C - Band Data Radio
for Orbiter 3B Unmanned A/C

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TRANSMITTER EQUIPMENT CHARACTERISTICS

1. NOMENCLATURE, MANUFACTURER'S MODEL NO. Orbiter III, Unmanned Aerial System	**2. MANUFACTURER'S NAME** Aeronautics Defense Systems, Ltd.
3. TRANSMITTER INSTALLATION Aeronautics Ltd.	**4. TRANSMITTER TYPE** GMSK
5. TUNING RANGE 4400-5100 Mhz	**6. METHOD OF TUNING** Direct conversion
7. RF CHANNELING CAPABILITY continuous;1 MHz frequency resolution, Chanel spacing 8MHz	**8. EMISSION DESIGNATOR(S)**
9. FREQUENCY TOLERANCE +-7 PPM including aging for 15 years	
10. FILTER EMPLOYED *(X one)* [X] a. YES [ ] b. NO	
11. SPREAD SPECTRUM *(X one)* [ ] a. YES [X] b. NO	**12. EMISSION BANDWIDTH** *(X and complete as applicable)* [ ] CALCULATED [X] MEASURED
13. MAXIMUM BIT RATE 2 Mbps	a. -3 dB 0.6 MHz b. -20 dB 4.2 MHz
14. MODULATION TECHNIQUES AND CODING GMSK with convolution + reed solomon	c. -40 dB 7.8 MHz d. -60 dB e. OC-BW
	15. MAXIMUM MODULATION FREQUENCY 4 MSPS
16. PRE-EMPHASIS *(X one)* [X] a. YES [ ] b. NO	**17. DEVIATION RATIO** N/A
	18. PULSE CHARACTERISTICS
19. POWER	a. RATE N/A
a. MEAN 1W	b. WIDTH N/A
b. PEP 1W	c. RISE TIME N/A
20. OUTPUT DEVICE Transistor + ceramic filter	d. FALL TIME N/A e. COMP RATIO N/A
	21. HARMONIC LEVEL
22. SPURIOUS LEVEL 80 dBC	a. 2ND -78 dBc b. 3RD -75 dBc
23. FCC TYPE ACCEPTANCE NO.	c. OTHER -80 dBc

24. REMARKS

Ground Tx

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TRANSMITTER EQUIPMENT CHARACTERISTICS

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3. TRANSMITTER INSTALLATION Aeronautics Ltd.	**4. TRANSMITTER TYPE** GMSK
5. TUNING RANGE 4400-5100 Mhz	**6. METHOD OF TUNING** Direct conversion
7. RF CHANNELING CAPABILITY continuous;1 MHz frequency resolution, Chanel spacing 8MHz	**8. EMISSION DESIGNATOR(S)**
9. FREQUENCY TOLERANCE +-7 PPM including aging for 15 years	
10. FILTER EMPLOYED *(X one)* [X] a. YES [ ] b. NO	
11. SPREAD SPECTRUM *(X one)* [ ] a. YES [X] b. NO	**12. EMISSION BANDWIDTH** *(X and complete as applicable)* [ ] CALCULATED [X] MEASURED
13. MAXIMUM BIT RATE 2 Mbps	a. -3 dB 0.6 MHz b. -20 dB 4.2 MHz
14. MODULATION TECHNIQUES AND CODING GMSK with convolution + reed solomon	c. -40 dB 7.8 MHz d. -60 dB e. OC-BW
	15. MAXIMUM MODULATION FREQUENCY 4 MSPS
16. PRE-EMPHASIS *(X one)* [X] a. YES [ ] b. NO	**17. DEVIATION RATIO** N/A
	18. PULSE CHARACTERISTICS
19. POWER	a. RATE N/A
a. MEAN 1W	b. WIDTH N/A
b. PEP 1W	c. RISE TIME N/A
20. OUTPUT DEVICE Transistor + ceramic filter	d. FALL TIME N/A e. COMP RATIO N/A
	21. HARMONIC LEVEL
22. SPURIOUS LEVEL 80 dBC	a. 2ND -78 dBc
23. FCC TYPE ACCEPTANCE NO.	b. 3RD -75 dBc
	c. OTHER -80 dBc

