

UNCLASSIFIED	
SECURITY SUMMARY & SPECIAL HANDLING REQUIREMENTS	
The title of this application is : RT-1944A/U Radio Set The overall classification of this application is : UNCLASSIFIED	
Refer to your Security Manual for further guidance.	
The Application Level Special Handling is : A Approved for public release; distribution is unlimited (DoD Directive 5230.24)	
DOWNGRADING INSTRUCTIONS	
	CLASSIFICATION UNCLASSIFIED

APPLICATION FOR EQUIPMENT FREQUENCY ALLOCATION		CLASSIFICATION UNCLASSIFIED		DATE 7/26/2010		PAGE 1	
DOD GENERAL INFORMATION							
TO (U) Defense Information Systems Agency ATTN: Navy and Marine Corp Spectrum Center (NMSC) P.O. Box 549, Fort Meade, MD 20755-0549				FROM			
1. APPLICATION TITLE (U) RT-1944A/U Radio Set							
2. SYSTEM NOMENCLATURE (U) RT-1944A/U Radio Set							
3. STAGE OF ALLOCATION (U) ☐ a. STAGE 1 CONCEPTUAL ☒ b. STAGE 2 EXPERIMENTAL ☐ c. STAGE 3 DEVELOPMENTAL ☐ d. STAGE 4 OPERATIONAL							
4. FREQUENCY REQUIREMENTS (See Data Overflow Page) a. FREQUENCY(IES) (U) 2200.000 MHz - 2300.000 MHz (U) 2310.000 MHz - 2395.000 MHz (U) 4500.000 MHz - 4940.000 MHz b. EMISSION DESIGNATORS (U) 10M7W7D (U) 22M6W7D (U) 40M7W7D (U) 5M33W7D							
5. TARGET STARTING DATE FOR SUBSEQUENT STAGES							
a. STAGE 2		b. STAGE 3			c. STAGE 4		
6. EXTENT OF USE (U) The RT-1944A/U radio set will be used intermittently 24-hours a day, 7 days a (See Data Overflow Page)							
7. GEOGRAPHICAL AREA FOR							
a. STAGE 2 (U) Panama City Naval Coastal Syst, (U) FL - Polygon (See Data Overflow Page)							
b. STAGE 3							
c. STAGE 4							
8. NUMBER OF UNITS							
a. STAGE 2		b. STAGE 3			c. STAGE 4		
9. NUMBER OF UNITS OPERATING SIMULTANEOUSLY IN THE SAME ENVIRONMENT (U) 2							
10. OTHER J/F 12 APPLICATION ID(S) TO BE ☐ a. SUPERSEDED ☐ b. RELATED				11. IS THERE ANY OPERATIONAL REQUIREMENT AS DESCRIBED IN THE INSTRUCTIONS FOR PARAGRAPH 11? ☐ a. YES ☐ b. NO ☐ c. NAVAIL			
12. NAMES AND TELEPHONE NUMBERS							
13. REMARKS							
DOWNGRADING INSTRUCTIONS Special Handling Instruction : A						CLASSIFICATION UNCLASSIFIED	

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DOD DATA OVERFLOW PAGE		
4. FREQUENCIES (U) 4950.000 MHz - 4990.000 MHz (U) 5150.000 MHz - 5250.000 MHz		
6. EXTENT OF USE Cont. (U) s a week		
7. GEOGRAPHICAL AREA FOR Stage 2 (U) Melbourne, (U) Florida Single Point - Lat/Lon		
DOWNGRADING INSTRUCTIONS Special Handling Instruction : A		CLASSIFICATION UNCLASSIFIED

