

QuadPOTS™ (4:1) System

One solution...two applications: extend subscriber service up to 64,000 ft. with a repeater over a single twisted pair.



The QuadPOTS™ system multiplexes four 64 Kbps Clear channel POTS lines and transports them over a single twisted pair, utilizing noiseless, low power HDSL (2B1Q) line coding. The digital subscriber line (DSL) is then demultiplexed at the Remote Terminal (RT), providing four POTS lines.

When the switch on the Central Office Terminal (COT) line card is in the "OFF" position, the system will support loops up to 51,000 ft. on 19 AWG (1300 Ohms or -48 dB at 68 KHz). When a repeater is added to the loop and the switch on the COT is in the "ON" position, the system will support loops up to 64,000 ft. on 19 AWG (1650 Ohms, or -60 dB at 68 KHz).

- CLASS® services compatible
- Compatible with V.34 modem speeds
- NEBS Level 3 certified
- GR-63-CORE, GR-1089-CORE

System Components

A Central Office Terminal (COT) Line Card

- Provides 4:1 Digital Pair-Gain (DPG)
- HDSL (2B1Q) line coding
- Mounts in 300 series shelves
- 4TEL or MLT line testing signatures
- A2 or A3 safety available (refer to electrical specifications)

B Remote Terminal (RT) RT4

- Drops up to four POTS lines
- Line powered
- RT line card mounts in 400 type NID, pedestal or indoor mounting
- Fail-to-POTS option (non-repeated mode only)
- Enhanced Pre-Provisioning (EPREP) for easy one person turn-up of additional lines (non-repeated mode only)
- Rugged design for use at -40° to 65°C (-40° to +149°F)
- UL recognized, CSA certified

C-E Repeaters

Three options available:

C Pole/Wall/Pedestal Model in Weather-Tight Housings

D Aerial/Buried/Manhole Model in Sealed Housing

E 239 Mechanics Model for use in Apparatus Case Housing

- Extend DSL distance up to 64,000 ft. on 19 AWG
- Line powered
- Rugged for use at -40° to +65°C (-40° to +149°F)

Alarm Card (optional)

- One card per 300 series shelf
- Visual alarms



System Components (optional)

300 Series Shelf, Baffle and Fan

- 23" DML301 shelf; maximum 72 lines (19 slots, 18 COT line cards); uses 5.25" of vertical rack space (three rack units)
- 19" DML305 shelf; maximum of 60 lines (16 slots, 15 COT line cards); uses 5.25" of vertical rack space (three rack units)
- Optional baffles for 19" or 23" shelves ; uses 3.5" of vertical rack space (two rack units)
- Optional fan trays fit in 19" and 23" racks; uses 1.75" of vertical rack space (one rack unit)
- Fan trays feature 300 CFM and quiet operation.



Note: Refer to DDL301 or DDL305 practices for recommended rack profile configurations

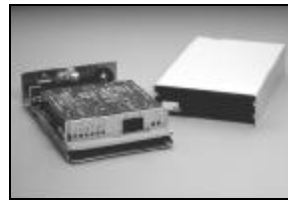
CPLE 10-400 Pedlock®

- Made entirely of non-corrosive materials
- Full 360° access to cables and apparatus when dome is removed
- Environmentally-sealed and tamper-resistant six-slot card housing



MX-4000 Mounting Assemblies

- Eight-slot shelf-style card housing
- Wall or rack mount



3550 Mounting Assemblies

- Single-slot card housing
- Mount vertically or horizontally on wall or desk

System Capabilities

Transmission Format

2B1Q, 272 Kbps full duplex

Channelization

Four, 64 Kbps Clear channel POTS lines

Range of Digital Subscriber Line

Distance with repeater: 64,000 ft. on 19 AWG, 40,000 ft. on 22 AWG, 27,000 ft. on 24 AWG or 19,000 ft. on 26 AWG. Attenuation loss of -60 dB at 68 KHz per segment with a repeater.

Configuration Software

Configuration software is a planning tool to verify that the configuration, wire gauge and segment distance do not exceed power limits.

