PATTON ELECTRONICS COMPANY

# PRODUCT QUICK REFERENCE

GoCard

| | | | |
|---|---|---|---|
| **Product Model** | **Model 1068 Variable Rate VDSL Modem** | | |
| **Product Name** | **Variable Rate VDSL Modem** | | |
| **Product Manager** | **John Grant** | **Contact** | **Jgrant@patton.com** |

## Who are the customers for the Model 1068?

The Patton Model 1068DV Variable Rate VDSL Modem enables the utilization of existing copper infrastructure for the delivery of high-speed broadband services. The 1068DV includes seven asymmetrical and symmetrical settings, which include an option for line rates up to 16.67 Mbps! The Model 1068DV's built in POTS/ISDN splitter allows users to simultaneously talk on the phone while surfing the web, downloading files, or receiving emails. This incredible bandwidth and line sharing capabilities are provided over a single twisted pair of voice-grade wire.

**Model 1068DV**

**Model 1068DVRC**

The Model 1068DV solution is targeted to users or service providers that need high-speed Ethernet data and voice links over their existing copper infrastructure. These organizations include but are not limited to CLEC's, ISP's, Educational Facilities (Campus), MTU/MDU's, and corporate/government offices. Popular applications for symmetrical VDSL include Ethernet extension, medical imaging, video-conferencing, Ethernet Bridging, and connecting remote devices or networks to a central LAN. The variable symmetrical data rates ensure the highest possible data rate is achieved over various lengths and types of copper wire and environments. Variable asymmetrical line rates make the Model 1068 ideal for service providers who want to differentiate their services and extend the reach of their customer base using VDSL services. The Model 1068DV allows service providers to offer unparalleled performance for applications such as: always on Internet access, real time bi-directional video streaming, and various multimedia applications.

Typical applications include:

**LAN-to-LAN Bridging:** The Model 1068 connects remote LANs over a high-speed, symmetrical or asymmetrical link. The 1068 CP unit is placed at the remote location and the 1068 CO unit is placed at the central site to provide a LAN-to-LAN connection over a voice-grade wire. This application will generally be made over a symmetrical link.

**Ethernet Extension:** The Model 1068 overcomes the 328 ft (100m) limitations of Ethernet with a symmetrical or asymmetrical data link at distances up to 6,656 ft (2.03 km) and speeds up to 16.67 Mbps. The Model 1068 point-to-point solution does not use or require Ethernet repeaters. This application will generally be made over a symmetrical link.

**Dedicated Internet and Voice Services:** The Model 1068 VDSL technology enables ISP's to deliver dedicated high-speed Internet access and voice services from a Point-of-Presence (POP) to a customer premise. A 1068CO is used at the POP and a 1068CP is used at the customer premise. The Model 1068DV's built-in POTS/ISDN splitter allows users to simultaneously use the phone or fax machine, while surfing the web, downloading files or receiving e-mails. The variable rates and asymmetrical and symmetrical settings allow the ISP's to sell differentiated services as well as increase the typical distances of their VDSL services. This application generally will be made over an asymmetrical link.

**MTU/MDU Services:** Using the Model 1068 rack chassis and the standalone solution, data and voice services can be extended to the hotel guest, apartment resident, and housing resident, etc. Patton's Model 1068 VDSL modems allow service providers to avoid the cost and trouble of wiring the individual hotel rooms with 4-wire twisted pair or Ethernet cabling by using the existing voice-grade 2-wire infrastructure. The service provider would place the 1001R rack system with multiple 1068RCDV/CO rack cards and an Ethernet switch in the basement or closet and the standalone 1068DV/CP in the individual hotel rooms. Once connected, the Model 1068 will automatically establish a high-speed Point-to-Point voice and data link. Bandwidth can be limited or distance increased by choosing various asymmetrical /symmetrical data rates on the CO and CP VDSL modems. This application generally will be made over an asymmetrical link.

