USING A 1203-SM1 IN A REMOTE RACK (WITH 1747-SN SERIES B AND 1747-ASB)

APPLICATION NOTE **AUGUST 11, 1997**

PURPOSE

The purpose of this document is to provide guidelines for wiring and control schemes for SCANport devices including Bulletin 1305 and 1336 PLUS AC Drives. This document is a suggestion only. Users must ensure that installations meet applicable codes and are suitable for the existing conditions.

INTENDED AUDIENCE

This application note should be used by personnel familiar with the hardware components and programming procedures necessary to operate SCANport devices. It is also assumed that the user has some familiarity with SLC programming and block transfer using the 1747-SN Series B RIO Scanner.

WHERE IT IS USED

The diagrams, parameter settings and auxiliary hardware used in this application note are designed to address specific issues in many different applications. Some changes by the user may be necessary to apply the concepts of this document to a specific application.

WHAT THIS NOTE CONTAINS

This document contains information and an example ladder program that demonstrate how to use a 1203-SM1 in a remote RIO rack. This requires the use of a 1747-SN Series B RIO Scanner and a 1747-ASB RIO adapter.

APPLICATION CONSIDERATIONS

The examples were written to be simple and clear and do not fulfill all the functions needed for a real application. Consult the specific product manuals for more information.

SCANport devices may assign different meanings to bits in the Logic Command and Status words. The usage of the Reference and Feedback words may also vary. Consult the manual for your SCANport device for more information.

DATA TRANSFER TO THE 1203-SM1 VIA BLOCK TRANSFER WRITE

The program fragment shown below writes 8 words of data to a 1203-SM1 located at rack address 0, group 0, slot 0. Refer to Figure 3 for information about the data table structure required to perform this function.

