EXCALIBUR EXI-8000PCIe SOFT PANEL

USER MANUAL

1. INTRODUCTION

This document is intended to provide the end-user with guidance on the Excalibur EXI-8000PCIe board soft panel (SP). This type of boards can have multiple MIL 1553 modules up to four. The soft panel is developed for the single module board Excalibur part number EXC-8000PCIe/F0F0 X8K-FF.

The module has two banks, which can be configured as BC (Bus Controller), RT (Remote terminal) or BM (Bus Monitor). Since the board has only one module, the soft panel developed such a way, that the module will have one BC and one RT/BM.

The manufacturer's terminology is quite misleading. To overcome this obstacle the following definitions are used:

a. Device (number) is the module number in the board.
b. Module (number) is the one of two banks of the each module.

MIL-1553 interface, by its nature, has RTs constantly running – they are listeners and BC sends commands to them and receives responses. For this reason, it will be helpful to start explanation of the soft panel from RT page configuration. There are two possible scenarios:

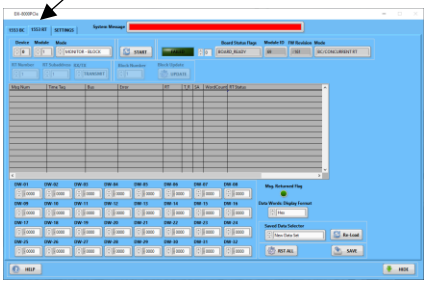
a. BC sends data to the RT
b. BC requested data from the RT.

In this manual, BC will be assigned the "Module" number 0 and RT – the module number 1.

2. BC sends data to the RT

2.1 RT Configuration

First, we have to configure the RT. To do that, go to the "1553 RT" page:

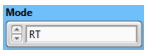


2.1.1 Set "Device" 

to "0".

2.1.2 Set "Module" 

to "1".

2.1.3 Set "Mode" 

to RT.

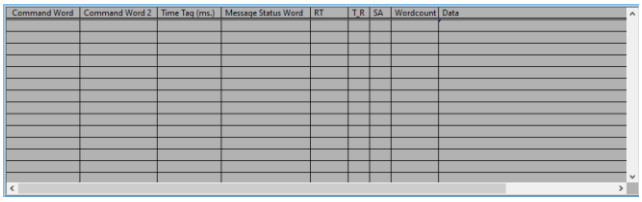
2.1.4 Set “RT Number” 

to “1”

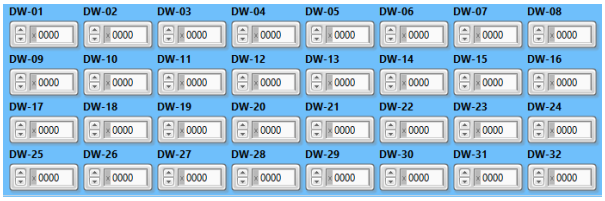
2.1.5 Set “RT Subaddress” 

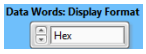
to “1”. It must be noted that the term “Subaddress” is actually the module memory bank, where data from external (to the device) sources will be stored. For the BC-to-RT operations, it is irrelevant.

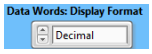
2.1.6 The data from BC will be displayed in the table:



and the “Data words:



In the table, the transmitted data displayed in the Hex format. The Data words can be displayed in the Hex 

or decimal 

formats. To clear both – the table and the data words, press “reset all” 

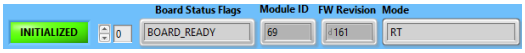
button.

2.1.7 Set the RX/TX selector to “RECEIVE” 

.

2.1.8 Press “START” button 

. The board will be initialized and its status displayed:



THIS CONCLUDES THE RT MODULE CONFIGURATION

2.2 BC configuration

2.2.1 Go to the “1553 BC” page:

2.2.2 Set “Device” to “0” 

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2.2.3 Set “Module” to “0” 

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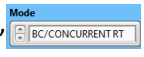
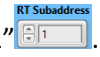
2.2.4 Set “Mode” to BC/CONCURRENT RT” 

.

2.2.5 Set “RT Number” to “1” 

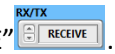
. This is the RT address where data will be send.

2.2.6 Set “RT Subaddress” to “1” 

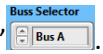
. This is the register of the RT where sent data will be stored.

