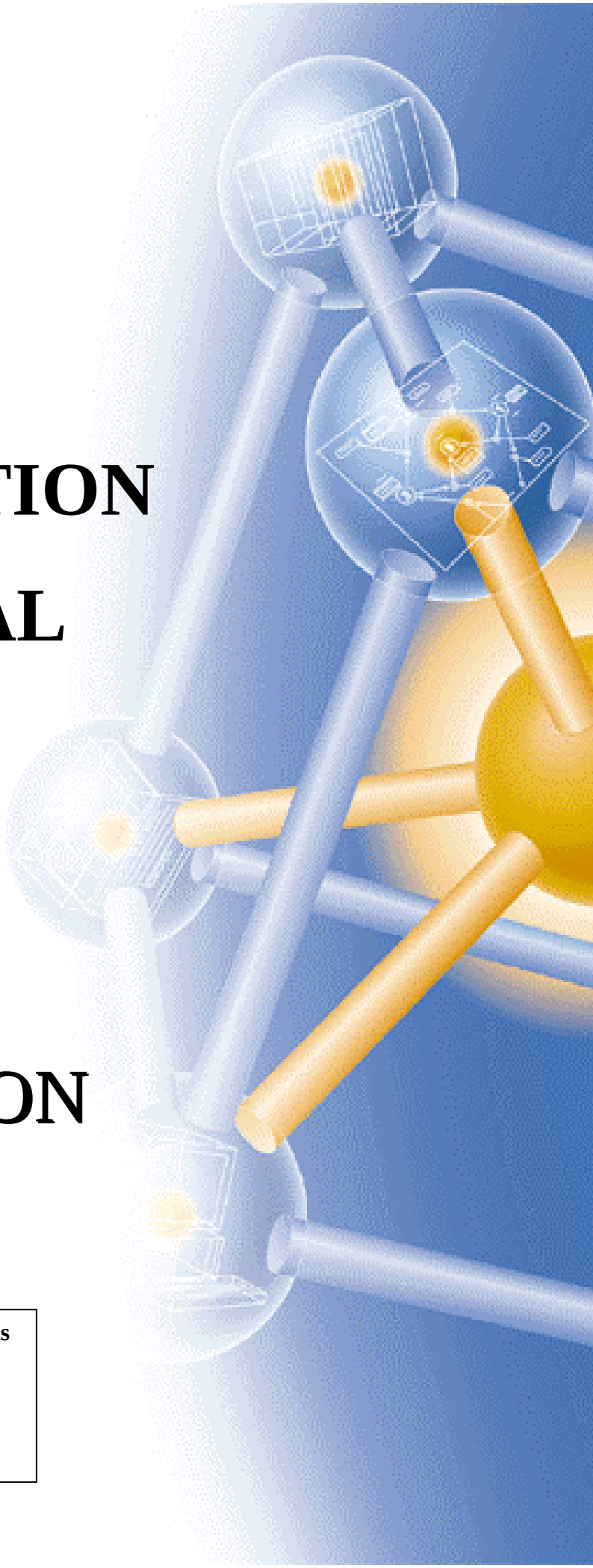
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AUTOMATION TECHNICAL SERVICES

APPLICATION NOTES

Topic: S5 Programming Over Modems
Date: August 26, 1998

APPnote: 244

PREFACE

Application notes are intended to explain the use and/or configuration of subtle or complex functionality related to the Siemens Energy and Automation, products manufactured in Johnson City, TN.

Typical functions described in application notes are either not covered, or are only superficially covered in currently available end user documentation.

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Further information is available from the SE&A System Product Support Group in Johnson City (423-461-2522).