| Model 1068 Features and Benefits | |
|---|---|
| **High-Speed line rates up to 16.67 Mbps.** | **Fast and reliable data transmission.** |
| **Switch selectable Asymmetrical or Symmetrical line rate options** | **Differentiated services and ability to adapt to different environments, distances, and multimedia.** |
| **Extends Ethernet beyond its current 328 ft (100m) limitation.** | **Inexpensively links remote devices or extends LANs up to 6,652 ft (2.03 km).** |
| **Built-in POTS/ISDN Splitter (1068DV only)** | **Provides "life-line" telephone services.** |
| **Full service integration (voice, video, and data) services over existing voice-grade telephone wire.** | **Eliminates the need to install/upgrade to new LAN-grade cable or expensive fiber.** |
| **Operation transparent to high-layer protocols.** | **Lets higher-layer broadcast, multi-cast and uni-cast data frames pass through, and supports VLAN tagged frames.** |
| **Auto-sensing 10 or 100Base-T and full or half-duplex Ethernet.** | **No configuration necessary, just Plug your Ethernet connections in and play.** |
| **Five status LEDs.** | **Monitoring your connection and operational status is made simple.** |

**Switch Selectable Settings for the Model 1068:**

| | Asymmetrical | | |
|---|---|---|---|
| | Line Rates | | Distance (24AWG) |
| | Upstream (Mbps) | Downstream (Mbps) | |
| 1 | 1.56 | 4.17 | 6,656′ (2.03km) |
| 2 | 1.56 | 9.38 | 5,756′ (1.75km) |
| 3 | 2.34 | 16.67 | 5,556′ (1.69km) |

| | Symmetrical | | |
|---|---|---|---|
| | Line Rates | | Distance (24AWG) |
| | Upstream (Mbps) | Downstream (Mbps) | |
| 1 | 6.25 | 6.25 | 4,956′ (1.51km) |
| 2 | 9.38 | 9.38 | 4,806′ (1.46km) |
| 3 | ***12.50†*** | ***12.50*** | ***4,656′ (1.42km)*** |
| 4 | 16.67 | 16.67 | 3,956′ (1.21km) |

**Related Patton xDSL Products:**

Patton provides a complete line of xDSL products. Whether it's VDSL for ultra-high speed connections, mSDSL for high-speed long distance connections, or iDSL for standard U-interface connections over long distances, Patton has the solutions to fit all types of networks and requirements. Patton's xDSL solutions include compact cross connects, rack-card based solutions, and CPE units for your last mile networking needs. Patton's complete line of high-speed xDSL modems, include interfaces for 10Base-T Ethernet, T1/E1, G.703/G.704, voice, and serial (X.21, V.35, EIA-530, and V.24).

| DSL Type | Max Data Rate | Quick Connect Modules | Compact (Rocket) | Rack Card | Concentrator |
|---|---|---|---|---|---|
| iDSL | 128 Kbps | 1092A | 1082 | 1092ARC | 3092/3192 |
| HDSL | 1.152 Mbps | 1094A | 1089 | 1094ARC | 3095 |
| mSDSL | 2.034 Mbps | 1095 | 1088 | 1095RC | 3095 |
| VDSL | 12.5 Mbps | Ethernet Only | 1058 | 1058RC | 3324 |
| VDSL | 16.67 Mbps | Ethernet Only | 1068 | 1068RC | 3324 |

Model 1095 and 1095RC (Quick Connect)

