USER MANUAL

MODEL 1070RC
AC Powered, Synchronous Short Range Modem: Rack Mount Card

PATTON
Electronics Co.

1.0 WARRANTY INFORMATION

Patton Electronics warrants all Model 1070RC components to be free from defects, and will—at our option—repair or replace the product should it fail within one year from the first date of shipment.

This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse or unauthorized modification. If this product fails or does not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall **Patton Electronics** be liable for any damages incurred by the use of this product. These damages include, but are not limited to, the following: lost profits, lost savings and incidental or consequential damages arising from the use of or inability to use this product. **Patton Electronics** specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

1.1 RADIO AND TV INTERFERENCE

The Model 1070RC generates and uses radio frequency energy, and if not installed and used properly—that is, in strict accordance with the manufacturer's instructions—may cause interference to radio and television reception. The Model 1070RC has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection from such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If the Model 1070RC does cause interference to radio or television reception, which can be determined by turning the power off or removing the card, the user is encouraged to try to correct the interference by one or more of the following measures: moving the computing equipment away from the receiver, re-orienting the receiving antenna and/or plugging the receiving equipment into a different AC outlet (such that the computing equipment and receiver are on different branches). In the event the user detects intermittent or continuous product malfunction due to nearby high power transmitting radio frequency equipment, the user is strongly advised to take the following steps: use only data cables with an external outer shield bonded to a metal or metalized connector; and, configure the rear card as shown in section 3.3 of this manual.

1.2 CE NOTICE

The CE symbol on your Patton Electronics equipment indicates that it is in compliance with the Electromagnetic Compatibility (EMC) directive and the Low Voltage Directive (LVD) of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

1.3 SERVICE

All warranty and nonwarranty repairs must be returned freight prepaid and insured to Patton Electronics. All returns must have a Return Materials Authorization number on the outside of the shipping container. This number may be obtained from Patton Electronics Technical Support: **(301) 975-1007**; **http://www.patton.com**; or, **support@patton.com**.

> **NOTE:** Packages received without an RMA number will not be accepted.

Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Model 1070RC. Technical Service hours: **8AM to 5PM EST, Monday through Friday.**

2.0 GENERAL INFORMATION

Thank you for your purchase of this Patton Electronics product. This product has been thoroughly inspected and tested and is warranted for One Year parts and labor. If any questions during installation or use of the 1070RC, contact Patton Electronics Technical Support at: (301) 975-1007.

2.1 FEATURES

- Data Rates from 1200 to 19,200 bps, switch selectable
- Optical Isolation
- High Speed Surge Protection
- Supports distances up to 10 miles
- Mounts in Patton's 16-Card Rack Chassis
- Bi-state LED indicators
- Point-to-Point or Multipoint
- Loopback Test Modes
- Internal or External Clocking
- Hardware and Software Flow Control Support
- Made in the U.S.A.

2.2 DESCRIPTION

The Model 1070RC Synchronous Short Range Modem Rack Card operates full duplex, over two unconditioned twisted pair. Supporting data rates to 19.2 Kbps, the Model 1070RC has a maximum range of 10 miles (@ 1200 bps over 19 AWG wire). The Model 1070RC passes one control signal in each direction, and features both optical isolation and Silicon Avalanche Diode surge protection on the data lines side. Clocking can be sourced internally or externally.

The Model 1070RC is designed to mount in Patton's 2U high 19" rack chassis. This 16 card chassis has a switchable 120/240 volt power supply and mounts cards in a mid-plane architecture: The front "brains" half-card can be plugged into different rear "interface" cards. This means that the 1070RC card can have several interface options, and can be switched with other Patton short haul cards.

The Model 1070RC has two built-in diagnostic tools: local and remote loopback test. Additionally, bi-level LEDs on the 1070RC's front panel allow you to visually monitor communication.

3.0 CONFIGURATION

This section describes the location and orientation of the Model 1070RC's configuration switches, provides detailed instructions on setting each switch, and describes strap settings for each of the rear connection cards.

