

WS5 MARINE WEATHER SATELLITE RECEIVER SYSTEM

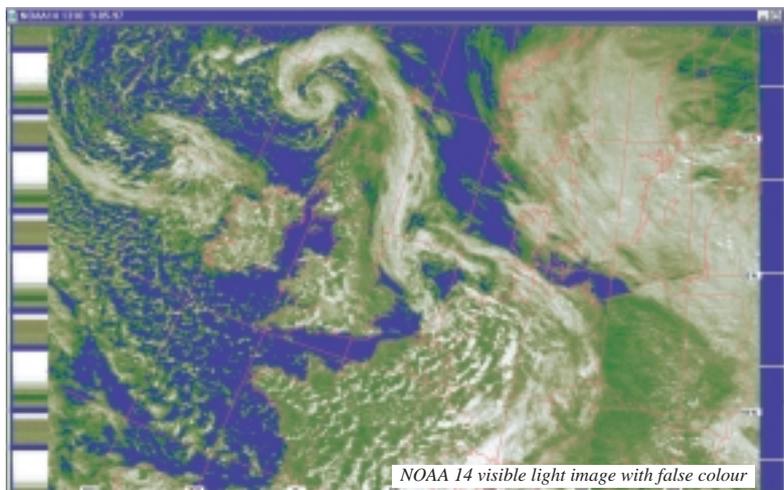


ICS Electronics Ltd have a world-wide reputation in the design and manufacture of MF/HF radio data communications equipment. As well as supplying DSC, NAVTEX, Weather Facsimile, Weather Satellite systems to the marine market. ICS equipment is extensively used by coast radio stations and navies throughout the world

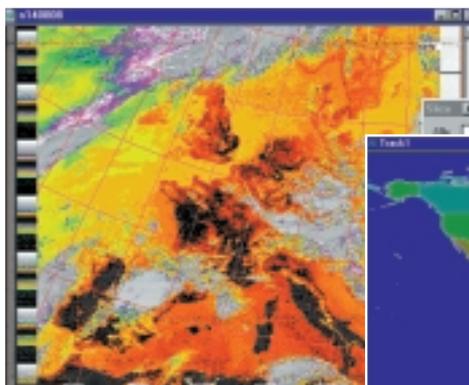
The WS5 M uses powerful 32bit Windows compatible software to receive and display startlingly detailed satellite weather images directly on a PC screen, even when at sea. Detailed Visible light and Infra-red heat image earth views enable the user to track weather systems and pinpoint ocean temperatures.

Automatic direct reception of NOAA Weather Satellite Images at Sea with Windows 95/98™ laptop or desktop computers

The American NOAA polar orbiting satellites transmit a continuous picture of the earth's surface and cloud cover as they slowly orbit the earth. Travelling from pole to pole, each satellite takes about 100 minutes for one orbit. Two satellites are normally in use. Because the satellites have a relatively low orbit height of about 450 miles, reception is possible using a compact VHF 'crossed dipole' antenna.



NOAA 14 visible light image with false colour



NOAA 14 temperature slice

Several near overhead NOAA satellite passes will occur each day anywhere in the world. These can give startlingly detailed cloud cover pictures of the weather patterns surrounding the receiving location. Two types of images are transmitted from each satellite: Visible light and infra-red. Visible light images show surface cloud cover. Low pressure weather systems typically show up as a spiral of densely grouped cloud. Infra-red images can reveal the surface temperature and show cloud cover even during the hours of darkness.

The WS5 M System

Everything that is needed to receive stunning satellite images on a Windows 95™ or later laptop computer is provided. The system includes a compact marinised antenna, a dual channel NOAA receiver with in-built serial computer interface and powerful Windows 32bit 'PROsat' software.

Satellite Information and Use

Modern weather forecasting is increasingly accurate, however most information used to produce radio weather facsimile charts is at least three hours old when transmitted. The speed of movement of weather patterns and tropical revolving storms is often inaccurately forecast and the development of a secondary low pressure system is frequently not forecast at all.

The WS5 allows fine tuning of weather forecasts - the determination of the actual rate of movement of weather systems, and an indication of un-forecasted weather developments. Using infra-red images, surface temperatures may be determined and changes in ocean temperature can be located. These features can assist deep-sea fishermen in the location of warm ocean areas and allow long distance yachtsmen to locate ocean currents.



