Weather Products

Product	Category	Product	Category
PPI (Plan Position Indicator)	Standard Analysis	PRT (Point Rainfall Total Plot & Table)	Analyze Hydrologic
RHI (Range Height Indicator)		RSA (River Subcatchment Accumulation)	
CAPPI (Constant Altitude PPI)		RGAUGE (Radar gauge)	
VXSECT (Vertical Cross Section)		VPR (Vertical profile correction)	
MAXDISPLAY (Maximum Column CAPPI)		RDS (Shear in Radial Direction, Radial Shear)	Turbulence and Shear
STSC - PDMR (Sistema de Tempo Severo Convectivo)	Specialized Processing and Corrections	AZS (Shear in Azimuth Direction, Azimuth Shear)	
SCCE 0100 (Correção Volumétrica de Interferência)		ELS (Shear in Elevation Direction, Elevation Shear)	
RCLASS (Rainfall Classification)		RAS (Shear Combined Range and AZ direction, 2D Az shear)	
BBLC (Beam Blockage Correction)		RES (Shear Combined Range and EL direction, 2D El shear)	
BBC (Bright Band Detection and Correction)		3DS (Shear Combined Range, AZ and EL direction, 3D Shear)	
PREC (Precipitation Attenuation Correction)		HZS (Shear in Horizontal Layer Direction, Horizontal Shear)	
VPR (Vertical Profile of Rain Correction)		VCS (Shear in Vertical Layer Direction, Vertical Shear)	
OCC (Beam Occultation Correction)		SHEAR (All Shear-Package)	
ETOP (Echo Top)	Eco Height Analysis	LTB (Shear between Two Layers, Layer Turbulence)	
EBASE (Echo Base)		LLSHEAR (Low level wind Shear)	
LMAX (Layer Maximum)		VIR (Vertically Integrated Reflectivity)	
CMAX (Column Maximum)		WARN (Automatic Severe Weather Warning)	Severe Weather Alert and Phenomena Detection
VAD (Velocity Azimuth Display)	Wind Analysis	HMC (Hydrometeor Classification)	
VVP (Volume Velocity Processing)		SSANA, SSA (Storm Structure Analysis)	
UWT (Uniform Wind Technique)		MESO (Meso Cyclone Detection)	
HWIND (Horizontal Wind)		CDVER, VERG (Convergence/Divergence Product)	
CMM (Combined Moment Display)	Storm Analysis	SWI (Severe Weather Indicator)	
SRV (Storm Relative Velocity)		DSD (Dust Storm Detection)	
SMV (Spectrum Mean Velocity)		HAIL (Hail Detection)	
LMR (Layer Mean Reflectivity)		MBURST (Microburst Detection)	
SWAD (Severe Weather Analysis)		GUST (Gust Front detection)	
SRI (Surface Rainfall Intensity)	Hydrological Analysis	FCOM-WARN (Severe Weather Feature Combination)	
SHR (Surface Hourly Rainfall)		IDW (Ice Detection and Warning)	
VIL (Vertically Integrated Liquid)		ITRACK (Interactive Strom tracking)	Follow-up and Forecast
PAC (Precipitation Accumulation)		STP, GSF (Automatic Storm tracking)	
PAL (Long Time Accumulation)		RSTP (Rain Tracking)	
RIH (Rainfall Intensity Histogram)		CSTP (Centroid Tracking)	
		MOSAIC (Radar Network Composite)	

RMT 0200
Weather Radar
Solid State

Prediction of severe weather events in defense of society
Weather Radar, Doppler, S-Band, Dual Polarization, Solid State

Radar RMT 0200 was developed for the detection of meteorological phenomena over long distances, operating in Dual Polarization with Solid State Amplifier technology.

Produced with state-of-the-art technology, the RMT 0200 is made up of several subsystems that perform specific functions such as transmission, reception, processing, monitoring, operation and control, being among the most recommended sensors for mesoscale weather supervision and known forecasting. such as "nowcasting".

It has a transceiver based on Software Defined Radio (SDR) technology and uses the non-linear modulation technique (NLFM) to mitigate Side Lobes.

Due to its radiating system with a beam opening of 1 degree in the horizontal and vertical polarizations simultaneously, the RMT 0200 allows the classification of meteorological events according to the type and behavior of hydrometeors.

Among the meteorological phenomena are the classification of rain, detection of precipitation, detection of severe weather and hail.

RMT 0200 has an extensive range of products focused on Meteorology, enabling support for decision making in the areas of Air Traffic Control, Civil Defense, Agriculture, Water Resources Management and Research & Development Centers.