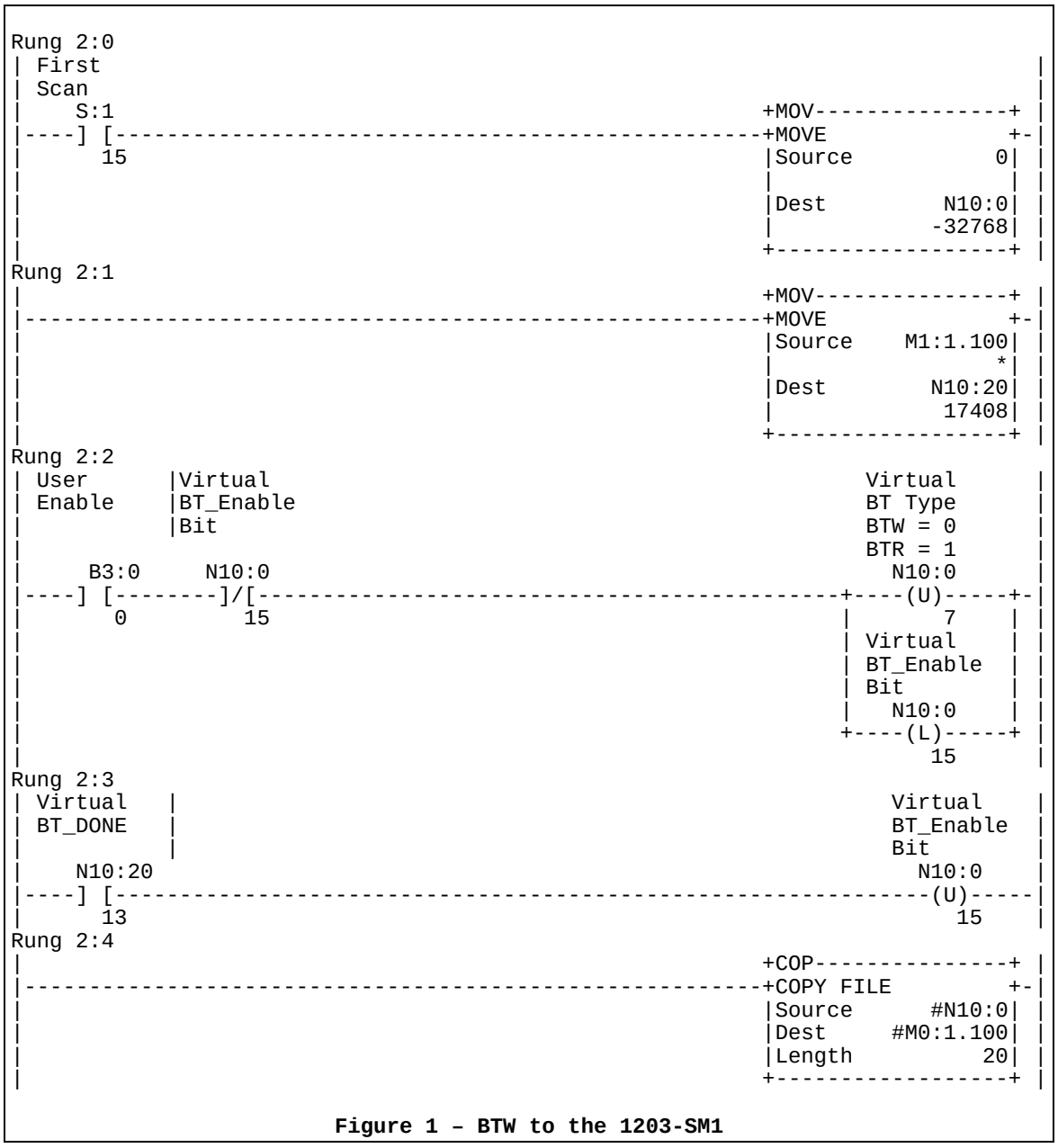

Figure 1 – BTW to the 1203-SM1

DATA TRANSFER FROM THE 1203-SM1 VIA BLOCK TRANSFER READ

The program fragment shown below reads 8 words of data from a 1203-SM1 located at rack address 0, group 0, slot 0. Refer to Figure 3 for information about the data table structure required to perform this function.