The Model 1070RC uses a set of eight DIP switches that allow configuration to a wide range of synchronous applications. These DIP switches are accessible when the card is slid out of the rack chassis. Once configured, the Model 1070RC is designed to operate transparently, without need for frequent re-configuration.
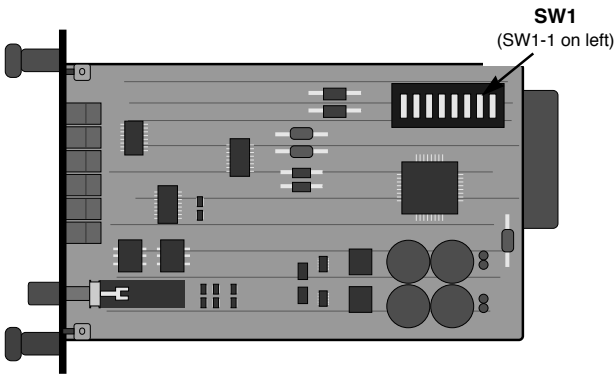

Figure 1. Model 1070RC Board Showing Location of DIP Switches

3.1 SWITCH LOCATIONS AND ORIENTATION

The eight DIP switches on the Model 1070RC board allow you to specify data rate, clocking method, RTS/CTS delay, and carrier control method. Figure 2 (below) shows the orientation of the DIP switches with respect to "ON" and "OFF" positions. The table on the following page summarizes the switch settings, including the factory default settings.
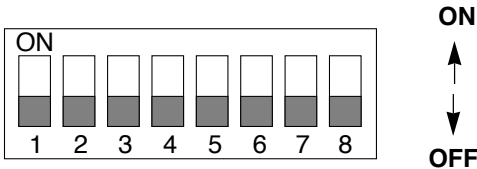

Figure 2. Close Up of DIP Switches Showing ON/OFF Positions.

4

SWITCH SUMMARY TABLE		
Position	**Function**	**Factory Default**
Switch 1	Data Rate	Off ⎫
Switch 2	Data Rate	Off ⎬ 9,600 Bps
Switch 3	Data Rate	On ⎭
Switch 4	Not Used	N/A
Switch 5	Transmit Clock	Off
Switch 6	RTS/CTS Delay	On ⎫
Switch 7	RTS/CTS Delay	Off ⎬ 8 ms
Switch 8	Carrier Control	Off Constant

3.2 DETAILED SWITCH SETTINGS

The following section provides detailed information about the function of each DIP switch, and lists all possible settings. Use this section as configuration guide for applications where the 1070RC's default would not provide correct results.

Data Rate

Switches 1 thru 3 are set in combination to allow the Model 1070RC to be used at data rates from 1200 bps up to 19,200 bps.

Switch 1	Switch 2	Switch 3	Setting
On	On	On	1.2 Kbps
Off	On	On	2.4 Kbps
On	Off	On	4.8 Kbps
On	On	Off	7.2 Kbps
Off	Off	On	9.6 Kbps
Off	On	Off	14.4 Kbps
On	Off	Off	19.2 Kbps
Off	Off	Off	19.2 Kbps

Note: Switch 4 is not used.

Transmit Clock

Switch 5 is used to specify the clocking method. The Model 1070RC can provide an internal clock (Pin 15),or receive an external clock (from Pin 24).

Switch 5
On   =   Internal
Off   =   External

RTS/CTS Delay

Switches 6 and 7 are used together to specify RTS/CTS delay. After request to send (RTS) is raised by the host terminal, the 1070RC raises CTS after a slight delay in order to give the remote terminal time to receive an incoming signal. Depending on the type of environment, either a 0 mS, 8 mS or 53 mS delay can be selected.

| Switch 6	Switch 7		
On	On	=	0 mS
On	Off	=	8 mS
Off	Off	=	53 mS

Carrier Enable

Switch 8 is used to specify how the carrier signal is raised. In most point-to-point , full duplex applications, the carrier signal can remain constantly "high". **Important Note:** In a multi-point environment, set the host to "Constant Carrier" and each slave to "Controlled by RTS".

Switch 8
On   =   Controlled by RTS
Off   =   Constant Carrier

3.3 REAR CARD CONFIGURATION

The 1070RC has four interface half-card options: DB-25/RJ-11, DB-25/RJ-45, RJ-45/RJ-11, and dual RJ-45. Each of these options supports one RS-232 connection and one 4-wire connection. Figure 4 (opposite page) illustrates the four different interface options for the Model 1070RC:
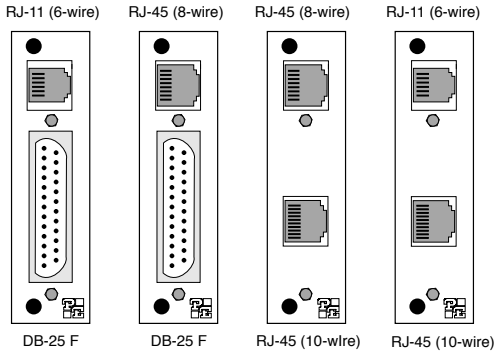
Figure 4. Model 1070RC interface half-card options

Prior to installation, you will need to examine the rear half-card you have selected and be sure it is configured properly for your application. Each rear half-card is configured by setting straps located on the PC board. Sections 3.3.1 and 3.3.2 describe the strap locations and possible settings for each rear card.

