

# LPM-33-E

## Low Power Cabinet Modem

### Data Collection Modem

ALL MODEMS ARE NOT ALIKE!

Commercially available modems are generally not suitable for use in roadside applications. The temptation is strong to use least-cost modems, but Peek and its customers have found out through direct experience that commercial indoor modems, and even "industrial" modems, can have low reliability in field use.

That's why Peek offers the LPM 33, specifically designed to provide data communications in roadside applications requiring remote access via standard dial access telephone service. It is designed to meet the rigors imposed by extreme outdoor data collection and control cabinet environments. It is designed to operate over a temperature range of -40°F to +162°F (-40°C to +72°C).

The LPM-33 can be powered by any source in the range from 5 to 36 Vdc. It features a low power standby mode that allows it to be battery powered. In standby mode, the LPM-33 requires less than 0.5mA of current at 12 Vdc. A solar panel-charged battery provides a fully satisfactory method of powering the LPM 33. Alternatively, the LPM 33 can be powered by a nominal 12 Vac from an available AC to DC wall mount transformer for use with any 120 Vac outlet.

Baud rates up to 33,600 are supported by the LPM 33. It is fully compatible with applicable Bell and CCITT standards, including those for error correction and data compression. The LPM 33 will operate in auto-answer and originate modes.

The LPM 33 uses several timers to reduce net power consumption in typical applications. Sixty seconds after the termination of ringing voltage or 120 seconds after stopping of DTE data the LPM 33 will automatically revert to its low power standby mode. Standby mode will also occur 10 seconds after the loss of carrier is detected. The standby mode of the LPM 33 can be disabled, leaving the modem in continuous active mode.



The LPM-33 is easy to use and install. It comes equipped with an RS-232 serial interface that can be directly connected to the RS-232 port of most traffic recorders and traffic devices. Two RJ-11 jacks allow quick connection to the telephone circuit and a utility phone that can be used while the modem is inactive. Six front panel LEDs provide complete status information. When power is available to the LPM 33, the green "STBY" LED flashes. This indicates the modem is in low power standby mode. The LED will turn off when the modem receives DTE data or auto-answers an incoming call.

The LPM 33 conforms to the industry standard set of AT commands. Two user-defined profiles can be stored in non-volatile memory by connecting the communications port of a PC directly to the RS 232 connector of the LPM 33 and using a communications program such as HyperTerminal®.

The LPM 33 is housed in a rugged aluminum case. In its standard configuration the LPM 33 is placed on a shelf or flat horizontal surface. It is equipped with four non-slip rubber feet.

# Specifications

Property	Description
<b>Modem Standards</b>	CCITT: V.34, V.32 bis, V.32, V.22 bis, V.22, V.21 Bell: 103, 212A
<b>Error Correction</b>	MNP 2-4, LAP-M
<b>Data Compression</b>	MNP 5, V.42 bis
<b>Command Set</b>	Hayes AT; Additional AT commands for data compression, error correction, cellular operation
<b>Interface to DTE</b>	Type: RS-232, DB 25 connector  Speed: Auto-detects with AT command, up to 115,200 Baud  Signaling: N-8-1
<b>Operation</b>	Speed: Baud rates to 33,600 Type: Auto-answer and originate
<b>Profiles</b>	2, set to factory default, user-definable, stored in non-volatile E2PROM
<b>Mode Control</b>	Standby (normal): Awaiting ringing voltage or DTE data, flashing green LED. Standby to Active: Transitions within 6 seconds of ringing voltage or 200 msec of DTE data, LED on steady Answer: After transition to active mode answers call in accordance with S0 register setting for ring delay Disconnect: Loss of carrier, DTR drop or on-hook AT command Active to Standby (selectable link controlled): Active Connection – 10 seconds after loss of carrier; No Connection – 60 seconds after last ring or 120 seconds after last DTE data
<b>Controls</b>	Internal: Jumper JP1 disables standby operation if jumper is on External: All operational control is via RS-232 connector
<b>LED Indicators</b>	Standby: green, flashes awaiting call Ringing: red Send Data: red Receive Data: red Carrier Detect: red Off Hook: red
<b>Power</b>	Voltage: 5.0 to 36 Vdc; 12 Vdc typical; wall mount transformer for 120 Vac source - Stancor STA 4112A. Consumption: Standby – 0.5mA @ 12 Vdc maximum; Active – 85 mA @ 12 Vdc typical
<b>Physical</b>	Size: 1.9" H x 5.3" W x 8.6" D  Weight: 20 oz.
<b>Environmental</b>	Storage: -40°F to +185°F (-40°C to +85°C) Operating: -40°F to +162°F (-40°C to +72°C) Humidity: 0 to 95%, non-condensing

Property	Description
<b>Construction</b>	Housing: Fully enclosed, anodized aluminum; Not intended for direct exposure to weather, precipitation. Suitable for installation in standard traffic control or traffic data collection field cabinets. Removable screws allow inside access.  Electrical: Single printed circuit board inside housing conformally coated for protection
<b>Mounting</b>	Cabinet, shelf or desktop, Rubber feet for shelf/desktop.
<b>Connectors</b>	DTE: DB-25 Female, configured as RS-232, DCE  Pin 1: Protective Ground  Pin 2: Send Data  Pin 3: Receive Data  Pin 4: Request to Send  Pin 5: Clear to Send  Pin 6: Data Set Ready  Pin 7: Signal Ground  Pin 8: Carrier Detect  Pin 20: Data Terminal Ready  Pin 22: Ring In  Power: Standard 3.5mm recessed jack, female, center positive  Telephone: Dual female RJ-11, wired in parallel, phone & line
<b>Line Protection</b>	Standard internal gas tube arrestor, 230 Vdc across tip and ring to ground  External telco or user-provided protection against surges and high voltage is recommended.
<b>Regulatory</b>	Designed to meet applicable FCC standards.

This specification describes the physical and functional properties of the Peek PED-100 Single Section Aluminum Pedestrian Signal for LED installation manufactured by Peek Traffic Corporation. Peek reserves the right to alter any of the Company's products or published technical data relating thereto at any time without notice.

## Two Year Limited Warranty

Peek Traffic, Inc. warrants this product against manufacturing defects in materials and workmanship for two years from date of shipment from Peek. Specific contracts and regional laws may vary or alter these terms.

