REMOTE KEYPANEL
DIAL-UP or LEASED LINE and FIBER OPTIC LINK

Shawn Anderson & Chuck Roberts, Originating Authors

DIAL-UP or LEASED LINE , by Shawn Anderson

Local Site

The following procedure describes all the settings required for remoting a keypanel on a 2 wire dial up or leased phone line using Multi-Tech DataTalker Modems and Telebyte Converters.

Connect the DataTalker with a PC to set the internal configurations of the modem at the main site per the attached block diagram and the following procedure:

Run a PC communications program such as Hyper Terminal found in Windows 95 and 98 under the Windows Accessories folder and possibly under the Communications folder. Double-click on Hypertrm.EXE and when "New Connection" window comes up, enter a name, select an icon, then click o.k.

Next under "Connect Using" (from the pulldown menu) select "Direct to Com 1", then o.k. Under "Port Settings", change baud rate to 9600, then o.k. (**do not** enter phone number in this screen)

Now connect the DataTalker to the PC (Com 1). Put the DataTalker into the "Command Mode" to set the internal configuration. This is accomplished by setting dip switch 3 on the Datatalker in the down position then cycling the power to the unit. From the keyboard, select "enter". The Data-Talker should now begin communicating with the PC. Normal operating positions of dip switches on side of DataTalker are (1)down (2)up (3)up (4)down (5)down (6)down (7)down (8)down.

When the "Main Menu" comes up, select "1-Configuration". Next select "Data Port Configuration" and enter the settings from the table on the left below. When finished with the port settings, enter "S" and press enter to save the configuration.

Next enter "P" for the previous menu and select option "3-Composite Link Configuration". Enter the settings from the center table below. When finished with Composite Link Settings, enter "S" and press enter to save the configuration.

Now enter "P" for the previous menu and select option "2-Voice/Fax Channel Configuration". Enter the settings from the table at the right below. When finished with the Voice/Fax Channel settings, enter "S" and press enter to save the configuration.

This completes internal setup for the Local Site modem; enter "P" for the previous menu and exit setup.

Disconnect the Datatalker from the PC, return dip switch 3 to the up position, recycle power to the DataTalker and proceed with the Remote Site setup.

Local Site (Frame End) Originating Caller

Data Port Configuration	
Async/Sync:	Async
Speed:	9,600
Word Length:	8
Stop bit:	1
Parity:	None
Flow Control:	OFF
Enq/Ack Flow Control:	OFF
Echo:	OFF
Pacing:	OFF
EIA Pass Through:	OFF
Pass Xon:	OFF
Remote Down Echo:	OFF

Composite Link Settings	zero
Enter AT Commands:	
ATDT [*number to dial*] N0 <CR>	
AT$D1 <CR>	
AT&W <CR>	
ATS43=21 <CR> (sets bandwidth to 21k)	
Q <CR>	
On line XMT Rate:	displayed when link is up
Speed Setting:	33,600
Dial/Leased:	Dial
2 or 4 Wire:	2 wire
Answer/Originate:	Originate
Transmit level:	-10dB
DOD/DOI:	OFF
(mirror AT settings if remote panel is the caller)	

Voice/Fax Channel	
Destination Channel:	1
Digitize Rate:	9600
Output Level Attn:	00
Input Level Gain:	04
Silence Suppression:	OFF
Local Interface Type:	E&M 1
Ground Loop Start (FXS):	N/A
2 or 4 Wire (E&M):	4 wire
Dialtone/Wink:	dialtone
Wink Timer (E&M):	250
Remote Interface Type:	E&M 1
Ground Loop Start (FXS):	N/A
2 or 4 wire (E&M):	4 wire
Dialtone/Wink (E&M):	dialtone

To clear a number stored in the register, enter ATD N0 <CR>. Do not enter a number. Then save configuration.

Remote Site

The Remote Keypanel site is configured in the same manner as the Local Site using the settings listed below.

Connect the remote DataTalker with a PC to set the internal configurations of the modem at the remote site per the attached block diagram and the following procedure:

Again run a PC communications program such as Hyper Terminal found in Windows 95 and 98 under the Windows Accessories folder and possibly under the Communications folder.

Double-click on Hypertrm.EXE and when "New Connection" window comes up, enter a connection name, select an icon, then click o.k.