3.3.1 DB-25/RJ-11 & DB-25/RJ-45 STRAP SETTINGS

Figure 5 (below) shows strap locations for the Model 1000RCM12511 (DB-25/RJ-11) and the Model 1000RCM12545 (DB-25/RJ-45) rear cards. These straps determine various grounding characteristics for the RS-232 and twisted pair lines.
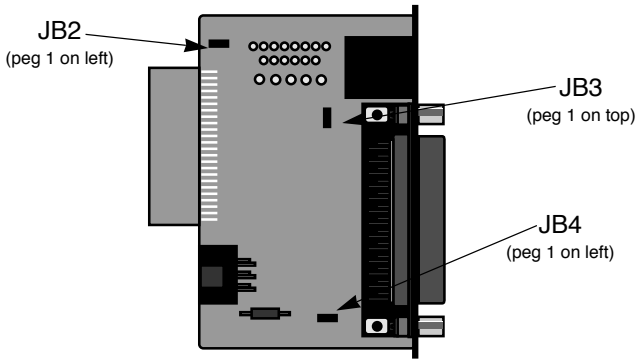

Figure 5. DB-25/RJ-11 & DB-25/RJ-45 strap locations

Figure 6 (below) shows the orientation of the rear interface card straps. Observe that the strap can either be on pegs 1 and 2, or on pegs 2 and 3.
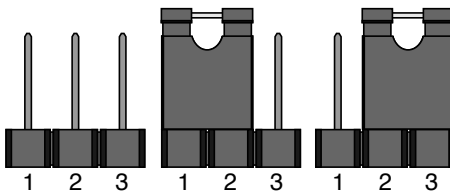

Figure 6. Orientation of interface card straps

The table below provides an overview of strap functions for the DB-25/modular cards. Following this overview is a detailed description of each strap's function.

INTERFACE CARD STRAP SUMMARY TABLE #1			
Strap	**Function**	**Position 1&2**	**Position 2&3**
JB2	Line Shield & FRGND	Connected	Open*
JB3	DTE Shield (Pin1) & FRGND	Connected	Open*
JB4	FRGND & SGND	Connected	Open*

Summary of strap settings, * indicates factory default

Line Shield & FRGND (JB2)

This strap pertains to the line interface. In the connected (closed) position, this strap links RJ-11 pins 1 and 6, or RJ-45 pins 2 and 7 to frame ground. These pins can be used as connections for the twisted pair cable shield. In the open (disconnected) position, pins 1 and 6 (or 2 and 7) remain connected to each other, but are "lifted" from the frame ground.

JB2
Position 1&2 = Line Shield and FRGND Connected
Position 2&3 = Line Shield and FRGND Not Connected

DTE Shield (Pin 1) & FRGND (JB3)

In the connected (closed) position, this strap links DB-25 pin 1 and frame ground. In the open (disconnected) position, pin 1 is "lifted" from frame ground.

JB3
Position 1&2 = DTE Shield (Pin 1) and FRGND Connected
Position 2&3 = DTE Shield (Pin 1) and FRGND Not Connected

SGND & FRGND (JB4)

In the connected (closed) position, this strap links DB-25 pin 7 (Signal Ground) and frame ground. In the open (disconnected) position, pin 1 is "lifted" from frame ground.

JB4
Position 1&2 = SGND (pin 7) and FRGND Connected
Position 2&3 = SGND (Pin 7) and FRGND Not Connected

3.3.2 RJ-45/RJ-11 & RJ-45/RJ-45 STRAP SETTINGS

Figure 8 (below) shows strap locations for the Model 1000RM1D11 (RJ-45/RJ-11) and the Model 1000RM1D45 (RJ-45/RJ-45) rear cards. These straps determine various grounding characteristics for the RS-232 and twisted pair lines.
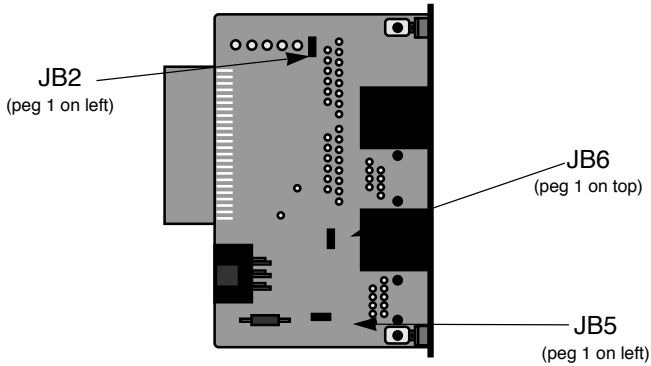

