Redundancy Communications Module

Features

- High Speed Parallel Bus Expansion Interface
- Supports Hot Standby and Enhanced Hot Standby CPU Redundancy system configurations
- Provides path for shared I/O and synchronizing message between Primary and Secondary PLCs
- Five LED indicators for board and system status
- Pushbutton switch for manual switch from active to backup unit
- Software configuration using MS-DOS® programming software configuration function

Functions

This Redundancy Communications Module (RCM) provides a path for a synchronizing message from the active to the backup unit which is used to synchronize the two CPUs in a Hot Standby or Enhanced Hot Standby CPU Redundancy system. It also provides the path for the transfer of shared I/O data between the two units. The physical connection between units in a redundancy system can have up to 25 feet (7.5 meters) total of interconnecting cable. The CPUs for Hot Standby CPU Redundancy systems can be either IC697CPU780, IC697CGR935, or IC697CGR772.

The module occupies a single slot and has two connectors, the top connector is for attachment to the upstream BTM or BRM and the bottom connector is unused. The RCM can be installed in slots 2 through 9 of rack 0 (CPU rack).

Five green LEDs provide status indication of the health of the RCM module and monitor the control status of the Hot Standby CPU Redundancy system. These LEDS are labeled *BOARD OK*, *LOCAL READY*, *LOCAL ACTIVE*, *REMOTE READY*, and *REMOTE ACTIVE*. Local refers to the system that the RCM is in; remote is the other system connected through the expansion bus and is automatically configured by the system to be in slot 1 of rack 7. Rack 7, however, is not available for physical I/O.

A pushbutton on the module allows you to manually switch control from the active to the backup unit (if the backup unit is ready) which allows maintenance of the previously active unit while the system is on-line.

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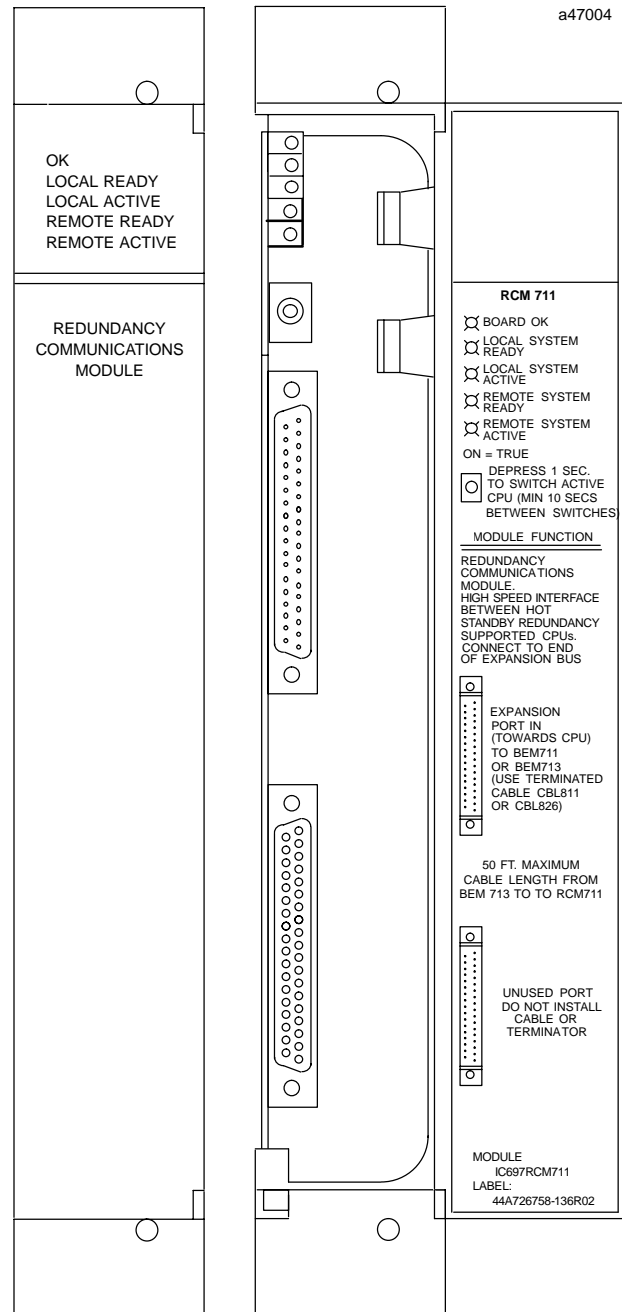
Installation

- Installation should not be attempted without referring to the either the *Hot Standby CPU Redundancy User's Guide or Enhanced Hot Standby CPU Redundancy User's Guide* and the applicable *Programmable Controller Installation Manual*.

