

UNCLASSIFIED	
SECURITY SUMMARY & SPECIAL HANDLING REQUIREMENTS	
<p>The Application Title is : Furuno FAR-2117 & FAR-2127</p> <p>The System Name is : AN/SPS-50(V)#</p>	
<p>The overall classification of this application is : UNCLASSIFIED</p> <p>Refer to your Security Manual for further guidance.</p>	
<p>The Application Level Special Handling is : A</p> <p>Approved for public release; distribution is unlimited (DoD Directive 5230.24)</p>	
DOWNGRADING INSTRUCTIONS	J/F 12/9757/2
	CLASSIFICATION UNCLASSIFIED
Special Handling Instruction : A	

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FULL RECORD PRINT FOR AN/SPS-50(V)#		
SELECTED FREQUENCIES		
(U) 9410.000 MHz		
Application Title (U) Furuno FAR-2117 & FAR-2127		
System Name (Nomenclature) (U) AN/SPS-50(V)#	Stage (U) 4 - Operational	
Coord. ID/Coord. Num. J/F 12/9757/2	NTIA Certified (U) No	
Agency (U) CG - Coast Guard	Date Of Import 3/3/2022 9:30:03 PM (GMT)	
Overall Security Unclassified	Date/Time Last Mod. 3/4/2022 4:45:29 PM (GMT)	
GEOGRAPHIC AREAS FOR STAGE 4		
(U) , (U) USP (US & POSS) Location Type : (U) Polygon		
Control Numbers: SPS- 17927/3	Predefined Trunking? (U) No	
REFERENCES		
Type : Other Ref. To Cert. : False Ref. ID : 17927/3 Ref. Title : COAST GUARD REPLACEMENT REQUEST FOR NOMENCLATURE CHANGE OF THE FURUNO FAR-2117 AND FAR-2127 NAVIGATION RADAR, STAGE 4 Ref. Date : 8/20/2020 Ref. Is Class. : False Type : Previous Certification Ref. To Cert. : False Ref. ID : 18651/3 Ref. Title : AN/SPS-50(V)# Navigation Radar Ref. Date : 6/4/2021 Ref. Is Class. : False		
SYSTEM INFORMATION		
System Description: (U) Surface search radar used for navigation and to detect/track surface targets. Ground Surveillance Portable and Fixed Surveillance, Tracking, and Navigation Radar capability.		
CLASSIFICATION UNCLASSIFIED		

CLASSIFICATION <div style="text-align: center; font-size: 1.2em; font-weight: bold;">UNCLASSIFIED</div>	PAGE 3																		
FULL RECORD PRINT FOR AN/SPS-50(V)#																			
System Relationship and Essentiality: (U) System is essential for safe navigation of vessels and target detection. Radar sensor for maritime navigation plus wide area surveillance and tracking of ground, maritime, and low flying aircraft items of interest for border security law enforcement.																			
ATTACHMENTS																			
<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; width: 50%;">File Name</th> <th style="text-align: left; width: 30%;">SPS Number</th> <th style="text-align: left; width: 20%;">Date of Attachment</th> </tr> <tr> <td>(U) SPS-17927-3 Memo CG Req Nomenclature Change Furuno Navigation Radar AN SPS-50V 20 Aug 2020.pdf</td> <td>17927/3</td> <td>8/20/2020</td> </tr> <tr> <td>(U) SPS-18651_3 Coast Guard AN_SPS-50(V)# Navigation Radar Stage 4 Jun2021.pdf</td> <td>18651/04</td> <td>6/4/2021</td> </tr> </table>		File Name	SPS Number	Date of Attachment	(U) SPS-17927-3 Memo CG Req Nomenclature Change Furuno Navigation Radar AN SPS-50V 20 Aug 2020.pdf	17927/3	8/20/2020	(U) SPS-18651_3 Coast Guard AN_SPS-50(V)# Navigation Radar Stage 4 Jun2021.pdf	18651/04	6/4/2021									
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(U) SPS-18651_3 Coast Guard AN_SPS-50(V)# Navigation Radar Stage 4 Jun2021.pdf	18651/04	6/4/2021																	
TARGET DATES																			
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">System Termination: (U) 12/31/2040</td> <td style="width: 33%;">System Activation: (U) 6/1/2011</td> <td style="width: 33%;">System Approval: (U) 6/1/2011</td> </tr> </table>		System Termination: (U) 12/31/2040	System Activation: (U) 6/1/2011	System Approval: (U) 6/1/2011															
System Termination: (U) 12/31/2040	System Activation: (U) 6/1/2011	System Approval: (U) 6/1/2011																	
NSEP Use: (U) Yes	ITU Waiver: (U) No																		
Number Of Units: (U) 200	National Coord. Required? Yes																		
	Number Of Units Per Stage: <div style="text-align: right;">Stage 4 (U) 200</div>																		
System Cost of the System: (U) \$ 4000 (U) Cost is per unit																			
Replacement Information: (U) None																			
Remark(s) (U) (U) Nomenclature is titled AN/SPS-50(V)# Furuno FAR-2117 & FAR-2127 Navigation Radar, where "#" represents the version number associated with the RADAR when installed on different CG platforms (Cutters).																			
STATIONS																			
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Station Name</td> <td style="width: 70%;">: (U) Radar</td> </tr> <tr> <td colspan="2"><u>Transmitters</u></td> </tr> <tr> <td style="padding-left: 20px;">Nomenclature</td> <td>: (U) FAR-2117</td> </tr> <tr> <td style="padding-left: 20px;">Nomenclature</td> <td>: (U) FAR-2127</td> </tr> <tr> <td colspan="2"><u>Receivers</u></td> </tr> <tr> <td style="padding-left: 20px;">Nomenclature</td> <td>: (U) FAR-2117, FAR-2127</td> </tr> <tr> <td colspan="2"><u>Antennas</u></td> </tr> <tr> <td style="padding-left: 20px;">Nomenclature</td> <td>: (U) FAR-2127, XN-20AF</td> </tr> <tr> <td style="padding-left: 20px;">Nomenclature</td> <td>: (U) FAR-2117, XN-24AF</td> </tr> </table>		Station Name	: (U) Radar	<u>Transmitters</u>		Nomenclature	: (U) FAR-2117	Nomenclature	: (U) FAR-2127	<u>Receivers</u>		Nomenclature	: (U) FAR-2117, FAR-2127	<u>Antennas</u>		Nomenclature	: (U) FAR-2127, XN-20AF	Nomenclature	: (U) FAR-2117, XN-24AF
Station Name	: (U) Radar																		
<u>Transmitters</u>																			
Nomenclature	: (U) FAR-2117																		
Nomenclature	: (U) FAR-2127																		
<u>Receivers</u>																			
Nomenclature	: (U) FAR-2117, FAR-2127																		
<u>Antennas</u>																			
Nomenclature	: (U) FAR-2127, XN-20AF																		
Nomenclature	: (U) FAR-2117, XN-24AF																		
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Station Name</td> <td style="width: 70%;">: (U) Radar2</td> </tr> <tr> <td colspan="2"><u>Transmitters</u></td> </tr> <tr> <td style="padding-left: 20px;">Nomenclature</td> <td>: (U) FAR-2117</td> </tr> <tr> <td style="padding-left: 20px;">Nomenclature</td> <td>: (U) FAR-2127</td> </tr> </table>		Station Name	: (U) Radar2	<u>Transmitters</u>		Nomenclature	: (U) FAR-2117	Nomenclature	: (U) FAR-2127										
Station Name	: (U) Radar2																		
<u>Transmitters</u>																			
Nomenclature	: (U) FAR-2117																		
Nomenclature	: (U) FAR-2127																		
CLASSIFICATION <div style="text-align: center; font-size: 1.2em; font-weight: bold;">UNCLASSIFIED</div>																			