Figure 8. RJ-45/RJ-11 & RJ-45/RJ-45 strap locations

The table below provides an overview of strap functions for the modular/modular cards. Following the table is a detailed description of each strap's function.

INTERFACE CARD STRAP SUMMARY TABLE #2			
Strap	Function	Position 1&2	Position 2&3
JB2	Line Shield & FRGND	Connected	Open*
JB5	SGND & FRGND	Connected	Open*
JB6	DTE Pin 2	DSR*	Not Available

Summary of strap settings, * indicates factory default

Line Shield & FRGND (JB2)

This strap pertains to the line interface. In the connected (closed) position, this strap links RJ-11 pins 1 and 6, or RJ-45 pins 2 and 7 to frame ground. These pins can be used as connections for the twisted pair cable shield. In the open (disconnected) position, pins 1 and 6 (or 2 and 7) remain connected to each other, but are "lifted" from frame ground.

        JB2
    Position 1&2 = Line Shield and FRGND Connected
    Position 2&3 = Line Shield and FRGND Not Connected

SGND & FRGND (JB5)

This strap pertains to the DTE interface, which is a 10-position modular RJ-45 jack. In the connected (closed) position, this strap links modular pin 5 (Signal Ground) and frame ground. In the open (disconnected) position, pin 5 is "lifted" from frame ground.

JB5
Position 1&2 = SGND (pin 5) and FRGND Connected
Position 2&3 = SGND (Pin 5) and FRGND Not Connected

DTE Interface Pin 2 (JB6)

This strap configures DTE interface pin 2 for Ready Start (DSR) operation when placed on pegs 1 & 2. Placing the strap on pegs 2 & 3 is *not a valid option* when using this rear interface card in conjunction with the Model 1070RC.

JB6
Position 1&2 = Ready Start (DSR) Operation
Position 2&3 = Not a valid option

4.0 INSTALLATION

This section describes the functions of the Model 1000R16 rack chassis, tells how to install front and rear Model 1070RC cards into the chassis, and provides diagrams for wiring up the interface connections correctly.

4.1 THE MODEL 1000R16 RACK CHASSIS

The 1000R16 Rack Chassis (shown in figure 10, below) has sixteen short range modem card slots, plus its own power supply. Measuring only 3.5" high, the 1000R16 is designed to occupy only 2U in a 19" rack. Sturdy front handles allow the 1000R16 to be extracted and transported conveniently.
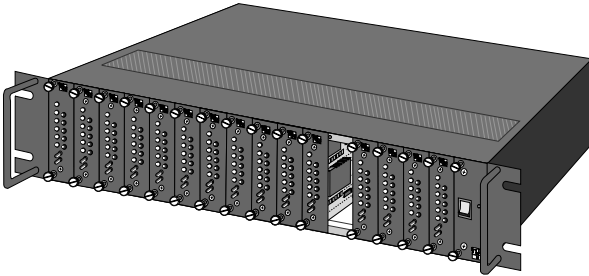

Figure 10. Model 1000R16 Rack Chassis with Power Supply

4.1.1 THE RACK POWER SUPPLY

The power supply included in the Model 1000R16 rack uses the same mid-plane architecture as the modem cards. The front card of the power supply slides in from the front, and the rear card slides in from the rear. They plug into one another in the middle of the rack. The front card is then secured by spring loaded thumb screws and the rear card by conventional metal screws.

WARNING! **There are no user-serviceable parts in the power supply section of the Model 1070RC Series. Voltage setting changes and fuse replacement should only be performed   by qualified service personnel. Contact Patton Electronics Technical support at (301)975-1007 for more information.**

Switching the Power Supply On and Off

The power supply on/off switch is located on the front panel. When plugged in and switched on, a red front panel LED will glow. Since the Model 1000R16 is a "hot swappable" rack, *it is not necessary for any cards to be installed before switching on the power supply*. The power supply may be switched off at any time without harming the installed cards.

