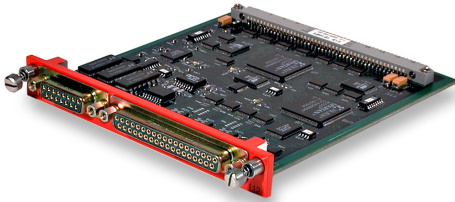


CMP-112

Chapter 8 Compatible MIL-STD-1553 Composite Output Board

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WRIGHT**

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Key Features

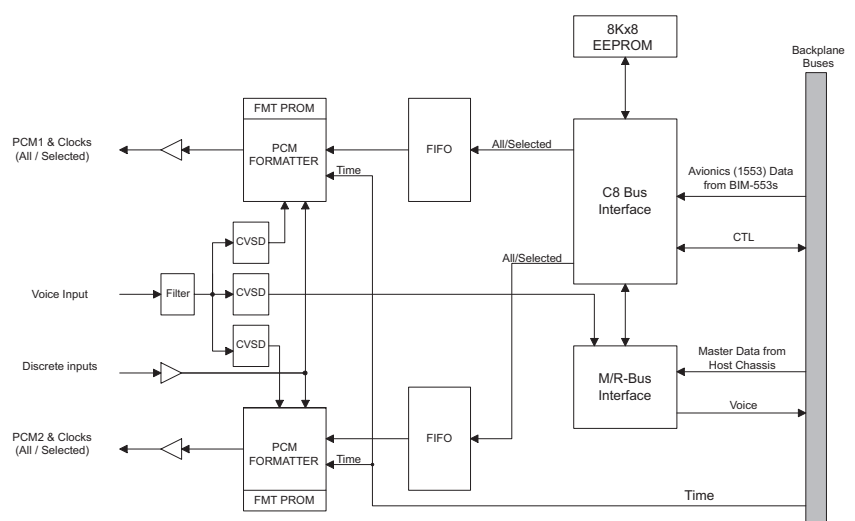
- Composite PCM output board
- Acquires MIL-STD-1553 data from up to eight BIM-553-8 boards
- Card supports 2 composite outputs
 - + Independent, concurrent operation
 - + Each contains selected messages or all data from selected buses
- 16-bit discrete word per board
- Voice input channel
 - + Uses CVSD voice encoding
 - + Separate encoders for each output
- Steer “master data” (Chapter 4) to either composite output
- Meets IRIG-106-96, Chapter 8 requirements
- Future expansion capability via optional plug-in boards
 - + PCM and ARINC-429 data merged to the Chapter 8 output stream
- Microsoft Windows application software included

Applications

- 1553 instrumentation
- Avionics bus acquisition
- Lab test

Overview

The CMP-112 is a MIL-STD-1553 composite data output board for use in Curtiss-Wright’s EDAU-20XX and CDAU-20XX products. The card is used to create multiple, high speed, 100% composite data output streams in accordance with IRIG-106-96, Chapter 8 requirements. The composite data output streams contain all or selected subsets of acquired avionics (MIL-STD-1553) data (captured with BIM-553-8 cards within the same chassis), along with other data sources such as time, voice, discretes, and conditioned data from the host EDAU/CDAU chassis.



CMP-112 block diagram

Specifications

Description

The CMP-112 composite data board is a member of the EDAU/CDAU product family. The board is used to create multiple, high speed data composite output streams containing all or selected subsets of acquired avionics (MILSTD- 1553) data. Other data sources can be merged with the avionics data such as time, voice, discrettes, or other general data sources acquired by the host EDAU/CDAU equipment. Refer to the CMP-112 block diagram for the following discussion. The main functional areas of the board include the backplane bus interfaces, the composite 1 output formatter, the composite 2 output formatter, the voice input conditioner, and the discrete input conditioner.

Backplane Bus Interfaces

The CMP-112 board is compatible with Curtiss-Wright’s EDAU-20XX and CDAU-20XX product families. The board can be placed in units configured to operate either as master units or remote units and can furnish composite output streams in either configuration. The CMP-112 retrieves avionics data from the host chassis’ C8 backplane bus. All MIL-STD-1553 and timestamp data acquired with the installed BIM-553-8 boards appears on the C8 bus. All data is then available for selection and placement on either/both composite outputs. Other generic data sources are acquired, conditioned, and encoded by the host EDAU/CDAU chassis. If the CMP-112 board is placed within either a master unit or stand alone unit, then the generic data is available on the internal M-Bus. The user can selectively program this generic data to appear in either/both of

the composite outputs.

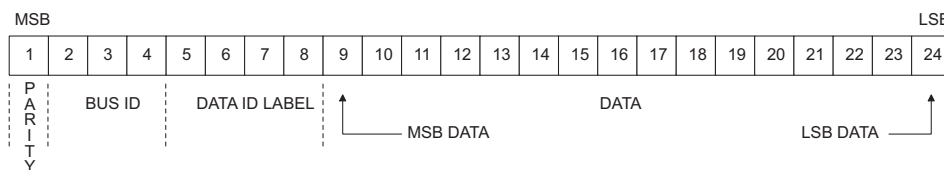
Composite Data Formatter

Avionics data available over the internal C8 bus can be transmitted on the composite 1 and/or composite 2 output streams. The user can program the unit for all data or selected MIL-STD-1553 message data to appear in either of these outputs. The user can also individually disable the data from any avionics bus channel (each BIM-553-8 board provides one channel).

