

# 3510 Series DATA SERVICE UNIT



## B E N E F I T S

- VERSATILE, MULTI-FEATURED DSU  
SUPPORTS VIRTUALLY ALL APPLICATIONS  
FOR MAXIMUM FLEXIBILITY IN NETWORK  
DESIGN AND RECONFIGURATION
- RAPID FAULT ISOLATION IS PROVIDED BY  
A FULL COMPLEMENT OF DIAGNOSTIC  
CONTROLS AND INDICATORS
- MAKES OPTIMUM USE OF CENTRAL SITE  
SPACE BY MEANS OF THE COMSPHERE  
3000 SERIES CARRIER
- SIMPLIFIED, ECONOMICAL MIGRATION IS  
PROVIDED THROUGH DIAGNOSTIC AND  
LINE COMPATIBILITY WITH DATAPHONE II  
2500 AND 2600 SERIES DSUs
- HIGH RELIABILITY: 22 YEARS MTBF
- AVAILABLE IN STANDALONE AND CARRIER  
CARD VERSIONS

**D**esigned to handle the growth and increasing complexity of digital networks, the 3500 Series Data Service Unit (DSU) combines a wide array of features into a single, economical and highly functional unit. The 3500 Series DSU enables the user to make maximum use of digital data services.

Based on a field-proven Bell Laboratories digital data pump, the 3500 Series DSU provides a cost-effective solution for a broad range of operating environments. Because the 3500 Series DSU can operate as a Limited Distance Modem (LDM) in a point-to-point application, it is particularly ideal for campus environments that require a single unit to operate over a wide range of speeds. Depending on the speed and wire gauge, the unit can operate at distances of over 16 miles.

The 3500 Series DSU supports traditional point-to-point and multipoint configurations. It is line-compatible with all of Paradyne's DSU products, and is also diagnostically compatible with the COMSPHERE® 3600 Series and the DATAPHONE® II 2500 and 2600 Series DSUs. This compatibility with a wide range of digital products provides investment protection while assuring a smooth migration path.

The 3500 Series DSU is available in both standalone and high density carrier card models. The compact 3510 Standalone unit is designed especially for use at tributary sites, while the 3511 Carrier Card mounts in the high-density COMSPHERE 3000 Series Carrier and is ideal for central site applications.

### COMSPHERE 3000 SERIES CARRIER

The COMSPHERE 3000 Series Carrier houses a mixture of the 3511 and COMSPHERE 3611 DSUs, as well as select Paradyne dial modems. Sixteen cards can be housed in a single carrier, or as many as 96 cards in a 72" cabinet. This extremely high-density feature is important in data centers, concentration sites and other locations where space is at a premium.

# FEATURES

- USER-CONFIGURABLE DATA RATES OF 2400, 4800, 9600, 19,200, 38,400 AND 56,000 bps, PLUS 64 Kbps CLEAR CHANNEL
- CO-RESIDENT EIA-232D/ V.24 AND CCITT V.35 INTERFACES
- POINT-TO-POINT OR MULTIPOINT OPERATION
- FULL COMPLEMENT OF LOCAL AND REMOTE LOOPBACKS
- INTEGRAL 511 TEST PATTERN GENERATOR AND COMPARATOR
- THREE POWER LEVELS FOR COMPATIBILITY WITH RBOC AND LOCAL EXCHANGE CARRIER FIXED DATA RATES OF 19,200 bps
- ELASTIC STORE FEATURE FOR EXTENDED CIRCUIT APPLICATIONS
- DIAGNOSTIC AND LINE COMPATIBILITY WITH DATAPHONE II 2500, 2600 SERIES, AND COMSPHERE 3600 SERIES DSUS
- POINT-TO-POINT OPERATION AS A LIMITED DISTANCE MODEM

## DISTANCE CAPABILITIES FOR LDM APPLICATIONS

Wire Gauge (AWG)	DATA RATE						
	2400	4800	9600	19,200	38,400	56,000	64,000
19	20.0	19.4	15.2	11.8	11.2	9.2	9.2
22	16.6	12.7	9.7	7.5	6.5	5.4	5.4
24	12.7	9.6	7.3	5.7	4.6	3.8	3.8
26	9.4	7.1	5.6	4.2	3.2	2.8	2.8

## SPECIFICATIONS

### Data Rates

Synchronous terminal rates of 2400, 4800, 9600, 19,200, 38,400, 56,000 & 64,000 bps

### DTE Interface

25-pin D-subminiature connector (female)  
EIA-232D/CCITT V.24 (ISO 2110)  
34-pin connector (female) - CCITT V.35 (ISO 2593)

### Digital Network Interface

3510: 8-pin modular jack, USOC RJ48S  
3511: 50-pin connector, USOC RJ48T (one for slots 1-8, one for slots 9-16)

### Data Format

Serial, synchronous, protocol-independent, binary data in full or half duplex operation

### Data Encoding

Bipolar Return to Zero; complies with AT&T technical reference 62310

### Elastic Storage Buffer

+ 3 bits

### Timing

DDS, internal, external or receiver

### Transmit Levels

19,200 bps: -10, 0 or +6 dBm  
9600 bps: 0 dBm  
All other speeds: +6 dBm

### Receiver Sensitivity Level

-42 dBm at 56,000 bps

### Transmit and Receive Impedances

TX: 135 ohms + 10%  
RX: 135 ohms + 10%

### AC Power Requirements

3510 Standalone  
90-132 VAC, 60 Hz + Hz: 5.8 watts max

### 3511 Carrier Card

Supplied by carrier: 45 watts

### Fan Module

Supplied by carrier: 45 watts

### Environment

Temperature (operating)  
32 to 122 degrees F  
(0 to 50 degrees C)

### Temperature (storage)

-4 to 158 degrees F  
(-20 to 70 degrees C)

### Relative humidity

5-95% (noncondensing)

### Shock and vibration

Withstands normal shipping and handling

### Heat Dissipation at 115 VAC

3510: 19.5 BTU/hr  
3511: 0.5 BTU/hr

## ORDERING INFORMATION

Description	Model
Standalone DSU	3510-A1-001
Card Version DSU	3511-A1-002

## DIMENSIONS

### 3510 Standalone

Height: 2.13 in (5.4 cm)  
Width: 7.63 in (19.4 cm)  
Depth: 13.4 in (34.0 cm)

### 3511 Carrier Card

Height: 7.13 in (18.1 cm)  
Width: 0.9 in (2.3 cm)  
Depth: 13.4 in (34.0 cm)

### COMSPHERE 3000 Series Carrier

Height: 10.5 in (26.7 cm) (6 EIA units)  
Width: 19.0 in (48.3 cm)  
Depth: 14.0 in (35.6 cm)

### Weight

3510 Standalone: 2.6 lb (1.2 Kg)  
3511 Carrier Card: 0.8 lb (0.4 Kg)  
COMSPHERE 3000 Series Carrier (with power module): 36 lb (16.3 Kg)  
Fan Module: 8.0 lb (3.6 Kg)

### Regulatory Approvals

FCC Part 15 - Class A computing device  
FCC Part 68 - Complies  
3510 DSU: Listed UL 478  
3511 DSU: COMSPHERE 3000 Series Carrier; Recognized UL 478  
CSA Safety - Cert. CSA 22.2, No. 220  
CSA Emissions - Class A digital apparatus  
Bell Canada - Complies(DSU only)

For additional information on this or any Paradyne product or service, contact the office nearest you. Or, dial toll-free (USA and Canada) 800 482-3333 or call 813 530-8623. Fax (USA) 813 530-2103.

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