CLASSIFICATION <div style="text-align: center; font-size: 1.2em; font-weight: bold;">UNCLASSIFIED</div>	PAGE 4		
FULL RECORD PRINT FOR AN/SPS-50(V)#			
<div style="margin-left: 40px;"> <u>Receivers</u> Nomenclature : (U) FAR-2117, FAR-2127 <u>Antennas</u> Nomenclature : (U) FAR-2117, XN-24AF Nomenclature : (U) FAR-2127, XN-20AF </div>			
Station Name : (U) Target - Generic			
Station Name : (U) Target of Opportunity (Boat, Personnel, Vehicle, Aircraft,) - Generic			
<div style="margin-left: 40px;"> Station Name : (U) Ground Radar <u>Transmitters</u> Nomenclature : (U) FAR-2127 <u>Receivers</u> Nomenclature : (U) FAR-2117, FAR-2127 <u>Antennas</u> Nomenclature : (U) FAR-2127, XN-20AF </div>			
STATION INFORMATION			
Transmitting Station: (U) Ground Radar	Receiving Station: (U) Target of Opportunity (Boat, Personnel, Vehicle, Aircraft,) - Generic		
Station Class: (U) LR	Radio Service: (U) Radiodetermination		
LINK INFORMATION			
Transmitter: (U) FAR-2127	Transmitter Antenna: (U) FAR-2127, XN-20AF		
Receiver: (U) FAR-2117, FAR-2127	Receiver Antenna: (U) FAR-2127, XN-20AF		
SELECTED MODES			
Frequency (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz	Emission Designator (U) 22M0P0N (U) 13M0P0N (U) 9M00P0N (U) 7M00P0N (U) 6M50P0N (U) 54M0P0N	Power (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak	Notes PRI PRI PRI PRI PRI PRI
CLASSIFICATION <div style="text-align: center; font-size: 1.2em; font-weight: bold;">UNCLASSIFIED</div>			

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FULL RECORD PRINT FOR AN/SPS-50(V)#			
STATION INFORMATION			
Transmitting Station: (U) Radar		Receiving Station: (U) Target - Generic	
Station Class: (U) MR (U) NR		Radio Service: (U) Radiodetermination (U) Radiodetermination	
LINK INFORMATION			
Transmitter: (U) FAR-2127		Transmitter Antenna: (U) FAR-2127, XN-20AF	
Receiver: (U) FAR-2117, FAR-2127		Receiver Antenna: (U) FAR-2127, XN-20AF	
SELECTED MODES			
Frequency (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz	Emission Designator (U) 9M00P0N (U) 6M50P0N (U) 54M0P0N (U) 13M0P0N (U) 7M00P0N (U) 22M0P0N	Power (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak	Notes PRI PRI PRI PRI PRI PRI
STATION INFORMATION			
Transmitting Station: (U) Radar2		Receiving Station: (U) Target - Generic	
Station Class: (U) MR (U) NL (U) NR		Radio Service: (U) Radiodetermination (U) Radiodetermination (U) Radiodetermination	
LINK INFORMATION			
Transmitter: (U) FAR-2117		Transmitter Antenna: (U) FAR-2117, XN-24AF	
Receiver: (U) FAR-2117, FAR-2127		Receiver Antenna: (U) FAR-2117, XN-24AF	
CLASSIFICATION UNCLASSIFIED			

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FULL RECORD PRINT FOR AN/SPS-50(V)#			
SELECTED MODES			
Frequency (U) 9410.000 MHz	Emission Designator (U) 14M0P0N	Power (U) 12000 W Peak	Notes PRI
LINK INFORMATION			
Transmitter: (U) FAR-2127		Transmitter Antenna: (U) FAR-2127, XN-20AF	
Receiver: (U) FAR-2117, FAR-2127		Receiver Antenna: (U) FAR-2117, XN-24AF	
SELECTED MODES			
Frequency (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz	Emission Designator (U) 7M00P0N (U) 54M0P0N (U) 6M50P0N (U) 9M00P0N (U) 13M0P0N (U) 22M0P0N	Power (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak	Notes PRI PRI PRI PRI PRI PRI
LINK INFORMATION			
Transmitter: (U) FAR-2127		Transmitter Antenna: (U) FAR-2127, XN-20AF	
Receiver: (U) FAR-2117, FAR-2127		Receiver Antenna: (U) FAR-2127, XN-20AF	
SELECTED MODES			
Frequency (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz (U) 9410.000 MHz	Emission Designator (U) 7M00P0N (U) 9M00P0N (U) 13M0P0N (U) 22M0P0N (U) 54M0P0N (U) 6M50P0N	Power (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak (U) 25000 W Peak	Notes PRI PRI PRI PRI PRI PRI
CLASSIFICATION		UNCLASSIFIED	

TRANSMITTER EQUIPMENT CHARACTERISTICS

Nomenclature: (U) FAR-2127

Manufacturer: (U) FURUNO

NTIA Approval Status: (U) Unapproved

Coordination ID: J/F 12

Date of Import: 6/22/2021 4:52:58 PM (GMT)

Date/Time Last Mod.: 4/27/2020 12:37:56 PM (GMT)

