

RAQUEL II

RAQUEL II System Objectives

Define the functions and capabilities of radar associated weapon systems

Establish the weapon system operational characteristics and employment modes

RAQUEL II Mission

Directed coverage of pulse and CW radars - 1.5 to 10 GHz

Measure effective radiated power (ERP)

Determine antenna beamwidth and scan pattern

Make high-quality parametric measurements of the signal

RAQUEL I AND II TECHNICAL CAPABILITIES

	<u>RAQUEL I</u>	<u>RAQUEL II</u>
Mission:	General search/technical intelligence/operational ELINT	Directed search/technical intelligence
Frequency Coverage:	Pulse: 12-18 GHz (primary), 4-12 GHz (secondary). CW: 4-12 GHz (primary), 12-18 GHz (secondary) TI: Slaved to CW	Pulse and CW: 1.5-10 GHz TI: Slaved to highest priority pulse/CW
Instantaneous bandwidth	2 GHz	4-75 MHz Channels
Ground Coverage:	Scanning pencil beam for side lobe intercept, omni antenna for mainbeam intercept plus inhibit.	Toroidal shaped omni pattern for main beam intercept

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ERP Measure- ment Accuracy	≈ 6 dB (no polarization measurement)	1.4 dB
RF Measurement Accuracy:	Pulse: ± 32 MHz CW: ± 15 MHz TI-CW: ± 200 KHz	Pulse: ± 3.2 MHz CW: ± 1.0 MHz TI-Pulse: ± 200 KHz -CW: ± 130 KHz
PRI Measure- ment accuracy (pulse to pulse)	1 usec	pulse: 1 usec TI: .05 usec
PW Measurement Accuracy	.2 usec (PW < 12.7 usec)	.1 usec or 3% (PW < 200 usec) 6% (PW < 600 usec)
Polarization Measurement Accuracy	None	20°
Receiver Sen- sitivity (6 GHz) Pulse: CW:	- 74 dBm - 94 dBm	- 78 dBm - 94 dBm
Antenna Gain (6 GHz) DF OMNI	+ 30 dBi - 3 dBi	-- - 5 dBi
Min Detectable Power (6 GHz - 500 nm S.R.) DF Pulse: CW:	+ 70 dBm + 50 dBm	N/A N/A
(6 GHz - 1000 nm S.R.) OMNI Pulse: CW:	+ 102 dBm + 82 dBm	+ 100 dBm + 84 dBm
Location DF OMNI	 None	None

* 400 nm slant range

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Modulation:	Pulse: None CW/TI: 750 KHz Predetect or 13 MHz spectrum analysis	Pulse/CW/TI: 750 KHz prede- tect or 10 MHz band-width com- pressed (200 usec sample)
Phase Stab- ility:	Undefined	20° over .5 ms 90° over 20 ms
Scan Rate:	1% of basic rate	1% of basic rate
Scan Dimen- sion:	± 3°	± 1.25°

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