



# The CTDI XCel-12GS™

**POTS Service 50 miles from the CO**

## CTDI Service Advantages

Supported by the technical and service expertise of CTDI, the XCel-12 GS System is now backed by the most comprehensive access service solution in the telecom industry. Now, CTDI customers not only have high-quality access products, but an expanded service solution that includes network planning, sales and technical support, web-based ordering, system monitoring and world-class 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 twelve subscribers located as far as 100,000 feet from the central office.**

The XCel-12GS replaces the XCel-12 system, supports the XCel-8 system and offers the following new features:

- The XCel-12GS uses spectrum-friendly g.SHDSL transport
- Advanced Diagnostics software provides remote performance monitoring of all active elements including central office and outside plant
- The XCel-12GS remote terminal electronics module can be unplugged and removed for quick and easy maintenance, eliminating the need to remove and replace drop wires

**Farther:** The XCel-12 GS systems transport twelve digital POTS lines used for voice, CLASS services, and V.90 access on a single copper pair up to 50,000 feet or more from the central office. The XCel-12 GS distributes multiple services along a copper loop and 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-12 GS system's patented V.90 modem technology delivers faster Internet access speeds and reduces customer complaints.

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

## XCel-12 GS Features

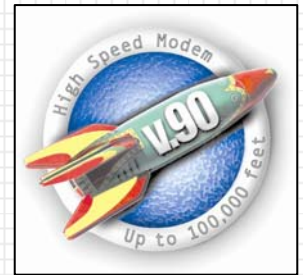
- Compliant with ANSI T1.417 spectrum management
- High pair gain of 12:1
- Voltage selectable at  $\pm 130$  or  $\pm 190$  volts DC
- Single pair line powered
- Remote Advanced Diagnostics
- V.90 modem support
- CLASS features supported
- Mechanized testing to subscriber handset
- Easy installation
- 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 50,000 feet or more away
- Deliver distributed or grouped applications
- Conserve valuable CO space

# The CTDI XCel-12 GS™

with Selectable Voltage and Mechanized Drop Testing



## Specifications

|                      |   |
|----------------------|---|
| Line Rate            | 784 kb/s  |
| Line Code            | TC-PAM 16   |
| Transport            | G.shdsl   |
| Bandwidth Allocation | 12 x 64 kb/s - POTS + 16 kb/s overhead  |
| Max Loop Resistance  | ~2500-3000 ohm system total<br>[~1000 ohm per span]   |
| Line Attenuation     | <41.5 dB per span @ 136 kHz   |
| Line Power Feed      | A2 class for ±130V, A3 class for ±190V  |
| Voltage Selectable   | ±130 or ±190 volts DC, tip/ring to ground   |
| Max Current          | 98 mA   |
| Safety               | ± 130V systems - 5 mA tip/ring to ground, GFI<br>± 190V systems - 10 mA tip/ring to ground, GFI |

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

### XCel-12 GS 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)<br>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                          |
| STR/STRLP                | 7" W x 15" H x 5" D, 3 lb. Weight                         |
| ADR                      | 8" W x 16.5" H x 5" D, 3.5 lb. Weight                     |
| STRM                     | 2.5" H x 0.75" W x 6.5" D<br>Plug-in for 239-Type Housing |
| RTU                      | 8" W x 16.5" H x 5" D, 4 lb. Weight                       |

### 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<br>4Tel or MLT Signatures<br>Mechanized Loop and Drop Test<br>TR-398 or GR-909 Signatures<br>CMDT card required for metallic testing<br>Loop pair or optional bypass pair |
| Physical |   |

### OSP: STR, STRLP, ADR, RTU

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

### XCel-12 GS - OSP Element POTS Interface

|                               |  |
|-------------------------------|--|
| Number of Lines               | Varies by unit type (ADR, RTU)<br>12 Total per XCel-12 GS Loop |
| On Hook Voltage               | 48 Vdc nominal   |
| Off Hook Current              | 23 mA  |
| Active Lines                  | All 12 off hook, or 9 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         | 560 ohm total w/phone  |
| Insertion Loss                | -4 dB  |
| Transmission/Signal Impedance | Meets TR-57, SS7<br>600ohm +2µF                                |

## XCel-12 GS System Equipment List

### Multi-Service 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                          |
| XCel Network Interface Card - ACU  | 990444   | HC Alarm Card, w/ExtAlarm                                   |
| Common Mechanized Drop Test (CMDT) | 990329   | One CMDT per Multi-Service Shelf for metallic test only     |
| XCel-Advanced Diagnostics          | 990355   | Compact Disc, PC Software, Advanced Diagnostics Application |

### XCel-12 GS Shelf Line Units

|                                 |        |   |
|---------------------------------|--------|---|
| Central Terminal Unit, CTU12 GS | 990315 | Line Card for XCel-12 GS, 12 lines per pair, selectable voltage |
|---------------------------------|--------|---|

### XCel-12 GS Remote Terminals and Repeaters

|  |        |  |
|--|--------|--|
| Straight Through Repeater, Outdoor STR GS          | 990322 | Line powered repeater                            |
| Straight Through Repeater, Outdoor STRLP GS        | 990324 | Locally powered repeater with selectable voltage |
| Straight Through Repeater Module, Outdoor, STRM GS | 990323 | Repeater plug in for 239-type housing            |
| Add-Drop Repeater, Outdoor, ADR4 GS                | 990320 | 4 line add/drop repeater                         |
| Remote Terminal Unit, Outdoor, RTU12 GS            | 990318 | 12 line remote terminal                          |

### Cable Stub Kits for XCel-12 GS

|                                |        |                                 |
|--------------------------------|--------|---------------------------------|
| Cable Stub Kit, 14 Pair, STB14 | 990183 | Stub Kit, 20 feet, for RTU12    |
| Cable Stub Kit, 6 Pair, STB6   | 990093 | Stub Kit, 20 feet, for STR, ADR |



## Contact Information

### Telephone

800.297.2424  
Fax 510.226.8785

### Web & E-Mail:

www.CTDI.com

### CTDI Corporate Office

1373 Enterprise Drive  
West Chester, PA 19380