Spectrum Certification / Equipment Characteristics Cover Page

DOCUMENT ID: J/F 12/	STARTING PAGE #	CLASSIFICATION	HANDLING CODES
DoD General Information	1	U	
Transmitter Equipment Characteristics #1	3	U	
Receiver Equipment Characteristics #1	5	U	
Antenna Equipment Characteristics #1	7	U	

Handling Code Definitions

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APPLICATION FOR EQUIPMENT FREQUENCY ALLOCATION	Classification UNCLASSIFIED	Date	J/F 12/
DoD General Information			

To	From
Application Title	
System Nomenclature: Type: Manufacturer:	
Stage of Allocation (U) 1 - Conceptual	**Intended for Operational Inventory**

Frequency Requirements

#	Frequency	Emission	Power	Service / Station Class	Equipment

Target Starting Date for Subsequent Stages		
Stage 2:	Stage 3:	Stage 4:
Extent of Use		
Geographical Area for Stage 2: Stage 3: Stage 4:		
Number of Units		
Stage 2:	Stage 3:	Stage 4:
Number of Units Operating Simultaneously in the Same Environment		
Number of Mobile Units		
Superseded J/F 12s	**Related J/F 12s**	
System Purpose and Concepts		
Wartime Use		
TSPR	**Emergency Use**	
Information Transfer Requirements		
Estimated Initial Cost of the System		
Target Date for		
Application Approval:	System Activation:	System Termination:
System Relationship and Essentiality		
Replacement Information		
Related Analysis and/or Test Data		
NTIA Coordination Required	**ITU Waiver**	
Originating MILDEP	**Other Using MILDEPs**	

Names and Telephone Numbers

Program Manager
Name:
Commercial:
DSN:
Email:

Project Engineer
Name:
Commercial:
DSN:
Email:

Station Details

Frequency Requirement Details

Remarks

Nomenclature: (U) ELM 2052 320 T/R configuration Transmitter
Type: Commercial
Manufacturer: (U) ELTA-ASHDAD ISRAEL

Transmitter Installation
Installation Type: (U) Air
Potential Platform: (U) Mirage F1
(U) F-16

Transmitter Type: (U) Pulse Doppler Radar

Tuning Range
(U) 9400 - 9900 MHz
This is a summary of Tuning Ranges in the modes.

Method of Tuning: (U) Synthesizer
This Tuning Method is used by every mode.

Frequency Tolerance: (U) 0.2 ppm

This Frequency Tolerance is used by every mode.

Filter Employed (U) NA

Output Device
Type: (U) Gallium Arsinide FET Name: (U) ELTA, HPA

FCC Type Acceptance No.: (U) NA

Pre-Emphasis: (U) No

Approved:

Proxy:

Mode 1 - (U) 10M6Q1N **Name:** (U) All Modes

Tuning Range	Tuning Step	Num Channels	Lowest Usable Channel	Min. Separation	Num Frequencies
(U) 9400 - 9900 MHz	(U) 40 MHz	(U) 12	(U) 9.45 GHz	(U) 10 MHz	(U) 45

Method of Tuning: (U)Synthesizer

RF Curve Point Level	Offset
-3 dB	200 kHz
-20 dB	2.025 MHz
-40 dB	22.4 MHz
-60 dB	97.5 MHz

Emission Bandwidth
Emission Bandwidth Source: Measured
Occupied Bandwidth: (U) 11.3 MHz Occupied Bandwidth Source: Measured
Modulation Type: (U) Pulse
Power
Mean Low: (U) 384 W Mean High: (U) 480 W
PEP Low: (U) 2.56 kW PEP High: (U) 3.2 kW
Carrier Low: (U) 384 W Carrier High: (U) 480 W
Baseband Signal Type: (U) Binary Phase Shift Key
Max. Modulation Frequency: (U) 5 MHz Min.: (U) 2 MHz
Radar Type: (U) Coded Pulse
Modulation
Digital Modulation Type: (U) Binary Phase Shift Key
Number of States: (U) 2
Line Coding: (U) Bi-Phase-Level
Code Rate: (U) 4 kbps
Code Period: (U) 2.5 µs
Max. Bit Rate: (U) 4 Mbps
Deviation Ratio: (U) NA
Level of Carrier Suppression: (U) 0.6 dB
Amplitude Modulation Index: (U) 0.6
RMS Amplitude Modulation Index: (U) 0
Peak Freq. Deviation: (U) 0 MHz
RMS Freq. Deviation: (U) 600 kHz
RMS Freq. Deviation Code: (U) Per Channel
FM (Chirp) Period: (U) 0ps
Spread Spectrum

Transmitter Equipment Characteristics #1

Pulse Characteristics

Pulse Width Low: (U) 600 ns	Pulse Rate Low: (U) 20 kPPS	Rise Time: (U) 50 ns
Pulse Width High: (U) 4 µs	Pulse Rate High: (U) 60 kPPS	Fall Time: (U) 50 ns

