

## MultiConnect<sup>®</sup> OCG-D

Open Communications Gateways - Device



The MultiConnect<sup>®</sup> OCG-D open communications gateways with CoreCDP<sup>®</sup> comprise an open Linux development environment and a fully certified hardware offering that includes multiple interfaces and internal peripherals in one application-ready end user solution. Applications that require device networking capability can now be embedded directly onto select MultiTech hardware, providing a flexible, quick and cost-effective way to bring your solution to market.

### DEVELOPMENT HARDWARE

- Application-ready hardware platform
- Includes GPS and cellular modem
- Multiple interfaces available (serial, USB, Ethernet)
- 36-pin GPIO interface
- FCC, IC, UL, PTCRB and R&TTE certified

### CORECDP SOFTWARE

- Custom Linux distribution
- Provides complete Linux build environment
- Cross-compile thousands of open source software packages
- Create custom applications in a short period of time

### SUPPORT

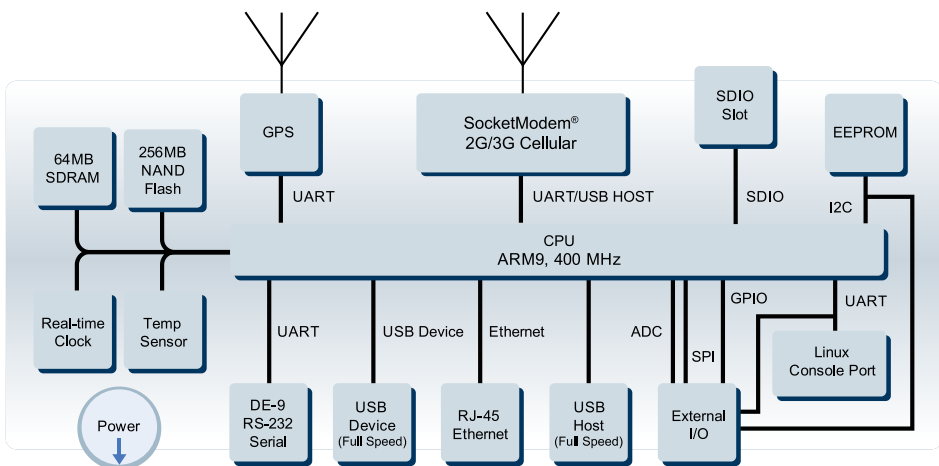
- Advanced developer support available
- Established developer community available at [www.multitech.net](http://www.multitech.net)
- Two-year warranty

### DEPLOYMENT MODELS

- Non-cellular, cellular-only and cellular/GPS models available
- Standard and customized deployment models available
- FCC, IC, UL, PTCRB and R&TTE certified

### BENEFITS

- Linux-based open source software
- Proven hardware for the development and deployment of custom applications
- Cost-effective alternative to custom manufacturing
- Comprehensive service and developer support



