NWRD9399-52-01

X-Band 150W

Dual-Beam Pole-Mount Weather Radar

NANOWAVE Technologies Inc.

v 2.2

GENERAL DESCRIPTION

The NWRD9399-52-01 is NANOWAVE Technologies' 150W, Dual-beam compact X-Band pulse compression RADAR. This multi-application unit can be utilized as either a primary solution for regional or urban deployments or as a gap filler in existing weather RADAR networks to cover gaps or outages with a range of up to 60km and 150m resolution.

The units patented approach employs a dual antenna system to enable two independently configurable RADAR beams.

In the case both beams operate at the same frequency volume scan time can be reduced by 50%. The RADAR can also be configured such that one beam operates within the blind range of the other providing continuous coverage and the opportunity to optimize for range and velocity ambiguity independently providing an optimal target scanning scenario.

The RADAR system can also be configured for conventional single beam operation resulting in reductions in power consumption and mass.

Developed using NANOWAVE Technologies in house state of the art technologies the NWRD9399-52 offers a versatile RADAR front End Unit capable of gap filling in deployed RADAR networks.

Fig 1: Dual Beam RADAR NWRD9399-52-01

FEATURES

- Compact, cost effective weather monitoring
- Compliant to salt fog environment
- Pole-mountable
- Optional volume scan
- Single or dual beam configuration
- Optional Marine RADAR Interference Mitigation software.

APPLICATIONS

- Coastal weather RADAR
- Gap filling weather RADAR
- Mobile weather RADAR

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ELECTRICAL PARAMETERS

Parameter	Unit	Min	Typ	Max	Remarks
X band Frequency Range	GHz	9.3	9.75	9.9	Reconfigurable over 100MHz at any selected center frequency.
Number of beams		1		2	Electrical specifications applicable to both beams and independently controllable.
Pulse Width	µs	1		40	
Processed Range	km		60		
Range Resolution	m		150		
Range Gate Spacing	m		30		
Data Output Products			Z,V; I/Q,		
Sensitivity @30 Km	dBZ		18.5dBZ		
Peak Transmit EIRP	dBW		52.5		
Spurious Levels	dBc	-60dBc		-50dBc	
Minimal Detectable Signal (MDS)	dBm		-101		
Data Streaming Rate	MB/s		10		
Operational Bandwidth	MHz		5		
Waveform Bandwidth	MHz	0.1		1	
Pulse Repetition Frequency	PPS	100		2000	
Polarization			Linear Horizontal Polarization		
Azimuth 3dB Beam width	deg			4.0	
Elevation 3dB Beam width	deg			4.0	
Azimuth Scan Rate	deg/s			144	Scan rate based on dual beam scan mode.
Elevation Scan Range	deg	0		20	
Elevation Scan Rate	deg/s		0.66	0.66	

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Parameter	Unit	Min	Typ	Max	Remarks
AC Power	W			500	At AC voltage: 120V/ 60Hz: Alternate supply options available on request.
Product certifications	CE, UL, FCC				Certification dependent on region

Mechanical and Environmental Parameters

Parameter	Unit	Min	Typ	Max	Remarks
Operating Temperature	°C	-30		+55	
Storage Temperature	°C	-40		+85.0	
Humidity	0 – 100% none condensing external				
Shock (Transportation)	Air shippable				
Wind Load	60m/s survivable				
Salt Fog	Radome sealed using a rubber gasket against salt & fog.				
Deployment	Pole mount				Unit can be re-packaged and integrated with existing site antenna systems.
Diameter	m			0.8	
Mass	kg	40		55	Lower mass for single beam unit.

Software Features

Feature	Description	Remarks
MRIM	Marine RADAR Interference Mitigation	Features suppresses narrowband marine RADAR interference for coastal deployment.
VSCAN	Volume Scan	Optional software add-on by request

Notes:
1) Specifications are subject to change without notice
2) Increased temperature ranges available on request
3) Unit fully protected against lightning

