

X-BAND SINGLE POLARIZATION

The WR-10X is a valuable tool for real-time monitoring of weather phenomena in areas with complex topography.

It can be used advantageously at both urban and regional levels, or as a gap filler for an existing network.

A mobile version can be deployed quickly in situations where meteorological alerts arise in areas with significant hydrological risks, becoming an important tool for civil protection emergencies.

The possibility of WR-10X cluster networking allows the system coverage to be extended practically without limit. The result is a unique image that combines the data collected by all the radar units included in the network.

Thanks to the use of the latest technology, as well as the capital, installation, and operating costs of WR-10X radar networks, these are an attractive alternative to the traditional high-power, large-size, weather radar approach.

It is also available a cost-effective WR-10XCE version that features single elevation azimuthal scans, still allowing very accurate and sensible storms detection and monitoring.

The WR-10XCE version can be later upgraded to the full-fledged one with simple operations.

A comprehensive set of the most common radar output data, the so-called “weather products”, is provided with the system, and thanks to the open software architecture, additional or customized products can be easily added later.

The control and display software has a very intuitive GUI and the possibility to be web visualized.

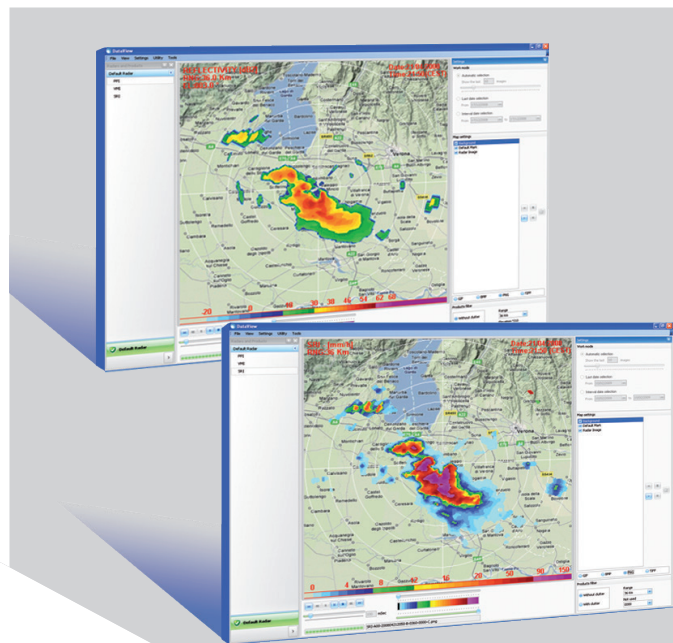
The system can be remotely controlled, operated, and tested, resulting in no requirement to access the radar site for standard operations.

ELDES is based in Italy but thanks to our Service Department, supported by our Distributor network, we can easily reach all parts of the world, ensuring support for installation and commissioning, constant assistance and quick response times throughout the product lifetime.

Gap filling, storm prevention, research, hydrology, transportation, outdoor events... All easier now with WR-10X.



Examples of installations



WR-10X Display – Data View

AVAILABLE RADAR PRODUCTS (full option)

- > **PPI-Z**: Reflectivity PPI; RHI (Range Height Indicator)
- > **CAPPI**: Constant Altitude PPI
- > **SRI**: Surface Rainfall Intensity (instantaneous)
- > **SRT**: Surface Rainfall Total (accumulated)
- > **VMI**: Vertical Maximum Intensity
- > **ECHO VMI**: Height of Maximum Reflectivity
- > **HVMI**: Maximum Reflectivity on Horizontal and Vertical Axis
- > **VCUT**: Atmosphere Vertical Cross Section
- > **VPR**: Reflectivity Vertical Profile
- > **LBM**: Low Base Map
- > **ECHO LBM**: Height of Low Base Map
- > **Nowcasting**: Storm Cell Evolution Forecast at: 15', 30', 1h
- > **Mosaic**: Combination of the maps of all the radars in the same network

Typical applications

- Hydrological basins not covered by the main radar network
- Critical weather events for Civil Protection purposes
- Local urban area weather conditions for local authorities and citizens
- Weather conditions for outdoor recreational activities, sports, concerts, happenings, etc.
- Urban or regional weather for local TV stations
- Hydroelectric basin conditions
- Roads, airports, harbours
- Events potentially harmful for agriculture

TECHNICAL SPECIFICATIONS REFERRED TO IC11 (STANDARD VERSION) AND IC12 (CE VERSION)

TRANSCIVER TECHNICAL SPECIFICATIONS

Operating frequency:	9410MHz ± 30MHz
Peak power:	10Kw
Average power:	IC = 4.8W IM = 4.8W IL = 6W
Pulse width:	0.3 - 0.6 - 1.2 uS User selectable
Repetition frequency (PRF):	1600 - 800 - 500 Hz user selectable (Jittered PRF for interference rejection)
Modulator:	Solid state
Receiver:	Logarithmic
Transmitter:	Magnetron
Polarization:	Horizontal
Noise figure:	< 4dB

ANTENNA

Type:	Parabolic prime focus reflector (φ 75cm)
Horizontal lobe width:	< 3°
Vertical lobe width:	< 3°
Gain:	> 35dB
Scan mode	Continuous azimuth scan with elevation steps of 0.1° in the 0° to 180° range, RHI, manual and automatic pointing (WR-10X) Azimuthal scan with fixed elevation adjustable during initial setup (WR-10X-CE)
Sector Blanking	Fully programmable in two separate azimuth sectors

All specification (technical included) and design are subject to change without notice.
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SIGNAL PROCESSOR

Type:	Digital processing on PC and DSP
Parameters assessed:	Horizontal reflectivity (Z) in dBZ
Clutter correction:	Statistical
Sensitivity:	9,4dBz @ 25Km - 22dBz @108Km
Pulse integration:	Configurable based on antenna sync
Calibration:	Automatic noise correction, yearly manual RX calibration with provided support tools
Range scale:	21.6Km - 36.0Km - 72.0Km - 108.0Km User selectable
Range resolution:	30m* 30m* 60m 60m* Depending upon range scale *pulse undersampling

DISPLAY AND CONTROL

Movie loop to display PPI maps at different heights in real time. Measurement cursors. Pan and Zoom features. Underlay and overlay can be configured

Standard Weather Products:	PPI-Z, RHI, VMI, HVMI Nowcasting (WR-10X) PPI-Z, VMI and Nowcasting (WR-10X-CE)
Optional Weather Products:	SRI, SRT, CAPPI, ECHO VMI, VCUT, VPR, LBM and ECHO LBM (WR-10X) SRI and SRT (WR-10X-CE)
Composite and conversion Products:	Mosaic, BUFR, HDF5 and MDV format converters Image export in: GIF, BMP, JPEG, PNG, TIFF formats

GENERAL

Radome dimension	Diameter 103cm. Height 124cm.
Weight	< 90Kg excluding mast
Electrical consumption	< 350VA (PC included)