Track II for Windows™

FEATURES

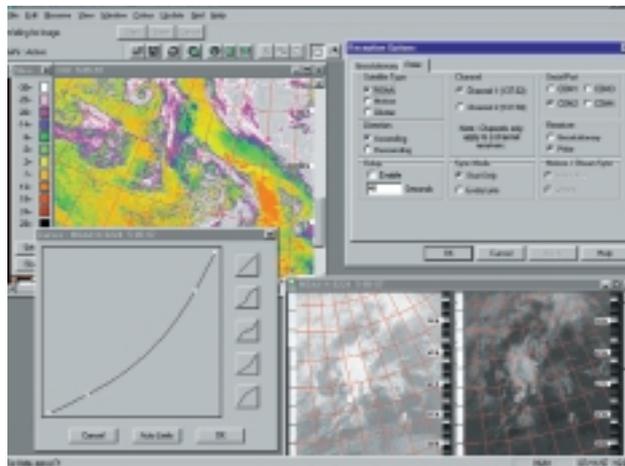
- ▶ User friendly Windows 95/98™/NT4 software
- ▶ One 'click' for automatic scheduling of NOAA passes
- ▶ Live display of full incoming image
- ▶ Visible and Infrared images viewable simultaneously
- ▶ Continuous AutoSave and scheduling of new images
- ▶ Simultaneous tracking and new image window
- ▶ 'You are here' position indication from GPS
- ▶ Latitude and Longitude grids with land outlines
- ▶ Temperature slice display
- ▶ Spectacular colour facilities
- ▶ Compact marine antenna
- ▶ Greyscale or colour printing using Windows supported printers

Software Operation

As with all ICS products, ease of use is of paramount importance. One click of the 'Automatic Reception Icon' will start a new reception session. The 'Tracking Window' will show the actual position of the 'footprint' of the NOAA satellite plotted on a world map. It shows details of the actual 'rise' and 'fall times' of the next available satellites. From then on, images are automatically received, dated, time-stamped and saved to computer file. The most up to date image is left in view. Previous images may be recalled and 'windowed' alongside for comparison.

Any part of an image may be enlarged and processed to provide maximum image clarity. Images may be zoomed as many as three times, grey levels manipulated and image contrast adjusted to allow examination of the fine detail. User defined 'false colour' palettes may be overlaid. These can enhance the overall image presentation by showing ocean areas and land masses in different colours.

The 'Temperature Slice' feature presents areas of similar surface temperatures as coloured bands. This permits the user to view the position of weather fronts and ocean currents which can be dependant on changes in surface temperature.



Computer generated latitude and longitude gridding and country outlines may be superimposed on the received image and the actual position of the vessel can be plotted on the screen. By connecting the WS5 to a GPS navigation receiver with a NMEA 0183 interface, the vessel's position details and the computer's clock may be automatically updated.

Satellite Element Data

Satellite orbit prediction element data can be automatically down loaded into the WS5 by connection to the "Internet" or telephone bulletin board (requires Windows supported modem). To maintain the accuracy of the satellite rise time prediction and grid image overlay, updating is normally required once a month. If a direct "Internet" connection is not available on board, it is possible to enter the element update information by hand.



WS5 M Technical Specifications

RECEIVER

Receiver Frequency	137.500, 137.620 MHz
Receiver Sensitivity	>0.3µV for 12dB SINAD
Antenna Input	75Ω F type connector, 12v DC present.
Supply Voltage	10-14 Volts DC
Supply Current	500 mA
Serial Interface Output	57.6kbps
NMEA Input	0183 Version 2 - RMC or GGA& ZDA or GLL&ZDA
Size	200W x 45H x 15D mm excluding connectors
Weight	0.45Kg
Mounting	Table top, or bulkhead using the BMK-2 option

COMPUTER REQUIREMENTS

Pentium 90 or higher processor, 20MB hard disk space, Windows 95/98™ or NT4, Unused serial COM port, 8MB RAM or more, Super VGA 800x600x256 display or better

Automatic update of NOAA satellite elements requires a modem and Internet account

WS5 - OPTIONS

- BMK-2 bulkhead or shelf mounting kit for WS5 receiver
- WS-EXT 20m antenna extension cable
- WS-5G Meteosat & GOES Geostationary satellite-upgrade for WS5, (for landbased installation only)

TECHNICAL DETAILS - WS-ANT/A ANTENNA

Marinised cross dipole antenna with reflectors, 1" x 14 T.P.I. internal mounting thread, 10m plug in cable
 Size 650mm tall x 950mm diameter
 Weight 1.75Kg



ICS Electronics has a policy of continuous product improvement and reserve the right to vary in detail from the specifications contained in this brochure.

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