



Weather Frame Synchronizer / Decommulator

Model 225WB

Features

- **Built-in Test Simulator**
- **Data Stream Record / Playback**
- **Ethernet Control and Data Output**
- **DPSS on Ethernet**
- **Data Input on Ethernet**
- **Time Code Translator**
- **Supports TIROS Formats**
 - **HRPT**
 - **LAC**
 - **GAC**
 - **AIP**
 - **SAIP**
 - **TIP**
 - **TIP Boost**
 - **STIP**
- **Forward / Reverse Synchronization**
- **Local / Remote Control**

General Description

The GDP model MD225WB Weather Format Synchronizer (WFS) is a stand-alone Frame Synchronizer/Decommulator designed to process data from the TIROS (Polar Orbiting) Weather Satellites. By applying a flexible programmable synchronization strategy, the unit synchronizes to the received data stream, detects a valid frame synchronizer pattern in the presence of bit errors and processes the contained information. Telemetry data is decommutated and extracted from the data stream and transmitted along with data quality information to other system elements by way of an EtherNet network connection. The unit is housed in a 5.25-inch chassis and can be controlled locally from the front panel keyboard and menu driven display, or remotely from a host computer on the network.



The unit includes a built in data stream simulator. The capability is also included to record the received telemetry and play it back at a later time.

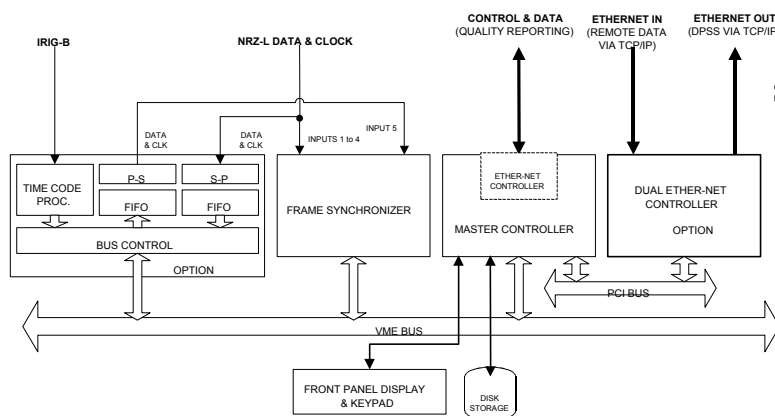
MD225WB Weather Format / Data Handling

The MD225WB Weather Format Synchronizer (WFS) supports the data formats of both the ATN and the KLM spacecraft. These formats include HRPT (High Resolution Picture Transmission), LAC (Local Area Coverage), GAC (Global Area Coverage), AIP (AMSU Information Processor), SAIP (Stored AIP), TIP (TIROS Information Processor), TIP Boost (TIROS Information Processor-Boost), and STIP (Stored TIP) data formats. Aboard the spacecraft the TIP, HRPT, and/or the AIP data is transmitted in real-time, while the LAC, GAC, SAIP, and/or STIP data are played back from digital tape recorders in reverse direction. The MD225WB accepts all formats and synchronizes to them

in both the forward and the reverse direction performing polarity resolution (APC –Automatic Polarity Control) to correct for inverted data. Specific synchronization strategies can be programmed into the unit.

A data stream is processed based on the selected format. Each of the supported formats relates to a predefined process that includes definitions for routing of data and the determination of data quality.

The data input may also be by means of a packetized reception on an Ethernet connection.





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Specifications

<p>PCM Input</p> <ul style="list-style-type: none"> • Four TTL Data/Clock <ul style="list-style-type: none"> • Codes: Bi-Phase or NRZ-L • Formats: TIP, AIP, TIP Boost, STIP, SAIP, HRPT, LAC, GAC, PNTEST (Forward or Reverse) • Spacecraft: ATN, KLM • Rate: 1bps to 5 mbps <ul style="list-style-type: none"> • Clock: 1X rate, 2X rate, 4X rate • Ethernet Data Input <p>Synchronizer</p> <ul style="list-style-type: none"> • Sync Pattern: 2 to 64 bits with mask • Input Polarity: Normal/ Inverted /APC • Strategy: Normal/ Quick • Frame Length: 8 to 1,048,576 bits • Word Length: 8, 10 bits • Position: First or Last word • Sync States: Search, Check, Lock, Flywheel • Error Tolerance: 0 to 15 SH/CK/LK/FW (independently programmable) • Bit Slip Window: ± 3 bits <p>Remote Control</p> <ul style="list-style-type: none"> • Ethernet: TCP/IP 	<p>Outputs:</p> <ul style="list-style-type: none"> • Ethernet 1: Data Quality Output • Ethernet 2: Data & Data Quality • Simulator Data: TTL data/clock • DPSS Port: 2 ports, 24 lines differential, data & quality <p>Simulator/Test:</p> <ul style="list-style-type: none"> • Modes: External/Internal (Loop-back) • Codes: NRZ-L, Bi-Phase • Clock: 1X rate, 2X rate, 4X rate Polarity: Normal/Invert • Formats: TIP, AIP, TIP Boost, STIP, SAIP, HRPT, LAC, GAC, PNTEST (Forward or Reverse) • Data Rates: 8.32, 16.64, 332.7, 665.4, 1330.8, 2661.6 Kbps <p>Record/ Playback</p> <ul style="list-style-type: none"> • Record: Record input stream to HD <ul style="list-style-type: none"> • Storage Capacity: 60 passes on 30G HD (120G Optional) • File Management: Recorded Passes can be archived to network • Playback: Playback any recorded pass (internal) or to another unit (external) <p>Time Tagging:</p> <ul style="list-style-type: none"> • System Time • Time Code: IRIG B (1ms resolution) • Time Message: Space-Craft Time
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Ordering Codes

Ordering Code	Description	Ordering Code	Description
MD225WB	Basic Unit		
OP225WB-71	120 G Hard Drive		

Recognizing that no standard product can meet all the needs of all users, GDP works with its customers to tailor its products to fit unique applications.	The statements in this data sheet are not intended to create any warranty, express or implied. Equipment specifications are subject to change without notice.
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