MODEM ELIMINATOR, V.35

1205P

(CTS ME-V.35)

INSTALLATION AND OPERATIONS MANUAL

ISO 9001 CERTIFIED

COPYRIGHT NOTICE

PROPRIETARY NOTICE

WARRANTY NOTICE

PUBLICATION NOTICE

EMISSION REQUIREMENTS

FCC CLASS A

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expence.

CANADIAN EMISSIONS

This digital apparatus does not exceed the Class A limits for noise emmissions from a digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits redioelectriques depassant les limites applicables aux appareils numeriques de la Class A prescites dans le Reglement sur le brouillage redioelectrique edicte par le ministere des Communications du Canada.

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CHAPTER 1 - OPERATION

The 1205P (CTS ME-V.35) is a cost effective solution for interconnection of V.35 terminal devices located in proximity of each other. The use of two modems is eliminated with a resulting cost savings to the user. The 1205P (CTS ME-V.35) complies with the CCITT V.35 balanced interface specification. Two 34 pin V.35 (MR-34) connectors are provided to interface to the V.35 terminals.

Clocking

The Modem Eliminator can be either internally or externally clocked independently on each Port. Rates up to 2.048Mbps are provided by the internal baud rate generator. The generator will provide clocks for both terminal and insure the data is synchronized with the RX Clock in both directions.

Delaying CTS

Request to Send (RTS) is looped back to Clear to Send (CTS) on each Port. To allow terminals requiring CTS delays to function properly, selectable delays of Constant, 0 mS, 8mS and 50mS of RTS to CTS delay is provided. Each Port ins individually configured for CTS delay.

Controlling Carrier Detect

RTS on each port is also routed to Data Carrier Detect (DCD) on the other port. When DCD is set to follow RTS, the same delay that is added to CTS is added to DCD. DCD can be also be forced to constant active by configuration switches.
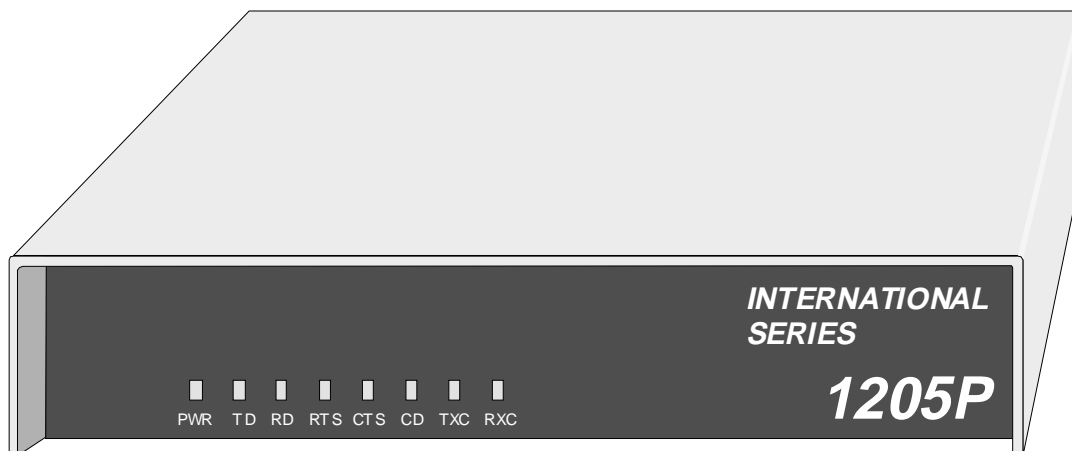
Controlling DSR

Data Terminal Ready (DTR) on each port is routed to the Data Set Ready (DSR) pin of the other port. DSR can be configured to follow the DTR or can be forced to be active all the time.

Power

110 or 220 Volt operation is provided by a convenient switch located on the rear panel of the 1205P (CTS ME-V.35). Simply install the proper fuses (110VAC - .16ASB, 250V or 220VAC - .8ASB, 250V) and power plug for the country of use and select the proper line voltage and the unit is ready for operation.

Approvals

Safety approvals for UL & CSA have been granted allowing the Modem Eliminator. FCC Part 15 class A emissions approvals insure the Modem Eliminator will not interfere with any of the other equipment in your data center. The Model 1205P Serieshas 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.

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.

Available Options

1205P is available in both stand-alone subset or rack-mountable versions (1205PRC). Various configurations of the interface are also available from the factory. The 1205PRC fits into the Model 1010R16 16 Card Rack Assembly.

