

# C3IMeshPlus

## High Performance Utility Communications Module

### INTRODUCING C3IMeshPlus

The **ONLY** Real-Time capable utility metering-load management solution is available! C3IMeshPlus technology offers **unmatched capabilities** for the small to medium municipal utility.

The C3IMeshPlus Integrated Gateway now provides the powerful features utilities need and installation of the unit in the meter now takes only 30 seconds. *No other technology does as much for the utility and customers.*

#### *C3IMeshPlus Technology*

##### **METER DEVICE FLEXIBILITY**

- Aclara I-210+ Electric Meters
- Aclara KV2C Electric Meters
- Aclara I-210+RD Disconnect
- Aclara I-210+C TOU Meters

##### **COMMUNICATIONS**

- High Speed (256 kbps)
- Digi XBEE XR
- Encrypted
- Bi-Directional
- Real Time Data Access
- Open Protocol Provided

##### **DATA PROVIDED**

- Kwh Reading
- Voltage
- Instant KW
- 30 Minute Profile Data
- Monthly High Demand
- Current Per Phase
- Instant Power Factor
- Remote Disconnect Status

##### **INSTALLATION**

- 10 and 12 PIN I-210+
- Simple Plug In
- Powerful Diagnostic Tools



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## High Performance Utility Communications Module

### *C3IMeshPlus Technology*

#### **METER READING**

- Real Time Data Available
- Flexible/Fast scheduled reads
- Move-In/Move Out reads
- Demand Metering-Reset
- TOU Metering
- Power Factor
- Received Energy-Generation
- Remote Disconnect
- Prepayment
- Emergency Conservation
- Load Profile Analysis
- Site—Meter Condition Flags
- Power Quality

#### **COMMUNICATIONS**

- 900 MHZ DigiMesh
- Optional LORA Devices
- Encrypted Data
- High Speed

#### **LOAD MANAGEMENT**

- Function Verification
- Fast Communication
- Flexible Device Options

#### **SUMMARY**

The C3IMeshPlus Network was designed to allow utilities and customers **Real Time** access to customer metering information as well as providing a fast two-way network for load control devices.

The C3IMeshPlus unit is contained within the Aclara I-210+, I-210+C, or KV2C type electric meters. Even though C3IMeshPlus is capable of receiving water reads from several device types, we recommend utilities utilize a dedicated water meter AMI system such as Kamstrup as more data is available through these specifically tailored systems.

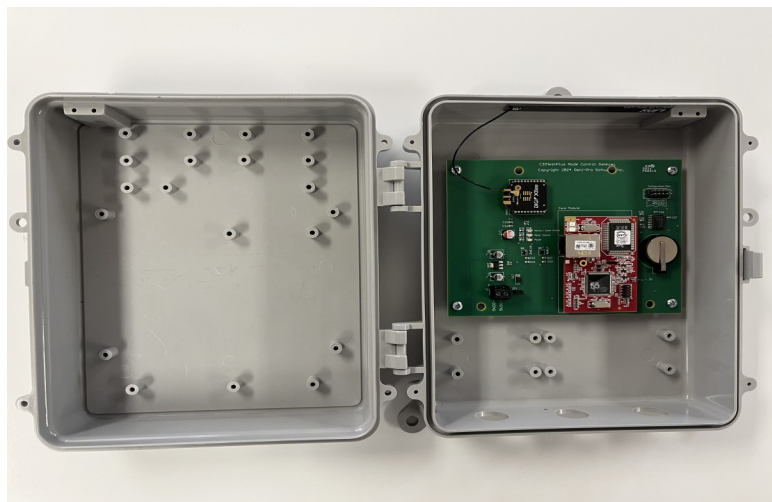
Metering data is updated in the master MDM database through flexible scheduling and can be accomplished every minute, hour, day, or month. Data can include consumption readings, demand, voltage, diagnostic flags, current per phase, power factor, Time of Use data, 30 minute profile readings, etc. Since C3IMeshPlus units can save approximately a year of 30 minute interval readings for each channel, analysis of the consumption for customers is easy. Imagine being able to determine every single customer's instant kw load in less than two minutes!

Load Management capability is also an integrated part of the C3IMeshPlus network.

#### **COMMUNICATIONS**

C3IMeshPlus networks utilize broadband communications to Node Control Gateways located throughout the community. Each gateway supports up to 128 meters. The gateways can be installed in groups of 4 at any geographical location with a broadband connection. Each gateway and network operates independently of the others, and this unique architecture allows us to obtain meter data at extreme speeds compared to other technologies.

Each Node Control Gateway (pictured below) is simply attached via ethernet cable to the network and powered via 5V plug in supply.



# C3IMeshPlus

## High Performance Network Communications

### **HIGH SPEED DATA AND CONTROL**

Each C3IMeshPlus unit functions as a data acquisition module and self healing mesh network communications node. The DigiMesh networking protocol automatically creates redundant pathways via all system devices and provides a reliable high speed encrypted path to meters and load control devices. The high speed Digi Xbee XR radio platform is utilized in the C3IMeshPlus module and the communications protocol is openly available.

