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# MERLIN DATA PRODUCTS

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## ME-981/991 Data Recording System



*ME-981 Data to Video Encoder*

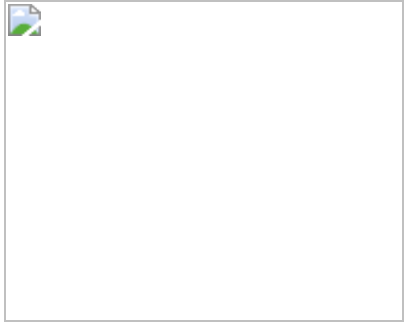
**RECORD DIGITAL DATA ON STANDARD S-VHS OR HI-8 VIDEO RECORDERS**

Designed for use in harsh environments-aircraft, armed vehicles, missiles, ships and other mobile platforms, the **Merlin ME-981/991 Data Recording System** accepts data through application-specific interface modules. Using standard, low-cost videotape as the archival medium, over 2-hours of continuous data at rates up to 2.2M bits/sec may be recorded for future playback and analysis. Data is recovered using a standard industrial-grade video recorder/reproducer output to the ME-991 Decoder, which restores the data stream to its original state, format and timing for further processing and analysis.

**ME-981 Data to Video Encoder**

The Merlin Me-981's size and light weight offers significant advantages over large older longitudinal data recording systems for an increasingly wide range of test applications. Interfacing directly to existing video tape recorders, the ME-981 converts digital data into video for real-time recording in the hostile conditions typically encountered in test environments. By utilizing standard, unmodified S-VHS or Hi8 video tape recorders, over two hours of continuous data can be recorded on a single video cassette.

The rugged enclosure of the ME-981 occupies less than 0.1 cubic feet of space and weighs just six pounds. Environmentally tested and qualified to Mil-Std-810E, the ME-981 encoder operates on 28 colts DC, per Mil-Std-7040 at 20 watts.



*ME-991 Video to Data Decoder*

**Merlin ME-991 Data Decoder**

Designed to operate in a laboratory environment, the ME-991 Decoder may be mounted in a standard 19-inch instrument rack. The unit converts the video-encoded data back to its original state at the time it was recorded using a standard industrial video recorder/reproducer for tape playback. Vibration, shock and G-loads normally experienced in airborne and off-road vehicle test often distort the data signals, but the ME-991's dynamically adaptable input circuitry tracks the playback video signal to insure recovery of data recorded even under adverse conditions.

The ME-991 Decoder incorporates proprietary error correction circuitry to mitigate the effects of data lost because of tape dropouts. Merlin $V^3$ (Vector Cube), three-dimensional, seven-level error detection is performed by using the CRC bits recorded on every line of video in conjunction with the recorded parity bits and the interleaving pattern by which the data is recorded on tape.

$V^3$ data error correction coding can recover 8496 continuous erroneous bits off-tape. This remarkable error correction capability, the state-of-the-art in off-tape digital error correction technology, is possible now because of recent advancements in PLA (Programmable Logic Device) integrated circuits.

**Interface Modules**

- **One (1) Channel of PCM (NRZ-L with Clock or Bi-Phase)**
- **Two (2) Channels of PCM (NRZ-L with Clock or Bi-Phase)**
- **One (1) Channel of PCM and One (1) Redundant Mil-Std-1553 Data Bus**
- **Two (2) Redundant Mil-Std-1553 Data Busses**
- **Two (2) Channels of Asynchronous RS-422 data**
- **Eight (8) Channels of ARINC-429 Data**
- **Eight (8) Channels of ARINC-429 Data and either one (1) Channel of PCM or one (1) Mil-Std-1553 Data Bus**

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