Caution, Disconnect the POWER Before Removing The Cover
Vorsicht, Befor Deckung Abnehmen Mach Strom Zu.

CHAPTER 2 - SETUP AND INSTALLATION

Power Connection

Before connecting the 1205P (CTS ME-V.35) to a AC power source the top cover must be installed and secured with the supplied #8-32 screws. The unit is supplied with a 110/220VAC voltage switch, turn the switch with a coin or screw driver to the appropriate voltage for your country. EXAMPLE: In the United States of America; set to 110VAC. The unit is supplied with a IEC power connector next to the voltage select switch, plug the power cord into the connector until it is firmly seated. You may now connect the power cord into your AC outlet.

110 / 220VA Switch*
Fuse Drawer

CAUTION: FOR CONTINUED PROTECTION AG
FIRE, REPLACE ONLY
WITH SAME TYPE
AND RATING FUSE.

PORT 1

100-120V
0.16ASB,250V
TO.16A,250V

200-240V
0.08ASB,250V
TO 0.08A,250V

IEC Power Connector
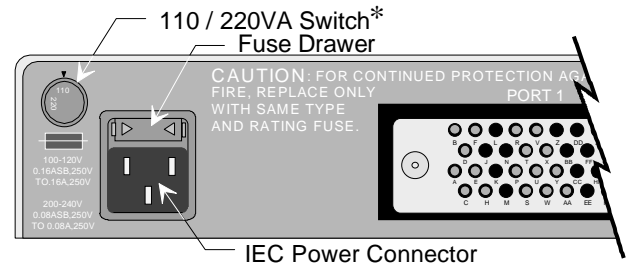
Switch Fuse for 100-120V (.16ASB, 250) or 200-240V (.8ASB, 250) as noted on rear of unit.

Factory Configuration Switch Settings

The 1205P (CTS ME-V.35) is configured prior to shipment with the switches set to the following default positions:

Switch 1 - 2 and 3 to **OFF**, 1, 4, 5 and 6 to **ON**.

Baud Rate = 64Kbps
Port 1 DSR Follows Port 2 DTR
Port 2 DSR Follows Port 1 DTR

Switch 2 - 1 and 4 to **OFF**, 2, 3, 5 and 6 to **ON**.

Port 1 CTS Delay = 0
Port 2 CTS Delay = 0
Port 1 DCD Follows Port 2 RTS
Port 2 DCD Follows Port 1 RTS

JP1 - JP3 always connected
JP4 - Open
JP5 - **INT**ernal Clock
JP6 - **INT**ernal Clock

HS Option

JP7 - Open
JP8 - Open
JP9 - Open
JP10 - Open

If the system application requires one of more of the default settings to be changed, it will be necessary to remove the top cover of the enclosure to access and change the DIP switches or Jumpers located on the printed circuit board.

Disassembly

Remove the top cover by unscrewing the phillips head screws located on the left and right sides of the 1205P (CTS ME-V.35). The configuration switches and Jumpers are located on the PCB as indicated on the strapping guide in the Appendix of this manual. After the switch selection activity is completed, ***re-install the top cover BEFORE connecting to an AC power source.***

Installation

Select an appropriate location accessible to and within six feet of an AC power outlet. The outlet must have a ground pin receptacle for product warranty. *"Straight Through"* shielded cables, terminated in male V.35 (MR-34) connectors should be used to connect the two terminals to the 1205P (CTS ME-V.35). Set the switches and Jumpers to match the required configuration using the descriptions in this chapter and the strapping guide in the appendix.

Equipment Grounding (JP4)

JP4 provides for grounding interconnection in those systems requiring a connection between (Frame Ground) and (Signal Ground). *Connect ONLY if required.*

CTS Delay, Port 1 (SW2-1,2)

SW2 position 1 and 2 selects RTS to CTS delay for the terminal connected to PORT 1. RTS (pin 4) from PORT 1 is looped back to CTS (pin 5) through the delay circuitry.

SW2-1	SW2-2	DELAY
ON	ON	Const
OFF	ON	0mS
ON	OFF	8mS
OFF	OFF	50mS

CTS Delay, Port 2 (SW2-4,5)

SW2 position 4 and 5 selects RTS to CTS delay for the terminal connected to PORT 2. RTS (pin 4) from PORT 2 is looped back to CTS (pin 5) through the delay circuitry.