- Make sure rack power is off.

- Install in any slot of rack 0 (except slot 1).

- Connect applicable cable to module (either IC697CBL811 or IC697CBL826).

- Turn on power.

An example of a Hot Standby CPU Redundancy configuration with two CPU racks is shown in Figure 1. This configuration assumes that no local I/O requiring expansion racks is included in the system.

I/O Bus Termination

To allow for easy replacement of a faulty RCM, it should be located at the end of the expansion bus and connected using a special terminated cable - catalog numbers IC697CBL811 (10 feet (3 meters)) or IC697CBL826 (25 feet (7.5 meters)). This cable can be removed with

minimal disruption of the expansion bus, especially when one or more expansion racks are included in the system.

Expansion Rack Attachment

Using cable IC600WDXXX (where XXX is length in feet as shown in Table 3) a Bus Transmitter Module (BTM) in the CPU rack connects to a BRM in an expansion rack. Additional expansion racks are added by daisy-chaining cabling between BRMs with the RCM *always* connected last.

Removing a Module

- Grasp the board firmly at the top and bottom of the board cover with your thumbs on the front of the cover and your fingers on the plastic clips on the back of the cover.

- Squeeze the rack clips on the back of the cover with your fingers to disengage the clip from the rack rail and pull the board firmly to remove it from the backplane connector.

- Slide the board along the card guide and remove it from the rack.
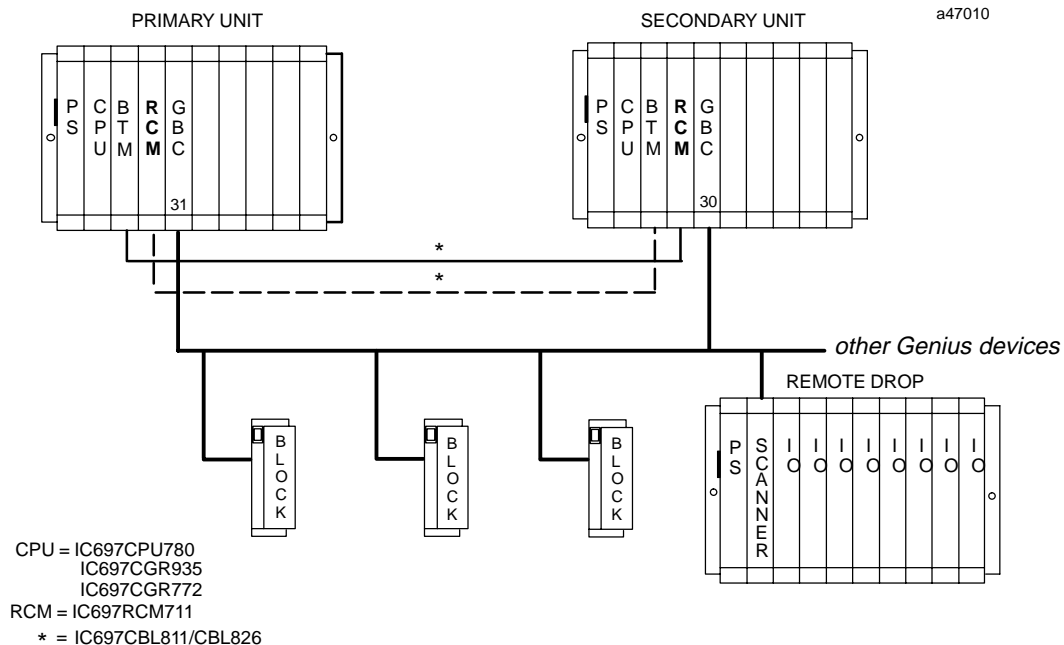
Figure 1. Location of Redundancy Communications Modules in a Hot Standby CPU Redundancy System
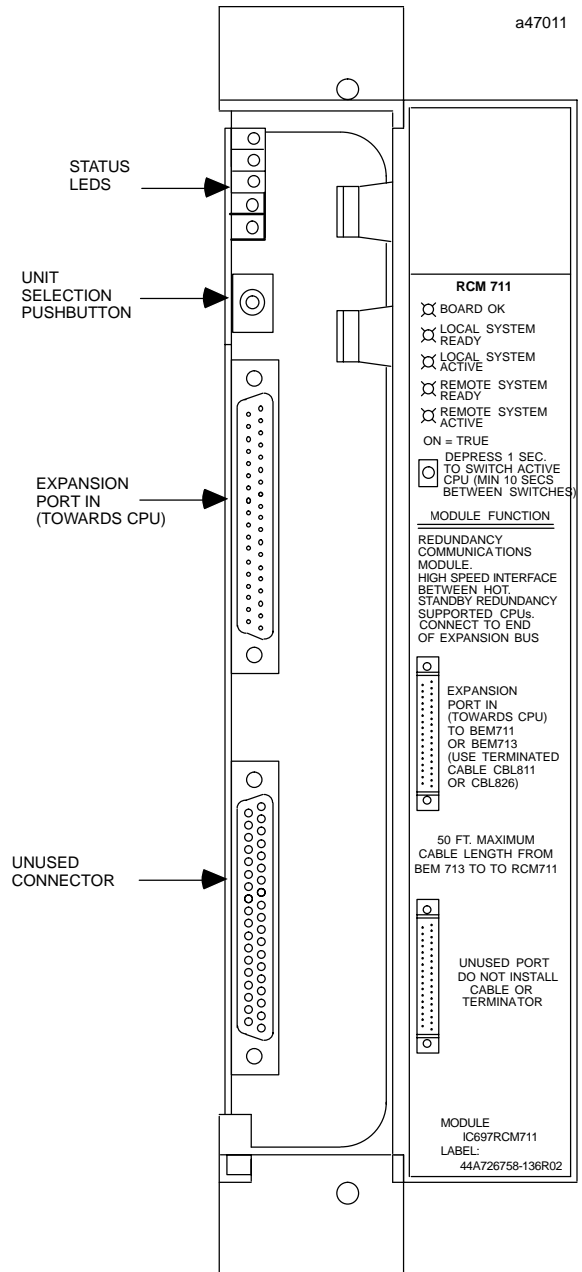
Redundancy Communications Module