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TRANSMITTER EQUIPMENT CHARACTERISTICS			
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) RT-1944A/U Transmitter, (U) RT-1944/U		2. MANUFACTURER'S NAME (U) RELIABLE SYSTEM SERVICES CORP.	
3. TRANSMITTER INSTALLATION		4. TRANSMITTER TYPE (U) Networked Data Communications	
5. TUNING RANGE (U) 2200.000 - 2600.000 MHz (U) 4500.000 - 6000.000 MHz		6. METHOD OF TUNING (U) Synthesizer	
7. RF CHANNELING CAPABILITY (U) 1000.0 kHz Increments (U) 1000.0 kHz Increments		8. EMISSION DESIGNATORS (U) 10M7W7D (U) 22M6W7D (See Data Overflow Page)	
9. FREQUENCY TOLERANCE (U) 10 ppm		12. EMISSION BANDWIDTH ☒ CALCULATED ☐ MEASURED	
10. FILTER EMPLOYED (U) Bandpass Filter		a. -3 dB (U) 9000 kHz (U) 9000 kHz	
11. SPREAD SPECTRUM ☐ a. YES ☒ b. NO		b. -20 dB (U) 11000 kHz (U) 11000 kHz	
13. MAXIMUM BIT RATE (U) 135000000 bps		c. -40 dB (U) 28000 kHz (U) 28000 kHz	
14. MODULATION TECHNIQUES AND CODING (U) Digital		d. -60 dB (U) 38000 kHz (U) 38000 kHz	
16. PRE-EMPHASIS ☐ a. YES ☐ b. NO		e. OC-BW (U) 10700 kHz (U) 10700 kHz	
19. POWER		15. MAXIMUM MODULATION FREQUENCY (U) 4000.0 kHz (U) 4000.0 kHz	
a. MEAN (U) 4.00 W - (U) 30.0 W		17. DEVIATION RATIO	
b. PEP (U) 200 W		18. PULSE CHARACTERISTICS	
c. CARRIER		a. RATE	
20. OUTPUT DEVICE (U) Transistor		b. WIDTH	
22. SPURIOUS LEVEL (U) -65.0 dB		c. RISE TIME	
23. FCC TYPE ACCEPTANCE NO.		d. FALL TIME	
24. REMARKS (U) (U) Frequencies: Low Band 2200 - 2600 MHz (prefer 2200 - 2400 MHz) and High Band 4500 - 6000 MHz (prefer 4800 - 5000 MHz). Low band will be used to support ship to off-board Platforms, ship to airborne, and airborne to off-board platforms. High band will be used to support ship-to-ship and off-board platform launch-recovery communications.		e. COMP RATIO	
(U) Tuning Increments: 2200MHz, 1 MHz steps, 400 overlapping channels. 4500MHz, 1MHz steps, 1500 overlapping channels		21. HARMONIC LEVEL	
		a. (U) -65.0 dB	
		b. (U) -85.0 dB	
		c. (U) -95.0 dB	
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CLASSIFICATION UNCLASSIFIED	PAGE 4																																																												
TRANSMITTER DATA OVERFLOW PAGE																																																													
8. EMISSION DESIGNATORS (U) 40M7W7D (U) 5M33W7D																																																													
12. EMISSION BANDWIDTH <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">-3.00 dB (U) 18000 kHz</td> <td style="width: 33%;">-3.00 dB (U) 18000 kHz</td> <td style="width: 33%;">-3.00 dB (U) 38000 kHz</td> </tr> <tr> <td>-20.0 dB (U) 22000 kHz</td> <td>-20.0 dB (U) 22000 kHz</td> <td>-20.0 dB (U) 42000 kHz</td> </tr> <tr> <td>-40.0 dB (U) 54000 kHz</td> <td>-40.0 dB (U) 54000 kHz</td> <td>-40.0 dB (U) 110000 kHz</td> </tr> <tr> <td>-60.0 dB (U) 76000 kHz</td> <td>-60.0 dB (U) 76000 kHz</td> <td>-60.0 dB (U) 156000 kHz</td> </tr> <tr> <td>Calculated</td> <td>Calculated</td> <td>Calculated</td> </tr> <tr> <td>OC-BW (U) 22600 kHz</td> <td>OC-BW (U) 22600 kHz</td> <td>OC-BW (U) 40700 kHz</td> </tr> <tr><td colspan="3"> </td></tr> <tr> <td>-3.00 dB (U) 38000 kHz</td> <td>-3.00 dB (U) 4500 kHz</td> <td>-3.00 dB (U) 4500 kHz</td> </tr> <tr> <td>-20.0 dB (U) 42000 kHz</td> <td>-20.0 dB (U) 5500 kHz</td> <td>-20.0 dB (U) 5500 kHz</td> </tr> <tr> <td>-40.0 dB (U) 110000 kHz</td> <td>-40.0 dB (U) 14000 kHz</td> <td>-40.0 dB (U) 14000 kHz</td> </tr> <tr> <td>-60.0 dB (U) 156000 kHz</td> <td>-60.0 dB (U) 19000 kHz</td> <td>-60.0 dB (U) 19000 