Fcc Acc. Number: (U) ADB9ZWRTR079

Radar/Comm: (U) Radar

Model Name: (U) FAR-2127, RTR-079

Output Device: (U) Magnetrons

Tuning Method: (U) Fixed Magnetron

Supp. of Harmonics: (U) No

Freq. Stability: (U) 3188ppm

Tx Type: (U) Pulsed Radar

Tx Installation(s)

(U) Shipboard

(U) Coast Station

Filter Type

(U) None

POWER

Power Type: Peak Envelope

Upper Limit: (U) 25000 W

2ND HARMONIC CURVE

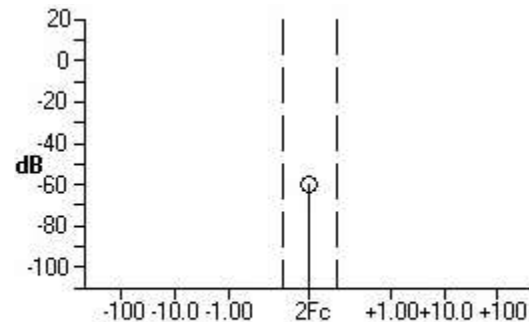
(UNCLASSIFIED)

Atten.

(U) -60.0 dB

Offset (Fo)

(U) 0.00000 kHz



TRANSMITTER EQUIPMENT CHARACTERISTICS

3RD HARMONIC CURVE

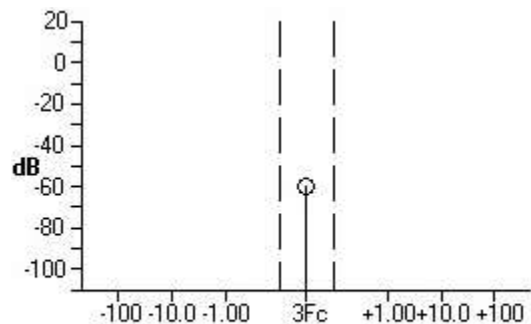
(UNCLASSIFIED)

Atten.

(U) -60.0 dB

Offset (Fo)

(U) 0.00000 kHz



OTHER HARMONIC CURVE

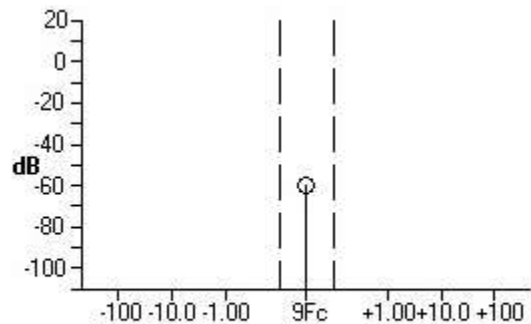
(UNCLASSIFIED)

Atten.

(U) -60.0 dB

Offset (Fo)

(U) 0.00000 kHz

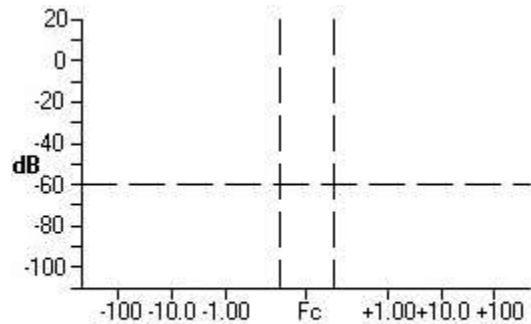


SPURIOUS EMISSION CURVE

(UNCLASSIFIED)

Maximum Spurious Emission**Atten.**

(U) -60.0 dB



TRANSMITTER EQUIPMENT CHARACTERISTICS

FREQUENCIES

Fixed Frequency: (U) 9410.000 MHz

Freq. Blocking Indicator: (U) No

EMISSION DESIGNATORS

Em. Designator: (U) 54M0P0N

Necessary BW:	(U) 54000 kHz
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Radar/Communications: (U) Radar

Measured/Calculated: (U) Measured

Occupied Bandwidth: (U) 54000 kHz

Spread Spectrum:	No
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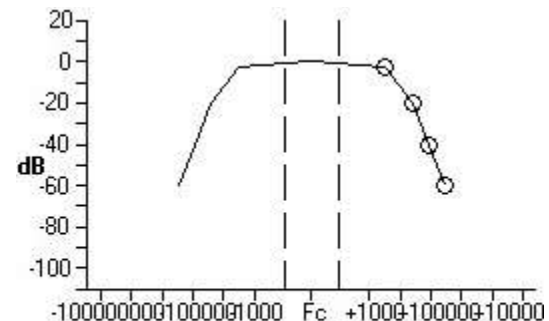
Radar Type:	(U) Non-FM Pulse Radar
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FUNDAMENTAL CURVE

(UNCLASSIFIED)

Meas/Calc: Measured

<u>Level</u>	<u>Offset (Fo)</u>
(U) -3.00 dB	(U) 3000.0 kHz
(U) -20.0 dB	(U) 27000 kHz
(U) -40.0 dB	(U) 90000 kHz
(U) -60.0 dB	(U) 290000 kHz



PULSE CHARACTERISTICS

Pulse Repetition Rate:	(U) 3000 pps
Pulse Rise Time:	(U) 0.0000100 ms
Pulse Fall Time:	(U) 0.0000610 ms
Pulse Width:	(U) 0.0000700 ms
Pulse Duty Cycle:	(U) 0.02100 %

TRANSMITTER EQUIPMENT CHARACTERISTICS

Measured/Calculated: (U) Measured

Occupied Bandwidth: (U) 13000 kHz

Spread Spectrum: No

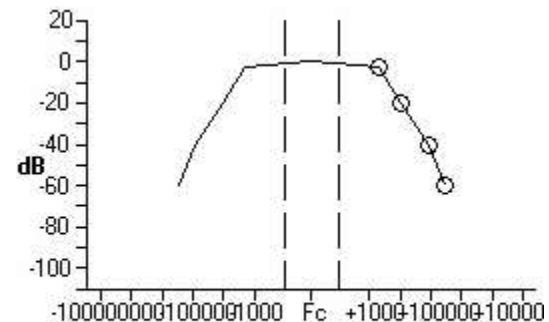
Radar Type: (U) Non-FM Pulse Radar

FUNDAMENTAL CURVE

(UNCLASSIFIED)

Meas/Calc: Measured

Level	Offset (Fo)
(U) -3.00 dB	(U) 2050.0 kHz
(U) -20.0 dB	(U) 11000 kHz
(U) -40.0 dB	(U) 90000 kHz
(U) -60.0 dB	(U) 290000 kHz