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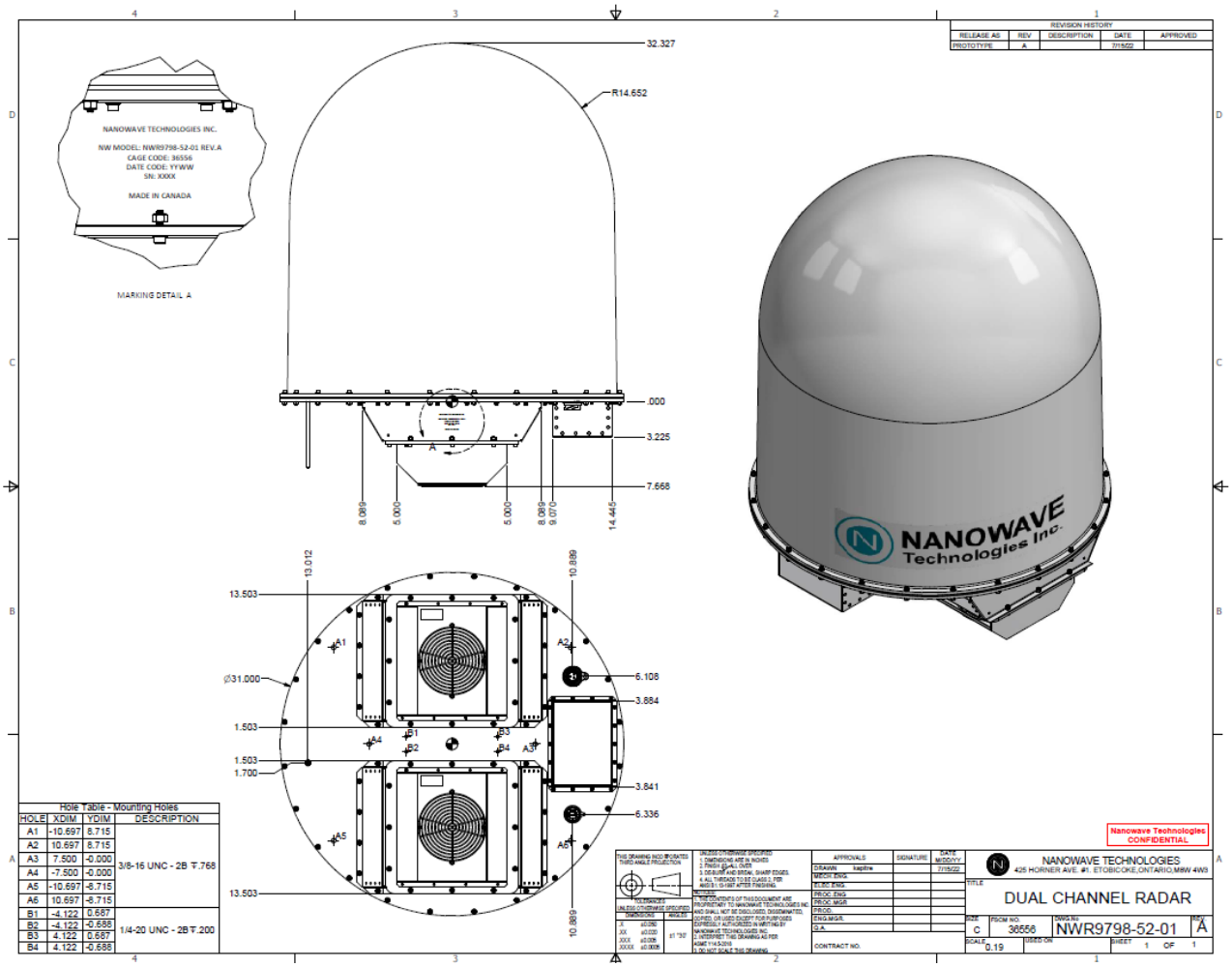

Hole Table - Mounting Holes

HOLE	XDIM	YDIM	DESCRIPTION
A1	-10.697	8.715	3/8-16 UNC - 2B ↧.768
A2	10.697	8.715	
A3	7.500	-0.000	
A4	-7.500	-0.000	
A5	-10.697	-8.715	
A6	10.697	-8.715	
B1	-4.122	0.687	1/4-20 UNC - 2B ↧.200
B2	-4.122	-0.688	
B3	4.122	0.687	
B4	4.122	-0.688	

Fig 2: Outline Drawing of NWR9798-52-01 Dual Channel RADAR unit

Additional Features:

- Marking: the unit is marked with manufacturer part no., date code, and Serial Number.\
- All plating and painting is RoHS compliant

For further information please contact NANOWAVE Technologies Inc. at sales@nanowavetech.com, or call at (+1) 416-252-5602.

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