

# M8K825CAN

The M8K825CAN is an intelligent multichannel ARINC 825/CAN interface module for Excalibur's 8000 family of multiprotocol carrier boards. The module supports up to five ARINC 825/CAN channels.

In receive mode, the module stores all or selected messages with status and Time Tag information appended to each message. In transmit mode, the module operates via a transmit Bandwidth Frame which allows scheduling of data transmissions and reduces the need for host computer intervention.

## General Features

- ◆ Supports 2, 3, 4 or 5 ARINC 825/CAN channels
- ◆ Each channel supports transmit and receive
- ◆ Implements CAN version 2.0B
- ◆ Supports Standard Extended and Remote Frames
- ◆ Short circuit and timeout protection on bus pins
- ◆ Programmable per channel:
  - Buffer size
  - Bit rates (83.33 kHz to 1 MHz)
- ◆ 128K x 8 dual-port RAM
- ◆ IRIG B input (standard IRIG B120 Serial Time Code)
- ◆ Ruggedized and extended temperature options



## Transmit Features

- ◆ Transmit modes: Immediate and Bandwidth
- ◆ Can send messages contiguously
- ◆ Large transmit buffers reduce host interaction with the module
- ◆ 32-bit transmit message counter per channel
- ◆ 64-bit data byte counter per channel
- ◆ Health messages automatically transmitted by the module based on user requested time period
- ◆ CRC and sequence numbers generated by the module for high integrity messages

## Operating Environment

- ◆ Temperature: 0°–70°C standard temperature  
-40° to +85°C extended temperature (optional)
- ◆ Humidity: 5%–90% noncondensing
- ◆ MTBF (5 ch.): 829,650 hours at 25°C, G<sub>F</sub>, S217F

## Host Interface

- ◆ EXC-8000 family of carrier boards
- ◆ Power (5 ch.): 5V @ 440mA

## Receive Features

- ◆ Receive buffer of user-selected size per channel
- ◆ Status indicator for all CAN receive errors
- ◆ Status indicator for correct CRC for high integrity messages
- ◆ 48-bit 1 μsec Time Tag or 64-bit IRIG B Time Tag
- ◆ 32-bit receive message counter per channel
- ◆ 64-bit data byte counter per channel
- ◆ Eight filters and filter mask to select which messages to be stored

## Software Support

- ◆ *Software Tools*: Intuitive and flexible API with source code
  - ◆ Compatible with 32/64-bit Windows 7/8/10/11 & Linux kernel 3.x/4.x/5.x
  - ◆ Includes application interface for NI LabView & CVI
- ◆ *Exalt Plus*: Excalibur Analysis Laboratory Tools (optional)
- ◆ GUI application for Windows (see page 2)

## Physical Characteristics

- ◆ Dimensions: 46mm x 30mm
- ◆ Weight (5 ch.): 9g

## Ordering Information

- ◆ **M8K825CAN-S5** ARINC 825/CAN five channel module
- ◆ Additional Options:
  - E Extended temperature option
  - R Ruggedized option
  - 001 With conformal coating

**Note:** When ordering this module with a carrier board, use the module code specified in the user's manual of the carrier board.

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These specifications are subject to change without notification

# M8K825CAN – Software Application

The M8K825CAN module comes with Excalibur's 825CAN Simulation Laboratory application, which enables you to utilize our module's advanced capabilities, by simply specifying your ARINC 825 data protocol in an Excel spreadsheet, simulating messages and monitoring your communication.

## Features

- ◆ Simulate transmit and receive messages on the ARINC 825 bus.
- ◆ Messages are configurable using an Excel spreadsheet; automatically generating a per-message GUI.
- ◆ Monitor the ARINC 825 bus at byte level with deep FIFOs, a high resolution Time Tag and Status.
- ◆ View and save a log of the transmitted and received messages.

## Benefits

- ◆ Single solution for testing multiple ARINC 825 data protocols.
- ◆ Works seamlessly with Excalibur ARINC 825 modules.
- ◆ No coding necessary.
- ◆ Low latency.

|    | A                    | B                    | C         | D             | E                         | F         | G       |
|----|----------------------|----------------------|-----------|---------------|---------------------------|-----------|---------|
| 1  | Field Description    | Units                | Data Type | Len. in Bytes | Min/Value                 | Max/Value | Comment |
| 2  | Header               | [%x : 1.0 : 100]     | const     | 3             | bb66cd                    |           |         |
| 3  | Message ID           | [%x : 1.0]           | const     | 1             | 81                        |           |         |
| 4  | UTC of Position      | [%d : 1.0]           | signed    | 1             |                           |           |         |
| 5  | Latitude             | [%f : 1.0 : 1.456]   | signed    | 2             |                           |           |         |
| 6  | N or S               | [%d : 1.0]           | signed    | 4             |                           |           |         |
| 7  | Longitude            | [%d : 1.0 : 5678]    | signed    | 8             |                           |           |         |
| 8  | E or W               | [%x : 1.0 : D]       | unsigned  | 1             |                           |           |         |
| 9  | GPS quality          | [%x : 1.0]           | unsigned  | 2             |                           |           |         |
| 10 | Number of satellites | [%x : 1.0]           | unsigned  | 4             |                           |           |         |
| 11 | Horizontal dilution  | [%x : 1.0]           | unsigned  | 8             |                           |           |         |
| 12 | Meters               | [%f : 1.0]           | float     | 4             |                           |           |         |
| 13 | Geoidal separation   | [%f : 1.0]           | double    | 8             |                           |           |         |
| 14 | Meters               | [%d : 1.0 : 7]       | enum      | 1             | 3 ENUM_DISP 3 (The actual |           |         |
| 15 | Age in seconds       | [%f : 1.0]           | float     | 4             | 7 ENUM_DISP 7 (The actual |           |         |
| 16 | Diff                 | [%s : 1.0]           | ascii     | 3             |                           |           |         |
| 17 | Checksum             | [%x : 1.0 : 0 : sum] | checksum  | 2             |                           |           |         |

Excel Spreadsheet with User-defined Messages