PULSE CHARACTERISTICS

Pulse Repetition Rate: (U) 1500 pps
Pulse Rise Time: (U) 0.0000110 ms
Pulse Fall Time: (U) 0.000204 ms
Pulse Width: (U) 0.000300 ms
Pulse Duty Cycle: (U) 0.04500 %

EMISSION DESIGNATORS

Em. Designator: (U) 9M00P0N

Necessary BW: (U) 9000.0 kHz

Radar/Communications: (U) Radar

Measured/Calculated: (U) Measured

Occupied Bandwidth: (U) 9000.0 kHz

Spread Spectrum: No

TRANSMITTER EQUIPMENT CHARACTERISTICS

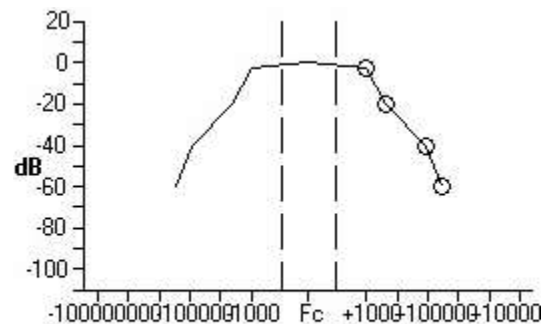
Radar Type: (U) Non-FM Pulse Radar

FUNDAMENTAL CURVE

(UNCLASSIFIED)

Meas/Calc: Measured

Level	Offset (Fo)
(U) -3.00 dB	(U) 1000.0 kHz
(U) -20.0 dB	(U) 4500.0 kHz
(U) -40.0 dB	(U) 90000 kHz
(U) -60.0 dB	(U) 290000 kHz



PULSE CHARACTERISTICS

Pulse Repetition Rate: (U) 1000 pps
 Pulse Rise Time: (U) 0.0000110 ms
 Pulse Fall Time: (U) 0.000210 ms
 Pulse Width: (U) 0.000500 ms
 Pulse Duty Cycle: (U) 0.05000 %

EMISSION DESIGNATORS

Em. Designator: (U) 7M00P0N

Necessary BW: (U) 7000.0 kHz

Radar/Communications: (U) Radar

Measured/Calculated: (U) Measured

Occupied Bandwidth: (U) 7000.0 kHz

Spread Spectrum: No

Radar Type: (U) Non-FM Pulse Radar

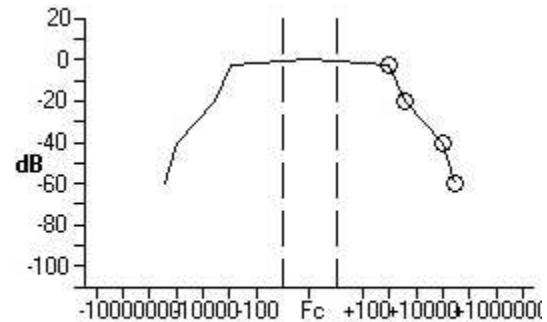
TRANSMITTER EQUIPMENT CHARACTERISTICS

FUNDAMENTAL CURVE

(UNCLASSIFIED)

Meas/Calc: Measured

<u>Level</u>	<u>Offset (Fo)</u>
(U) -3.00 dB	(U) 850.00 kHz
(U) -20.0 dB	(U) 3500.0 kHz
(U) -40.0 dB	(U) 90000 kHz
(U) -60.0 dB	(U) 290000 kHz



PULSE CHARACTERISTICS

Pulse Repetition Rate: (U) 1000 pps
Pulse Rise Time: (U) 0.0000120 ms
Pulse Fall Time: (U) 0.0000960 ms
Pulse Width: (U) 0.000700 ms
Pulse Duty Cycle: (U) 0.07000 %

EMISSION DESIGNATORS

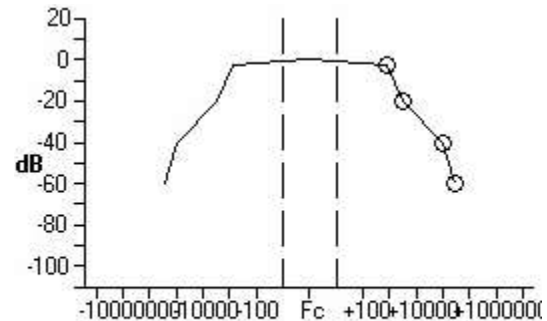
Em. Designator: (U) 6M50P0N**Necessary BW:** (U) 6500.0 kHz**Radar/Communications:** (U) Radar**Measured/Calculated:** (U) Measured**Occupied Bandwidth:** (U) 6500.0 kHz**Spread Spectrum:** No**Radar Type:** (U) Non-FM Pulse Radar

TRANSMITTER EQUIPMENT CHARACTERISTICS

FUNDAMENTAL CURVE

(UNCLASSIFIED)

<u>Level</u>	<u>Offset (Fo)</u>
(U) -3.00 dB	(U) 750.00 kHz
(U) -20.0 dB	(U) 3250.0 kHz
(U) -40.0 dB	(U) 90000 kHz
(U) -60.0 dB	(U) 290000 kHz



PULSE CHARACTERISTICS

Pulse Repetition Rate: (U) 600 pps
Pulse Rise Time: (U) 0.0000110 ms
Pulse Fall Time: (U) 0.0000920 ms
Pulse Width: (U) 0.00120 ms
Pulse Duty Cycle: (U) 0.07200 %

Measured/Calculated: (U) Measured

Occupied Bandwidth: (U) 6500.0 kHz

Spread Spectrum:	No
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Radar Type: (U) Non-FM Pulse Radar

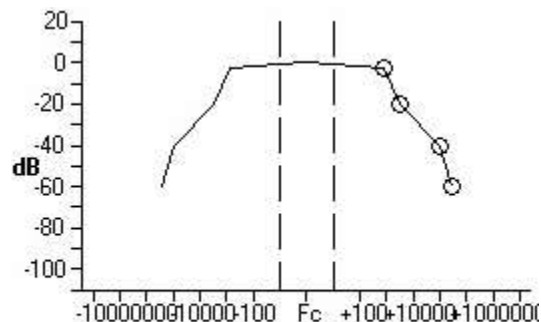
TRANSMITTER EQUIPMENT CHARACTERISTICS

FUNDAMENTAL CURVE

(UNCLASSIFIED)

Meas/Calc: Measured

Level	Offset (Fo)
(U) -3.00 dB	(U) 750.00 kHz
(U) -20.0 dB	(U) 3250.0 kHz
(U) -40.0 dB	(U) 90000 kHz
(U) -60.0 dB	(U) 290000 kHz



PULSE CHARACTERISTICS

Pulse Repetition Rate:	(U) 500 pps
Pulse Rise Time:	(U) 0.0000120 ms
Pulse Fall Time:	(U) 0.000920 ms
Pulse Width:	(U) 0.00120 ms
Pulse Duty Cycle:	(U) 0.06000 %

Remark(s) (U)

(U) Tuning Range: Fixed at 9410 MHz with a tolerance in the magnetrons of +/- 30 MHz (3188 ppm)
it is 9380 - 9440 MHz.