Compression Ratio: (U) 5
Number of Subpulses: (U) 5
Min. Duty Cycle Ratio: (U) 5 %
Max. Duty Cycle Ratio: (U) 15 %
Max. Radar Processing Gain: (U) 5 dB
Frequency Tolerance: (U) 0.2 ppm
Harmonic Level
2nd Harmonic: (U) -20 dB
3rd Harmonic: (U) -17 dB
4th Harmonic:
5th Harmonic:
6th Harmonic:
7th Harmonic:
8th Harmonic
Other Harmonic:

Spurious Level	Maximum
-60 dB	Yes

Remarks

Nomenclature: (U) ELM 2052 Receiver
Type: Commercial
Manufacturer: (U) ELTA-ASHDAD ISRAEL

Receiver Installation
Installation Type: (U) Air
Potential Platform: (U) Mirage F1
(U) F16

Receiver Type (U) Double Conversion Superheterodyne

Tuning Range
(U) 9400 - 9900 MHz
This is a summary of Tuning Ranges in the modes.

Method of Tuning: (U) Synthesizer
This Tuning Method is used by every mode.

Frequency Tolerance: (U) 2 ppm

This Frequency Tolerance is used by every mode.

Preselection Type: (U) NAvail

Conducted Emissions: (U) -60 dBm

FCC Type Acceptance No.: (U) NA

De-Emphasis: (U) No

Radiated Emission: 0.00000000000001

Approved:

Proxy:

Mode 1 - (U) 10M6Q1N **Name:** (U) All Modes

Tuning Range	Tuning Step	Num Channels	Lowest Usable Channel	Min. Separation	Num Frequencies
(U) 9400 - 9900 MHz	(U) 40 MHz	(U) 12	(U) 9.45 GHz	(U) 10 MHz	(U) 48

Method of Tuning: (U) Synthesizer
Max. Post Detection Frequency: (U) 1.6375 GHz Min.: (U) 1.6225 GHz
Max. Bit Rate: (U) 2.56 Mbps
Frequency Tolerance: (U) 2 ppm
Sensitivity
Level: (U) -124 dBm
Criteria Type: (U) S/N
Criteria Level: (U) 12
Noise Figure: (U) 4.5 dB
Noise Temperature: (U) 450 kelvins
IF Frequency
1st Stage: (U) 1.63 GHz
2nd Stage: (U) 1.63 GHz
3rd Stage: (U) 1.63 GHz
Oscillator Tuned
1st Stage: (U) LO above or below RF
2nd Stage: (U) LO above or below RF
3rd Stage: (U) LO above or below RF
IF Selectivity

Stage 1 Level	Offset
20 dB	40 MHz

Calculated?:Yes

Stage 2 Level	Offset
30 dB	60 MHz

Calculated?:Yes

Stage 3 Level	Offset
35 dB	80 MHz

Calculated?:Yes

RF Selectivity Level	Offset
3 dB	650 MHz
20 dB	1.63 GHz
60 dB	3 GHz

Calculated?:No

Image Rejection: (U) 55 dB
Spurious Rejection: (U) 50 dB
Intermodulation Rejection: (U) 60 dB
Adjacent Channel Selectivity: (U) 40 dB

Remarks

Nomenclature: (U) ELM 2052 Antenna 320TR configuration
Type: Commercial
Manufacturer: (U) ELTA-ASHDAD ISRAEL

Antenna Type: (U) Phased-Array

Frequency Range
(U) 9400 - 9900 MHz
This is a summary of Frequency Ranges in the modes.

Phased Array
Number of Main Beams: (U) 1 Elements: (U) 320

Sidelobes
1st Vertical Side Lobe Attenuation: (U) 15 dB
1st Vertical Side Lobe Elevation: (U) 12 deg
1st Horizontal Side Lobe Attenuation: (U) 22 dB
1st Horizontal Side Lobe Azimuth: (U) 12 deg

Antenna Dimensions
Vertical: (U) 0.37 m
Horizontal: (U) 0.45 m
Diameter: (U) 0.45 m

Approved:

Proxy:

Mode 1 **Name:** (U) All Modes
Function: (U) Transmit-Receive
Frequency Range: (U) 9400 - 9900 MHz
Gain: (U) 29 dBi Front-to-back Ratio: (U) 40 dB
Polarization Type: (U) Vertical linear
Scan Characteristics
Vertical
Type: (U) Electronic Scan (Sector)
Min. Elevation Angle: (U) -60 deg
Max. Elevation Angle: (U) 60 deg
Scan Rate: (U) 45 scans/min
Scan Speed: (U) 90 deg/sec
Sector Blanking: (U) No
Horizontal
Type: (U) Electronic Scan (Sector)
Sector: (U) 120 deg
Scan Rate: (U) 30 scans/min
Scan Speed: (U) 60 deg/sec
Horizontal Beamwidth: (U) 5.5 deg Vertical Beamwidth: (U) 7.5 deg

Remarks