> **NOTE:** Please refer to the Model 1000RP Series User Manual *AC and DC Rack Mount Power Supplie*s for fuse and power card replacement information.

4.2 INSTALLING THE MODEL 1070RC INTO THE CHASSIS

The Model 1070RC is comprised of a front "brains" half card and a rear "connections" card. The two cards meet inside the rack chassis and plug into each other by way of mating 50 pin card edge connectors. Use the following steps as a guideline for installing each Model 1070RC into the Model 1000R16 rack chassis:

1. Slide the rear "connections" card into the back of the chassis along the metal rails provided.

2. Secure the rear card using the metal screws provided.

3. Slide the "brains" card into the front of the chassis. It should meet the rear card when it's almost all the way into the chassis.

4. Push the front card *gently* into the card-edge receptacle of the rear card. It should "click" into place.

5. Secure the front card using the spring loaded thumb screws.

Note: Since the Model 1000R16 chassis allows "hot swapping" of cards, it is *not necessary to power down* the rack when you install or remove a Model 1070RC.

4.3 RS-232 CONNECTION

The RS-232 port is always the *lower* port on the rear interface card. The DB-25 is pinned according to the RS-232C/V.24 interface standard. The 10-pin RJ-45 is pinned according Patton's Modified Modular Interface Standard (based on the EIA/TIA-561Standard). For specific interface pin-outs, please refer to the diagrams in Appendix D.

The Model 1070RC is wired as a DCE (Data Communications Equipment). Therefore, it wants to connect to a DTE (Data Termination Equipment). If your RS-232 output device is a DTE, use a *straight though cable* to connect to the Model 1070RC. If your RS-232 output device is DCE, call Patton Technical Support at 301-975-1007 for specific installation instructions.

Notice! **Any terminal cable connected to the Model 1070RC must be shielded cable, and the outer shield must be 360 degree bonded–at both ends–to a metal or metalized backshell.**

4.4 TWISTED PAIR CONNECTION

The Model 1070RC operates full duplex over two twisted pair. In *all* applications, the twisted pair wire must be 26 AWG or thicker, unconditioned, dry metallic wire. Both shielded and unshielded wire yield favorable results. **Note:** The Model 1070RC can only communicate in a closed data circuit with another Model 1070RC. Dial-up analog circuits, such as those used with a standard Hayes-type modem, are *not acceptable.* For further information about acceptable wire grades, please refer to the diagrams in Appendix B.

4.4.1 Point-to-Point Twisted Pair Connection

The 6-position RJ-11 and 8-position RJ-45 jack options for the Model 1070RC (always the *upper* jack on the rear interface card) are prewired for a standard TELCO wiring environment. Connection of a 4-wire twisted pair circuit between two or more Model 1070RCs requires a *crossed over cable* as shown in the figures below and on the following page.

RJ-11

SIGNAL	PIN#	COLOR	COLOR	PIN#	SIGNAL
GND	1	Blue	White	6	GND
RCV-*	2	Yellow	Red	4	XMT-
XMT+	3	Green	Black	5	RCV+
XMT-	4	Red	Yellow	2	RCV-
RCV+	5	Black	Green	3	XMT+
GND	6	White	Blue	1	GND

RJ-45

SIGNAL	PIN#	COLOR		COLOR	PIN#	SIGNAL
GND	2	Orange	............Brown	7	GND
RCV-*	3	Black	................Green	5	XMT-
XMT+	4	Red	..................Yellow	6	RCV+
XMT-	5	Green	...............Black	3	RCV-
RCV+	6	Yellow	..............Red	4	XMT+
GND	7	Brown	..............Orange	2	GND

* The Model 1070RC is not sensitive to polarity

4.4.2 Multipoint Twisted Pair Connection

Figure 11 (below) shows how to wire two-pair cables properly for a Model 1070RC star topology.
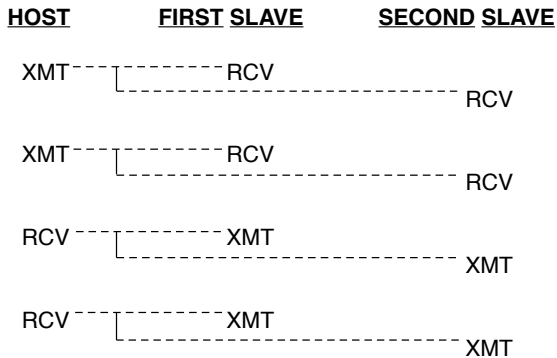
HOST   **FIRST SLAVE**   **SECOND SLAVE**