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TRANSMITTER EQUIPMENT CHARACTERISTICS		
Nomenclature: (U) FAR-2117		Manufacturer: (U) FURUNO
NTIA Approval Status: (U) Unapproved		Coordination ID: J/F 12
Date of Import: 6/22/2021 4:52:58 PM (GMT)		Date/Time Last Mod.: 4/27/2020 12:37:56 PM (GMT)
Fcc Acc. Number: (U) ADB9ZWRTR078		Radar/Comm: (U) Radar
Model Name: (U) FAR-2117, RTR-078		Output Device: (U) Magnetrons
Tuning Method: (U) Fixed Magnetron		Supp. of Harmonics: (U) No
Freq. Stability: (U) 3188ppm		
Tx Type: (U) Pulsed Radar		Tx Installation(s) (U) Shipboard (U) Coast Station
Filter Type (U) None		
POWER		
Power Type: Peak Envelope		
Upper Limit: (U) 12000 W		
2ND HARMONIC CURVE		
<div style="text-align: center;">(UNCLASSIFIED)</div> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;"> <p>Atten. (U) -70.0 dB</p> </div> <div style="width: 30%;"> <p>Offset (Fo) (U) 0.00000 kHz</p> </div> <div style="width: 35%; text-align: center;"> <p>The graph displays the 2nd harmonic curve. The vertical axis represents attenuation in dB, ranging from -100 to 20. The horizontal axis represents frequency offset in kHz, ranging from -100 to +100. A single, sharp peak is visible at the center, labeled 2Fc, reaching an attenuation of -70 dB. Vertical dashed lines are drawn at approximately ±10 kHz from the center peak.</p> </div> </div>		
CLASSIFICATION UNCLASSIFIED		

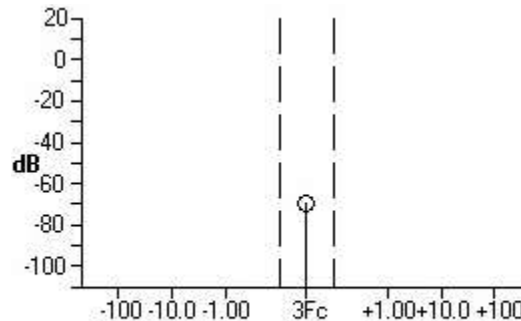
TRANSMITTER EQUIPMENT CHARACTERISTICS

3RD HARMONIC CURVE

(UNCLASSIFIED)

Atten.
(U) -70.0 dB

Offset (Fo)
(U) 0.00000 kHz

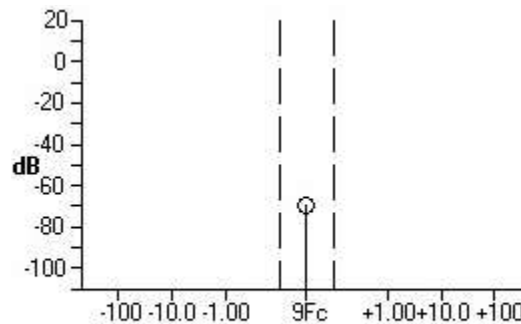


OTHER HARMONIC CURVE

(UNCLASSIFIED)

Atten.
(U) -70.0 dB

Offset (Fo)
(U) 0.00000 kHz

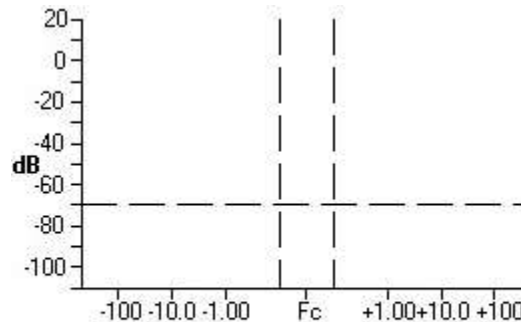


SPURIOUS EMISSION CURVE

(UNCLASSIFIED)

Maximum Spurious Emission

Atten.
(U) -70.0 dB



TRANSMITTER EQUIPMENT CHARACTERISTICS

FREQUENCIES

Fixed Frequency: (U) 9410.000 MHz

Freq. Blocking Indicator: (U) No

EMISSION DESIGNATORS

Em. Designator: (U) 14M0P0N

Necessary BW:	(U) 14000 kHz
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Radar/Communications: (U) Radar

Measured/Calculated: (U) Measured

Occupied Bandwidth: (U) 14000 kHz

Spread Spectrum:	No
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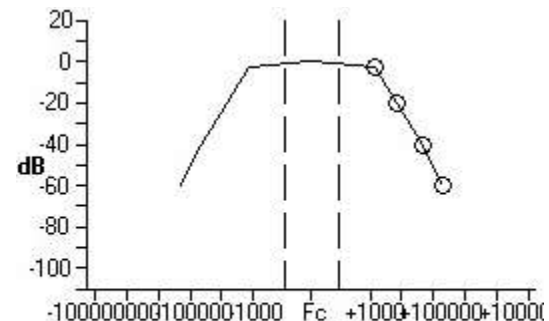
Radar Type:	(U) Non-FM Pulse Radar
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FUNDAMENTAL CURVE

(UNCLASSIFIED)

Meas/Calc: Measured

<u>Level</u>	<u>Offset (Fo)</u>
(U) -3.00 dB	(U) 1500.0 kHz
(U) -20.0 dB	(U) 7000.0 kHz
(U) -40.0 dB	(U) 45000 kHz
(U) -60.0 dB	(U) 193000 kHz



PULSE CHARACTERISTICS

Pulse Repetition Rate: (U) 1000 pps
Pulse Rise Time: (U) 0.0000100 ms
Pulse Fall Time: (U) 0.0000900 ms
Pulse Width: (U) 0.000500 ms
Pulse Duty Cycle: (U) 0.05000 %

TRANSMITTER EQUIPMENT CHARACTERISTICS

Remark(s) (U)

(U) Tuning Range: Fixed at 9410 MHz with a tolerance in the magnetrons of +/- 30 MHz (3188 ppm)
it is 9380 - 9440 MHz.