kHz</td> </tr> <tr> <td>Calculated</td> <td>Calculated</td> <td>Calculated</td> </tr> <tr> <td>OC-BW (U) 40700 kHz</td> <td>OC-BW (U) 5330.0 kHz</td> <td>OC-BW (U) 5330.0 kHz</td> </tr> </table>		-3.00 dB (U) 18000 kHz	-3.00 dB (U) 18000 kHz	-3.00 dB (U) 38000 kHz	-20.0 dB (U) 22000 kHz	-20.0 dB (U) 22000 kHz	-20.0 dB (U) 42000 kHz	-40.0 dB (U) 54000 kHz	-40.0 dB (U) 54000 kHz	-40.0 dB (U) 110000 kHz	-60.0 dB (U) 76000 kHz	-60.0 dB (U) 76000 kHz	-60.0 dB (U) 156000 kHz	Calculated	Calculated	Calculated	OC-BW (U) 22600 kHz	OC-BW (U) 22600 kHz	OC-BW (U) 40700 kHz				-3.00 dB (U) 38000 kHz	-3.00 dB (U) 4500 kHz	-3.00 dB (U) 4500 kHz	-20.0 dB (U) 42000 kHz	-20.0 dB (U) 5500 kHz	-20.0 dB (U) 5500 kHz	-40.0 dB (U) 110000 kHz	-40.0 dB (U) 14000 kHz	-40.0 dB (U) 14000 kHz	-60.0 dB (U) 156000 kHz	-60.0 dB (U) 19000 kHz	-60.0 dB (U) 19000 kHz	Calculated	Calculated	Calculated	OC-BW (U) 40700 kHz	OC-BW (U) 5330.0 kHz	OC-BW (U) 5330.0 kHz																					
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24. REMARKS (U) Filter Type: Bandpass Filter - External #1, Passband loss of < 1.2 dB from 2200-2400MHz, -3dB at 2175-2425MHz, -20dB at 2150-2450MHz, -40dB at 2100-2500MHz, -60dB at 2000-2600MHz. . External #2, Passband loss of <1.2dB from 4500-4990MHz, -3dB at 4450-5040MHz, -20dB at -4400MHz-5090MHz, -40dB at 4300-5190MHz, -60dB at 4100-5390MHz (U) Modulation Type: OFDM, each tone(information rate, excludes coding) 40MHz Mode <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Link Rate</td> <td style="width: 20%;">Mod.</td> <td style="width: 60%;">Coding</td> </tr> <tr> <td>6Mbps</td> <td>BPSK</td> <td>1/2 rate</td> </tr> <tr> <td>13.5Mbps</td> <td>BPSK</td> <td>1/2 rate</td> </tr> <tr> <td>27Mbps</td> <td>QPSK</td> <td>1/2 rate</td> </tr> <tr> <td>40.5Mbps</td> <td>QPSK</td> <td>3/4 rate</td> </tr> <tr> <td>54Mbps</td> <td>16-QAM</td> <td>1/2 rate</td> </tr> <tr> <td>81Mbps</td> <td>16-QAM</td> <td>3/4 rate</td> </tr> <tr> <td>108Mbps</td> <td>64-QAM</td> <td>2/3 rate</td> </tr> <tr> <td>121.5Mbps</td> <td>64-QAM</td> <td>3/4 rate</td> </tr> <tr> <td>135Mbps</td> <td>64-QAM</td> <td>5/6 rate</td> </tr> </table> 20MHz Mode <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Link Rate</td> <td style="width: 20%;">Mod.</td> <td style="width: 60%;">Coding</td> </tr> <tr> <td>6.5Mbps</td> <td>BPSK</td> <td>1/2 rate</td> </tr> <tr> <td>13Mbps</td> <td>QPSK</td> <td>1/2 rate</td> </tr> <tr> <td>19.5Mbps</td> <td>QPSK</td> <td>3/4 rate</td> </tr> <tr> <td>26Mbps</td> <td>16-QAM</td> <td>1/2 rate</td> </tr> <tr> <td>39Mbps</td> <td>16-QAM</td> <td>3/4 rate</td> </tr> <tr> <td>52Mbps</td> <td>64-QAM</td> <td>2/3 rate</td> </tr> <tr> <td>58.5Mbps</td> <td>64-QAM</td> <td>3/4 rate</td> </tr> <tr> <td>65Mbps</td> <td>64-QAM</td> <td>5/6 rate</td> </tr> </table> 10MHz Mode <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Link Rate</td> <td style="width: 20%;">Mod.</td> <td style="width: 60%;">Coding</td> </tr> </table>		Link Rate	Mod.	Coding	6Mbps	BPSK	1/2 rate	13.5Mbps	BPSK	1/2 rate	27Mbps	QPSK	1/2 rate	40.5Mbps	QPSK	3/4 rate	54Mbps	16-QAM	1/2 rate	81Mbps	16-QAM	3/4 rate	108Mbps	64-QAM	2/3 rate	121.5Mbps	64-QAM	3/4 rate	135Mbps	64-QAM	5/6 rate	Link Rate	Mod.	Coding	6.5Mbps	BPSK	1/2 rate	13Mbps	QPSK	1/2 rate	19.5Mbps	QPSK	3/4 rate	26Mbps	16-QAM	1/2 rate	39Mbps	16-QAM	3/4 rate	52Mbps	64-QAM	2/3 rate	58.5Mbps	64-QAM	3/4 rate	65Mbps	64-QAM	5/6 rate	Link Rate	Mod.	Coding
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TRANSMITTER DATA OVERFLOW PAGE