2.2.7 Set “Word Count” to “4” 

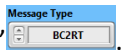
. This is the number of the data words to be sent to the RT by BC.

2.2.8 Set “RX/TX” to “RECEIVE” 

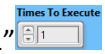
. It means that RT will receive data.

2.2.9 Set “Bus Selector” to “Bus A” 

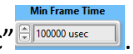
. There are two buses – A and B. The data will be transferred over Bus A.

2.2.10 Set “Message Type” to “BC2RT” 

. It means that data will be sent by BC to RT.

2.2.11 Set “Times To Execute” to “1” 

. It means that the message will be sent one time.

2.2.12 Set “Min Frame Time” to “100000 usec” 

. This is the message timeout.

2.2.13 Set “Data Words: Display Format” to “Hex” 

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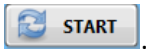
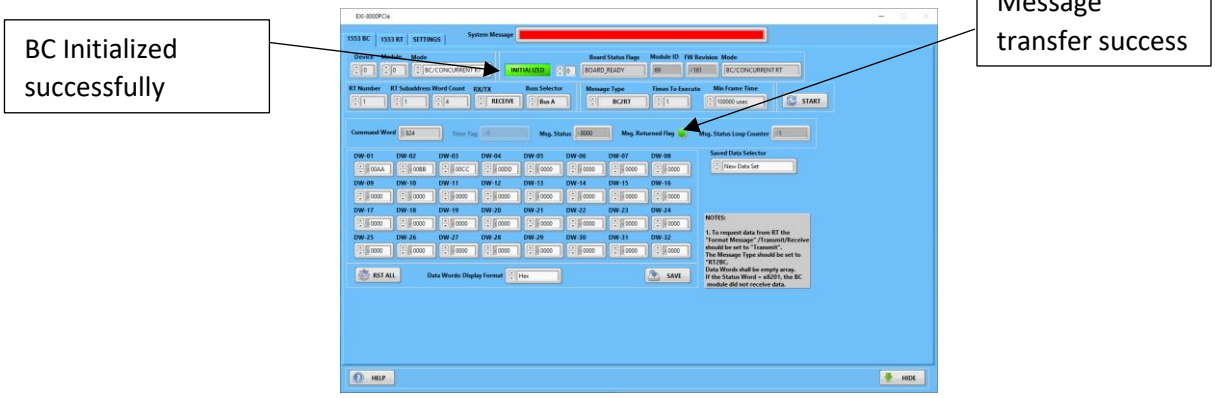
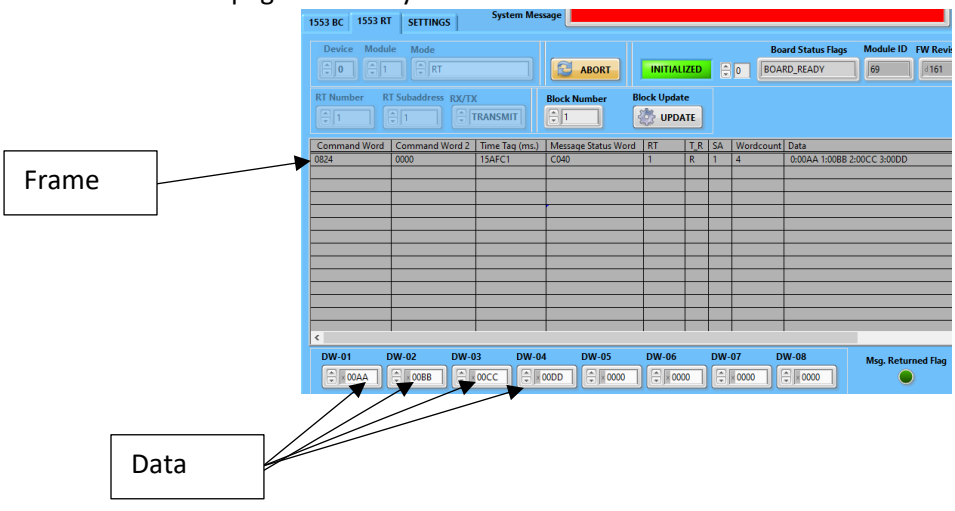
2.2.14 Set DW-01” to “AA”, “DW-02” = “BB”, “DW-03” = “CC”, and “DW-04” = “DD”