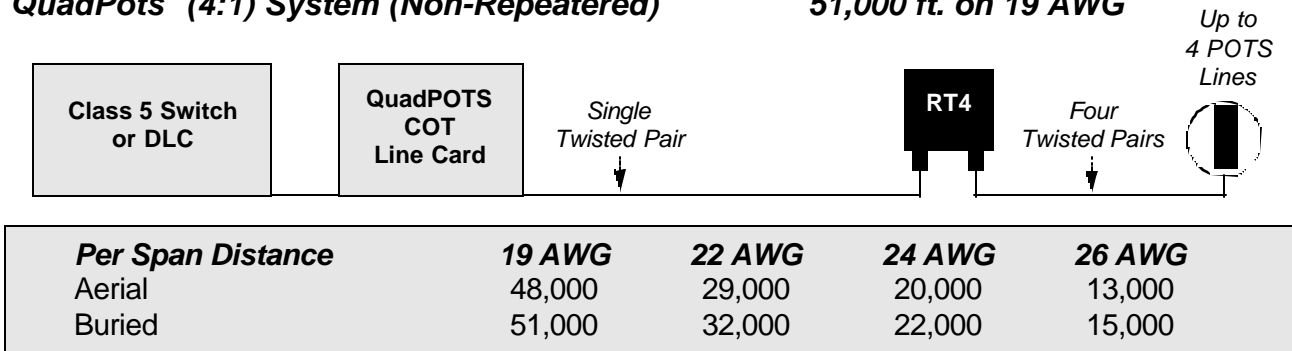
Electrical Specifications

System loss in each direction of transmission	3.5 ± 1.0 dB nominal
Frequency response	The loss relative to 1004 Hz with 0 dBm0 input signal: 0.0 to +3.0 dB at 300 Hz, -1.5 to +1.0 dB at 400 to 3000 Hz, -0.5 to +1.5 dB at 3200 Hz and 0.0 to +3.0 dB at 3400 Hz
Idle channel noise at output of RT	20 dBnC maximum
Channel crosstalk	With 0 dBm0 single frequency input signals between 300 and 3400 Hz applied to any line, the C-message weighted total output of the other three lines at the RT in the 300 and 3400 Hz frequency band is less than -65 dBm0
DC supervisory range	The Rdc for the RT is 530 ohms, specified as a 430 ohm telephone instrument plus a 100 ohm cable (Rdc is the maximum external loop resistance capability of the system)
Return loss (Ref: 600 ohms + 2.16 µF)	ERL > 18 dB; SRL > 10 dB
Off-hook current to each line	23 mA minimum
Off-hook voltage to each line	-42.5 V minimum
Ringing frequency response	15-35 Hz
Ringing capacity	Non-repeated mode = 5 REN per line, 12 REN simultaneously (all lines total) Repeated mode = 5 REN per line, 10 REN simultaneously (all lines total)
DSL Voltage	±130 volts: A2 (5 mA) or A3 (10 mA) safety available

Configurations

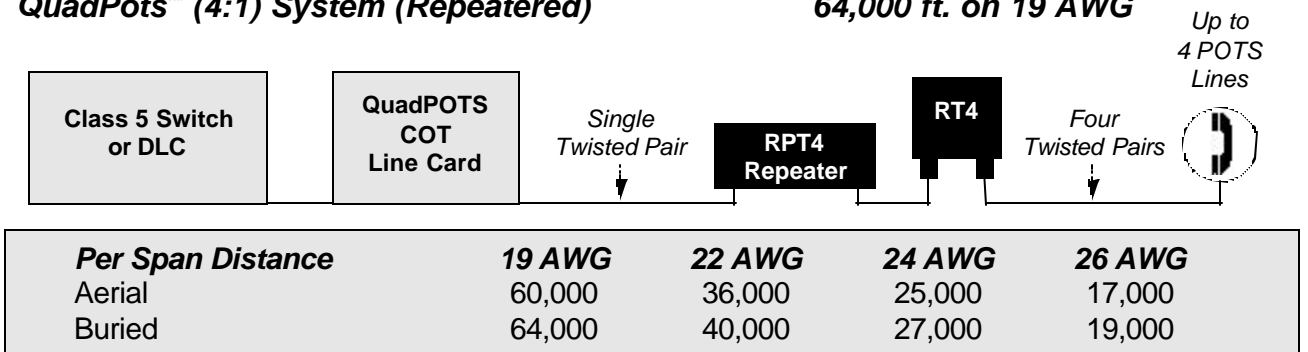
QuadPots™ (4:1) System (Non-Repeated)

51,000 ft. on 19 AWG



QuadPots™ (4:1) System (Repeated)

64,000 ft. on 19 AWG



Ordering Information

Model Number	Product Description
DMLQ340	QuadPOTS COT Line Card - 4TEL Signatures
DMLQ341	QuadPOTS COT Line Card - MLT Signatures
DMLQ441	QuadPOTS RT Card
DDL381	Alarm Card
DDL301	High Density 23" 300 Series Shelf
DDL305	High Density 19" 300 Series Shelf
DMLQ141	RT4 (Wall Mount NID)
DMLQ142	RT4 (Pole Mount NID)
DMLQ143	RT4 (Wall Mount NID with Fail-to-POTS)
DMLQ144	RT4 (Pole Mount NID with Fail-to-POTS)
CPL10-400	CPL10-400 Pedlock® Enclosure
DML4008	MX-4000 Mounting Assemblies with Eight-Slot Shelf
3550	Single-Slot Mounting Assemblies
DMLQ540	RPT 4 (Pole/Wall/Pedestal Repeater)
DMLQ541	RPT 4 (Aerial/Buried/Manhole Repeater)
VIP542	RPT 4 (239 Mechanics Repeater)
FANDML	19"/23" Fan Tray
BAFDML23	23" Baffle
BAFDML19	19" Baffle
LTDML-470-180	Configuration Software

**Contact your Charles sales representative for specific product part numbers
Also available: *DuaLine Plus™ (2:1) System with D56K and 12:1 Multi-Line System™***

Copper Solutions. Golden Support™.

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- 24-hour Technical Support
- Training courses available

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