SW2-4	SW2-5	DELAY
ON	ON	Const
OFF	ON	0mS
ON	OFF	8mS
OFF	OFF	50mS

DSR Control, Port 1 (SW1-6)

SW1 position 6 selects DSR control for the terminal connected to Port 2. Set SW1 position 6 to **ON** to select DSR on Port 2 switching in response to DTR from Port 1 switching. Set SW1 position 6 to **OFF** to set DSR on Port 2 to be forced ON.

DSR Control, Port 2 (SW1-5)

SW1 position 5 selects DSR control for the terminal connected to Port 1. Set SW1 position 5 to **ON** to select DSR on Port 1 switching in response to DTR from Port 2 switching. Set SW1 position 5 to **OFF** to set DSR on Port 2 to be forced ON.

DCD Control, Port 1 (SW2-6)

SW2 position 6 selects DCD control for the terminal connected to Port 2. Set SW2 position 6 to **ON** to select DCD on Port 2 switching in response to RTS from Port 1 switching. Set SW2 position 6 to **OFF** to set DCD on Port 2 to be forced ON.

DCD Control, Port 2 (SW2-3)

SW2 position 3 selects DCD control for the terminal connected to Port 1. Set SW2 position 3 to **ON** to select DCD on Port 1 switching in response to RTS from Port 2 switching. Set SW2 position 3 to **OFF** to set DCD on Port 1 to be forced ON.

Clock Source, Port 1 (JP6)

Port 1 clock selection is accomplished via JP6. To select the internal baud rate generator as the clock source install the jumper on the side marked **INT**. To use an external source provided on Port 2 Pins W & U, install the Jumper on the side marked **EXT**.

Clock Source, Port 2 (JP5)

Port 1 clock selection is accomplished via JP5. To select the internal baud rate generator as the clock source install the jumper on the side marked **INT**. To use an external source provided on Port 1 Pins W & U, install the Jumper on the side marked **EXT**.

Internal Baud Rate Selection (SW1-1,2,3,4)

Selection of internal rates is provided by configuration of SW1 positions 1 through 4 and JP7 through JP10 if the High Speed Option has been installed by the factory. The following table show the rates available:

SW1-1	SW1-2	SW1-3	SW1-4	RATE
ON	ON	ON	ON	HS Mode
OFF	ON	ON	ON	768K
ON	OFF	ON	ON	384K
OFF	OFF	ON	ON	192K
ON	ON	OFF	ON	128K
OFF	ON	OFF	ON	72K
ON	OFF	OFF	ON	64K*
OFF	OFF	OFF	ON	57.6K
ON	ON	ON	OFF	56K
OFF	ON	ON	OFF	48K
ON	OFF	ON	OFF	38.4K
OFF	OFF	ON	OFF	28.8K
ON	ON	OFF	OFF	19.2K
OFF	ON	OFF	OFF	14.4K
ON	OFF	OFF	OFF	9.6K
OFF	OFF	OFF	OFF	4.8K

* Indicates Default

High Speed Option Rates (JP7,JP8,JP9,JP10)

If the high speed option is installed the following rates can be utilized by setting SW1 positions 1 through 4 to **ON**:

JP10 Installed JP7, JP8 & JP9 Removed - 256K

JP9 Installed JP7, JP8 & JP10 Removed - 512K

JP8 Installed JP7, JP9 & JP10 Removed - 1.024M

JP7 Installed JP8, JP9 & JP10 Removed - 2.048M

Factory Test Jumpers (JP1,JP2,JP3)

The factory test jumpers must be installed for the Modem eliminator to properly function. Insure these jumpers are installed prior to operation of the unit.

APPENDIX

Technical Specifications

Application
Interconnect two V.35 terminal type devices

Capacity
Two V.35 Sync or Async Terminals

Data Format
Data is Transparent

Data Rates
4.8K, 9.6K, 14.4K, 19.2K, 28.8K, 38.4K. 48K, 56K, 57.6K, 64K, 72K, 128K, 192K, 384K, 768Kbps, 256K, 512K, 1024K & 2048K

Timing
Internal Baud Rate Generator

Front Panel
Indicators: ... Power, RD, TD, CTS, RTS, DCD, TT, RT

Channel Interface
Two CCITT V.35 female connectors (MR-34)