24. REMARKS (continued)

Cont.

(U)

3Mbps	BPSK	1/2 rate
4.5Mbps	BPSK	3/4 rate
6Mbps	QPSK	1/2 rate
9Mbps	QPSK	3/4 rate
12Mbps	16-QAM	1/2 rate
18Mbps	16-QAM	3/4 rate
24Mbps	64-QAM	2/3 rate
27Mbps	64-QAM	3/4 rate

5 MHz Mode

Link Rate	Mod.	Coding
1.5Mbps	BPSK	1/2 rate
2.25Mbps	BPSK	3/4 rate
3Mbps	QPSK	1/2 rate
4.5Mbps	QPSK	3/4 rate
6Mbps	16-QAM	1/2 rate
9Mbps	16-QAM	3/4 rate
12Mbps	64-QAM	2/3 rate
13.5Mbps	64-QAM	3/4 rate

(U) Power: The RT1944 is a pulsed system with a high crest factor modulation where the average to peak power ratio varies from 3dB to 8dB depending on the modulation used. Maximum Mean is 60W average pulse power x 80% maximum duty cycle. This listed Peak envelope Power may exist for a single modulation symbol with a maximum duration of 16usec

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RECEIVER EQUIPMENT CHARACTERISTICS					
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) RT-1944A/U Receiver, (U) RT-1944/U			2. MANUFACTURER'S NAME (U) RELIABLE SYSTEM SERVICES CORP.		
3. RECEIVER INSTALLATION			4. RECEIVER TYPE		
5. TUNING RANGE (U) 2200.000 - 2600.000 MHz (U) 4500.000 - 6000.000 MHz			6. METHOD OF TUNING (U) Synthesizer		
7. RF CHANNELING CAPABILITY (U) 1000.0 kHz Increments (U) 5000.0 kHz Increments			8. EMISSION DESIGNATORS (See Data Overflow Page) (U) 10M7W7D (U) 22M6W7D		
9. FREQUENCY TOLERANCE (U) 10 ppm			11. RF SELECTIVITY (See Data Overflow Page) ☐ CALCULATED ☒ MEASURED		
10. IF SELECTIVITY	1st (U)	2nd (U)	3rd (U)	a. -3 dB (U) 250000 kHz	
(See Data Overflow Page) a. -3 dB	(U) 38000 kHz	(U) 44000 kHz	(U) 44000 kHz	b. -20 dB (U) 300000 kHz	
b. -20 dB	(U) 40000 kHz	(U) 120000 kHz	(U) 120000 kHz	c. -60 dB (U) 600000 kHz	
c. -60 dB	(U) 60000 kHz	(U) 250000 kHz	(U) 250000 kHz	d. Preselection Type (U) Bandpass Filter	
12. IF FREQUENCY				13. MAXIMUM POST DETECTION FREQUENCY (U) 18.12500 MHz	
a. 1st (U) 1767.000 MHz				14. MINIMUM POST DETECTION FREQUENCY (U) 0.3125000 MHz	
b. 2nd (U) 1767.000 MHz				16. MAXIMUM BIT RATE (U) 72000000 bps	
c. 3rd (U) 5300.000 MHz				17. SENSITIVITY (See Data Overflow Page)	
15. OSCILLATOR TUNED		1st	2nd	a. SENSITIVITY (U) -67.0 dBm	
a. ABOVE TUNED FREQUENCY				b. CRITERIA (U) 10 (U) Other	
b. BELOW TUNED FREQUENCY				c. NOISE FIG (U) 4.00 dB	
c. EITHER ABOVE OR BELOW THE FREQUENCY		(U) X		d. NOISE TEMP (U) 438 K	
18. DE-EMPHASIS ☐ a. YES ☐ b. NO				20. SPURIOUS REJECTION (See Data Overflow Page) (U) 60.0 dB (U) 60.0 dB (U) 60.0 dB	
19. IMAGE REJECTION (U) 70.0 dB					
21. REMARKS (U) (U) Frequencies: Low Band 2200 - 2600 MHz (prefer 2200 - 2400 MHz) and High Band 4500 - 6000 MHz (prefer 4800 - 5000 MHz). Low band will be used to support ship to off-board Platforms, ship to airborne, and airborne to off-board platforms. High band will be used to support ship-to-ship and off-board platform launch-recovery communications (U) Tuning Increments: 2200MHz, 1 MHz steps, 400 overlapping channels. 4500MHz, 1MHz steps, 1500 overlapping channels (U) IF Selectivity: 1st Stage IF selectivity only valid for Low Band. 2nd Stage IF does not contain any filtering and utilizes double balanced, image rejecting mixers. Channel selectivity established at baseband (third IF stage): -3dB nominal 38MHz, -20dB nominal 40MHz, -40dB nominal 60MHz					
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RECEIVER DATA OVERFLOW PAGE			
8. EMISSION DESIGNATORS (U) 40M7W7D (U) 5M33W7D			
10. IF SELECTIVITY			
3.00 dB (U) 44000 kHz 20.0 dB (U) 120000 kHz 60.0 dB (U) 250000 kHz Calculated	3.00 dB (U) 44000 kHz 20.0 dB (U) 120000 kHz 60.0 dB (U) 250000 kHz Calculated	3.00 dB (U) 38000 kHz 20.0 dB (U) 40000 kHz 60.0 dB (U) 60000 kHz Calculated	
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11. RF SELECTIVITY 3.00 dB(U) 590000 kHz 20.0 dB(U) 890000 kHz 60.0 dB(U) 1290000 kHz Measured			
12. IF FREQUENCY			
(U) 5300.000 MHz (U) 1767.000 MHz (U) 1767.000 MHz (U) 1767.000 MHz (U) 1767.000 MHz (U) 1767.000 MHz	(U) 1767.000 MHz (U) 1767.000 MHz (U) 1767.000 MHz (U) 1767.000 MHz (U) 1767.000 MHz (U) 1767.000 MHz	(U) 1767.000 MHz (U) 5300.000 MHz (U) 5300.000 MHz (U) 1767.000 MHz (U) 1767.000 MHz	
17. SENSITIVITY			
a. SENSITIVITY	(U) -67.0 dBm		
b. CRITERIA	(U) 10 (U) Other		
c. NOISE FIGURE	(U) 4.00 dB		
d. NOISE TEMPERATURE	(U) 438 K		
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RECEIVER DATA OVERFLOW PAGE

