

## Instruments developed by ProSensing Inc. 1990-present:

#/Year	Instrument	Customer	Comments
1 (1993)	Multi-beam salinity mapping radiometer	NOAA	Generated first airborne ocean surface salinity maps (L-band)
2 (1993)	X-band Focused Phased Array Imaging Radar	ONR	In use since 1993 by UMass for studying ocean surface wave spectra, breaking waves, surface topography
3 (1994)	Coastal Delta-K radar	NOAA	Three beam surface current mapping system. Presently owned by NOAA ETL.
4 (1995)	Airborne C-band Scatterometer	NOAA-HRD	Used by NOAA Hurricane Research Division in various missions since 1995 for measuring ocean surface wind vector and wind profiles
5 (1995)	37 GHz Electronically Steered Thinned Array Imaging Radiometer	Air Force Research Laboratory	Airborne 60 beam imaging radiometer.
6 (1995)	Stepped Frequency C-band Radiometer	NOAA-HRD	Used routinely by NOAA to measure ocean surface wind speed and rain rate through hurricanes
7 (1994)	95 GHz dual polarized cloud radar	University of Utah	Still in operation
8 (1995)	95 GHz airborne polarimetric cloud radar	University of Wyoming	Key element of instrument suite of NSF-funded airborne research facility
9 (1995)	95 GHz polarimetric cloud radar	GKSS, Germany	Routinely operated since 1996.
10 (1997)	Spectral Atmospheric Radiometer	Air Force Research Lab	22/37 GHz water vapor profiling radiometer-remotely operable via Internet
11 (1997)	32 channel digital beamformer receiver	Air Force Research Lab	Continuous storage of raw data at 150 Mbytes/s
12 (1997)	95 GHz polarimetric cloud radar (SPIDER)	Mitsubishi Japan	Routinely operated from airborne and ship based platforms by NASDA/CRL since 1998
13 (1998)	35 GHz dual polarization cloud radar	Air Force Research Lab	80 W average power. Routinely operated by AFRL.
14 (2000)	Airborne Salinity Mapping Radiometer	Flinders U. Australia	In routine use since 2000

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15 (2000)	95 GHz polarimetric cloud radar	Mitsubishi, Japan	Part of Japan's National Research Institute for Earth Science and Disaster Prevention mobile weather radar system.
16 (2000)	95 GHz dual polarized FMCW radar	Mitsubishi, Japan	High range resolution (30 cm) system for surface imaging applications
17 (2000)	95 GHz FMCW imaging radar	Mitsubishi, Japan	High range resolution system for airport landing aide research
18 (2000)	95 GHz chaotic radar	Mitsubishi, Japan	Modification of 95 GHz FMCW radar for collision avoidance research
19 (2001)	Airborne Salinity Mapper	NRL	6 independent L-band radiometer channels with Butler matrix antenna feed
20 (2001)	C-band stepped frequency radiometer	NRL	Operates in conjunction with salinity mapper to estimate surface roughness for improved salinity retrieval
21 (2002)	Airborne 95 GHz FMCW cloud radar	ONR	300 mW average power transmitter. Deployed in a wing pod on a Twin Otter aircraft.
22 (2002)	1-dimensional thinned array L-band correlation radiometer	NASA-GSFC	Reworked system originally built by the University of Massachusetts
23 (2002)	2-dimensional thinned array L-band correlation radiometer	NASA-GSFC	21 independent L-band radiometers. First airborne deployment: summer, 2002.
24 (2002)	DIR-40 and DIR-100 SAR receiver stations, 2002	NASDA, Japan	Wideband (40 MHz and 80 MHz) digital receivers for SAR ground-station raw data recording, 2002
25 (2002)	Bistatic Receiver and Recording System	DOT	Dual polarized bistatic receiver for removing multipath returns from airport surveillance radars. Proceeding to phase II in 2003.
26 (2003)	C-band Stepped Frequency Radiometer	NOAA-HRD	First production unit of 3 planned for NOAA; 10 planned for Air Force Hurricane Reconnaissance aircraft.
27 (2003)	C-SCAT (3 units)	University of Manitoba, Canada	Polarimetric high resolution (0.3 m) C-band scatterometer Deployed on ship and sled in Arctic for ice/snow detection.
28 (2003)	Digital beamforming antenna and receiver system	NASA/GSFC	Microstrip patch array antenna integrated into custom radar enclosure. 8 channel digital receiver with FPGA-based digital beamformer and T/R module drivers for transmit amplitude and phase control.

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29 (2004)	C-band Stepped Frequency Radiometer	NOAA/HRD	Second production unit.
30 (2004)	Multi-frequency Airborne Radar	NASA/GRC	Three-frequency (10, 35, 95 GHz) forward looking airborne radar for detection of cloud liquid water content, particle size estimation
31 (2004)	X-band weather radar processor system	ONR	Add-on weather radar processor for X-band phased array radar system (MPQ-64)
32 (2005)	Dual polarization L-band airborne radiometer	University of Melbourne	Six parallel radiometer channels with selectable V/H polarization input for soil moisture or salinity mapping.

### In process:

#/Year	Instrument	Customer	Comments
33 (2005)	Ultra-stable L-band radiometers	NASA/GSFC	Compact low noise radiometers with integral calibration loads (ambient temperature and 125K cold FET). 35 radiometers under construction.
34 (2005)	C-band Stepped Frequency Radiometers	NOAA/HRD	Two production units, one for high altitude operation, both including integrated cold-FET low temperature calibration load.
35 (2005)	183 GHz water vapor radiometer	DOE	Integrated water vapor and liquid water for arid environments
36 (2005)	Ground-based 95 GHz cloud radar	DOE	Remotely operable 95 GHz dual polarization cloud radar with full spectrum processing
37 (2005)	Airborne X and W-band cloud radars	NRC Canada	W-band polarimetric cloud radar with digital pulse compression, 5 antenna ports. X-band polarimetric cloud radar, 4 antenna ports.
38 (2006)	Ground-based 95 GHz cloud radar for the ARM mobile facility	DOE	Remotely operable 95 GHz dual polarization cloud radar with full spectrum processing
39 (2007)	Wave mapping radar system	DARPA	PPI scanning interferometric X-band radar for ocean surface wave height mapping from small vessels.