Power Source
100-120/200-240VAC, 50 to 60Hz, 0.16/0.08A switchable

Environmental
Oper Temp: ... 32° to 122°F (0° to 50°C)
Rel Humidity: .. 5 to 90% non-condensing
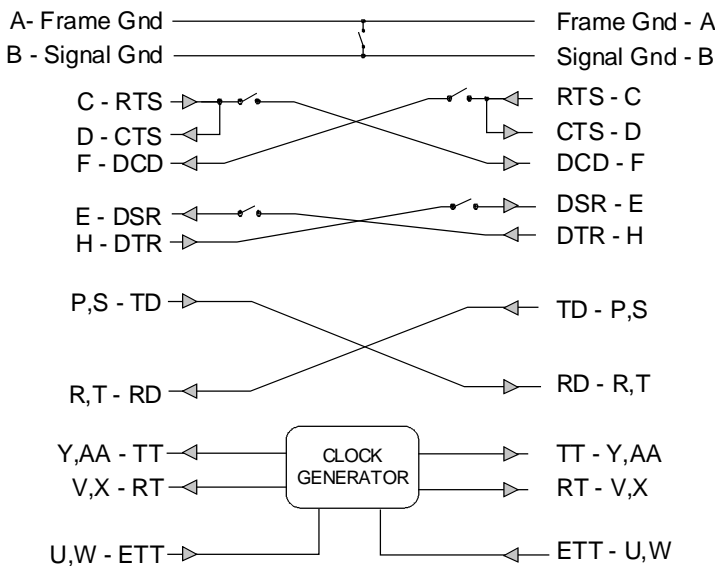Altitude: .... 0 to 10,000 feet

Dimensions
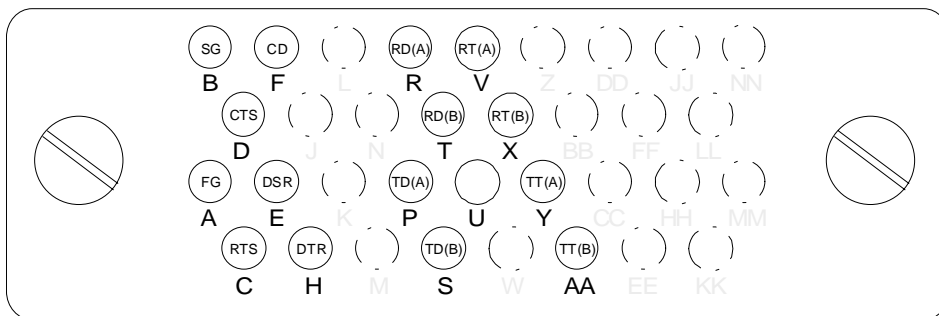Height: ...... 1.75 inches (4.44 cm)
Width: ...... 8.90 inches (22.60 cm)
Length: ..... 10.00 inches (25.40 cm)

Signal Flow Diagram

Connector Pins Used

Power
TD
RD
RS
CS
CD
TC
RC

Install Only One Jumper to Select the Required Rate

ONLY ON THE OPTIONAL HS VERSION

256Kbps HS Option
512Kbps HS Option
1.024Mbps HS Option
2.048Mbps HS Option

JP10 JP9 JP8 JP7

JP6 - Port 1 Clk Source

INT   EXT

JP5 - Port 2 Clk Source

INT   EXT

Baud Rate Select SW1

1	2	3	4	Speed
ON	ON	ON	ON	HS Option
OFF	ON	ON	ON	768K
ON	OFF	ON	ON	384K
OFF	OFF	ON	ON	192K
ON	ON	OFF	ON	128K
OFF	ON	OFF	ON	72K
ON	OFF	OFF	ON	64K
OFF	OFF	OFF	ON	57.6K
ON	ON	ON	OFF	56K
OFF	ON	ON	OFF	48K
ON	OFF	ON	OFF	38.4K
OFF	OFF	ON	OFF	28.8K
ON	ON	OFF	OFF	19.2K
OFF	ON	OFF	OFF	14.4K
ON	OFF	OFF	OFF	9.6K
OFF	OFF	OFF	OFF	4.8K

Port 1 CTS Delay SW2

1	2	Delay
ON	ON.	Constant
OFF	ON	0 mS
ON	OFF	8 mS
OFF	OFF	50mS

Port 2 CTS Delay SW2

4	5	Delay
ON	ON.	Constant
OFF	ON	0 mS
ON	OFF	8 mS
OFF	OFF	50mS

CGND TO DGND

JP4

Port 2

Port 1

SW1

Baud Rate Select

Port2 DSR ON=Switched, OFF=Const
Port1 DSR ON=Switched, OFF=Const

OFF   ON

SW2

Port1 CTS Delay Select
Port2 DCD ON=Switched, OFF=Const
Port2 CTS Delay Select
Port1 DCD ON=Switched, OFF=Const

OFF   ON

JP1   JP2   JP3

Factory Test Straps Must be Installed For Proper Operation