RECEIVER EQUIPMENT CHARACTERISTICS

Manufacturer: (U) FURUNO

Coordination ID: J/F 12

Date/Time Last Mod.: 4/27/2020 5:13:09 PM (GMT)

Fcc Acc. Number: (U) ADB9ZWRT078 and 079

Oscillator Tuned: (U) Above

Proxy: No

RxType	(U) Single Conversion Superheterodyne
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(U) Shipboard
(U) Coast Station

FREQUENCIES

Tuning Method:	(U) Fixed Magnetron
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Freq. Stability:	(U) 3188ppm
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EMISSION DESIGNATORS

Sensitivities

Sensitivity:	(U) -104 dBm
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Necessary BW: (U) 14000 kHz

Perf. Value: (U) 1

Noise Figure: (U) 6.00 dB

Noise Temp. (U) 865 K

Spur. Reject	(U) 60.0 dB
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Intermod. Reject:

Adj. Channel Sel.:

Perf. Crit.:	(U) SINAD - Signal-to-Noise and Distortion Ratio (dB)
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RECEIVER EQUIPMENT CHARACTERISTICS

IF SELECTIVITY CURVE

(UNCLASSIFIED)

Measured/Calculated: Measured

IF Freq. (Fk): 60.00000 MHz

Atten.

(U) 3.00 dB

(U) 20.0 dB

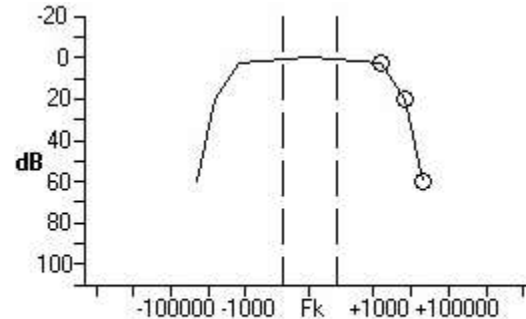
(U) 60.0 dB

Offset (Fo)

(U) 1500.0 kHz

(U) 6500.0 kHz

(U) 21000 kHz



EMISSION DESIGNATORS

Em. Designator: (U) 54M0P0N

Sensitivities

Sensitivity: (U) -104 dBm

Necessary BW: (U) 54000 kHz

Perf. Value: (U) 1

Noise Figure: (U) 6.00 dB

Noise Temp. (U) 865 K

Spur. Reject (U) 60.0 dB

Intermod. Reject:

Adj. Channel Sel.:

Perf. Crit.: (U) SINAD - Signal-to-Noise and Distortion Ratio (dB)

IF SELECTIVITY CURVE

(UNCLASSIFIED)

Measured/Calculated: Calculated

IF Freq. (Fk): 60.00000 MHz

Atten.

(U) 3.00 dB

(U) 20.0 dB

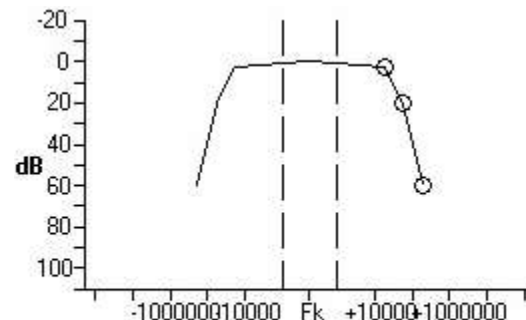
(U) 60.0 dB

Offset (Fo)

(U) 20000 kHz

(U) 58500 kHz

(U) 189000 kHz



RECEIVER EQUIPMENT CHARACTERISTICS

EMISSION DESIGNATORS

Em. Designator: (U) 22M0P0N

Sensitivities

Sensitivity: (U) -104 dBm

Necessary BW: (U) 22000 kHz

Perf. Value: (U) 1

Noise Figure: (U) 6.00 dB

Noise Temp. (U) 865 K

Spur. Reject (U) 60.0 dB

Intermod. Reject:

Adj. Channel Sel.:

Perf. Crit.: (U) SINAD - Signal-to-Noise and Distortion Ratio (dB)

IF SELECTIVITY CURVE

(UNCLASSIFIED)

Measured/Calculated: Calculated

IF Freq. (Fk): 60.00000 MHz

Atten.

(U) 3.00 dB

(U) 20.0 dB

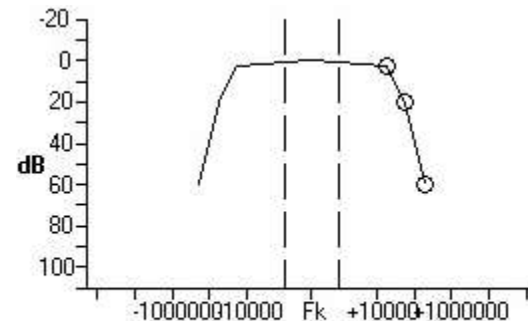
(U) 60.0 dB

Offset (Fo)

(U) 20000 kHz

(U) 58500 kHz

(U) 189000 kHz



EMISSION DESIGNATORS

Em. Designator: (U) 13M0P0N

Sensitivities

Sensitivity: (U) -104 dBm

Necessary BW: (U) 13000 kHz

Perf. Value: (U) 1

Noise Figure: (U) 6.00 dB

Noise Temp. (U) 865 K

Spur. Reject (U) 60.0 dB

Intermod. Reject:

Adj. Channel Sel.:

Perf. Crit.: (U) SINAD - Signal-to-Noise and Distortion Ratio (dB)

RECEIVER EQUIPMENT CHARACTERISTICS

IF SELECTIVITY CURVE

(UNCLASSIFIED)

Measured/Calculated: Calculated

IF Freq. (Fk): 60.00000 MHz

Atten.

(U) 3.00 dB

(U) 20.0 dB

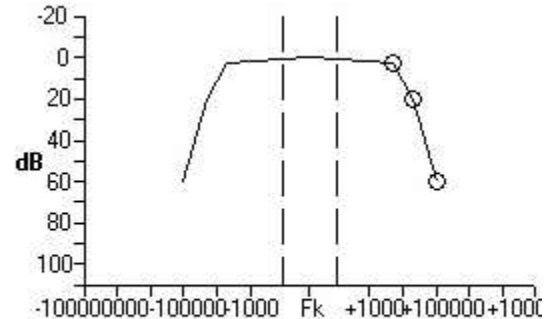
(U) 60.0 dB

Offset (Fo)

(U) 5000.0 kHz

(U) 21000 kHz

(U) 100000 kHz



EMISSION DESIGNATORS

Em. Designator: (U) 9M00P0N

Sensitivities

Sensitivity: (U) -104 dBm

Necessary BW: (U) 9000.0 kHz

Perf. Value: (U) 1

Noise Figure: (U) 6.00 dB

Noise Temp. (U) 865 K

Spur. Reject (U) 60.0 dB

Intermod. Reject:

Adj. Channel Sel.:

Perf. Crit.: (U) SINAD - Signal-to-Noise and Distortion Ratio (dB)

IF SELECTIVITY CURVE

(UNCLASSIFIED)

Measured/Calculated: Calculated

IF Freq. (Fk): 60.00000 MHz

Atten.