## SPECIFICATIONS

| Model                       | MTCDP-H5  | MTCDP-EV3  | MTCDP-E1   | MTCDP-G2   |
|-----------------------------|---|--|--|--|
| Performance                 | HSPA+   | EV-DO<br>CDMA2000 1xRTT  | <b>EDGE:</b> E-GPRS Class 12<br><b>GPRS:</b> Class 10  | GPRS Class 10  |
| Frequency Bands (MHz)       | <b>Hepta-band:</b><br>800/850/900/AWS<br>1700/1900/2100<br><b>Triple-band:</b><br>2100/1900/850<br>with Rx diversity  | <b>Dual-band:</b> 800/1900<br>CDMA; Up to 3.1 Mbps<br>downlink/Up to 1.8Mbps<br>uplink | <b>Quad-band:</b> GSM/<br>GPRS/EDGE<br>850/900/1800/1900   | <b>Quad-band:</b> GSM<br>850/900/1800/1900             |
| <b>Environmental†</b>       |   |  |  |  |
| Operating Temperature*      | -22° to +140° F<br>(-30° to +60° C)*  | -40° to +167° F<br>(-40° to +75° C)*   | -31° to +167° F<br>(-35° to +75° C)*   | -40° to +185° F<br>(-40° to +85° C)*                   |
|                             | * UL Listed @ 104° F (40° C), limited by power supply. UL Certification does not apply or extend to an ambient above 104° F (40° C) and has not been evaluated by UL for ambient greater than 104° F (40° C). |  |  |  |
| Storage Temperature         | -40° to +185° F (-40° to +85° C)  |  |  |  |
| Humidity                    | 20% to 90% RH, noncondensing  |  |  |  |
| <b>Physical Description</b> |   |  |  |  |
| Dimensions (L x W x H)      | 2.8" x 7.0" x 1.2"<br>(7.1 cm x 17.8 cm x 3.0 cm)   |  |  |  |
| Weight                      | 11.5 oz (326 g)   |  |  |  |
| <b>Certifications</b>       |   |  |  |  |
| EMC Compliance†             | FCC Class B, EN55022,<br>EN55024  | FCC Class B  | FCC Class B, EN55022, EN55024  |  |
| Radio Compliance            | FCC Part 22, 24, RSS132,<br>133, EN301 489-1, EN489-3<br>(-GP only), EN301 489-7,<br>EN301 511, AS/ACIF S042.1,<br>S042.3   | FCC Part 22, 24, RSS132,<br>133  | FCC Part 22, 24, RSS132,133, EN301 489-1, EN489-3<br>(-GP only), EN301 489-7, EN301 511, AS/ACIF S042.1,<br>S042.3 |  |
| Safety†                     | UL60950-1, cUL60950-1,<br>IEC60950-1  | UL60950-1, cUL60950-1,<br>IEC60950-1   | UL60950-1, cUL60950-1,<br>IEC60950-1   | UL60950-1, cUL60950-1,<br>IEC60950-1,<br>AS/NZS60950-1 |
| Network                     | PTCRB   | N/A  | PTCRB  |  |

† Specifications for non-cellular versions.

## CORECDP SOFTWARE SPECIFICATIONS

### (Version 2.3.3)

Linux Kernel 2.6.35.14

Utilizes OpenEmbedded framework

Tested with the following Linux OS: Ubuntu 10.04 to 12.10,  
Debian 6 and 7 openSUSE 11.4 - 12.2, Fedora Core 12 - 17,  
CentOS 6.5

Drivers to support all peripherals included on the platform  
hardware

Notable Software Versions: Python 2.6.6, JamVM 1.5.4 (Java),  
Perl 5.10.1. Ruby 1.9.3-p392, PHP 5.3.6

A complete list of software versions is available at  
[www.multitech.net](http://www.multitech.net)

Networking: PPP, iptables

Web Server: lighttpd

Remote shell: SSH

Database: sqlite3

Network file system: samba

Security: OpenSSL

Software Development Kit: MultiConnect SDK

## HARDWARE SPECIFICATIONS

### Processor & Memory

|  |   |
|--|---|
| 400 MHz ARM9 CPU<br>256MB NAND flash<br>64MB SDRAM | 2GB industrial grade SD<br>Flash Card (included w/<br>development models) |
|--|---|

### Internal Peripherals

|   |  |
|---|--|
| RTC (Real Time Clock)<br>Dedicated GPS receiver<br>Cellular modem | Debug 3 pin serial console<br>port<br>Temperature sensor |
|---|--|

### Connections

|  |   |
|--|---|
| LAN: RJ-45, 10/100BaseT<br>RS-232 Data: DB-9 female,<br>921.6K bps max serial<br>speed<br>GSM/GPS Antenna: 50<br>ohm SMA female<br>Power: 2.5mm miniature<br>screw<br>SIM: Standard 1.8V & 3V<br>SIM receptacle (mini SIM) | USB Host: USB 2.0 Full<br>Speed (12 Mbps)<br>Host Connector USB<br>Device: USB 2.0 Full<br>Speed (12 Mbps) mini-B<br>device connector<br>GPIO: 36-pin Molex<br>connection<br>SD Memory Flash Card: SD<br>memory card slot |
|--|---|

### GPIO Functions:\*

|  |   |
|--|---|
| Pins 1-9: General Purpose<br>Input<br>Pins 10-14: Analog Input<br>Pins 15-24: General<br>Purpose Output<br>Pins 25-29: SPI | Pins 30-31: Debug<br>Pin 32: GPS PPS<br>Pins 33-34: I2C<br>Pin 35: No Connect<br>Pin 36: Ground (SPI, I2C,<br>Serial) |
|--|---|

