

APPLICATION FOR EQUIPMENT FREQUENCY ALLOCATION	CLASSIFICATION Unclassified	DATE 24 Sept, 2008	Form Approved OMB No. 0704-0188
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DOD GENERAL INFORMATION			
TO Director Navy and Marine Corps Spectrum Center 2461 Eisenhower Ave Alexandria, VA 22331-1400		FROM Commanding Officer NAVEODTECHDIV (Code 5221L) 2008 Stump Neck Rd. Indian Head, MD 20640	
1. APPLICATION TITLE DTC Communications, Model Palladium II Digital Video Transmitter			
2. SYSTEM NOMENCLATURE Micro Air Vehicle (MAV) Explosive Ordnance Disposal (EOD)			
3. STAGE OF ALLOCATION (X one) <input type="checkbox"/> a. STAGE 1 - CONCEPTUAL <input type="checkbox"/> b. STAGE 2 - EXPERIMENTAL <input type="checkbox"/> c. STAGE 3 - DEVELOPMENTAL <input checked="" type="checkbox"/> d. STAGE 4 - OPERATIONAL			
4. FREQUENCY REQUIREMENTS a. FREQUENCY(IES) 4400MHz to 5000 MHz b. EMISSION DESIGNATOR(S) 2M44W7D			
5. TARGET STARTING DATE FOR SUBSEQUENT STAGES			
a. STAGE 2 NA		b. STAGE 3 NA	c. STAGE 4 24 September, 2008
6. EXTENT OF USE 1 - 24 hrs per day, day/night			
7. GEOGRAPHICAL AREA FOR			
a. STAGE 2			
b. STAGE 3			
c. STAGE 4 US&P, Iraq, and Afghanistan			
8. NUMBER OF UNITS			
a. STAGE 2 N/A		b. STAGE 3 NA	c. STAGE 4 400
9. NUMBER OF UNITS OPERATING SIMULTANEOUSLY IN THE SAME ENVIRONMENT 2 to 16			
10. OTHER J/F 12 APPLICATION NUMBER(S) TO BE		11. IS THERE ANY OPERATIONAL REQUIREMENT AS DESCRIBED IN THE INSTRUCTIONS FOR PARAGRAPH 11?	
<input type="checkbox"/> a. SUPERSEDED J/F 12/ <input type="checkbox"/> b. RELATED J/F 12/		<input type="checkbox"/> a. YES <input type="checkbox"/> b. NO <input checked="" type="checkbox"/> c. NAvail	
12. NAMES AND TELEPHONE NUMBERS			
a. PROGRAM MANAGER Brian Anderson		(1) COMMERCIAL 301-744-6906	(2) AUTOVON
b. PROJECT ENGINEER Ray McGuire		(1) COMMERCIAL 301-744-6858 x273	(2) AUTOVON
13. REMARKS			
DOWNGRADING INSTRUCTIONS N/A		CLASSIFICATION Unclassified	

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TRANSMITTER EQUIPMENT CHARACTERISTICS		
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. PD2-TX-100-C	2. MANUFACTURER'S NAME DTC Communications	
3. TRANSMITTER INSTALLATION Micro Air Vehicle	4. TRANSMITTER TYPE PSK Communications Microwave Transmitter	
5. TUNING RANGE 4400-5000MHz	6. METHOD OF TUNING PLL Tuning	
7. RF CHANNELING CAPABILITY 4400 MHz, 100 KHz increments	8. EMISSION DESIGNATOR(S) 2M44W7D	
9. FREQUENCY TOLERANCE 5.0 ppm		
10. FILTER EMPLOYED (X one) <input checked="" type="checkbox"/> a. YES <input type="checkbox"/> b. NO		
11. SPREAD SPECTRUM (X one) <input checked="" type="checkbox"/> a. YES <input type="checkbox"/> b. NO	12. EMISSION BANDWIDTH (X and complete as applicable)	
13. MAXIMUM BIT RATE 3.45 Mbps (QPSK), 6.90 Mbps (16QAM)	<input type="checkbox"/> CALCULATED <input checked="" type="checkbox"/> MEASURED	
	a. -3 dB 2.35 MHz	
14. MODULATION TECHNIQUES AND CODING Coded Orthogonal Frequency Division Multiplex (COFDM). MPEG-2, QPSK 400 Carriers	b. -20 dB 2.40 MHz	
	c. -40 dB 4.50 MHz	
	d. -60 dB 6.60 MHz	
	e. OC-BW 2.44 MHz	
16. PRE-EMPHASIS (X one) <input type="checkbox"/> a. YES <input checked="" type="checkbox"/> b. NO	15. MAXIMUM MODULATION FREQUENCY 5.5 MHz Video	
	17. DEVIATION RATIO N/A	
19. POWER a. MEAN 100 mW, MAX b. PEP N/A	18. PULSE CHARACTERISTICS N/A (frequency modulated)	
	a. RATE N/A	
20. OUTPUT DEVICE Microwave FET Transistor	b. WIDTH N/A	
	c. RISE TIME N/A	
	d. FALL TIME N/A	
22. SPURIOUS LEVEL > -54 dBm	e. COMP RATIO N/A	
	21. HARMONIC LEVEL	
	a. 2ND -53 dB	
23. FCC TYPE ACCEPTANCE NO. N/A	b. 3RD -54 dB	
	c. OTHER >-54 DB	
24. REMARKS		
<p>Item 1: PD2-TX-100-C, 100mW (max) output power digital video transmitter which allows the transmission of standard video composite signals (CCIR405/1 NTSC) or PAL (user selectable) video signals, 2 audio signals and 1 data channel (RS-232) of up to 115 kbps.</p> <p>Item 10: Low Pass Lumped L-C Filter. The wideband emissions filtering employed is of a bandpass characteristic and is integral to the circuitry employed in the transmitter, that is the amplifier stages in the transmitter when combined together due to their intrinsic frequency response characteristics have a bandpass response which has sufficient harmonic and spurious rejection to comply with FCC spectral emissions limits. The actual on channel emissions response curve is detailed in item 12 and is determined by the nature of the digital modulation coding.</p> <p>Item 11: COFDM is considered a form of spread spectrum by the NTIA</p> <p>Item 14: 400 Carrier COFDM with individual QPSK or 16QAM modulation on each carrier</p> <p>Item 16: Pre-Emphasis is N/A for MPEG-2 Coding</p> <p>Item 23: FCC type acceptance is only required for operation in the 4950-4990MHz range. The operator of the MAV system has control of which frequencies the system is tuned and should only operate on the frequencies that are authorized for their location. Access to the public safety spectrum is provided to support OCONUS operations. This spectrum is easily excluded using the system channel definition table.</p>		
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Unclassified		