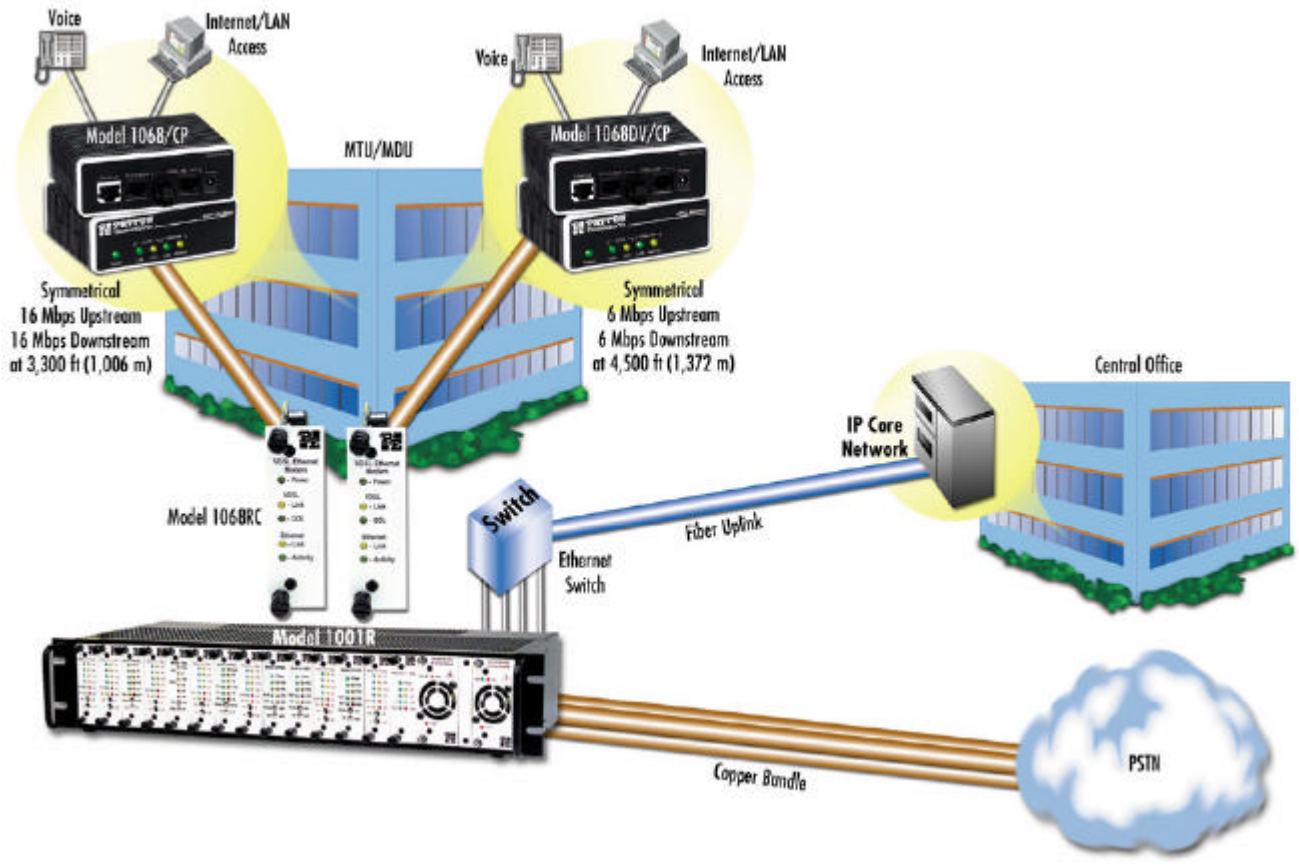
Model 1088 (Rocket)

Model 3095 (Access Concentrator)

## Primary Application: Point-to-Point Ethernet Bridging & Extension

MTU/MDU Application:

Using an Ethernet Switch and Patton's VDSL Rack Chassis solution at a Central Location, up to 16 full-service links can be routed to various residents. The CO would provide the uplink from the network into an Ethernet switch. The individual Ethernet connections from the switch would connect into each 1068RC Ethernet port. The POTS lines delivered from the PSTN, plug into the POTS/ISDN port of the 1068RC. The 1068RC will combine the POTS and Ethernet signals and send them over a VDSL signal to the individual rooms over already installed twisted pair, voice grade wiring. The 1068 standalone placed in the residents rooms would split the VDSL back into data (Ethernet) and voice (POTS/ISDN). Line rates can be altered on the standalones and rack cards to differentiate services or to increase the distance or rates of the individual links.