Next under "Connect Using" (from the pulldown menu) select "Direct to Com 1", then o.k. Under "Port Settings", change baud rate to 9600, then o.k. (**do not** enter phone number in this screen)

Now connect the DataTalker to the PC (Com 1). Set the DataTalker into the "Command Mode" to set the internal configuration. This is accomplished by setting dip switch 3 on the DataTalker in the down position then cycling power to the unit. From the keyboard, select "enter". The Data-Talker should now begin communicating with the PC.

When the "Main Menu" comes up, select "1-Configuration". Next select "Data Port Configuration" and enter the following settings from the table on the left below. When finished with the port settings, enter "S" and press enter to save the configuration.

Now enter "P" for the previous menu and select option "3-Composite Link Configuration". Enter the settings from the center table below. When finished with Composite Link Settings, enter "S" and press enter to save the configuration.

Next enter "P" for the previous menu and select option "2-Voice/Fax Channel Configuration". Enter the settings from the table at the right below. When finished with the Voice/Fax Channel settings, enter "S" and press enter to save the configuration.

This completes internal setup for the remote keypanel modem; enter "P" for the previous menu and exit setup program.

Remote Keypanel End

Data Port Configuration	
Async/Sync:	Async
Speed:	9,600
Word Length:	8
Stop bit:	1
Parity:	None
Flow Control:	OFF
Enq/Ack Flow Control:	OFF
Echo:	OFF
Pacing:	OFF
EIA Pass Through:	OFF
Pass Xon:	OFF
Remote Down Echo:	OFF

Composite Link Settings	
Enter AT Commands:	
ATS43=21 <CR> (sets bandwidth to 21k)	
Q <CR>	
On line XMT Rate:	displayed when link is up
Speed Setting:	33,600
Dial/Leased:	Dial
2 or 4 Wire:	2 wire
Answer/Originate:	Answer
Transmit level:	-10dB
DOD/DOI:	OFF
(mirror AT settings if remote panel is the caller)	

Voice/Fax Channel	
Destination Channel:	1
Digitize Rate:	9600
Output Level Attn:	00
Input Level Gain:	04
Silence Suppression:	OFF
Local Interface Type:	E&M 1
Ground Loop Start (FXS):	N/A
2 or 4 Wire (E&M):	4 wire
Dialtone/Wink:	dialtone
Wink Timer (E&M):	250
Remote Interface Type:	E&M 1
Ground Loop Start (FXS):	N/A
2 or 4 wire (E&M):	4 wire
Dialtone/Wink (E&M):	dialtone

When you have finished configuration of the remote site, exit setup and disconnect the Datatalker from the PC, return dip switch 3 to the up position and recycle power to the DataTalker.

If remote location is the originating caller, reverse "AT Command" and "Answer/Originate" configurations in "Composite Link Settings" for Local and Remote locations.