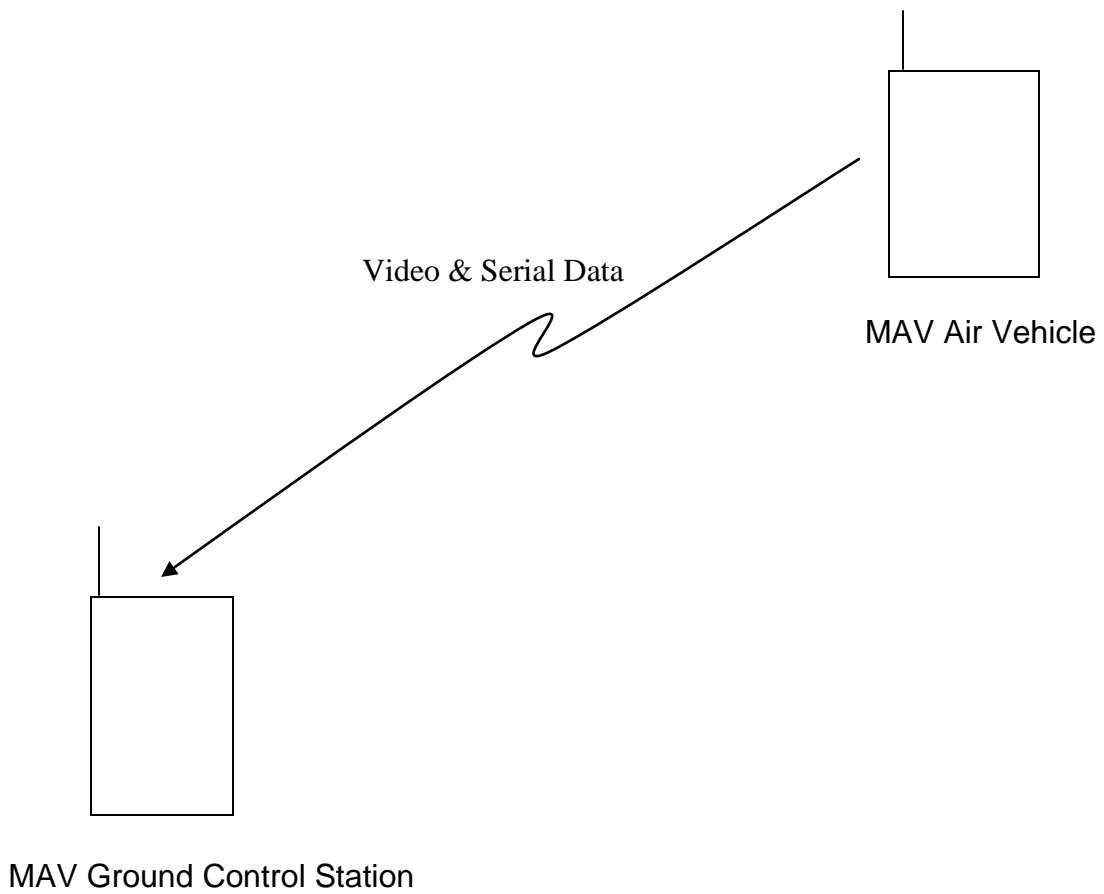
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ANTENNA EQUIPMENT CHARACTERISTICS	
1. <input checked="" type="checkbox"/> a. TRANSMITTING <input type="checkbox"/> b. RECEIVING <input type="checkbox"/> c. TRANSMITTING AND RECEIVING	
2. NOMENCLATURE, MANUFACTURER'S MODEL NO. ANT-A-2-C	3. MANUFACTURER'S NAME DTC Communications
4. FREQUENCY RANGE 4400 MHz – 4900 MHz	5. TYPE Dipole, 1/2 Wave
6. POLARIZATION Vertical	7. SCAN CHARACTERISTICS
8. GAIN	a. TYPE FIXED
a. MAIN BEAM 2 dBi	b. VERTICAL SCAN
b. 1ST MAJOR SIDE LOBE NA	(1) MAX ELEV N/A
	(2) MIN ELEV N/A
	(3) SCAN RATE N/A
9. BEAMWIDTH	c. HORIZONTAL SCAN
a. HORIZONTAL 360 deg	(1) SECTOR SCANNED N/A
b. VERTICAL 77 deg	(2) SCAN RATE N/A
	d. SECTOR BLANKING (X one)
	<input type="checkbox"/> (1) YES <input checked="" type="checkbox"/> (2) NO
10. REMARKS	
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ANTENNA EQUIPMENT CHARACTERISTICS				
1. <input type="checkbox"/> a. TRANSMITTING <input checked="" type="checkbox"/> b. RECEIVING <input type="checkbox"/> c. TRANSMITTING AND RECEIVING				
2. NOMENCLATURE, MANUFACTURER'S MODEL NO. COL-5-C		3. MANUFACTURER'S NAME DTC Communications		
4. FREQUENCY RANGE 4400 MHz – 4900 MHz		5. TYPE Collinear		
6. POLARIZATION Vertical		7. SCAN CHARACTERISTICS		
		a. TYPE FIXED		
8. GAIN		b. VERTICAL SCAN		
a. MAIN BEAM 6 dBi		(1) MAX ELEV N/A		
b. 1ST MAJOR SIDE LOBE NA		(2) MIN ELEV N/A		
		(3) SCAN RATE N/A		
9. BEAMWIDTH		c. HORIZONTAL SCAN		
a. HORIZONTAL 360 deg		(1) SECTOR SCANNED N/A		
b. VERTICAL 77 deg		(2) SCAN RATE N/A		
		d. SECTOR BLANKING (X one)		
		<input type="checkbox"/> (1) YES <input checked="" type="checkbox"/> (2) NO		
10. REMARKS				
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Table 1