2.2.15 Press “START” button 

. The data will be sent to the RT:



2.2.16 Go to the RT page and verify the RT received data from BC:

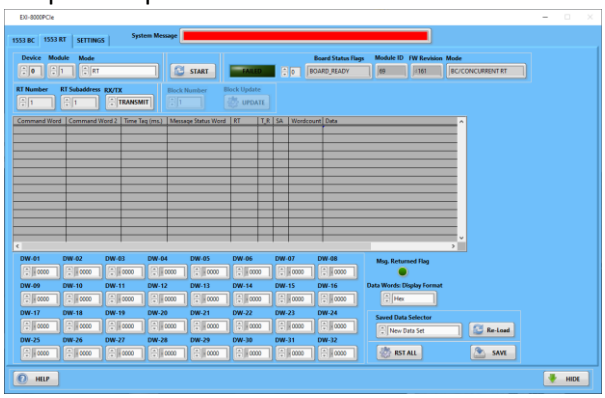


THIS CONCLUDES THE DATA TRANSFER FROM BC TO RT

3 BC reads data from RT

3.1 RT configuration

3.1.1 Go to the RT page and repeat steps 2.1.1 to 2.1.5



3.1.2 Press “START” button 

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3.1.3 Populate the data words:

3.1.4 Set “Block Number” to “1” 

and Press “Block Update” button 

.

3.2 BC configuration

3.2.1 Go to the BC page:

3.2.2 Repeat steps from 2.2.1 to 2.2.6.

3.2.3 Set the “Word Count” to “6” 

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3.2.4 Set “RX/TX” to “TRANSMIT” 

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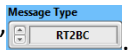
3.2.5 The “Message Type” will be automatically set to “RT2BC” 

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3.2.6 Press “START” button 

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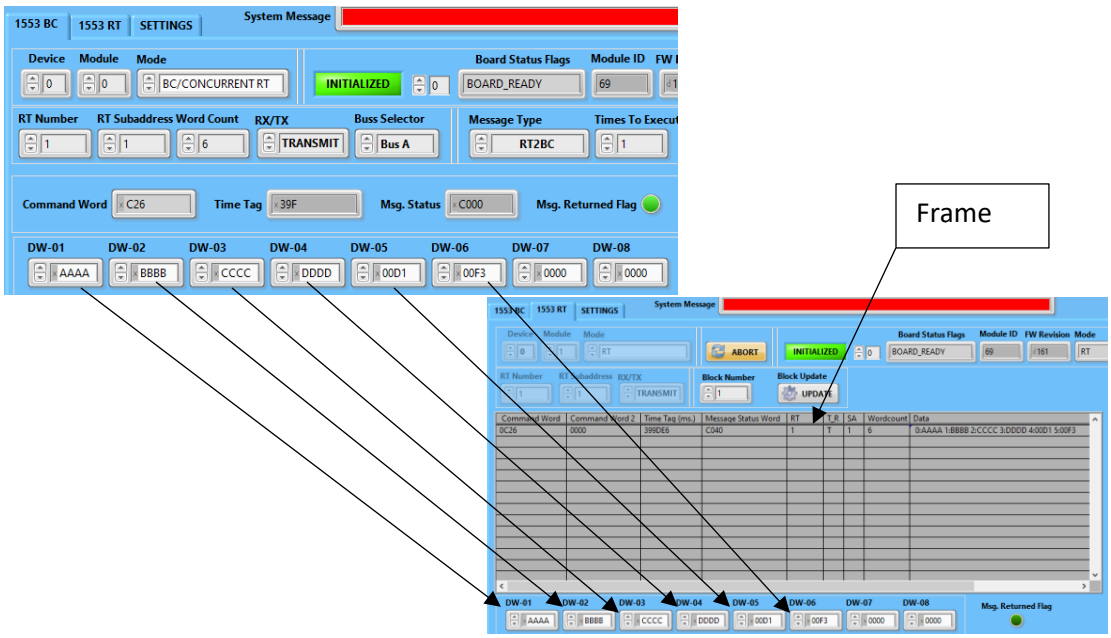
3.2.7 Compare received data with sent data:

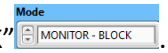


THIS CONCLUDES THE DATA TRANSFER FROM RT TO BC

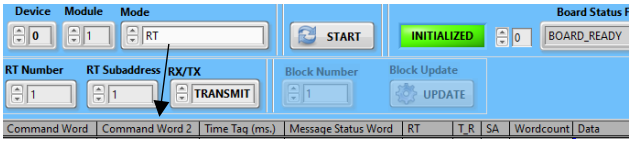
4 Bus Monitor

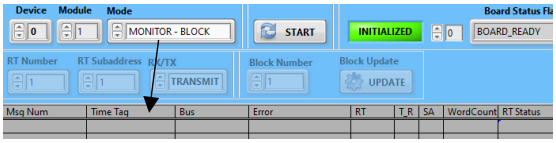
4.1 RT Setup

4.1.1 Go to the “1553 RT” page and press “ABORT” button  if RT module is running.

4.1.2 Set the “MODE” selector to the “MONITOR- BLOCK”  .

4.1.3 Note that the table will change its column headers:





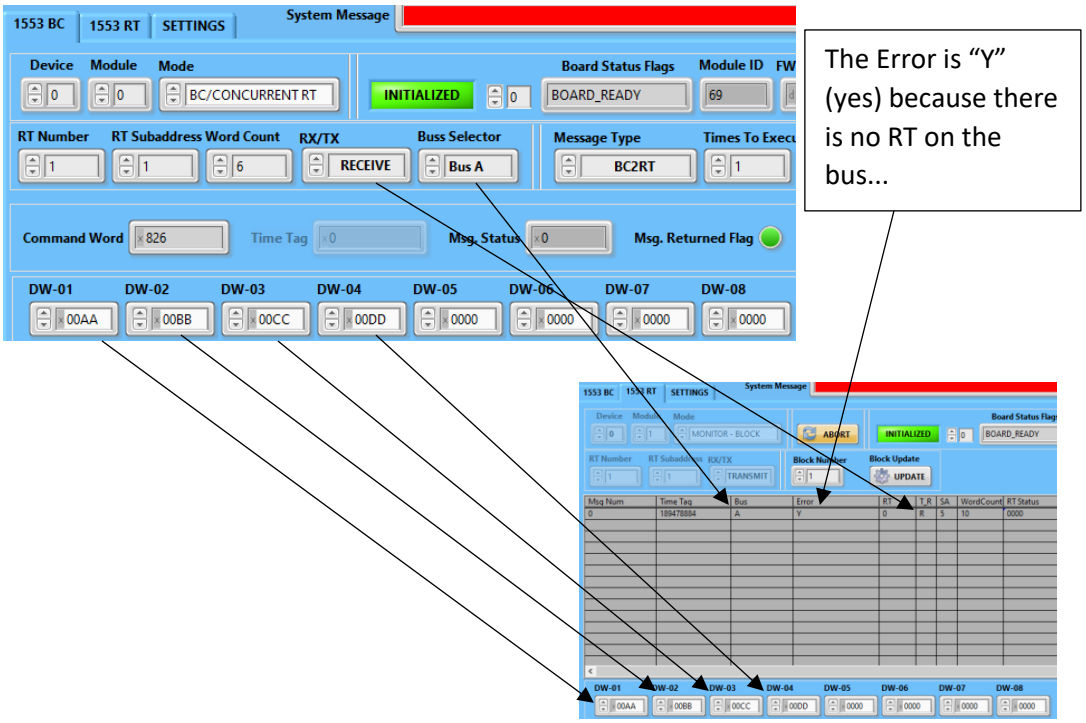
4.1.4 If the data words are populated, press “RST ALL” button  .

4.1.5 Press “START” button  .

4.2 BC setup

4.2.1 Go to the “1553 BC” page and repeat all steps from the section 2.2.

4.2.2 Go to the “1553 RT” page and verify that data from BC was properly monitored:


1553 BC
1553 RT
SETTINGS
System Message
Device
Module
Mode
BC/CONCURRENT RT
INITIALIZED
Board Status Flags
BOARD_READY
Module ID
69
RT Number
RT Subaddress Word Count
RX/TX
RECEIVE
Buss Selector
Bus A
Message Type
BC2RT
Times To Execu
Command Word
826
Time Tag
Msg. Status
Msg. Returned Flag
DW-01
DW-02
DW-03
DW-04
DW-05
DW-06
DW-07
DW-08
00AA
00BB
00CC
00DD
0000
0000
0000
0000
The Error is “Y” (yes) because there is no RT on the bus...