



Meteorology

METEOR 700S WEATHER RADAR

The METEOR 700S sets the benchmark in weather radar technology for Meteorological Services with special emphasis on long-range surveillance and extreme precipitation in tropical regions.

The METEOR 700S combines cutting-edge technologies with straight-forward and reliable implementation. It features an S-Band magnetron transmitter with a 2nd generation solid-state modulator, a digital receiver, a high-precision antenna and Rainbow® 5, the most up-to-date software package for meteorological users.

METEOR PRODUCT LINE ADVANTAGES

- Optimized for Rainbow® 5, the most advanced meteorological software available on the market today
- Cutting-edge 16 bit signal processor GDRX® 5
- Dynrex receiver technology
- Unattended remote operation 24 hours a day, 365 days a year
- Long-life, state-of-the-art technology
- Full remote surveillance and control capability based on Ravis® maintenance tool
- Comprehensive BITE system
- Full network capability in heterogeneous networks
- Maximum use of COTS components (e.g. PC-based signal processing)

- Simultaneous dual polarization capability available in conventional and receiver-over-elevation configurations

METEOR 700S SYSTEM ADVANTAGES

- High-end DWR with unparalleled price-performance ratio
- Proven magnetron technology
- Graceful degradation modulator
- Wide dynamic range receiver, based on Dynrex dual-channel implementation
- Compliant with EU RTTE Directive due to proprietary high-power filter technology
- Minimization of lifecycle costs due to high reliability
- Improved range resolution and scanning speed through multi-trip echo recovery
- S-Band advantage: Optimized for long-range surveillance under conditions of extreme precipitations





TECHNICAL DATA

SYSTEM	METEOR 700S
Mode	Doppler, Dual-Polarization
Operating Frequency Range	2700 – 2900 MHz (S-Band)
Pulse Width	0.5 – 3.3 μ s
Pulse Repetition Frequency [PRF]	250 – 2000 Hz, user selectable
Typical Operational Range / Technical Range	400 km / 600 km
Maximum Velocity	\pm 214 m/s
System Phase Stability	0.3°

ANTENNA

Type	Parabolic, prime-focus reflector with elevation-over-azimuth pedestal
Reflector Diameter	8.5 m
Minimum Gain	\geq 44.5 dBi
Maximum Half Power Beam Width	\leq 1.0°
Step Response Time for 2° step \pm 0.1°	\leq 1.5 s
Polarization	Horizontal / Horizontal and vertical
Angle Span	0° – 360° continuous in azimuth, -2° – +182° in elevation
Angular Positioning Accuracy	\pm 0.05°
Maximum AZ Scanning Speed	6 rpm
Type	Direct Drive

RADOME

Size	11.8 m
Type	Sandwich, fiberglass with foam core; quasi-random panel cut
Transmission Losses - one-way, dry surface	\leq 0.3 dB

TRANSMITTER

Type	Coaxial Magnetron with solid state, IGBT-switched modulator
Peak Power	850 KW

RECEIVER

Type	Superheterodyne, dual down-conversion
Minimum Discernable Signal @ 1 MHz	\leq -114 dBm
Noise Figure	\leq 2 dB
Linear Dynamic Range @ 1 MHz	\geq 115 dB

GDRX® 5 DIGITAL RECEIVER & SIGNAL PROCESSOR

Type	Modular, multi-channel digital receiver, connected to commercial-off-the-shelf industrial PC as signal processor
Intermediate Frequency [IF]	60 MHz
IF Sampling	16 bit, 180 MHz, 6 channels
Maximum Number of Processed Range Bins	10.000 per polarization @ fully activated algorithm chain
Minimum Processing Resolution	15 m
Processing Mode	PPP, FFT/DFT, Trip recovery and filtering
Clutter Filters	IIR, DFT linear or GIP (Gaussian iterative) interpolation

Ravis® MAINTENANCE SOFTWARE

Recommended Computer Platform	Commercial Off-the-Shelf Notebook
Operating System	Linux or Windows

Rainbow® 5 METEOROLOGICAL SOFTWARE

Recommended Computer Platform	Commercial Off-the-Shelf PC
Operating System	Linux or Windows
Standard Radar Meteorological Products	PPI, MPPI, RHI, CAPPI, Pseudo-CAPPI, MCAPPI, MAX, VCUT, MVCUT, EHT
Optional Product Groups	Hydrological, Aviation, Shear, Short-Term Forecasting, Phenomena Detection, Dual-Polarization, Pre- and Post-Processing, Warning

standard values, not an absolute limitation

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