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ANTENNA CONTINUATION PAGE



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APPLICATION FOR SPECTRUM REVIEW	CLASSIFICATION Unclassified	PAGE 7 of 7
NTIA GENERAL INFORMATION		
1. APPLICATION TITLE DTC Communications, Model Palladium II Digital Video Transmitter		
2. SYSTEM NOMENCLATURE Micro Air Vehicle (MAV) Explosive Ordnance Disposal (EOD)		
3. STAGE OF ALLOCATION (X one)		
<input type="checkbox"/> a. STAGE 1 - CONCEPTUAL	<input type="checkbox"/> b. STAGE 2 - EXPERIMENTAL	<input type="checkbox"/> c. STAGE 3 - DEVELOPMENTAL
		<input checked="" type="checkbox"/> d. STAGE 4 - OPERATIONAL
4. FREQUENCY REQUIREMENTS		
a. FREQUENCY(IES)	4400MHz to 5000 MHz	
b. EMISSION DESIGNATOR(S)	2M44W7D	
5. PURPOSE OF SYSTEM, OPERATIONAL AND SYSTEM CONCEPTS (WARTIME USE) (X one)		
		<input checked="" type="checkbox"/> a. YES
		<input type="checkbox"/> b. NO
Tactical reconnaissance, surveillance, targeting, and acquisition (TRSTA) of IEDs and unexploded ordnance by Joint Service EOD forces during military operations.		
6. INFORMATION TRANSFER REQUIREMENTS		
10 Mbps		
7. ESTIMATED INITIAL COST OF THE SYSTEM		
\$450K per System (estimated \$ for Block II configuration)		
8. TARGET DATE FOR		
a. APPLICATION APPROVAL	b. SYSTEM ACTIVATION	c. SYSTEM TERMINATION
June 2008	Sept 2008	
9. SYSTEM RELATIONSHIP AND ESSENTIALITY		
Joint EOD Operations		
10. REPLACEMENT INFORMATION		
NA		
11. RELATED ANALYSIS AND TEST DATA		
NA		
12. NUMBER OF MOBILE UNITS		
100		
13. GEOGRAPHICAL AREA FOR		
a. STAGE 2	N/A	
b. STAGE 3	NA	
c. STAGE 4	US&P, Iraq, and Afghanistan	
14. LINE DIAGRAM	15. SPACE SYSTEMS	
See Page(s) 6	See Page(s) NA	
16. TYPE OF SERVICE(S) FOR STAGE 4	17. STATION CLASS(ES) FOR STAGE 4	
Mobile	MO	
18. REMARKS		
Item 7: System consist of 2 Micro Air Vehicles and 1 Ground Control Station		
DOWNGRADING INSTRUCTIONS	CLASSIFICATION	
N/A	Unclassified	