The Radar System has a software package that covers all the analysis, supervision and operation needs of the system, including Meteorological Command and Control via Web, allowing integration with Air Traffic Control Systems, via SWIM (System Wide Information Management) capabilities, ASTERIX CAT 8/9 format and other high resolution formats.

Radar RMT 0200 is a modular, robust equipment, easy to install and with reduced operating costs.

Weather Radar, Dual Polarization, Doppler Solid State Transmission - RMT 0200

System

Mode	Dual Polarization Doppler Weather Radar Solid State Transmission
Operation Frequency	2700 - 2900 MHz (S Band)
Pulse width	1 - 100 µs
Pulse Repetition Frequency (PRF)	200 - 2500 Hz
PRF Switching Rate	None, 3: 2, 4: 3 or 5: 4
Distance Range	400 km (typical) 600 km (maximum)
Maximum Doppler Speed	at 256 m/s
Standard Products	Z, UZ, V, W
Polarimetric Data	ρ_{HV}, ϕ_{DP}, K_{DP}, Z_{DR}, LDR
Operation Temperature	External: -20 ^{0}C to +50 ^{0}C Internal: +10 ^{0}C to +40 ^{0}C (typical 25 °C)
Operation Relative Humidity	External: ≤ 95% @ < 40 ^{0}C, ≤ 75% @ ≥ 40 ^{0}C Internal: 20% to 80% @ 25 ^{0}C

Antenna

Type	Solid parabolic reflector with 8,54m de diameter
Reflector Diameter	8.54 m
Minimum Gain	≥ 44.5 dBi
Beamwidth ±3dB	≤ 1.0°
Polarization	Horizontal / Horizontal and Vertical
Side Lobes	≤ -27dB
VSWR	≤ 1.6 @ ± 5MHz
Pedestal Structure	Elevation on azimuth
Angular Scan	AZ: 0^0 ~ 360^0 EL: -2^0 ~ $+90^0$ (typical) EL: -2^0 ~ $+182^{0\circ}$ (optional)
Angular Positioning Accuracy	± 0.1^0
Scanning speed	AZ: 0^0 - 36^0/s (6 rpm) EL: 0^0 - 18^0/s (3 rpm)
Weight	Approximately 9.200 kg

Radome

Type	Fiberglass panels pressed with foam core
Size	11.8 m
Weight	3.4 t
Transmission Losses	0.2 dB (dry radome)
Wind Speed	≤ 67 m/s (gust)
Protection Against Electric Shock	Lightning rod

Transmitter

Type	Solid State Amplifier
Peak Power	5 kW per channel
Duty Cycle	≤ 10 %
Bandwidth	≤ 10 MHz
Transmission blanking	AZ and EL

Digital Receiver and Signal Processor

Type	16-bit, multichannel digital receiver and doppler signal processor based on industrial PC architecture	Matched Filters	FIR filter, pass band, digital decimeter, matched to transmitter pulse width
Intermediary Frequency	60 MHz	Data Quality	a. Attenuation correction atmospheric;
Resolution and Sampling Rate	16 bits, 76.8 MHz		b. Correction of radar reflectivity as a function of distance;
Maximum Range Bin Number	8192 (16384 optional)		c. Removal of spurious echoes (reflectivity, velocity, spectral width, moments of double polarization);
Minimum Resolution	25 m		d. Configuration of NOISE, CCOR, SIGPOW, RHOHV and SQI thresholds;
Processing Modes	PPP, FFT/DFT and DPRT		e. Removal of second and third path echoes
Clutter Suppression Capacity	40 ~ 50 dB (selectable)	2nd path Echo Supression	a. Optimized phase detection; Multipath random echoes; b. Mitigation of second and third path echoes
Clutter Filters	a. Time domain filter (IIR); b. Frequency domain filters (DC cancellations, adaptive interpolations and Windowing); c. Micro suppression of clutter	Interference Rejection	SCCE 0100 Anti-Jammer Subsystem with Interference Rejection Algorithm

Software Systems

RCC	IACIT Bem-Te-Vi
RDC	GAMIC FROGRTNG
LOW	GAMIC RADAR CONTROL II - COLIBRI - MURAN
ROW	GAMIC RADAR CONTROL II - COLIBRI - MURAN
WEB	IACIT C2I RADAR

Receptor

Type	Digital Super-Heterodyne
Noise Figure	< 2.5 dB
Linear Dynamic Range	> 102 dB
Minimal Detectable Signal	< -114 dBm

IACIT®