

# MPCM-102R

Dual-Channel PCM Interface Module for MEDAU/  
MCDAU/MWDAU/MnACQ-20XX Systems

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## Key Features

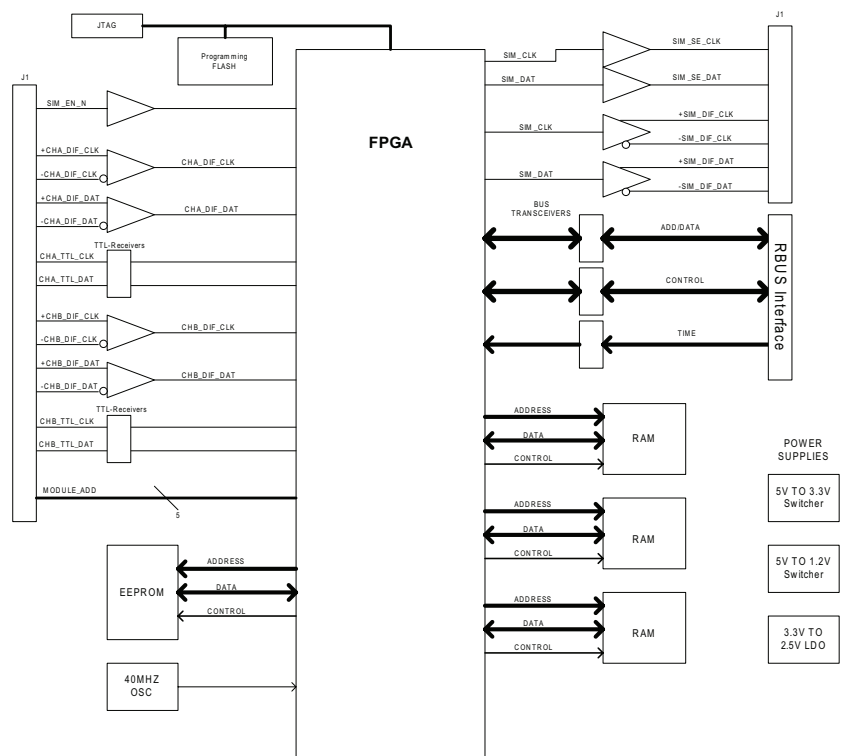
- For use in Curtiss-Wright's MEDAU/MCDAU/MWDAU/MnACQ-20XX systems
- Two independent PCM input channels
- Channels supports RS-422 differential or single-ended TTL inputs
- Built-in programmable frame correlator for each input channel
- Operates up to 20Mbps per channel (RS-422 Differential inputs)
- Frame lock output signals per channel
- Multiple MPCM-102R modules can be placed in a single stack
- Configurable using TTC's programmable software application
- Five Modes of Operation:
  - + FIFO Throughput Mode
  - + FIFO Buffered Mode
  - + Current Value Table (CVT) Mode
  - + Coherent Asynchronous Mode
  - + Coherent Synchronous Mode

## Applications

- Data acquisition systems
- Flight test data recording
- Flight test instrumentation
- Lab test

## Overview

The MPCM-102R is a 2-channel, PCM module for use in Curtiss-Wright's MEDAU/MCDAU/MWDAU/MnACQ-20XX systems. The module has two independent PCM channel inputs. Each channel accepts RS-422 differential inputs at rates up to 20Mbps on a per-channel basis. Both channels are also selectable to allow input on separate single-ended TTL input pins (5 Mbps maximum). The two PCM data/clock interfaces are accessible at the MPCM-102R faceplate via a single 37-Pin MDM connector. The total system bandwidth of all the input modules in a system should not exceed the maximum MEDAU/MCDAU/MWDAU/MnACQ-20XX systems bandwidth. The MPCM-102R can be configured in FIFO Throughput mode, FIFO Buffered Mode, CVT mode, Coherent Synchronous Mode, or Coherent Asynchronous Mode.



MPCM-102R Functional Block Diagram

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CAIS  
Compatible

## Specifications

### General

- Supply current: +5V @ 300mA
- Power consumption: 1.5 watts maximum
- Operating temperature: -35° to +85°C (box ambient temp)
- Storage temperature: -55° to +100°C

### Dimensions and Mechanical

- Compatibility: Operates in any MEDAU/MCDAU/MWDAU/MnACQ-20XX systems
- Dimensions (W x L x H): 2.49" x 2.63" x 0.40"  
(63.25mm x 66.80mm x 10.16mm)
- Weight: 2 ounces (57 grams) not including the mating connector
- Unit connectors: single MDM37S
- Mating connectors: MM212-037-161-45WD
- Backshells (optional): MM232-015-000-4100

### Functionality

- Input channels: Two independent PCM input channels
- Input types: RS-422 differential or TTL single-ended
- Differential impedance: Programmable 120 Ohm terminator on each differential input
- Single-ended impedance: Fixed 10K Ohm pull-up on each single-ended input
- Max input data rate: 20Mbps differential or 5Mbps single-ended
- Bits per word: Programmable from 8 to 16 (fixed word size)
- Bite per minor frame: Programmable up to 8K bits/minor frame
- Minor/major frames: 1 to 256
- Frame lock status: Opto-isolated locked indicator output for each channel
- Frame sync bits: Programmable up to 32-bits
- Frame sync mask: Programmable up to 32-bits
- Bit errors before lock drop: Programmable 0 to 15
- Bit slip window: Programmable 0, ±1, ±2, ±3
- Good frames before lock: Programmable 1 to 16
- Bad frames to drop lock: Programmable 1 to 16
- SFID word position: Any location within minor frame
- Bit clock: Programmable 0° or 180° phase selectable
- PCM data packing: Packed, unpacked or throughput
- Time tagging: Optional in selected modes

### Modes of Operation

- FIFO Throughput Mode: The Data is output in the same sequence as it was acquired. If the FIFO becomes empty the module outputs a filler word and a flag
- FIFO Buffered Mode: The entire PCM minor frame is stored in an auxiliary buffer before the data is output from the FIFO to the overhead in the same sequence as it was acquired
- Constant Value Table (CVT) Mode (Selected data): The data is stored and read from a CVT. Stale and Overflow flags are provided for data validity
- Coherent Asynchronous Mode (Selected data): Each Major Frame is tripled buffered. On each "swap buffer" instruction, data will be transferred from the next sequential buffer
- Coherent Synchronous Mode (Selected data): Used when the input PCM's minor frame is synchronized to the overhead's output minor frame. Each input PCM minor frame is tripled buffered

## Ordering Information

- MPCM-102R: Dual-Channel PCM Interface Module – Including one (1) Mating Connectors
- MM212-037-161-45WD: Extra Mating Connector (optional)
- Connector Backshell (optional): Call factory
- Programming software application (Windows application software included): No charge