17. SENSITIVITY (continued)

a. SENSITIVITY (U) -67.0 dBm
b. CRITERIA (U) 10 (U) Other
c. NOISE FIGURE (U) 4.00 dB
d. NOISE TEMPERATURE (U) 438 K

a. SENSITIVITY (U) -67.0 dBm
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a. SENSITIVITY (U) -67.0 dBm
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20. SPURIOUS REJECTION

(U) 60.0 dB (U) 60.0 dB (U) 60.0 dB
(U) 60.0 dB (U) 60.0 dB

21. REMARKS

(U) RF Selectivity: (U) Filter Type: Bandpass Filter - External #1, Passband loss of < 1.2 dB from 2200-2400MHz, -3dB at 2175-2425MHz, -20dB at 2150-2450MHz, -40dB at 2100-2500MHz, -60dB at 2000-2600MHz. . External #2, Passband loss of <1.2dB from 4500-4990MHz, -3dB at 4450-5040MHz, -20dB at -4400MHz-5090MHz, -40dB at 4300-5190MHz, -60dB at 4100-5390MHz

(U) IF Frequency: Low band does a frequency conversion into the High Band Range at 5300MHz at 1st IF. 2nd IF = 1/3 of 5300 or 1767MHz. 3rd IF is the resulting I/Q baseband signals. High band: 1st IF is tunable at 1/3 RF Frequency selected. The 2nd IF is the resulting I/Q baseband signals

(U) Sensitivity: All modes/link rates: criteria is 10% Packet Error Rate (PER) for 1500 byte packets for both Low and High Bands

40MHz Mode

Link Rate Sensitivity

6Mbps -89 dBm

13.5Mbps -85.5 dBm

27Mbps -83.5 dBm

40.5Mbps -81.5 dBm

54Mbps -77.5 dBm

RECEIVER DATA OVERFLOW PAGE

21. REMARKS (continued)

Cont.