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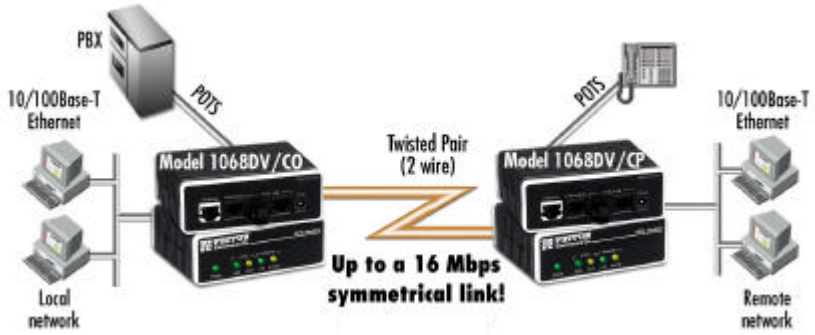
## Primary Application: MTU/MDU Full Service

Used in pairs (Central Office and Customer Premise), the Model 1068 establishes a high-speed, line sharing, asymmetrical or symmetrical voice and data link. The Model 1068 inter-connects two geographically separated LANs over a voice-grade twisted pair wire.

Operation is simple: packets destined for the remote LAN are sent transparently, at full line rate, to the peered LAN. The Model 1068DVs built-in POTS/ISDN splitter allows users to simultaneously talk on the phone while surfing the web, downloading files or receiving e-mails.




## Optional parts for the Model 1068D and the Model 1068DV

- DC Power Supplies
- Rack cards are compatible with Patton's Model 1001R High-Density Telco Rack Chassis and Cluster Boxes.

| Optional DC Power Supplies for Standalone Units | |
|---|---|
| **Part Number** | **Description** |
| 48V-PSM | -48 VDC power supply, 5VDC, 1A (optional) |
| 24V-PSM | -24 VDC power supply, 5VDC, 1A (optional) |
| 12V-PSM | -12 VDC power supply, 5VDC, 1A (optional) |

If you require a DC power supply with the Model 1068, you must order the 1068 without power supplies and add the DC power supply as a separate line item.

**EXAMPLE ORDER:**

1 X 1068DV-2PK (Variable Rate VDSL Modem Set (Customer Premise and Central Office), Data and Voice; No Power Supply)
2 x 48V-PSM (-48 VDC power supply, 5VDC, 1A)

## Shipping/Export Information

**ECCN export number:** 8517.50.1000

**Country of origin:** United States of America, NAFTA

**Total weight boxed:** .96lbs (.44kg) without power supply

**Individual unit:** .4lbs (.18kg); without power supply

## MTBF/ Repair Information

**MTBF**: 126,000 Hrs. Calculation based on MIL-HDBK-217F, Notice 2 - "Parts Count Reliability Prediction"

**Mean time to repair:** 7–10 days

**Warranty:** 1-year parts and labor

**Out of warranty repair rate:** $150, flat rate – contact Patton's Tech Support for details.

## Physical Specifications

**Dimensions:** **Standalone:** 1.5" H x 4.13" W x 3.75" D (3.81 H x 10.5 W x 9.53 D cm)

**Rack Card:** 3.00" H x 0.83" W x 7.84" D (7.6 H x 2.1 W x 19.9 D cm)

**Color:** **Standalone:** **Case:** Black **Front and Back Panel**: Black with white letters

**Rack Card**: **Front and Back Panel:** White with black letters

**Case material:** **Standalone:** Plastic, Fire retardant

**Rack Card:** Iridite Aluminum

## Environmental

**Operating Temp:** 32 to 122°F (0 to 50°C)

**Storage Temp:** -40 to 185°F (-40 to +85°C)

**Relative Humidity:** Up to 90% RH, non-condensing

**Altitude:** 0 –15,000 feet (3,048 meters)

**Ventilation requirements:** None, units do not require cooling fans.

## Approvals

| Safety | Emissions | Telecommunications |
|---|---|---|
| CE Marked per EMC directive 89/336/EEC and low voltage directive 72/23/EEC.<br>ESD EN61000-4-2 | FCC part 15, Class A | FCC Part 68 A & B (1068DV only) |
| | EN55022 Class A, conducted and radiated emissions | CS-03 Industry Canada |