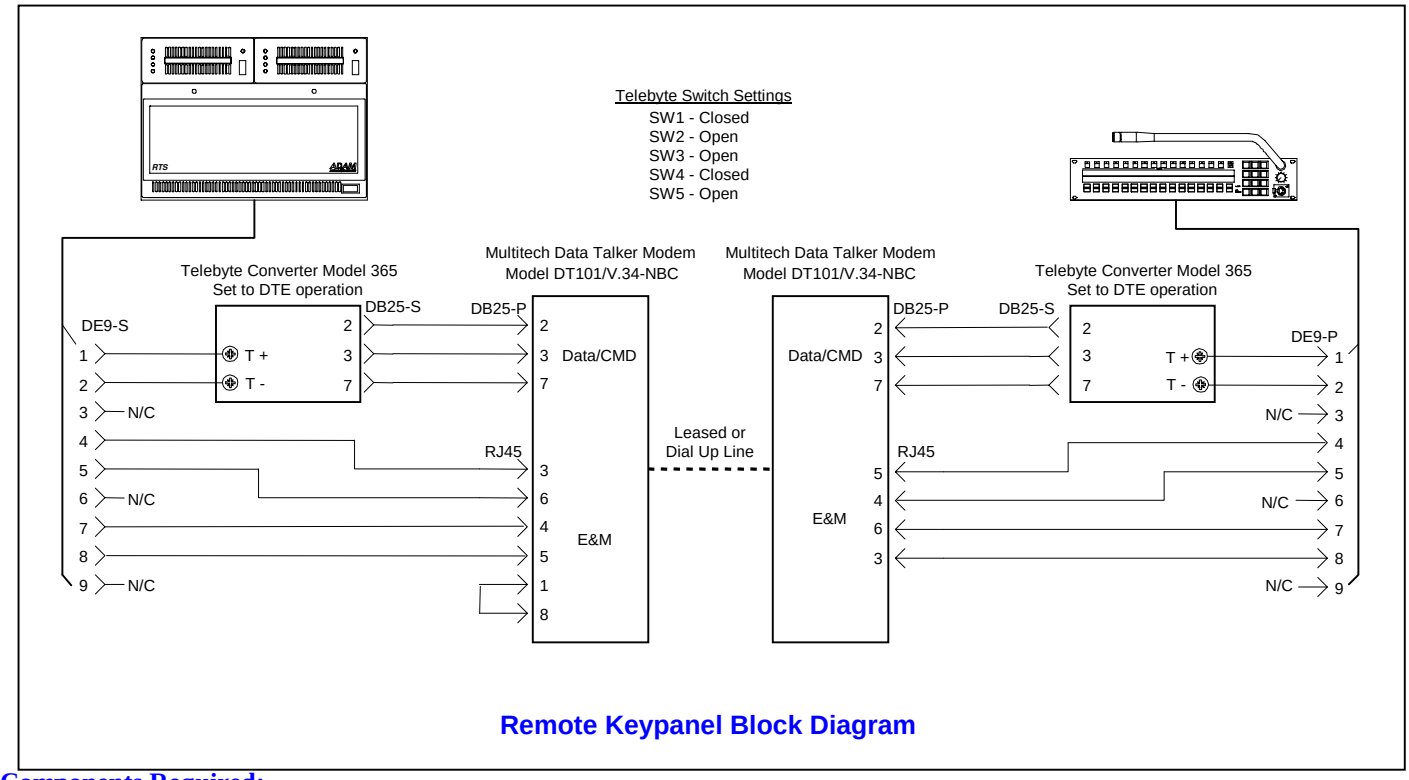
Polling Delay

When testing remote keypanel operation, if (****) is displayed in alpha window, polling delay may need to be applied via ADAMedit at the matrix frame end.

In ADAMedit, go to "Options", "Preferences", "Advanced", then check the box "Enable panel poll delay support". Click "Apply", then o.k.

Next click on the "Edit" button on the keypanel representing the remote keypanel and select "Port Settings" and enter the amount of delay anticipated. A typical starting figure is 100 ms. Click o.k. and send changes to the matrix.

If remote panel still does not display data communications, try increasing the poll delay in blocks of 50 ms or re-check entire previous setup procedure and wiring.



Remote Keypanel Block Diagram

Components Required:

2 ea Telebyte Model 285 Converter
2 ea Multi-Tech Model DT101/V34-NBC
1 ea DE9S Connector/shell
1 ea DE9P Connector/shell
2 ea DB25S Connector/shell
2 ea DB25P Connector/shell
2 ea RJ45 Plug
2 ea 3' Belden 8761 Cable
2 ea 6' Belden 8761 Cable
2 ea 6' Belden 82502 Cable

Initiating Connection

After configuration and upon power-up, the DataTalkers should begin communicating. If they do not, press the "originate" switch on the front panel at Local Site to re-initialize the DataTalker.

In dial-up line operation, the power-up routine should begin communication of DataTalkers and the dialing sequence should begin calling the remote site via the number programmed into the Local Site DataTalker in the "Composite Link Settings". Should this fail, re-initialize by pressing the "originate" switch at the Local Site DataTalker front panel.

REMOTE KEYPANEL, FIBER OPTIC LINK

By Chuck Roberts

Note : The Telecast ADDER 882 System.

Telecast Adder Model Descriptions

MODEL	AUDIO	DATA	MODE	# FIBER	OP DIST	EST COST/END
ADDR-882-L-2	8 IN/8 OUT	8 RS232/422	MULTI	2	10KM	$ 3,850
ADDR-882-LW-1	8 IN/8 OUT	8 RS232/422	MULTI	1	10KM	$ 4,995
ADDR-882-SW-1	8 IN/8 OUT	8 RS232/422	SINGLE	1	20-30KM	$ 6,950