(U)

81Mbps	-73.5 dBm
108Mbps	-70.5 dBm
121.5Mbps	-68.5 dBm
135Mbps	-67.0 dBm

20MHz Mode

Link Rate	Sensitivity
6.5Mbps	-93.5 dBm
13Mbps	-89.5 dBm
19.5Mbps	-87.5 dBm
26Mbps	-83.5 dBm
39Mbps	-79.5 dBm
52Mbps	-76.5 dBm
58.5Mbps	-74.5 dBm
65Mbps	-73.5 dBm

10MHz Mode

Link Rate	Sensitivity
3Mbps	-95 dBm
4.5Mbps	-92 dBm
6Mbps	-91 dBm
9Mbps	-89 dBm
12Mbps	-85 dBm
18Mbps	-82 dBm
24Mbps	-78 dBm
27Mbps	-76 dBm

5MHz Mode

Link Rate	Sensitivity
1.5Mbps	-98 dBm
2.25Mbps	-95 dBm
3Mbps	-94 dBm
4.5Mbps	-92 dBm
6Mbps	-88 dBm
9Mbps	-85 dBm
12Mbps	-81 dBm
13.5Mbps	-79 dBm

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ANTENNA EQUIPMENT CHARACTERISTICS			
1. ☐ a. TRANSMITTING ☐ b. RECEIVING ☒ c. TRANSMITTING AND RECEIVING			
2. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) HAIGH-FARR Model 6125, (U) 6125		3. MANUFACTURER'S NAME (U) HAIGH-FARR INCORPORATED	
4. FREQUENCY RANGE (U) 2200.000 - 2500.000 MHz		5. TYPE (U) Blade	
6. POLARIZATION (U) Vertical		7. SCAN CHARACTERISTICS	
8. GAIN		a. TYPE	
a. MAIN BEAM (U) 3.00 dBi		b. VERTICAL SCAN	
b. 1st MAJOR SIDE LOBE Horz. (U) 3 dB Actual Vert. (U) -17 dB Actual		(1) Max Elev	
9. BEAMWIDTH		(2) Min Elev	
a. HORIZONTAL (U) 360 degrees		(3) Scan Rate	
b. VERTICAL (U) 30.0 degrees		c. HORIZONTAL SCAN	
		(1) Sector Scanned	
		(2) Scan Rate	
		d. SECTOR BLANKING ☐ (1) YES ☐ (2) NO	
10. REMARKS (U) (U) Antenna is omni-directional used for airborne platforms			
CLASSIFICATION UNCLASSIFIED			

CLASSIFICATION UNCLASSIFIED	PAGE 11
ANTENNA EQUIPMENT CHARACTERISTICS	
1. ☐ a. TRANSMITTING ☐ b. RECEIVING ☒ c. TRANSMITTING AND RECEIVING	
2. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) 3209029-101 Dipole Array	3. MANUFACTURER'S NAME (U) HARRIS CORP
4. FREQUENCY RANGE (U) 2200.000 - 5900.000 MHz	5. TYPE (U) Dipole Array
6. POLARIZATION (U) Vertical	7. SCAN CHARACTERISTICS
8. GAIN	a. TYPE
a. MAIN BEAM (U) 16.0 dBi	b. VERTICAL SCAN (U) Fixed
b. 1st MAJOR SIDE LOBE	(1) Max Elev
9. BEAMWIDTH	(2) Min Elev
a. HORIZONTAL (U) 60.0 degrees	(3) Scan Rate (U) 0.000 scans/min (U) 0.000 degrees/sec
b. VERTICAL (U) 15.0 degrees	c. HORIZONTAL SCAN
d. SECTOR BLANKING ☐ (1) YES ☐ (2) NO	(1) Sector Scanned (U) 360 degrees
10. REMARKS (U) (U) Antenna Lower Frequency Limit/Antenna Upper Frequency Limit: Band 1: 2200 - 2500 MHz Band 2: 4800 - 5900 MHz (U) Polarization: Linear, Vertical (U) Antenna Main Beam Gain: Band 1 (2.2-2.5 GHz): 16.0 dBi Band 2 (4.8-5.9 GHz): 14.7 dBi (U) 1st major Sidelobe: Sidelobe levels are given relative to main beam peak Band 1 (2.2-2.5 GHz): -39 dB at +/- 120 degrees Horizontal, -7 dB at +/- 30 degrees Vertical Band 2 (4.8-5.9 GHz): -40 dB at +/- 120 degrees Horizontal, -5 dB at +/- 30 degrees Vertical (U) Antenna Horizontal Beamwidth/Antenna Vertical Beamwidth: Band 1 (2.2-2.5 GHz): 54 degrees Horizontal, 17 degrees Vertical Band 2 (4.8-5.9 GHz): 67 degrees Horizontal, 14 degrees Vertical	
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ANTENNA EQUIPMENT CHARACTERISTICS			
1. ☐ a. TRANSMITTING ☐ b. RECEIVING ☒ c. TRANSMITTING AND RECEIVING			
2. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) Direct Beam dBi22-24-16		3. MANUFACTURER'S NAME (U) DIRECT BEAM INC	
4. FREQUENCY RANGE (U) 2200.000 - 2400.000 MHz		5. TYPE (U) Dipole Array	
6. POLARIZATION (U) Vertical		7. SCAN CHARACTERISTICS	
8. GAIN		a. TYPE	
a. MAIN BEAM (U) 16.0 dBi		b. VERTICAL SCAN	
b. 1st MAJOR SIDE LOBE Horz. (U) 3.90 dB Actual Vert. (U) 3.90 dB Actual		(1) Max Elev	
9. BEAMWIDTH		(2) Min Elev	
a. HORIZONTAL (U) 28.3 degrees		(3) Scan Rate	
b. VERTICAL (U) 22.4 degrees		c. HORIZONTAL SCAN	
10. REMARKS (U) (U) 1st Major Sidelobe: -12.1 dB (3.9dBi) at +/- 40 degrees Horizontal -10.6 dB (6.0 dBi) at +/- 50 degrees Vertical		(1) Sector Scanned	
d. SECTOR BLANKING		☐ (1) YES ☐ (2) NO	
(2) Scan Rate		(2) NO	