(U) 3.00 dB

(U) 20.0 dB

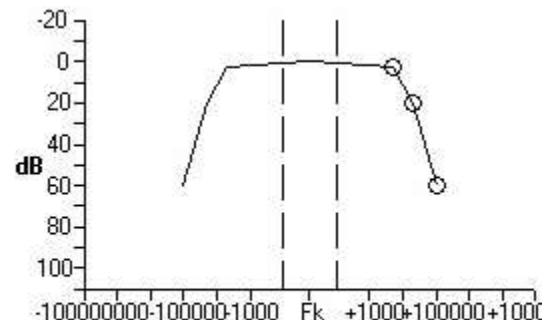
(U) 60.0 dB

Offset (Fo)

(U) 5000.0 kHz

(U) 21000 kHz

(U) 100000 kHz



RECEIVER EQUIPMENT CHARACTERISTICS

EMISSION DESIGNATORS

Em. Designator: (U) 7M00P0N

Sensitivities

Sensitivity: (U) -104 dBm

Necessary BW: (U) 7000.0 kHz

Perf. Value: (U) 1

Noise Figure: (U) 6.00 dB

Noise Temp. (U) 865 K

Spur. Reject (U) 60.0 dB

Intermod. Reject:

Adj. Channel Sel.:

Perf. Crit.: (U) SINAD - Signal-to-Noise and Distortion Ratio (dB)

IF SELECTIVITY CURVE

(UNCLASSIFIED)

Measured/Calculated: Calculated

IF Freq. (Fk): 60.00000 MHz

Atten.

(U) 3.00 dB

(U) 20.0 dB

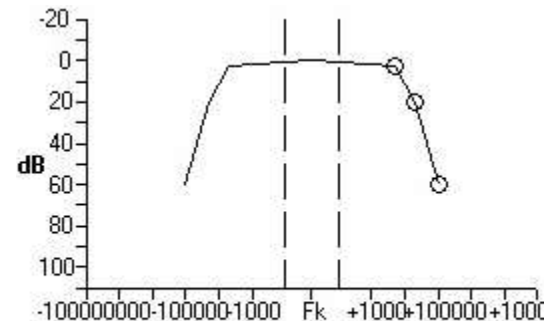
(U) 60.0 dB

Offset (Fo)

(U) 5000.0 kHz

(U) 21000 kHz

(U) 100000 kHz



EMISSION DESIGNATORS

Em. Designator: (U) 6M50P0N

Sensitivities

Sensitivity: (U) -104 dBm

Necessary BW: (U) 6500.0 kHz

Perf. Value: (U) 1

Noise Figure: (U) 6.00 dB

Noise Temp. (U) 865 K

Spur. Reject (U) 60.0 dB

Intermod. Reject:

Adj. Channel Sel.:

Perf. Crit.: (U) SINAD - Signal-to-Noise and Distortion Ratio (dB)

RECEIVER EQUIPMENT CHARACTERISTICS

IF SELECTIVITY CURVE

(UNCLASSIFIED)

Measured/Calculated: Measured

IF Freq. (Fk): 60.00000 MHz

Atten.

(U) 3.00 dB

(U) 20.0 dB

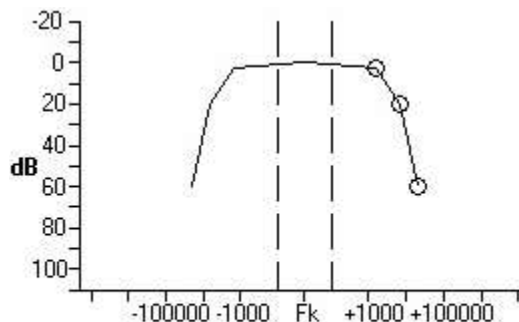
(U) 60.0 dB

Offset (Fo)

(U) 1500.0 kHz

(U) 6500.0 kHz

(U) 21000 kHz



RF SELECTIVITY CURVE

(UNCLASSIFIED)

Measured/Calculated: Measured

Atten.

(U) 3.00 dB

(U) 20.0 dB

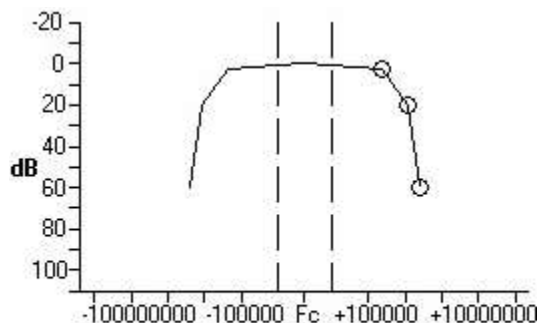
(U) 60.0 dB

Offset (Fo)

(U) 245500 kHz

(U) 1181000 kHz

(U) 2585500 kHz



Remark(s) (U)

(U) Tuning Range: Fixed at 9410 MHz with a tolerance in the magnetrons of +/- 30 MHz (3188 ppm)
it is 9380 - 9440 MHz.