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S5 Programming Over Modems

HARDWARE USED

115U 944 (6ES5 944-7UA22)
Power Supply (6ES5 951-7LD12)
Central Rack 2 (6ES5 700-2LA11)
(2) MultiTech Modems (MT1932ZDX) (see below for ordering information)
Null modem adapter (25-pin female to 25-pin male)
Gender changer (25-pin male to 25-pin male)
Compaq LTE 5100 laptop computer with below software installed
Communication cable for PC to external modem (standard 9-pin female to 25-pin male)
Communication cable 6ES5 734-1BD20 (comes with Step5 software)

SOFTWARE USED

) Step5 V6.6 (6ES5 894-0MA23T)
MultiExpress Terminal software (comes with modems

HARDWARE CONFIGURATION

Install 951 power supply, 944cpu into CR2 rack
Hook 951 power supply to power
Hook up power supplies to both modems
Connect cable from PC to local modem
Connect phone line to "LINE" connector on both modems
Plug gender change to remote modem communication port

NOTE: Gender changer not necessary if you get the correct type of null modem adapter.

Plug null modem adapter into gender changer
Plug 734-1 cable into null modem adapter
Plug 15-pin side of 734-1 cable to the PG port on the 115u 944

OBJECT

Set up remote S5 programming over phone lines.

PROCEDURE

1. Turn on both modems.
2. Start MultiExpress Terminal software
3. Select SETUP=PHONEBOOK ENTRY...and enter your own:

   Entry Name
   Description
   Telephone number of the remote modem

4. Select SETUP=COMMUNICATION LINK... and select:

Baud	=9600
Stop Bits	=1
Data Bits	=8
Parity	=Even
Flow-Control	=CTS/RTS
Break Length	=200
Modem List	=MultiModem ZDX Series

5. Select SETUP=TERMINAL EMMULATION ... and select:

Columns	=80
Lines	=25
Tab Stops	=8
Emulation	=ANSI

   Wrap at end of line
   Map backspace to ^H
   Over-strike backspace
   Wrap Back space

6. Select SETUP=FILE TRANSFER (ZMODEM), and select:

   Zmodem

7. Select SETUP=MODEM..., and select:

Modem Type	=MultiModem ZDX Series
Dial Prefix	=ATDT
Ring Message	=RING
Dial Suffix	=^M
Hang-up string	=+++ATH0^M
Modem Command1	=AT&FX4&E1&E4&E13S7=60S0=1E1$BA1
Modem Command2	+AT$EB1$SB9600&D0

8. Select PERFORM=DIAL..., and select the phone book entry you just setup in Steps 3 thru 7, and press DIAL. The local modem should call the remote modem.

   NOTE: On my configuration, I had to disconnect the cable from the remote modem to the PLC in order for the remote modem to answer! The PLC port is due to a signal on the port of the modem holding this in the wrong state. What signal this is , was not determined. This can be remedied with a little investigation!

Richard Taylor of CCA in Norcross, GA discovered that if you DO configure the remote modem and use the command AT%DC1&W0 that this causes the remote modem to answer correctly with the cable hooked up. However, this turns off command codes, and stores this into the modem's non volitale memory, i.e. it will no longer accept AT commands. To allow the reversal of this, the MultiTech modem2

NOTE2: For some reason did not have to configure the remote modem with the above Modem Commands (in Step 7). The local modem must somehow setup the remote one when they connect, although I did not verify this with MultiTech. If modems other than the MultiTech ones are used this may not happen automatically.

9 After the modems successfully connect, then exit the MultiExpress Terminal software by selecting FILE=EXIT.

10 Press "YES" in answer to "Do you want to exit MultiExpress?"

11 Press "NO" in answer to "Want to hang-up line?". This will cause the software to close but leave the modem connection intact.

12 Execute Step5 software

13 Select OBJECT=SETTINGS=PAGE2. The cursor should now be on MODE: Offline, if not, use the arrow keys and place it there.

14 Press the F3 key. The software should go online.

At this point, you can do ANY programming function just like you would if you were directly connected to the PG port of the S5 CPU.

To close the connection:

1. Exit Step5 by selecting OBJECT=END.
2. Execute the MultiExpress Terminal software.
3. Select PERFORM=HANGUP.
4. Exit MultiExpress Terminal software by selecting FILE=EXIT.

APPENDIX

The MultiTech Modems were ordered from:

MultiTech Systems
2205Woodale Drive
Mounds View, MN 55112

PH: 612-785-3500 or 800-328-9717
FX: 612-785-9874

Order number: MT1932ZDX

Cost ~ $150

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