## Power Supplies

### Standalone Units Only

**AC:** 120VAC, 50-60Hz, external or Universal input, 100-240VAC, 50-60Hz, external

**DC:** -48VDC, -24VDC, or -12VDC external (optional)

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| Ordering Information-Model 1068D (Data Only) | |
|---|---|
| **Model** | **Description** |
| 1068D/CO | Central Office Variable Rate VDSL Modem, Data Only; No Power Supply |
| 1068D/CP | Customer Premise Variable Rate VDSL Modem, Data Only; No Power Supply |
| 1068D/CO/120 | Central Office Variable Rate VDSL Modem, Data Only; 120VAC |
| 1068D/CP/120 | Customer Premise Variable Rate VDSL Modem, Data Only; 120VAC |
| 1068D/CO/UI* | Central Office Variable Rate VDSL Modem, Data Only; 100-240VAC |
| 1068D/CP/UI* | Customer Premise Variable Rate VDSL Modem, Data Only; 100-240VAC |
| 1068D-2PK | Variable Rate VDSL Modem Set (Customer Premise and Central Office), Data Only; No Power Supply |
| 1068D/120-2PK | Variable Rate VDSL Modem Set (Customer Premise and Central Office), Data Only; 120VAC |
| 1068D/UI-2PK* | Variable Rate VDSL Modem Set (Customer Premise and Central Office), Data Only; 100-240VAC |
| 1068DRC/CO | Central Office Variable Rate VDSL Modem Rack Card, Data Only |
| 1068DRC/CP | Customer Premise Variable Rate VDSL Modem Rack Card, Data Only |

- When ordering standalone units, it is recommended that the 1068D be ordered in sets: one 1068D/CO (Local) and one 1068D/CP (Remote). When ordering rack cards it is required that you match a standalone CP with a CO rack card and if you order the standalone CO you must match it with a CP rack card.
- * =You must specify a country specific power cord


| Ordering Information-Model 1068DV (Data and Voice) | |
|---|---|
| **Model** | **Description** |
| 1068DV/CO | Central Office Variable Rate VDSL Modem, Data and Voice; No Power Supply |
| 1068DV/CP | Customer Premise Variable Rate VDSL Modem, Data and Voice; No Power Supply |
| 1068DV/CO/120 | Central Office Variable Rate VDSL Modem, Data and Voice; 120VAC |
| 1068DV/CP/120 | Customer Premise Variable Rate VDSL Modem, Data and Voice; 120VAC |
| 1068DV/CO/UI* | Central Office Variable Rate VDSL Modem, Data and Voice; 100-240VAC |
| 1068DV/CP/UI* | Customer Premise Variable Rate VDSL Modem, Data and Voice; 100-240VAC |
| 1068DV-2PK | Variable Rate VDSL Modem Set (Customer Premise and Central Office), Data and Voice; No Power Supply |
| 1068DV/120-2PK | Variable Rate VDSL Modem Set (Customer Premise and Central Office), Data and Voice; 120VAC |
| 1068DV/UI-2PK* | Variable Rate VDSL Modem Set (Customer Premise and Central Office), Data and Voice; 100-240VAC |
| 1068DVRC/CO | Central Office Variable Rate VDSL Modem Rack Card, Data and Voice |
| 1068DVRC/CP | Customer Premise Variable Rate VDSL Modem Rack Card, Data and Voice |

- When ordering standalone units, it is recommended that the DV be ordered in sets: one DV/CO (Local) and one DV/CP (Remote). When ordering rack cards it is required that you match a standalone CP with a CO rack card and if you order the standalone CO you must match it with a CP rack card.
- * =You must specify a country specific power cord