\* For more specifications on GPIO functionality, visit [www.multitech.net](http://www.multitech.net)

### Interfaces

|   |   |
|---|---|
| General Purpose LEDs:<br>Power, Cellular Link<br>Status, Ethernet Link, &<br>Speed<br>Programmable LEDs: 5<br>user-defined, application-<br>specific LEDs | Short Message Services -<br>SMS<br>Text & PDU<br>Point-to-Point (MO/MT) |
|---|---|

### GPS

|   |  |
|---|--|
| Position: 2.5 meters<br>Acquisition: Hot start 1<br>second; cold start 29<br>seconds avg. | Sensitivity: Tracking -161<br>dBm<br>Protocol: NMEA-0183<br>V3.01, GGA, GLL, GSA,<br>GSV, RMC, VTG |
|---|--|

### Power Requirements

Input Power: 9 to 32VDC

## HIGHLIGHTS

### Custom Application Development and Deployment

The MultiConnect OCG-D offers customers the opportunity to develop and deploy custom applications on the same product platform. Developer kits include all the hardware, cables and accessories required to develop unique applications. Once complete, deployment models are available for the sale and distribution of the solution within a proven and approved hardware platform.

### Linux-Based Open Source

The MultiConnect OCG-D uses the OpenEmbedded framework as the base to provide a custom Linux distribution, known as CoreCDP. This allows developers to cross-compile thousands of open source software packages and to create custom applications in a very short period of time. In many cases, existing applications can easily be run with little or no modification.

### Carrier Approved

All MultiConnect OCG-D developer kits and deployment models are PTCRB approved, relieving customers the burden and expense of obtaining these approvals independently. This also provides a faster time-to-market and improved return on investment.

### Multiple Interface Options

The MultiConnect OCG-D provides the broadest range of interface options, including serial, USB host, and Ethernet, giving customers seamless connectivity to their applications.

### GPIO

The 36-pin general purpose input/output connection, which includes SPI, I2C, serial, ADC, and GPS connections, provides multiple ways of interfacing with any application.

### Proof of Concept

Customers planning their own internal custom developments can use the MultiConnect OCG-D to create beta units and prototypes for use in voice of customer and proof of concept activities. These models can be generated quickly and with little additional expense. The input from these activities can improve the feature set of the customer's final product.

## ORDERING INFORMATION

### Developer Kits

Developer kits include: Modem with GPS receiver, universal power supply, GSM/GPS antenna, GPIO cable, serial debug cable, Ethernet cable, RS-232 cable, compact flash, USB cables, DVD, and screwdriver.

| Product                 | Description                                   | Region |
|-------------------------|---|--------|
| MTCDP-H5-GP-DK-1.0      | 3G HSPA+ Developer Kit                        | Global |
| MTCDP-EV3-GP-N3-DK-1.0  | 3G EV-DO Developer Kit (Verizon Wireless)     | US     |
| MTCDP-EV3-GP-N16-DK-1.0 | 3G EV-DO Developer Kit (Aeris Communications) | US     |
| MTCDP-E1-GP-DK-1.0      | 2.5G EDGE Developer Kit                       | Global |
| MTCDP-G2-GP-DK-1.0      | 2G GPRS Developer Kit                         | Global |
| MTCDP-GP-DK-1.0         | Non-Cellular Developer Kit                    | Global |

### Deployment Models (includes GPS receiver)\*

Deployment models are modem only. All accessories are sold separately.

| Product              | Description                                      | Region |
|----------------------|--|--------|
| MTCDP-H5-GP-1.0      | 3G HSPA+ Deployment Model                        | Global |
| MTCDP-EV3-GP-N3-1.0  | 3G EV-DO Deployment Model (Verizon Wireless)     | US     |
| MTCDP-EV3-GP-N16-1.0 | 3G EV-DO Deployment Model (Aeris Communications) | US     |
| MTCDP-E1-GP-1.0      | 2.5G EDGE Deployment Model                       | Global |
| MTCDP-G2-GP-1.0      | 2G GPRS Deployment Model                         | Global |
| MTCDP-GP-1.0         | Non-Cellular Deployment Model                    | Global |

### Deployment Models\*

Deployment models are modem only. All accessories are sold separately.