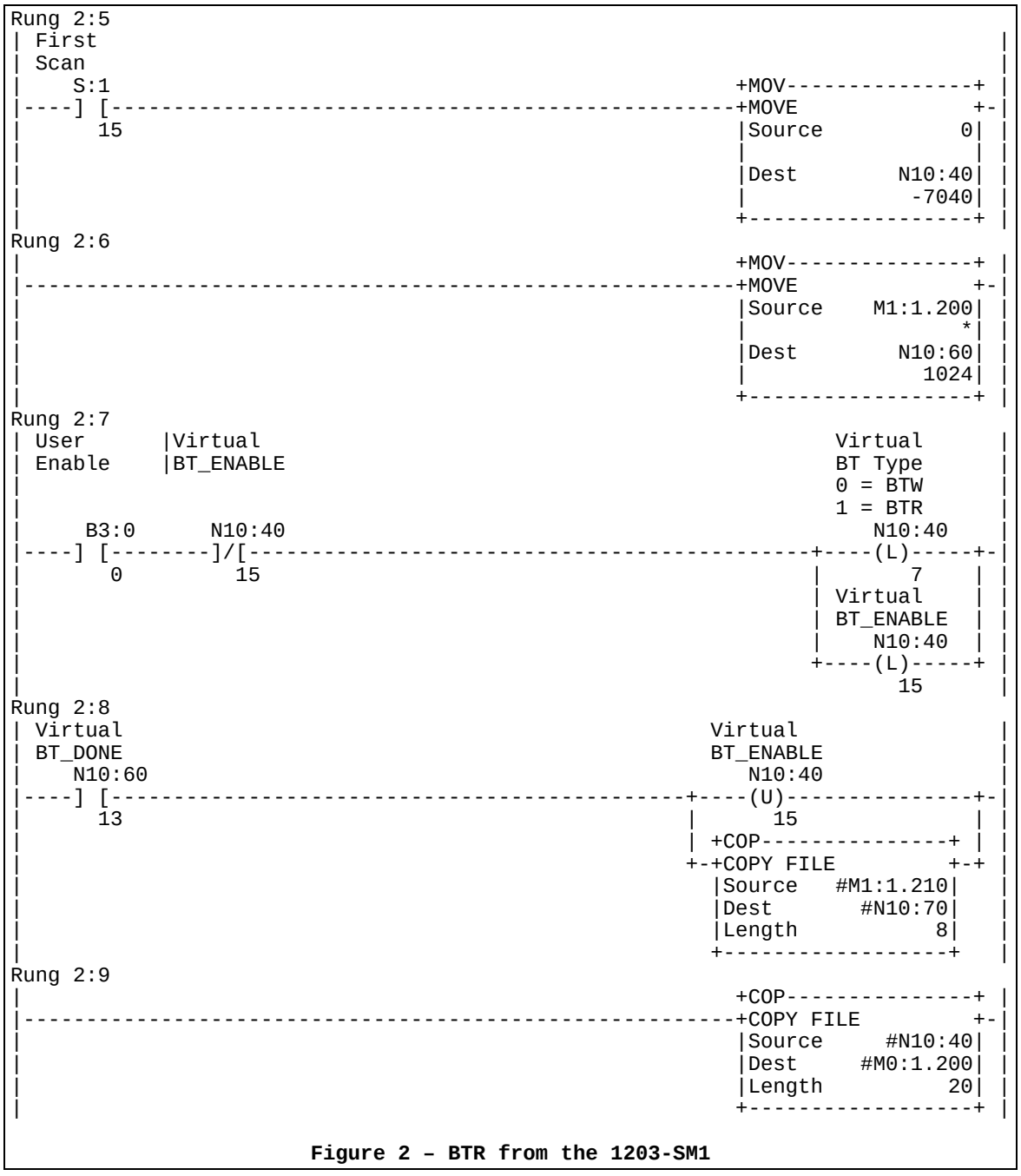

Figure 2 – BTR from the 1203-SM1

REQURED DATA TABLE STRUCTURE

The data tables shown below are used by the ladder program fragments shown in the previous two sections to write and read 8 words of data to and from a 1203-SM1 located at rack address 0, group 0, slot 0.

```
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Data Table               Processor File: 1747ASB.ACH         Data Table File B3

Address   Data  (Radix=BINARY)    Address   Data  (Radix=BINARY)
B3:0      0000 0000 0000 0001
```

```
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Data Table               Processor File: 1747ASB.ACH        Data Table File N10

Address   Data  (Radix=DECIMAL)
N10:0      -32768      8      0      0      0      0      0      0      0      0
N10:10        257      1      0      0      0      0      0      0      0      0
N10:20      17408      0      0      0      0      0      0      0      0      0
N10:30          0      0      0      0      0      0      0      0      0      0
N10:40      -7040      8      0      0      0      0      0      0      0      0
N10:50          0      0      0      0      0      0      0      0      0      0
N10:60       1024      8      0      0      0      0      0      0      0      0
N10:70       2313      9     44      0     44      0     44      0      0      0
```

Figure 3 – Required Data Table Structures

The value of 8 in N10:1 is the amount of data to be transferred to the 1203-SM1 by BTW. The data to be transferred is found at addresses N10:10 through N10:17.

The value of 8 in N10:41 is the amount of data to be transferred from the 1203-SM1 by BTR. The value of 8 found in N10:61 is the amount of data that was actually transferred. The data transferred by the BTR is found at addresses N10:70 through N10:77.

Address	Definition
N10:10	Channel 1 and 2 Enables
N10:11	Channel 3 Enable
N10:12	Channel 1 Logic Command
N10:13	Channel 1 Reference
N10:14	Channel 2 Logic Command
N10:15	Channel 2 Reference
N10:16	Channel 3 Logic Command
N10:17	Channel 3 Reference

Address	Definition
N10:70	Channel 1 and 2 Status
N10:71	Channel 3 Status
N10:72	Channel 1 Logic Status
N10:73	Channel 1 Feedback
N10:74	Channel 2 Logic Status
N10:75	Channel 2 Feedback
N10:76	Channel 3 Logic Status
N10:77	Channel 3 Feedback

The Rack, Group, Slot address for a block transfer is calculated as shown below. This value is set into data file address N10:2 for the BTW and N10:43 for the BTR.

Rack, Group, Slot Address	Decimal Value
0,0,0	0
1,0,0	100
1,2,0	120
2,4,0	240