Avionics data is FIFO-buffered to preserve channel order and maintain data coherency.

The following user-programmable features are available in either composite output:

- Message selection
- Bit rate (96 selections up to 12 Mbps)
- PCM output coding (NRZ-L or RNRZ-L)
- All data or selected data
- CVSD voice sampling rate
- Merge/no merge selection for
 - + Bus data
 - + Voice data
 - + Discrete words
- Master data from the host chassis (when installed in a master/standalone unit)



BUS ID*		
BIT 2 3 4	BUS	BIM-553-8 I/O SLOT
0 0 0	1	3
0 0 1	2	4
0 1 0	3	5
0 1 1	4	6
1 0 0	5	7
1 0 1	6	8
1 1 0	7	9
1 1 1	8	10

DATA ID LABEL					
BIT 5 6 7 8		DATA TYPE	BIT 5 6 7 8		DATA TYPE
1 1 1 1	Command A	0 1 1 1	High Time		
1 1 1 0	Status A	0 1 1 0	Low Time		
1 1 0 1	Data A	0 1 0 1	Micro Time		
1 1 0 0	Error A	0 1 0 0	Response Time		
1 0 1 1	Command B	0 0 1 1	Voice		
1 0 1 0	Status B	0 0 1 0	Discrete / Chapter 4 Data		
1 0 0 1	Data B	0 0 0 1	Fill Word (FIFO Empty)		
1 0 0 0	Error B	0 0 0 0	Overflow (FIFO Full)		

Chapter 8 word construction

Specifications

Voice Data

The CMP-112 board accepts a user voice channel, conditions the input, and encodes the voice using the CVSD algorithm. The encoded results are available for transmission in the composite 1 output, in the composite 2 output, and the Chapter 4 PCM output of the host EDAU/CDAU chassis.

Discrete Data

The CMP-112 board accepts a 16-bit discrete word channel, conditions the inputs, and encodes the data as a single data word. The encoded results are available for transmission in either composite output.

General

- Supply current: +5V @ 300mA, supplied by host chassis
- Power consumption: 2.5 Watts max. from the 28V supply
- Temperature:
 - + Operating Temperature: -31°F to +185°F (-35°C to +85°C) (box ambient temp)
 - + Storage Temperature: -67°F to +212°F (-55°C to +100°C)

Dimensions and Mechanical

- Dimensions: Occupies one card slot within the host chassis. Should be placed in slot #2 (slot #1 reserved for the master card).
- Weight: 14 oz. (estimate)
- Connectors (2): DCMA37S, DAMA15S
- Mating connectors (2): DCM37PD, DAM15PD

Overall Capability

- Inputs: Handles data from up to 8 MIL-STD-1553 buses. Acquires 1 analog voice channel and one 16-bit discrete word. Merges master data (Chapter 4 PCM) from the host EDAU/CDAU chassis.
- Outputs: Board supports 2 independent, concurrent output formats, composite 1 (all/selected data) and composite 2 (all/selected data)

General I/O Functions

(Applies to Composite 1 and 2)

- MIL-STD-1553 inputs: Accepts data from up to 8 MIL-STD-1553 buses. Data is acquired with BIM-553-8 cards installed in the host EDAU/CDAU chassis.
- Voice inputs: Accepts and conditions 1 analog voice input
- Voice encoding: Performs CVSD encoding prior to merging to the Composite outputs. Another independent CVSD encodes voice for merging to the Chapter 4 PCM.
- Discrete inputs: Accepts a 16-bit discrete word for merging in each composite output
- Timestamp: Frame timestamp words are available in each composite output. High time and low time (straight binary or BCD) and micro time (straight binary) are supported.
- Buffering: Independent FIFO buffering provided on each composite output
- Compatibility: Compatible with IRIG-106-96, Chapter 8
- Format: User-programmable including message selection, bit rate, PCM output coding, clock source selection, all or selected data, CVSD sampling rate, and merge/no merge for discrete words, MIL-STD-1553 bus data, and voice
- 1553 data: Contains all acquired MIL-STD-1553 messages or selected messages on a message by message basis (on-board EEPROM)
- Ancillary data: Contains analog voice channel (CVSD encoded), 16-bit discrete word, and frame time tag word(s)
- Master data: When installed in an EDAU/CDAU master, programmable to contain selected data words from the host chassis' Chapter 4 output stream. Note: When used in this mode, only data from up to 7 MIL-STD-1553 buses can be merged to this output.
- Output bit rate: Programmable up to 12 Mbps

Ordering Information

Contact [Curtiss-Wright](http://www.curtisswright.com) for ordering information.