Status Indications

The five green LEDs at the top of the module provide status information as shown in figure 3. The top LED (BOARD OK) is ON when power is applied, the board is configured, there were no diagnostic failures in the RCM, no diagnostic failures when establishing communications (the link) with the other RCM, and no failures in communications on the link.

The other LEDs (LOCAL READY, LOCAL ACTIVE, REMOTE READY, and REMOTE ACTIVE) indicate the control status of the Primary and Secondary units in a Hot Standby CPU Redundancy system. For detailed descriptions of each of these LEDs, refer to the *Hot Standby CPU Redundancy User's Guide,* or the *Enhanced Hot Standby CPU Redundancy User's Guide*.

Unit Selection Pushbutton

A pushbutton on the module, which when depressed for at least 1 second then released, allows you to manually switch control from the active unit to the backup unit if both units are ready. After switching roles, another switch is not allowed by the system for at least 10 seconds.

Figure 2. Redundancy Communications Module User Details

Table 1. References

Reference	Title
1	Programming Software User's Manual
2	Programmable Controller Reference Manual
3	Programmable Controller Installation Manual
4	Hot Standby CPU Redundancy User's Guide
5	Enhanced Hot Standby CPU Redundancy User's Guide

Table 2. Specifications for IC697RCM711 †

Current required from 5V Bus	1.2 amps
Expansion Interface Specification	
Maximum cable length	50 feet (15 meters)
Effective Data Rate	500 Kbytes/sec
Electrical Isolation	Non-isolated differential communication.
VME	System designed to support the VME standard C.1

† Refer to GFK-0867B, or later for product standards and general specifications. For installations
requiring compliance to more stringent requirements (for example, European Union), refer to *Installation
Requirements for Conformance to Standards.*

Table 3. Ordering Information

Description	Catalog Number
Redundancy Communications Module	IC697RCM711
CPU modules for Hot Standby CPU Redundancy	IC697CPU780
IC697CGR772
IC697CGR935
Bus Transmitter Module	IC697BEM713
Terminator Plug	IC697ACC702
I/O Cable: 5 feet (1.5m), 10 feet (3m), 25 feet (7.5m), 50 feet (15m)	IC600WD005/010/025/050
I/O Cable with Built-In Termination - 10 feet (3 meters)
I/O Cable with Built-In Termination - 25 feet (7.5 meters)	IC697CBL811
IC697CBL826

Note: For Conformal Coat option, or Low Temperature Testing option please consult the factory for price
and availability.