Figure 11. Star wiring for Model 1070RC host and slaves

RJ-11

1 - Blue
2 - Yellow
3 - Green
4 - Red
5 - Black
6 - White

RJ-45

1 - Blue
2 - Orange
3 - Black
4 - Red
5 - Green
6 - Yellow
7 - Brown
8 - Slate
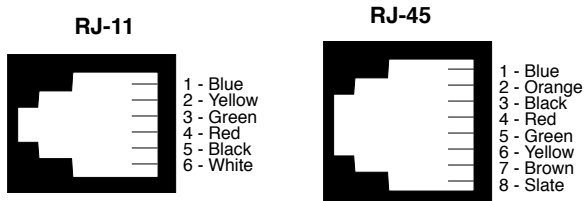
> **Notice!** **Any modular twisted pair cable connected to the Model 1070RC must be shielded cable, and the outer shield must be properly terminated to a shielded modular plug on both ends of the cable.**

5.0 OPERATION

Once you have configured each Model 1070RC and connected the cables, you are ready to operate the units. Section 5.0 describes the LED status monitors, the power-up procedure, and the use of the built-in loopback test modes.

5.1 LED STATUS MONITORS

The Model 1070RC features ten front panel status LEDs that indicate the condition of the modem and communication link. Figure 12 (below) shows the relative front panel positions of the LEDs. Following figure 12 is a description of each LED's function.
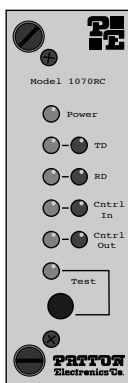

Figure 12. The Model 1070RC front panel, showing LED positions

Power　　glows green when power is applied to the Model 1070RC front card.

TD & RD　The green "TD" and "RD" indicators blink to show positive state data activity. The red "TD" and "RD" indicators blink to show negative state data activity. Solid red indicates a connection in an idle state.

Cntrl$_{in}$ and Cntrl$_{out}$　glow red to show that either control signal is off. Glow green to show that either control signal is on. When the 1070RC is connected to a DTE, Control In will glow green for a positive polarity on Pin 4 (RTS). Control Out will glow green for an incoming signal from the line and an outgoing CD signal on RS-232 pin 8.

Test　　glows green when the loopback test modes are activated.

5.2 POWER-UP

There is no power switch on the Model 1070RC: Power is automatically applied to the 1070RC when its card-edge connector makes contact with the chassis' mid-plane socket, or when the chassis' power supply is turned on. *Note: The 1070RC is a "hot swappable" card--it will not be damaged by plugging it in or removing it while the rack is powered up.*

When the local and remote Model 1070RCs are *both* powered up, and are passing data *normally*, the following LED conditions will exist:

- PWR = green
- TD & RD = flashing red and green
- Control In & Control Out = green
- TEST = off

5.3 TEST MODES

The Model 1070RC offers two diagnostic modes: local analog loop and remote analog loop. These test modes are activated *simultaneously* by depressing the "Test" button on the front panel of the Model 1070RC.

Local Analog Loop

The Local Analog Loop test mode causes any data sent to the local 1070RC by the local RS-232 device to be echoed *back* to that RS-232 device. For example, characters typed on the keyboard of a terminal will appear on the terminal screen. If characters are not echoed back, check the connection between the local RS-232 device and the local 1070RC. All 1070RC's in the system should be tested in this manner

Remote Analog Loop

The Remote Analog Loop test mode causes any characters sent from the *remote* 1070RC to the local 1070RC to be returned back to the *remote* device (see Figure 13). **Note: Only the *local* 1070RC should be in "test" mode.** The remote 1070RC should be in "normal" operating mode or this test will not work. If no characters are echoed back, check the wiring between the two 1070RCs. Be sure to wire the units according to the instructions in Section 4.0 Installation.
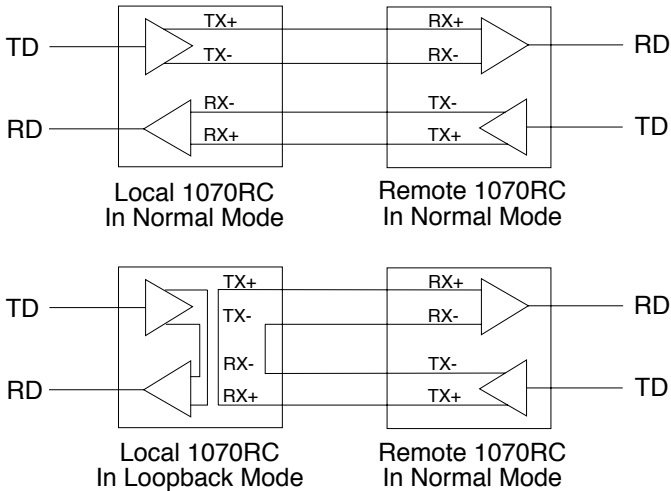

Figure 13. Normal operating mode vs. loopback test mode

APPENDIX A.

