

The CTDI XCel-8™ System

with Selectable Voltage and Mechanized Drop Testing

CTDI ADSL Service Advantages

Supported by the technical and service expertise of CTDI, the XCel-8 System is now backed by the most comprehensive DSL service solution in the telecom industry. Now, CTDI customers not only have high-quality DSL products, but an expanded DSL service solution that includes network planning, sales and technical support, web-based ordering, system monitoring and world-class DSL maintenance services. CTDI, a leader in the telecom service arena, will take our commitment to service excellence to the highest level.

Ask for a turnkey quote including engineering and installation.

Provide life-line voice service, CLASS and V.90 modem access over one copper pair to eight subscribers located as far as 130,000 feet from the central office.

Farther: CTDI XCel-8 systems transport eight digital POTS lines on a single copper pair up to 130,000 feet from the central office. The XCel-8 distributes multiple services along a copper loop or carries all services the full distance.

Faster: Line powering and easy installation allow network access providers to deploy services as fast as subscribers request them. The XCel-8 system's reliable V.90 modem support delivers faster Internet access speeds and reduces customer complaints.

XCel systems are the most cost-effective alternative to deploying more fiber, copper wire, or other expensive network equipment. By breaking the local loop bottleneck, CTDI is pioneering new territory with its line powered access platform.

- ### XCel-8 Features
- Single pair line powered
 - Voltage selectable at ±130 or ±190 volts DC
 - V.90 modem support
 - Remote Advanced Diagnostics
 - Mechanized testing to subscriber handset
 - Easy installation
 - Flexible configurations
 - High-density CO shelf
 - NEBS level 3 certified
- ### Get These Benefits Now
- Most cost effective alternative for achieving pair relief
 - Provide faster Internet access speeds and reduce customer modem speed complaints
 - Reach customers up to 130,000 feet away
 - Deliver distributed or grouped applications
 - Conserve valuable CO space



Contact Information

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Specifications

Line Rate	544kb/s
Line Code	2B1Q
Bandwidth Allocation	(8 x 64 kb/s POTS + 32 kb/s overhead)
Max Loop Resistance	~2000 ohm system total ~1000 ohm per span
Line Attenuation	<38.5 dB per span @ 136 kHz
Line Power Feed	A2 class for ±130V, A3 class for ±190V
Voltage	Selectable ±130 or ±190 volts DC
Max Current	98 mA
Safety	5 mA tip/ring to ground, ground fault interrupt

All OSP elements can be powered from the central office.
No local power is required. Local power option extends range by 3x.

Configur8r™ System Design Software is available for system and loop configuration. It runs on Microsoft Excel.

XCel-8 Central Office

Terminal Shelf and CTU Line Cards

Powering	-48 Vdc battery
DSL Power Supply	On each CTU card
Common Cards	Alarm and Control Unit (ACU) Common Mechanized Drop Test (CMDT)
Modularity	16 cards per 19" shelf, 20 per 23" shelf
Fusing	20 Amp, two per shelf
Card Insertion	Hot-loadable
NEBS	Meets GR-63 and GR-1089
NEBS Certification	Level 3 by Independent Certification Lab

Mechanical Data

COT- Multi-Service Shelf	19"W (or 23" W) x 11.5" H x 12"D
RTU, STR, STRLP, ADR, TAD	7" W x 15" H x 5" D, 3 lb. Weight
STRM	2.5" H x 0.75"W x 6.5" D Plug-in for 239-Type Housing

Environmental

Central Office Equipment	-40°C to 65°C, 95% RH non-condensing
Outside Plant Elements	-40°C to 65° C, 95% RH non-condensing
OSP Element Protection	3-element Protectors, Field Replaceable

Mechanized Loop Test

Testing	CTDI Standard Loop Test 4Tel or MLT Signatures Mechanized Loop and Drop Test TR-398 or GR-909 Signatures
Physical	CMDT card required for metallic testing Loop pair or optional bypass pair

OSP: STR, STRLP, ADR, TAD, RTU

Powering	From the DSL pair
Package	Pole/Wall mountable enclosure
Visual LED Indications	Power, Sync Upstream, Sync Downstream, Busy Downstream

Locally powered repeaters (STRLP) are available for extending reach.

XCel-8 - OSP Element POTS Interface

Number of Lines	Varies by unit type (ADR, TAD, RTU) 8 Total per XCel-8 Loop
On Hook Voltage	48 Vdc nominal
Off Hook Current	23 mA
Active Lines	All 8 off hook, or 5 off hook and 3 ringing
Ringers	3 x 5 REN at >40V RMS or 15 REN total
Ring Frequency	20Hz regardless of CO frequency
Subscriber Drop Reach	1200 ohm total w/phone
Insertion Loss	-4 dB
Transmission/Signal Impedance	Meets TR-57, SS7 600ohm +2µF

Diagnostics

XCel-Advanced Diagnostics	RS-232 Front Panel DB9 or dial-up modem remote access
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XCel-8 System Equipment List

Multi-Service Shelf / Standard Shelf and Common Equipment

19" Multi-Service Shelf, TR-057	990117-B	16 CTU card capacity for 19" racks
23" Multi-Service Shelf, TR-057	990118-B	20 CTU card capacity for 23" racks
NIC w/Alarm and Test Card, TR-057, NIC	990444	One NIC or ACU per Multi-Service Shelf, IP Network Access, Alarm and Test card
Common Mechanized Drop Test (CMDT)	990329	One CMDT per Multi-Service Shelf for metallic test only

XCel-8 Common Repeaters OSP

Straight Through Rptr Module, Outdoor, STR	990064-E	Line powered repeater
Straight Through Rptr Module, Outdoor, STRM	990102-A	Line powered repeater plug-in for 239-Type housing

XCel-8 Standard Elements (Standard DSL Framing)

CO Terminal Unit, MSA, CTU8 SELV	990365	XCel-8 line card, selectable voltage, standard framing, 8 lines per pair
Straight Through Rptr, Outdoor, STRLP	990110	Locally Powered repeater +/-190V DSL Transport
Add-Drop Repeater, Outdoor, ADR4	990100-C	4 line add/drop repeater standard
Terminal Add-Drop, Outdoor, TAD4	990101-C	4 line remote terminal standard
Remote Terminal Unit, Outdoor, RTU8E	990129-B	8 line remote terminal standard w/ Ext Drop

XCel-8 MDT Elements (MDT DSL Framing)

CO Terminal Unit, MSA, CTU8 SELV M9	990369	XCel-8 line card, selectable voltage, MDT framing, 8 lines per pair
Straight Through Rptr, Outdoor, STRLP MDT	990250	Locally Powered repeater +/-130V DSL Transport
Add-Drop Repeater, Outdoor, ADR4E MDT	990132-B	4 line add/drop repeater, Mechanized Drop Testing, Ext Drop
Terminal Add-Drop, Outdoor, TAD4E MDT	990134-B	4 line remote terminal, Mechanized Drop Testing, Ext Drop
Remote Terminal Unit, Outdoor, RTU8E MDT	990128-A	8 line remote terminal, Mechanized Drop Testing, Ext Drop

Cable Stub Kits for XCel-8 OSP and Miscellaneous

Cable Stub Kit, 10 Pair, STB10	990092	Stub Kit, 20 feet, for RTU8 OSP units
Cable Stub Kit, 6 Pair, STB6	990093	Stub Kit, 20 feet, for STR, ADR4 and TAD4 OSP units
XCel-Advanced Diagnostics	990355	PC Software, Advanced Diagnostics