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ANTENNA EQUIPMENT CHARACTERISTICS

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

3. MANUFACTURER'S NAME
(U) RELIABLE SYSTEM SERVICES CORP.

5. TYPE (U) Dipole Array

7. SCAN CHARACTERISTICS

(1) Max Elev

(2) Min Elev

(3) Scan Rate

c. HORIZONTAL SCAN

(1) Sector Scanned

d. SECTOR BLANKING ☐ (1) YES ☐ (2) NO

10. REMARKS

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ANTENNA EQUIPMENT CHARACTERISTICS			
1. ☐ a. TRANSMITTING ☐ b. RECEIVING ☒ c. TRANSMITTING AND RECEIVING			
2. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) RSS 224015-005A		3. MANUFACTURER'S NAME (U) RELIABLE SYSTEM SERVICES CORP.	
4. FREQUENCY RANGE (U) 2200.000 - 2400.000 MHz		5. TYPE (U) Dipole Array	
6. POLARIZATION (U) Vertical		7. SCAN CHARACTERISTICS	
8. GAIN		a. TYPE	
a. MAIN BEAM (U) 6.00 dBi		b. VERTICAL SCAN	
b. 1st MAJOR SIDE LOBE Horz. (U) -5.00 dB Actual Vert. (U) -5.00 dB Actual		(1) Max Elev	
9. BEAMWIDTH		(2) Min Elev	
a. HORIZONTAL (U) 360 degrees		(3) Scan Rate	
b. VERTICAL (U) 20.0 degrees		c. HORIZONTAL SCAN	
10. REMARKS		(1) Sector Scanned	
		(2) Scan Rate	
		d. SECTOR BLANKING ☐ (1) YES ☐ (2) NO	
CLASSIFICATION		UNCLASSIFIED	

APPLICATION FOR SPECTRUM REVIEW		CLASSIFICATION UNCLASSIFIED	PAGE 22
NTIA GENERAL INFORMATION			
TX (U) RT-1944A/U Transmitter, RX (U) RT-1944A/U Receiver, (U) 30.0 W Mean, (U) 2200.000 MHz - 2290.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX (U) RT-1944A/U Receiver, (U) 30.0 W Mean, (U) 2360.000 MHz - 2395.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX (U) RT-1944A/U Receiver, (U) 30.0 W Mean, (U) 2345.000 MHz - 2360.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX (U) RT-1944A/U Receiver, (U) 30.0 W Mean, (U) 2200.000 MHz - 2290.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX (U) RT-1944A/U Receiver, (U) 30.0 W Mean, (U) 2360.000 MHz - 2395.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX (U) RT-1944A/U Receiver, (U) 30.0 W Mean, (U) 2345.000 MHz - 2360.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX (U) RT-1944A/U Receiver, (U) 30.0 W Mean, (U) 2310.000 MHz - 2320.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX (U) RT-1944A/U Receiver, (U) 30.0 W Mean, (U) 2200.000 MHz - 2290.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 5150.000 MHz - 5250.000 MHz (U) 40M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 4500.000 MHz - 4940.000 MHz (U) 40M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 5150.000 MHz - 5250.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 4950.000 MHz - 4990.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 4500.000 MHz - 4940.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 5150.000 MHz - 5250.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 4950.000 MHz - 4990.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 4500.000 MHz - 4940.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 5150.000 MHz - 5250.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 4950.000 MHz - 4990.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 4500.000 MHz - 4940.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2200.000 MHz - 2290.000 MHz (U) 40M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2360.000 MHz - 2395.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2200.000 MHz - 2290.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2360.000 MHz - 2395.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2345.000 MHz - 2360.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2200.000 MHz - 2290.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2360.000 MHz - 2395.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2345.000 MHz - 2360.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2310.000 MHz - 2320.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 200 W Peak, (U) 2200.000 MHz - 2290.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 5150.000 MHz - 5250.000 MHz (U) 40M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 4500.000 MHz - 4940.000 MHz (U) 40M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 5150.000 MHz - 5250.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 4950.000 MHz - 4990.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 4500.000 MHz - 4940.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 5150.000 MHz - 5250.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 4950.000 MHz - 4990.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 4500.000 MHz - 4940.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 5150.000 MHz - 5250.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 4950.000 MHz - 4990.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 4500.000 MHz - 4940.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2200.000 MHz - 2290.000 MHz (U) 40M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2360.000 MHz - 2395.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2200.000 MHz - 2290.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2360.000 MHz - 2395.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2345.000 MHz - 2360.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2200.000 MHz - 2290.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2360.000 MHz - 2395.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2345.000 MHz - 2360.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2310.000 MHz - 2320.000 MHz (U) 5M33W7D			
DOWNGRADING INSTRUCTIONS			
Special Handling Instruction : A		CLASSIFICATION UNCLASSIFIED	