MODEL 1070RC SPECIFICATIONS

Transmission Format: Synchronous

External Interface: RS-232C/CCITT V.24 connection via DB-25 Female; EIA/TIA-561 connection via RJ-45 (10 wire); twisted pair connection via RJ-11 or RJ-45 (8 wire).

Internal Interface: Connection to Model 1000R16 rack chassis via 50 pin male card edge.

Transmission Line: 4-wire, unconditioned twisted pair, 19-26 AWG, 20pf/ft or better.

Data Rates: 1.2, 2.4, 4.8, 7.2, 9.6, 14.4, and 19.2 Kbps, switch selected.

Clocking: Internal or External

Controls: Carrier constantly "ON" or "controlled by RTS." RTS/CTS delay set to 0, 7 or 53 ms.

Applications: Point-to-point or Multi-point

Indicators: Bi-level LED indicators (two each) for Transmit Data, Receive Data, Control In and Control Out; bi-level indicators (one each) for Power and Test

Diagnostics: Local and remote analog loopback, activated by front panel push button

Optical Isolation: 150 V RMS (minimum)

Surge Protection: Silicon Avalanche Diodes, 600 watts RMS power dissipation @ 1 ms, with response time of less than 1 ps.

Temperature: 0-50^0 C / 32-122^0 F

Humidity: 0-95%, non-condensing

Dimensions: 0.95"W x 3.1"H x 5.4"L

APPENDIX B.

MODEL 1070RC CABLE RECOMMENDATIONS

The Patton Model 1070RC operates at frequencies of 20kHz or less and has been performance tested by Patton technicians using twisted-pair cable with the following characteristics:

Wire Gauge	Capacitance	Resistance
19 AWG/.9mm	83nf/mi or 15.72 pf/ft.	.0163 Ohms/ft.
22 AWG/.6mm	83nf/mi or 15.72 pf/ft.	.0326 Ohms/ft.
24 AWG/.5mm	83nf/mi or 15.72 pf/ft.	.05165 Ohms/ft.

Using or simulating cable with the above characteristics, the following data rate/distance results were obtained by Patton during bench tests:

Data Rate (Bps)	Gauge (AWG) / Distance (Mi)		
	19	22	24
19,200	2.5	2.1	1.3
9,600	3.7	2.3	1.7
4,800	4.9	4.9	2.5
2,400	8.2	5.8	4.6
1,200	10.0	8.3	6.8

To gain optimum performance from the 1070RC, please keep the following guidelines in mind:

• *Always* use **twisted pair** wire--this is not an option.

• Use twisted pair wire with a capacitance of 20pf/ft or less.

• Avoid twisted pair wire thinner than 26 AWG (i.e. avoid higher AWG numbers than 26)

• Use of twisted pair with a resistance greater than the above specifications may cause a reduction in maximum distance obtainable. Functionality should not be affected.

• Environmental factors too numerous to mention can affect the maximum distances obtainable at a particular site. Use the above data rate/distance table as a *general guideline only.*

APPENDIX C
FACTORY REPLACEMENT PARTS

The Patton Model 1070RC rack system features interchangeable rear half cards, power cords/fuses for international various operating environments and other user-replaceable parts. Model numbers and descriptions for these parts are listed below:

Patton Model #   **Description**

1000RPEM..........................120/240V Rear Power Entry Module
1000RPSM-2.......................120/240V Front Power Supply Module
1000RPEM-DC ....DC Rear Power Entry Module
1000RPSM-48A ....48V Front Power Supply Module
1000RPEM-V ....120/240V CE Compliant Rear Power
                             Entry Module
1000RPSM-V ....120/240V CE Compliant Front Power
                             Supply Module

0805US ....American Power Cord
0805EUR.............................European Power Cord CEE 7
0805UK ....United Kingdom Power Cord
0805AUS.............................Australia/New Zealand Power Cord
0805DEN.............................Denmark Power Cord
0805FR ....France/Belgium Power Cord
0805IN.................................India Power Cord
0805IS.................................Israel Power Cord
0805JAP..............................Japan Power Cord
0805SW ....Switzerland Power Cord