CLASSIFICATION UNCLASSIFIED		PAGE 26
ANTENNA EQUIPMENT CHARACTERISTICS		
Nomenclature: (U) FAR-2117, XN-24AF		Manufacturer: (U) FURUNO
NTIA Approval Status: (U) Unapproved		Coordination ID: J/F 12
Date of Import: 6/22/2021 4:52:58 PM (GMT)		Date/Time Last Mod.: 4/27/2020 12:37:56 PM (GMT)
Model Name: (U) RSB-096 XN-24AF		Antenna Type: (U) Slotted Waveguide
Antenna Category: Aperture		
FREQUENCIES		
Lower Frequency Limit: (U) 9300.000 MHz Upper Frequency Limit: (U) 9500.000 MHz		
ANTENNA CHARACTERISTICS		
Polarization: (U) Horizontal		Atten. Rel/Act: (U) Actual dBi
Dish Diameter:		
BEAMWIDTH		
Horizontal: (U) 0.950 degrees		Vertical: (U) 20.0 degrees
SCAN CHARACTERISTICS		
Horizontal Scan Type: (U) 360 Degrees Rotating		Horizontal Scan Rate: (U) 24.0 scans/min
Vertical Scan Type: (U) Fixed		Vertical Scan Rate:
GAIN		
Main Beam: (U) 31.5 dBi		1st Horz. Side Lobe Lvl.: (U) 3.50 dB
		1st Ver. Side Lobe Lvl.: (U) 3.50 dB
		1st Horz. Pos.: (U) 10.0 degrees
		1st Vert. Pos.: (U) 10.0 degrees
CLASSIFICATION UNCLASSIFIED		

CLASSIFICATION UNCLASSIFIED		PAGE 27
ANTENNA EQUIPMENT CHARACTERISTICS		
Nomenclature: (U) FAR-2127, XN-20AF		Manufacturer: (U) FURUNO
NTIA Approval Status: (U) Unapproved		Coordination ID: J/F 12
Date of Import: 6/22/2021 4:52:58 PM (GMT)		Date/Time Last Mod.: 4/27/2020 12:37:56 PM (GMT)
Model Name: (U) XN-20AF		Antenna Type: (U) Slotted Waveguide
Antenna Category: Aperture		
FREQUENCIES		
Lower Frequency Limit: (U) 9380.000 MHz Upper Frequency Limit: (U) 9440.000 MHz		
ANTENNA CHARACTERISTICS		
Polarization: (U) Horizontal		Atten. Rel/Act: (U) Relative dB
Dish Diameter:		
BEAMWIDTH		
Horizontal: (U) 1.23 degrees		Vertical: (U) 20.0 degrees
SCAN CHARACTERISTICS		
Horizontal Scan Type: (U) 360 Degrees Rotating		Horizontal Scan Rate: (U) 24.0 scans/min
Vertical Scan Type: (U) Fixed		Vertical Scan Rate:
GAIN		
Main Beam: (U) 30.0 dBi		1st Horz. Side Lobe Atten.: (U) 28.0 dB
		1st Ver. Side Lobe Atten.: (U) 28.0 dB
		1st Horz. Pos.: (U) 10.0 degrees
		1st Vert. Pos.: (U) 40.0 degrees
CLASSIFICATION UNCLASSIFIED		

Frequency List

Tx Station	Rx Station	Frequency (MHz)	Em. Des.	Radio Service	Stn. Classes
(U) Ground Radar	(U) Target of Opportunity (Boat, Personnel, Vehicle, Aircraft,)	(U) 9410.000	(U) 13M0P0N	(U) Radiodetermination	(U) LR
			(U) 22M0P0N		
			(U) 54M0P0N		
			(U) 6M50P0N		
			(U) 7M00P0N		
(U) Radar	(U) Target		(U) 9M00P0N		(U) MR,NR
			(U) 13M0P0N		
			(U) 22M0P0N		
			(U) 54M0P0N		
			(U) 6M50P0N		
			(U) 7M00P0N		
			(U) 9M00P0N		

Tx Station	Rx Station	Frequency (MHz)	Em. Des.	Radio Service	Stn. Classes
(U) Radar2	(U) Target	(U) 9410.000	(U) 13M0P0N	(U) Radiodeter mination	(U) MR,NL,NR
			(U) 14M0P0N		
			(U) 22M0P0N		
			(U) 54M0P0N		
			(U) 6M50P0N		
			(U) 7M00P0N		
			(U) 9M00P0N		

**Table of Contents For
(U) AN/SPS-50(V)#**

Page	Section/Report	Equipment Highest Classification
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1	Security Page	
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2	Full Record Print	
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	Detail Transmitters	
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7	(U) FAR-2127	UNCLASSIFIED
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16	(U) FAR-2117	UNCLASSIFIED
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	Detail Receivers	
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20	(U) FAR-2117, FAR-2127	UNCLASSIFIED
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	Detail Antennas	
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26	(U) FAR-2117, XN-24AF	UNCLASSIFIED
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27	(U) FAR-2127, XN-20AF	UNCLASSIFIED
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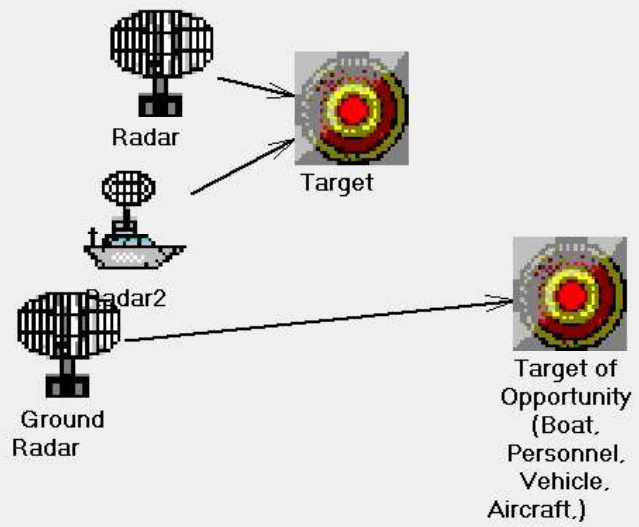
ALSO:

Line Diagram

Frequency List

UNCLASSIFIED

Line Diagram: AN/SPS-50(V)#



UNCLASSIFIED

REMARKS PAGES FOR EL-CID FILE - AN/SPS-50(V)# NAVIGATION RADAR,
STAGE 4

Page 3 of EL-CID file:

(U) Nomenclature is titled AN/SPS-50(V)# Furuno FAR-2117 & FAR-2127 Navigation Radar, where "#" represents the version number associated with the RADAR when installed on different CG platforms (Cutters).

Page 15 of the EL-CID File – Transmitter Equipment Characteristics, Furuno FAR-2127

(U) Tuning Range: Fixed at 9410 MHz with a tolerance in the magnetrons of +/- 30 MHz (3188 ppm) it is 9380 - 9440 MHz.

Page 19 of the EL-CID File – Transmitter Equipment Characteristics, Furuno FAR-2117

(U) Tuning Range: Fixed at 9410 MHz with a tolerance in the magnetrons of +/- 30 MHz (3188 ppm) it is 9380 - 9440 MHz.

Page 25 of the EL-CID File – Receiver Equipment Characteristics, Furuno FAR-2117, FAR-2127

(U) Tuning Range: Fixed at 9410 MHz with a tolerance in the magnetrons of +/- 30 MHz (3188 ppm) it is 9380 - 9440 MHz.