DME 0200

Distance Measuring Equipment

Aid to air navigation, for safety in flight

DME 0200, a system with 100% brazilian technology, is used by the Brazilian Air Force to aid the country's air navigation, supporting the aircraft to locate itself spatially and acting as an alternative to GPS navigation.

IACIT developed the DME 0200 thinking about unattended operations in remote locations, being extremely modular, compact and easy to operate.

Built with the most modern, the system is fully digital, allowing its interoperability with all radio navigation instruments available on the market.

The DME 0200 can be supplied in Dual Transponder/ Dual Monitor or Single Transponder/Single Monitor configurations.

IACIT's DME 0200 follows the standards defined by the International Civil Aviation Organization (ICAO), the body responsible for regulating all air navigation aid systems.

Main Characteristics

- Frequency generation by digital synthesizers,
- Solid state RF power stages,
- Microprocessors for local/remote control,
- Processing and core system monitoring with Firmware and Digital Hardware,
- Alarm log,
- Indication of faults locally, at the module level, associated with test points on the front panel and indication of faults locally/remotely, digitally, through the user interface (HMI).

IACIT®

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General Characteristics	
Supported operation modes	DME / ILS for approaches (low power version); DME / VOR and DME / DME for route (high power version)
Height	1068 mm
Width	600 mm
Depth	610 mm
Switching	Automatic
Automatic digital control	Power level transmitted Pulse format modulation
Environmental conditions	
Normal operation temperature	-10 ° C to + 60 ° C (Indoor)
Relative humidity	Up to 95% for temperatures ≤ +35°C Up to 60% for temperatures above > 35 °C

Normative Characteristics	
Normative Compliance	ICAO Annex 10
Channels	252 (X and Y)
Capacity	Up to 200 interrogators
Efficiency	> 70%
Pulse rise and fall time	2.5 us ± 0.5 us
Pulse width/duration	3.5 us ± 0.5 us
Distance Accuracy	± 50 feet (± 15m)
Total error (Route)	<± 0.1 NM (185 m) for distances smaller than 200 NM
Total error (Approach)	<± 0.04 NM (75 m) for distances less than 60 NM
Range	200 NM Nominal with line of sight
	60 NM Nominal with line of sight (approach)
Reply Delay	50 µs nominal for the X channel 56 µs nominal for the Y channel
Reliability	MTBO > 40,000 hours MTTR > 30 minutes
Redundancy	Dual Monitor and Dual Transponder
Configuration and Monitoring	Local Access - Via USB Remote Access - Via Ethernet Failure monitoring configurable (Primary and Secondary)
Maintenance	Performing self tests on the transponder and monitor (BIST - Built-in Self Test) Replacement of modules through quick coupler
Installation	Compact equipment and of easy installation

Monitor	
Simulated interrogation rate	32 ppps
Frequency stability	± 0.001%
Center frequency	From 1025 MHz to 1150 MHz
Interrogation Signal Generator	Center Frequency f_o to f_o ± 900 kHz in 100 kHz steps

Power Supply	
Primary Voltage	85 - 300 VAC
Frequency	44 - 66 Hz
Emergency power supply	+48 VCC
Power consumption (AC)	Typical 450W typical (High Power)
Battery Backup Power	4 hours (High power version) 7 hours (Low power version)

Transponder	
Transmission	962 to 1213 MHz, synthesized
Reception	1025 to 1150 MHz
Frequency Stability	
Transmission	± 0.001%
Reception	± 0.001%
Output Peak Power	
Low Power Version	100 W ± 1 dB for operation in terminal area
High Power Version	1000 W ±1 dB for operation in route
RF Pulse Spectrum, spurious output and harmonics	ICAO Annex 10
Power Variation between pulses	< 1 dB
Spurious Emission	- 80 dBc (minimum)
Adjacent Channel Rejection	80 dB (minimum)
Spurious Rejection within the range	75 dB (minimum)
IF rejection	80 dB (minimum)
Receiver sensitivity	> - 91dBm

Antenna	
Frequency range	962 to 1213 MHz
Input Impedance	50 Ω unbalanced
Polarization	Vertical
Gain	8 dB (minimum) 9 dB (typical)
VSWR (COE)	< 2:1
Radiation Pattern	Omnidirectional in azimuth
Maximum Power	3 kW (peak)
Output Coupling Factor (Probes)	22 dB ± 5 dB
Environmental Conditions	
Normal operating temperature	- 40 to +60°C
Relative Humidity	Up to 95%
Wind Resistance	Up to 160 km/h

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