2020 DME
NEXT-GENERATION DISTANCE MEASURING EQUIPMENT
Moog Inc. is a worldwide designer, manufacturer and integrator of mission critical products and systems. Over the past 60 years, we have developed a reputation for delivering innovative solutions for the most challenging civil, military and marine applications. Moog’s product heritage in navigation and surveillance systems is based on supplying innovative solutions to civil aviation authorities and military commands worldwide. By the 1980’s, we were supplying comprehensive fixed base, shipboard, mobile and man portable TACAN systems to customers globally.

2020 DME OVERVIEW

The 2020 is one of the world’s most technologically advanced distance measuring equipment available today. Solid state features include DSP technology, hardware monitoring and conservatively rated RF power amplifiers. Pulse shape and spectrum are controlled by an agile digital feedback control loop to keep the signal in space within permissible limits in all operating conditions.

Compliant with all requirements of ICAO Annex 10 and FAA-E-2996, the 2020 DME can be operated independently or in conjunction with other navigational aids such as ILS, CVOR, DVOR, and NDB. The 2020 is offered in a variety of configurations including single or dual transponder, fixed or mobile, and a compact wall mounted version.
REMOTE MAINTENANCE MONITORING (RMM)

The 2020 DME has a powerful integrated monitoring and maintenance system which can be displayed on a local PC, remote PC or both. Display screens show operating parameters, overall system status, LRU status, alarm limits, diagnostics and test, amplifier status and transmitter control status.

The 2020 DME features a BITE system which continually monitors and provides alarm indications in the event of module failure, system transfer or shutdown. External test points are configurable from LMM/RMM.

Other RMM features include:
- Windows compatibility and user password protection
- Centralized RMM option
- Up to 400 sites monitored from a central RMM station
- Full RMM diagnostics and history logging for each site
- Dial-up/leased line/Ethernet connectivity
- LAN/Satellite link/Fiber optic connection option
- Remote flight check capability
- Auxiliary interface allows user defined sensors to be configured by RMM
- LRU serial number and build state look-up
- Checks system performance to ICAO Annex 10 standards

ANTENNA COMPATABILITY

The 2020 DME operates with all standard omnidirectional, unidirectional and bidirectional antennas. We offer a standard solution with an 8 dB gain omnidirectional antenna with dual coupler outputs for high integrity performance. All antennas are lightweight, rugged, fully waterproof and come with a range of mounting adaptors to suit all sites.

LOGISTICS SUPPORT

Moog provides global logistics support and technical assistance, including:
- A customer helpline manned 24 hours a day
- Support packages for 15-20 years of the whole operational life of the equipment
- System installation and training
- Site survey and system commissioning
- Safety cases, spares and repairs
## 2020 DME TECHNICAL SPECIFICATIONS

### System Configuration
- Single or dual systems. Power output configurations from less than 100W to 1 kW full band

### Transmitter
- **Power Output**: 100 watt to 1kW versions
- **Frequency**: 962 MHz - 1213 MHz
- **Frequency Stability**: ± 0.001%
- **Channels**: 252 (X and Y)
- **RF Pulse Spectrum, Spurious Outputs and Harmonics**: ICAO Annex 10

#### Monitored Parameters

#### Primary
- The following parameters cause the system to shut down or transfer if out of tolerance:
  - Reply delay
  - Reply spacing

#### Secondary (Upgradable to Primary)
- Frequency
- Reply efficiency
- Reply width
- Output power
- Reply rate
- Ident

### Displayed Parameters on Local and Remote PCs
- Reply delay
- Transmitter peak power
- Transmitter pulse pair spacing
- Transmitter pulse count
- Receiver reply efficiency
- Monitor interrogation pulse count
- Monitor interrogation pulse pair spacing
- LRU/PCB status
- Trend analysis
- Diagnostic displays
- Data logging/performance history

### Dimensions
- **Floor Standing**
  - Cabinet (dual): 60 cm wide, 60 cm wide, 192 cm high
  - Weight: 215 kg (dual)
- **Wall Mounted**
  - Cabinet (single): 60 cm wide, 62 cm deep, 77 cm high
  - Weight: 82 kg (dual)

### Environmental
- **Temperature**
  - Operating: -10°C to +55°C
  - Storage: -30°C to +60°C
- **Humidity**
  - 0% to 95% RH (non-condensing)

### Reliability
- Field MTBO better than 100,000 hrs
- MTTR 15 minutes (typical)

### Applicable Standards
- R&TTE Directive 1999/5/EC, Article 3.1 (a), Article 3.1 (b) and Article 3.2
- ICAO Annex 10
- MIL-HDBK-217
- UK CAA CAP670
- Eurocae ED 57
- FAA-E-2996
- ISO 9001:2000 Plus TickIT
- ISO 9001 for hardware
- ISO 9000-3 for software
- FAA.STD.0.16A

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