05R16FPB1.........................Single Width Blank Front Panel
05R16FPB4.........................4-Wide Blank Front Panel
05R16RPB1 ....Single Width Blank Rear Panel
05R16RPB4 ....4-Wide Blank Rear Panel

0821R4................................400 mA Fuse (5x20mm)
                             Littlefuse 239.400 or equivalent

0821R2................................200 mA Fuse (5x20mm)
                             Littlefuse 239.200 or equivalent

056S1..................................Set of 16 #4 pan head screws/washers

APPENDIX D.

MODEL 1070RC INTERFACE STANDARDS

DIRECTION	STANDARD RS-232C/V.24 "DCE" SETTING		DIRECTION
From 1070RC	Transmit Clock - 15	1- (FG) Frame Ground	
		2- (TD) Transmit Data	To 1070RC
		3- (RD) Receive Data	From 1070RC
From 1070RC	Receive Clock - 17	4- (RTS) Request to Send	To 1070RC
		5- (CTS) Clear to Send	From 1070RC
		6- (DSR) Data Set Ready	From 1070RC
		7- (SG) Signal Ground	
To 1070RC	Data Term. Ready (DTR) - 20	8- (DCD) Data Carrier Detect	From 1070RC
To 1070RC	External Clock - 24		

EIA/TIA-561 REFERENCE - 8 Wire RJ-45		
Contact Number	Circuit	Description
1	125	Ring Indicator or DSR
2	109	Received Line Signal Indicator
3	108 / 2	DTE Ready
4	102	Signal Common
5	104	Received Data
6	103	Transmitted Data
7	106	Clear to Send
8	105 / 133	Request to Send / Ready for Receiving

PATTON MODIFIED MODULAR INTERFACE - 10 Wire RJ-45		
Contact Number	Circuit	Description
1	N/A	Receive Clock
2	**125**	**Ring Indicator or DSR**
3	**109**	**Received Line Signal Indicator**
4	**108 / 2**	**DTE Ready**
5	**102**	**Signal Common**
6	**104**	**Received Data**
7	**103**	**Transmitted Data**
8	**106**	**Clear to Send**
9	**105 / 133**	**Request to Send / Ready for Receiving**
10	N/A	Transmit Clock

APPENDIX E.

MODEL 1070RC BLOCK DIAGRAM

23
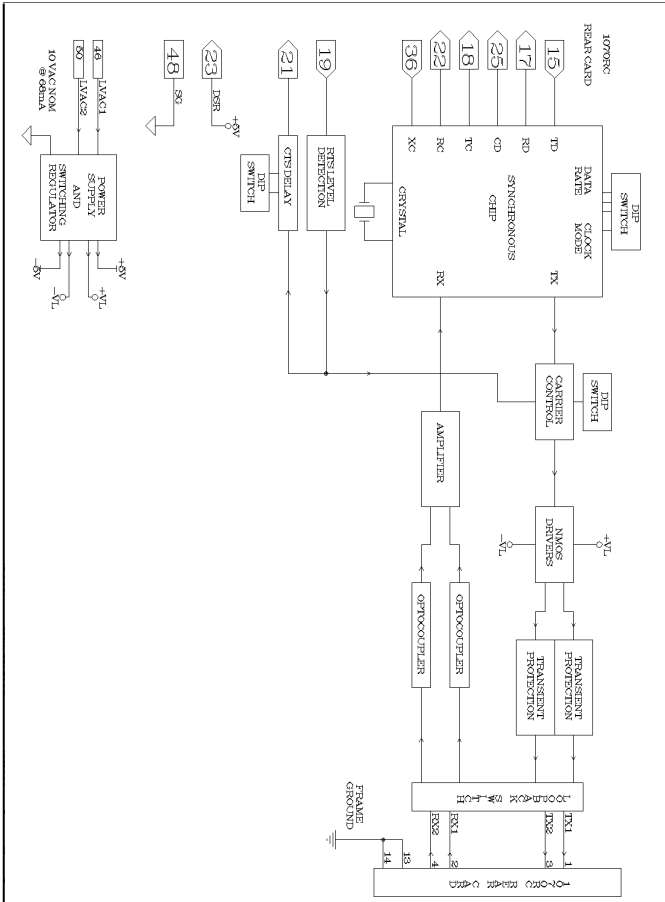
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Vice President

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