[illegible]

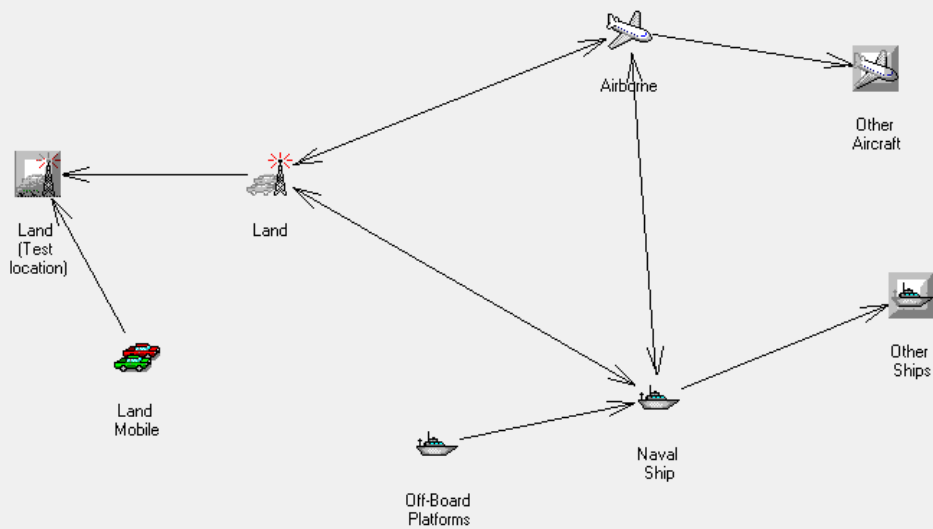
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NTIA GENERAL INFORMATION		
TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 4500.000 MHz - 4940.000 MHz (U) 5M33W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2200.000 MHz - 2300.000 MHz (U) 40M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2200.000 MHz - 2300.000 MHz (U) 22M6W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2200.000 MHz - 2300.000 MHz (U) 10M7W7D TX (U) RT-1944A/U Transmitter, RX - Generic (U) 30.0 W Mean, (U) 2200.000 MHz - 2300.000 MHz (U) 5M33W7D		
DOWNGRADING INSTRUCTIONS		
Special Handling Instruction : A		CLASSIFICATION UNCLASSIFIED

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NTIA DATA OVERFLOW PAGE		
4. FREQUENCIES (U) 4950.000 MHz - 4990.000 MHz (U) 5150.000 MHz - 5250.000 MHz		
5. PURPOSE OF SYSTEM, OPERATIONAL AND SYSTEM CONCEPTS Cont. (U) function independent of the transport vessel		
13. GEOGRAPHICAL AREA FOR Stage 2 (U) Melbourne, (U) Florida Single Point - Lat/Lon		
16. TYPE OF SERVICE(S) FOR STAGE 4 Land Mobile Maritime Mobile		
17. STATION CLASS(ES) FOR STAGE 4 MA MAD ML MOEA MS MSD		
DOWNGRADING INSTRUCTIONS Special Handling Instruction : A		CLASSIFICATION UNCLASSIFIED

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Line Diagram: RT-1944A/U Radio Set



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