24. REMARKS

Airborne Tx

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RECEIVER EQUIPMENT CHARACTERISTICS

1. NOMENCLATURE, MANUFACTURER'S MODEL NO. Orbiter III, Unmanned Aerial System	**2. MANUFACTURER'S NAME** Aeronautics Defense Systems, Ltd.
3. RECEIVER INSTALLATION Aeronautics Ltd.	**4. RECEIVER TYPE** Dual conversion Superheterodyne
5. TUNING RANGE 4400-5100 Mhz	**6. METHOD OF TUNING** synthesizer
7. RF CHANNELING CAPABILITY continuous;1 MHz frequency resolution, Chanel spacing 8MHz	**8. EMISSION DESIGNATOR(S)**
9. FREQUENCY TOLERANCE +-7 PPM including aging for 15 years	

10. IF SELECTIVITY	**1ST**	**2ND**	**3RD**
a. -3 dB	6 MHz	N/A	N/A
b. -20 dB	8 MHz	N/A	XX
c. -60 dB	9.8 MHz	N/A	N/A

11. RF SELECTIVITY *(X and complete as applicable)*

[ ] CALCULATED [X] MEASURED

a. -3 dB 1716 MHz
b. -20 dB 2621 MHz
c. -60 dB 3987 MHz
d. PRESELECTION TYPE
Cavity

12. IF FREQUENCY

a. 1ST 899 Mhz
b. 2ND N/A
c. 3RD N/A

13. MAXIMUM POST DETECTION FREQUENCY
+100 KHz

14. MINIMUM POST DETECTION FREQUENCY
-100 KHz

15. OSCILLATOR TUNED	**1ST**	**2ND**	**3RD**
a. ABOVE TUNED FREQUENCY			
b. BELOW TUNED FREQUENCY			
c. EITHER ABOVE OR BELOW TUNED FREQUENCY	X	X	X

16. MAXIMUM BIT RATE
2 Mbps

17. SENSITIVITY

a. SENSITIVITY	-98	dBm
b. CRITERIA	5 dB EB/N0	
c. NOISE FIG	5	dB
d. NOISE TEMP	300	Kelvin

18. DE-EMPHASIS *(X one)*

[ ] a. YES [X] b. NO

19. IMAGE REJECTION 60 dBC	**20. SPURIOUS REJECTION** 80 dBC

21. REMARKS

Ground Rx

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RECEIVER EQUIPMENT CHARACTERISTICS

1. NOMENCLATURE, MANUFACTURER'S MODEL NO. Orbiter III, Unmanned Aerial System	**2. MANUFACTURER'S NAME** Aeronautics Defense Systems, Ltd.
3. RECEIVER INSTALLATION Aeronautics Ltd.	**4. RECEIVER TYPE** Dual conversion Superheterodyne
5. TUNING RANGE 4400-5100 Mhz	**6. METHOD OF TUNING** synthesizer
7. RF CHANNELING CAPABILITY continuous;1 MHz frequency resolution, Chanel spacing 8MHz	**8. EMISSION DESIGNATOR(S)**
9. FREQUENCY TOLERANCE +-7 PPM including aging for 15 years	

10. IF SELECTIVITY	**1ST**	**2ND**	**3RD**
a. -3 dB	6 MHz	N/A	N/A
b. -20 dB	8 MHz	N/A	XX
c. -60 dB	9.8 MHz	N/A	N/A

11. RF SELECTIVITY *(X and complete as applicable)*

[ ] CALCULATED [X] MEASURED

- a. -3 dB 1716 MHz
- b. -20 dB 2621 MHz
- c. -60 dB 3987 MHz
- d. PRESELECTION TYPE: Cavity

12. IF FREQUENCY

- a. 1ST 899 Mhz
- b. 2ND N/A
- c. 3RD N/A

13. MAXIMUM POST DETECTION FREQUENCY

+100 KHz

14. MINIMUM POST DETECTION FREQUENCY

-100 KHz

15. OSCILLATOR TUNED	**1ST**	**2ND**	**3RD**
a. ABOVE TUNED FREQUENCY			
b. BELOW TUNED FREQUENCY			
c. EITHER ABOVE OR BELOW TUNED FREQUENCY	X	X	X

