SYSTEM RELATIONSHIP AND ESSENTIALITY (U) (See Remarks)		
10. REPLACEMENT INFORMATION (U) NAvail		
11. RELATED ANALYSIS AND/OR TEST DATA (U) NAvail		
12. NUMBER OF MOBILE UNITS (U) 10		
13. GEOGRAPHICAL AREA FOR		
a. STAGE 2 (U) NA		
b. STAGE 3 (U) DoD Test and Training Ranges and Military Bases in US & P		
c. STAGE 4 (U) US&P		
14. LINE DIAGRAM (U) See Page(s) 15		15. SPACE SYSTEMS (U) See Page(s) NA
16. TYPE OF SERVICE(S) FOR STAGE 4 (U) Mobile		17. STATION CLASS(ES) FOR STAGE 4 (U) MO
18. REMARKS (U) Item 5, 9: The MCWC mission is to automatically form a timely, accurate, and distributed communications network of mobile, high bandwidth communication nodes. The MCWC enables transmission and reception of multiple types of communications traffic including, but not limited to, radar tracks, streaming video, still images, situational awareness ground data, and voice.		
DOWNGRADING INSTRUCTIONS		J/F 12/09130
		CLASSIFICATION UNCLASSIFIED

NTIA DATA OVERFLOW PAGE

2. SYSTEM NOMENCLATURE

4. FREQUENCY REQUIREMENTS

b. EMISSION DESIGNATORS (U)	14M6D1D	12M9D1D	14M4D1D	16M2D1D
b. EMISSION DESIGNATORS	17M1D1D	17M7D1D	84M0G1D	

17. STATION CLASS(ES) FOR STAGE 4