Frequently Asked Questions

Title: 1553Px module [RT mode] How to set up module as multiple RTs, changing Tx data
Date: 20 Aug 2020
Card/Board/Module: 1553Px family
Operating System: all

Question:

Customer has a Px module. He wants to run in in RT mode, and has a number of questions concerning how to set it up for his requirements.

(a) How to turn it on to simulate multiple RTs
(b) How to setup data to transmit back to the BC for RT2BC messages
(c) How to change the data to be transmitted
(d) How to read message contents

Answer:

(a) Use function Set_RT_Active_Px to make the RT active/simulated. If your module is **multi-function** Px, then you can activate multiple RTs (numbered from 0-31). If your module is **single-function** PxS, then you can activate only one RT.

(b) Use functions Assign_RT_Data_Px to associate a data block with some RTid, and Load_Datablk_Px to load data into the data block.

(c) Somehow decide when you want to change the data (interrupt, or after some given time), and call Load_Datablk_Px with the new data. If you want a built-in mechanism that will help ensure data integrity (so that you do not change the data block while it is being transmitted, which may result in a mixed block of old & new data), then you can use double buffering, using function Assign_DB_Datablk_Px.

If you want to use multiple (up to 16) data blocks for a single RTid, use function Set_RTid_Multibuf_Px.

(d) Use function Get_Next_Message_RTM_Px or Get_Next_Mon_Messgae_Px to extract messages from the Internal Concurrent Monitor.

The software manual entry for these functions shows the message block (structure) content; and what values are returned (e.g., enomsg = -18, if there is no additional new unread message at present). You can then parse the command word and decide to take different actions depending on the message type.