| Product           | Description                                      | Region |
|-------------------|--|--------|
| MTCDP-H5-1.0      | 3G HSPA+ Deployment Model                        | Global |
| MTCDP-EV3-N3-1.0  | 3G EV-DO Deployment Model (Verizon Wireless)     | US     |
| MTCDP-EV3-N16-1.0 | 3G EV-DO Deployment Model (Aeris Communications) | US     |
| MTCDP-E1-1.0      | 2.5G EDGE Deployment Model                       | Global |
| MTCDP-G2-1.0      | 2G GPRS Deployment Model                         | Global |
| MTCDP-1.0         | Non-Cellular Deployment Model                    | Global |

### ILS deviceWISE® Models

This OCG product variant comes ready to integrate directly with the deviceWISE Application Enablement Platform (AEP). The deviceWISE AEP provides seamless connectivity and integration across any remote device, any network and any enterprise application in the back office - without any programming. The do-it-yourself platform reduces the risk, time-to-market, complexity and cost of deploying solutions for remote monitoring and control, industrial automation, asset tracking and field service operations. See [www.devicewise.com](http://www.devicewise.com) for more information.

| Product                   | Description  | Region |
|---------------------------|--|--------|
| MTCDP-H5-1.0-DW           | 3G HSPA+ deviceWISE Deployment Model                           | Global |
| MTCDP-H5-GP-1.0-DW        | 3G HSPA+ deviceWISE Deployment Model w/ GPS                    | Global |
| MTCDP-H5-GP-DK-1.0-DW     | 3G HSPA+ deviceWISE Developer Kit                              | Global |
| MTCDP-EV3-N3-1.0-DW       | 3G EV-DO deviceWISE Deployment Model (Verizon Wireless)        | US     |
| MTCDP-EV3-GP-N3-1.0-DW    | 3G EV-DO deviceWISE Deployment Model w/ GPS (Verizon Wireless) | USA    |
| MTCDP-EV3-GP-N3-DK-1.0-DW | 3G EV-DO deviceWISE Developer Kit (Verizon Wireless)           | US     |

### Accessories

|                      |   |
|----------------------|---|
| MTOCG-BOB-DK         | GPIO Cable and Break-out Board  |
| CA-CDP-GPIO          | 36-pin, General Purpose Input/Output Cable (open ended)   |
| PS-9VCB-LBC-U-Global | 100 - 240V 9V-1.7A changeable blade power supply with three interchangeable blades (U.S., Euro, UK) |
| ANGSM-GPS-IMM        | GSM/GPS Combination Antenna, 9.8 feet (3 meters)  |
| CA-CDP-DEBUG         | 3-Pin, Serial Debug Cable, 6 feet (1.8 meters)  |
| CA9-9-D              | RS-232 Cable, DB9F-DB9M, 6 feet (1.8 meters)  |
| CA-RJ-45             | RJ45 (CAT5E, 10/100 Mbps) Cable, 6 feet (1.8 meters)  |
| CA-USB               | USB A/B Cable, 4.9 feet (1.5 meters)  |
| CA-USB-A-MINI-B      | USB A-to-Mini-B Cable, 3.9 feet (1.2 meters)  |

\* Custom deployment options available. Contact your MultiTech representative for details.

Visit [www.multitech.com/solplat/celldev.go](http://www.multitech.com/solplat/celldev.go) for additional product offerings and information.

Produced in the U.S. of U.S. and non-U.S. components. Features and specifications are subject to change without notice.

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## SERVICES & WARRANTY

MultiTech's comprehensive Support Services programs offer a full array of options to suit your specific needs. These services are aimed at protecting your investment, extending the life of your solution or product, and reducing total cost of ownership. Our seasoned technical experts, with an average tenure of more than 10 years, can walk you through smooth installations, troubleshoot issues and help you with configurations.

## INSTALLATION SUPPORT

MultiTech's Installation Support Service delivers priority service with the ability to work one-on-one with an experienced MultiTech technical support engineer, to guide you through the installation process for our products.

## TECHNICAL SUPPORT SERVICES

At MultiTech, we're committed to providing you personalized attention and quality service while providing you a quick response to your product support needs. We have several options of support for you to choose from.

For additional information on Support Services as well as other service offerings, please contact your MultiTech representative or visit [www.multitech.com/support.go](http://www.multitech.com/support.go)

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