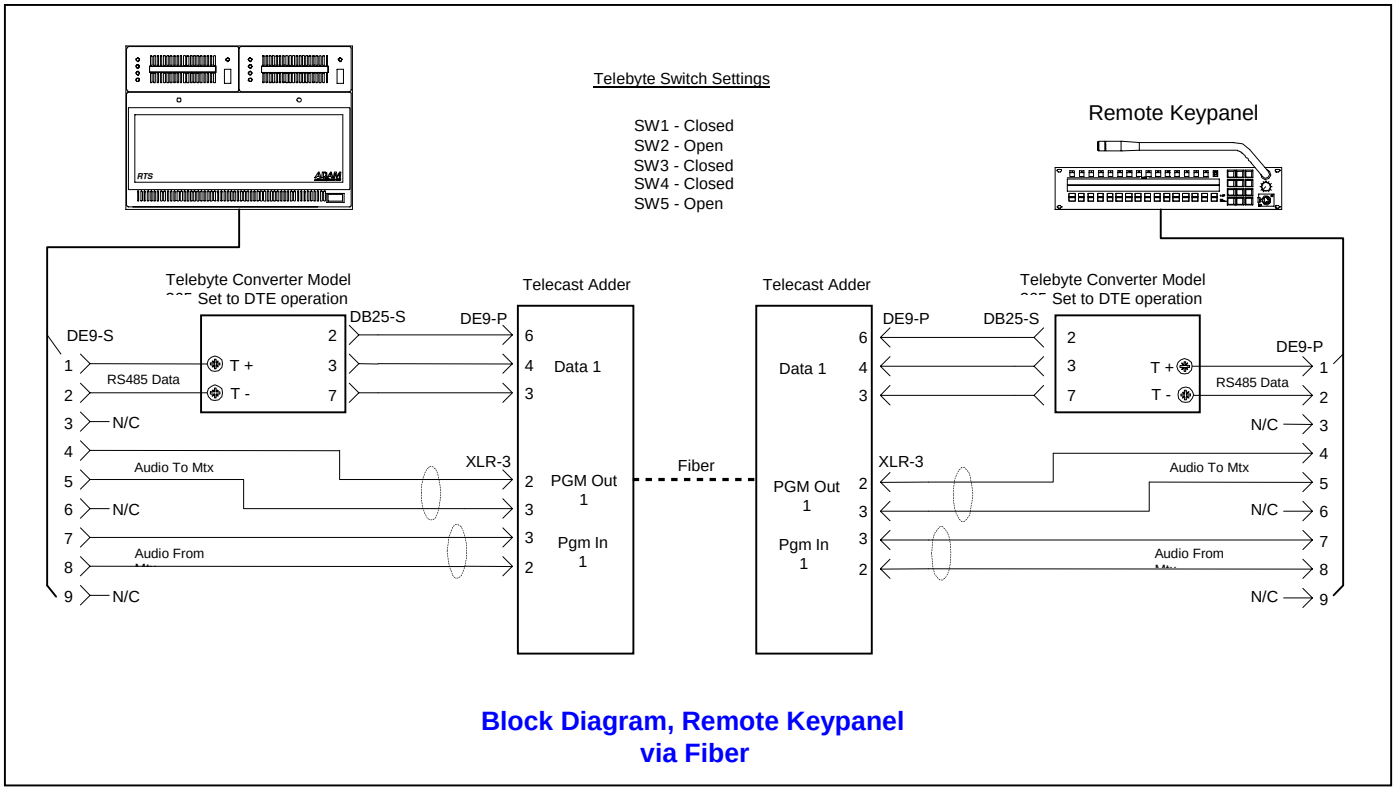
The DE-9 data transmission has the ability to provide GPI control. (Contact Closures)
The contact closure inputs are made by connecting pin 8 to ground (pin 3). This may be accomplished with a TTL output referenced to pin 3 as ground. The output contact closures are SPST-norm open dry relay contacts.

This may be useful if a client wishes to remotely control a device using our UIO-256. It will also provide RS422 serial data..

For reference, the pin-outs for the ADDER DE-9 connector are as follows (ADDER RS422/RS232/SWCL)

PIN	Function	PIN	Function
1	RS422 in (-)	6	RS232 In / RS422 In (+)
2	Closure Out	7	Closure Out
3	Ground	8	Closure In
4	RS232 Out	9	RS422 Out (+)
5	RS422 out (-)		

There is a CCU version of the 882 called (RS422/RS232/CCU)
The only difference is there are no contact closures available.



Block Diagram, Remote Keypanel via Fiber

All of the keypanels must be connected to the same AIO card and polling delays will need to be added as well. See Polling Delay section in Dial-Up and Leased Line remote keypanels.