16. MAXIMUM BIT RATE

2 Mbps

17. SENSITIVITY

a. SENSITIVITY	-98	dBm
b. CRITERIA	5 dB EB/N0	
c. NOISE FIG	5	dB
d. NOISE TEMP	300	Kelvin

18. DE-EMPHASIS *(X one)*

[ ] a. YES [X] b. NO

19. IMAGE REJECTION

60 dBC

20. SPURIOUS REJECTION

80 dBC

21. REMARKS

Airborne Rx

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ANTENNA EQUIPMENT CHARACTERISTICS

1. [ ] a. TRANSMITTING [ ] b. RECEIVING [X] c. TRANSMITTING AND RECEIVING

2. NOMENCLATURE, MANUFACTURER'S MODEL NO. Orbiter III, Unmanned Aerial System	3. MANUFACTURER'S NAME Aeronautics Defense Systems, Ltd.
4. FREQUENCY RANGE 4400-5100MHz	5. TYPE Planer Antenna
6. POLARIZATION Linear Vertical	7. SCAN CHARACTERISTICS a. TYPE Horizonatl
8. GAIN	b. VERTICAL SCAN
a. MAIN BEAM 19-23dBi@4.4-5.1GHz	(1) MAX ELEV N/A
b. 1ST MAJOR SIDE LOBE -10 dBi	(2) MIN ELEV N/A
	(3) SCAN RATE N/A
9. BEAMWIDTH	c. HORIZONTAL SCAN
a. HORIZONTAL 9.5deg	(1) SECTOR SCANNED 360 deg
b. VERTICAL 11.5deg	(2) SCAN RATE 15 deg/sec
	d. SECTOR BLANKING *(X one)* [ ] (1) YES [X] (2) NO

10. REMARKS

Ground Directional Antenna

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ANTENNA EQUIPMENT CHARACTERISTICS

1. [ ] a. TRANSMITTING [ ] b. RECEIVING [X] c. TRANSMITTING AND RECEIVING

2. NOMENCLATURE, MANUFACTURER'S MODEL NO. Orbiter III, Unmanned Aerial System	3. MANUFACTURER'S NAME Aeronautics Defense Systems, Ltd.
4. FREQUENCY RANGE 4400-5100 Mhz	5. TYPE Omni directional
6. POLARIZATION Linear Vertical	7. SCAN CHARACTERISTICS a. TYPE N/A
8. GAIN	b. VERTICAL SCAN
a. MAIN BEAM 2 dBi	(1) MAX ELEV N/A
b. 1ST MAJOR SIDE LOBE 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 +50 deg	(2) SCAN RATE N/A
	d. SECTOR BLANKING *(X one)* [ ] (1) YES [X] (2) NO

10. REMARKS

Ground Omni Antenna

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ANTENNA EQUIPMENT CHARACTERISTICS

1. [ ] a. TRANSMITTING [ ] b. RECEIVING [X] c. TRANSMITTING AND RECEIVING

2. NOMENCLATURE, MANUFACTURER'S MODEL NO. Orbiter III, Unmanned Aerial System	3. MANUFACTURER'S NAME Aeronautics Defense Systems, Ltd.
4. FREQUENCY RANGE 4400-5100 Mhz	5. TYPE Omni directional
6. POLARIZATION Linear Vertical	7. SCAN CHARACTERISTICS a. TYPE N/A
8. GAIN	b. VERTICAL SCAN
a. MAIN BEAM 2 dBi	(1) MAX ELEV N/A
b. 1ST MAJOR SIDE LOBE 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 +60 deg	(2) SCAN RATE N/A
	d. SECTOR BLANKING *(X one)* [ ] (1) YES [X] (2) NO

10. REMARKS

Airborne Blade Antenna (Omni)

CLASSIFICATION	
Unclassified	

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