

METEOR 600S WEATHER RADAR

The METEOR 600S 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 600S 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 14 bit signal processor GDRX®
- Dynrex receiver technology
- Unattended remote operation 24h 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 configuration

METEOR 600S 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 precipitation





TECHNICAL DATA

SYSTEM	METEOR 600S			
Operating Frequency Range	2700 – 2900 MHz (S-Band)			
Pulse Modes	Up to 4, default is 3			
Default Pulse Modes		Short (SPM)	Medium	Long (LPM)
Pulse Width	0.8 - 3.3 µs, selectable			
Default Pulse Width [PW]		0.83 µs (SPM)	1.67 µs	3.3 µs (LPM)
Range Resolution @ default PW		125 m	250 m	500 m
Pulse Repetition Frequency [PRF]	250 – 1400 Hz, selectable			
Maximum PRF @ default PW		1400 Hz	700 Hz	300 Hz
Unambiguous Range @ max PRF		100 km	200 km	500 km
Typical Operational Range	400 km			
Maximum Unambiguous Velocity @ max. PRF, 4:5 staggering, 2860 MHz		± 146.8 m/s	± 73.4 m/s	± 31.4 m/s
Clutter Suppression Capability	> 40 dB			
Data Output – single polarization [SP]	Reflectivity (UZ,CZ), Radial Velocity (V), Spectrum Width (W) simultaneously			
Optional Data Output – dual polarization [DP]	Differential Reflectivity (ZDR), Differential Phase Shift (ϕ_{DP}), Specific Differential Phase Shift (K_{DP}), Polarimetric Correlation Coefficient (ρ_{HV}) simultaneously. Linear Depolarization Ratio (LDR) on request			
ANTENNA		SLP20	SLP13	SLP10
Type	Parabolic, prime-focus reflector with elevation-over-azimuth pedestal			
Reflector Diameter		4.2 m (opt.)	6.4 m (default)	8.5 m (opt.)
Gain		38 dB	42.3 dB	44.5 dB
Half Power Beam Width		2.0 °	1.3 °	1.0 °
Polarization – SP (standard) / DP (option)	Horizontal / Horizontal and vertical			
Angle Span	0° - 360° continuous in azimuth, - 2° - + 182° in elevation			
Angular Positioning Accuracy	± 0.1°			
Scanning Speed	0.2 – 6 rpm			
Step Response Time – for 2° step ± 0.1°		1.0 s	1.5 s	1.5 s
RADOME		6.5 m (opt.)	9.1 m (default)	11.8 m (opt.)
Type	Sandwich, fiberglass with polyurethane foam core; For DP applications: quasi-random panel cut only			
Transmission Losses – one-way, dry surface	0.3 dB			
TRANSMITTER	TXS 600			
Type	Coaxial Magnetron with solid state, IGBT-switched modulator			
Peak Power	850 KW			
RECEIVER	RXS 600			
Type	Superheterodyne, dual down-conversion			
Minimum Discernable Signal @ default PW		108 dBm	111 dBm	114 dBm
Noise Figure	2 dB			
Linear Dynamic Range @ LPM	105 dB			
DIGITAL RECEIVER & SIGNAL PROCESSOR	GDRX®			
Type	Modular, multi-channel digital receiver based on Compact PCI, connected to commercial off-the-shelf industrial PC as signal processor			
Intermediate Frequency (IF)	60 MHz			
IF Sampling – SP (standard) / DP (option)	2 parallel channels in SP / 2 x 2 parallel channels in DP, 80 MHz, 14 Bit ea.			
Maximum Number of Processed Range Bins	Default: 2500, more on request			
Minimum Processing Resolution	30 m			
Processing Mode	Multi-lag autocorrelation with pulse-pair or Discrete Fourier Transform (DFT/FFT)			
Clutter Filters	16 Time domain, 16 Frequency domain			
MAINTENANCE SOFTWARE	Ravis®			
Recommended Computer Platform	Commercial PC, dual-core processor, 2.8 GHz, 2 GB RAM			
Operating System	Linux or Windows			
METEOROLOGICAL USER SOFTWARE	Rainbow®			
Recommended Computer Platform	HP workstation or Commercial PC			
Operating System	Unix, Linux or Windows			