### **ETHERNET NODE CONTROLLER ADVANTAGES**

Our unique network node controllers allow the C3IMesh Plus units within a community to be read in less than 2 minutes. These capabilities allow your selected customers to view consumption, demand, and power quality information quickly via the C3IWeb Portal. Meters typically bubble up their readings on an hourly basis.

Node controllers connect to the master via Ethernet and read their assigned units on schedules configured by the user. Meter reading and load management broadcasts are executed through each mesh network simultaneously, allowing very fast demand response from the devices.

### **REDUNDANCY AND TOOLS**

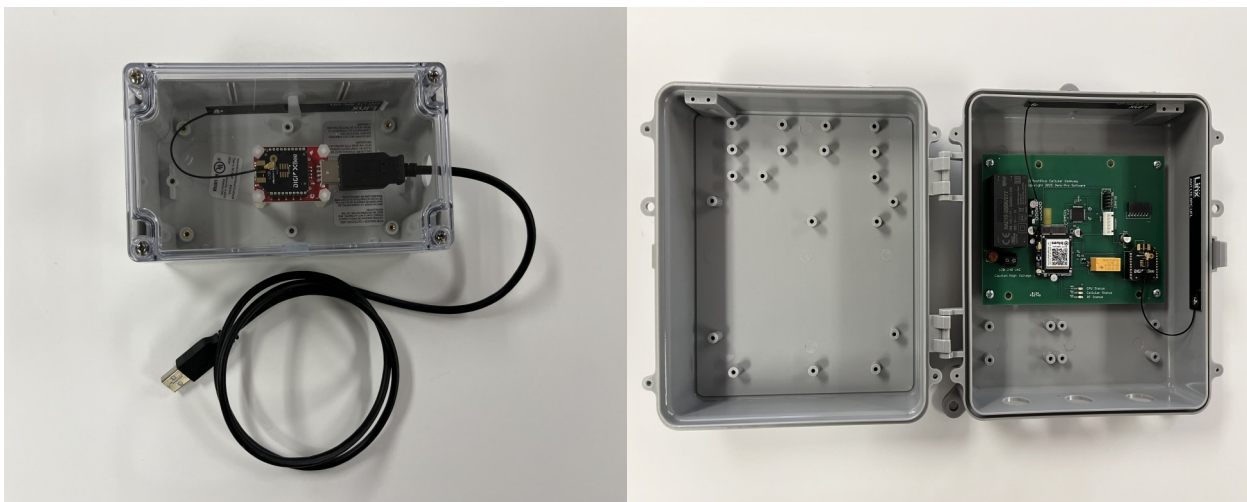
C3IMeshPlus features extremely simple and powerful tools to make installation fast and easy. **C3IProvisionPlus** Software and a network test unit is provided with a laptop for bench testing, field testing, configuration, and reading units in the event of a gateway or server failure. Meter reads obtained by the laptop may be sent directly to the master MDM so the reads are quickly available for billing.

**C3IMeshTest** module (pictured below-left) simply plugs into the USB port on any PC and allows communication with devices on the selected C3IMeshPlus network!

**C3IMeshCellular gateway** (pictured below-right) allows communications to C3IMeshPlus devices in areas without ethernet connectivity!

**C3IMeshRepeater** units provide range extension and network hop reduction when needed.

**DIGI XCTU** radio test software allows network diagnostics and remote radio access!



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#### LOAD MANAGEMENT

- Function Verification
- Fast Communication
- Flexible Device Options
- Powerful Maintenance Tools

#### AVAILABLE DEVICE SUMMARY

- C3IMeshPlusAdvanced
- C3IMeshPlusBasic
- C3IMeshPlusEthernet Gateway
- C3IMeshPlusGateway
- C3IMeshPlusCellular Gateway
- C3IMeshPlus Repeater
- TC260 Load Controller
- TC250 Load Controller
- MC140 Mini Load Controller
- C3IMeshPlus KV2C 3 Phase
- C3IMeshPlus KV2C Cellular with Digi XR Gateway
- TC250 Cellular-LORA Gateway
- TC250 LORA Load Controller

#### INSTALLATION

We designed the C3IMeshPlus Unit to install easily into the electric meter. It only takes 60 seconds to install it. Configuration and read validation is easily done in LMS3000 web portal.

#### TWO-WAY DATA STREAM-REAL TIME DATA

Two-way connectivity with devices in **Real Time** is a key feature of the C3IMeshPlus. It can be remotely configured from the server at any time, and can be polled on demand from the server at any time. C3IMeshPlus radio status is monitored by the assigned C3IMeshPlus Node Controller. Real Time data capability allows you instant access to transformer loading and voltage data, customer usage, power factor, and more!

#### ADVANCED LOAD CONTROL

Several load control options are available that are compatible with the C3IMeshPlus network. The revolutionary devices from Omni-Pro and EnTek Systems allow the user to instantly determine operational status of devices, connected load verification, and appliance cycling status.



The Digi XBee XR family operates in the 902 to 928 MHz range, delivering superior performance and interference immunity!

DigiMesh networking topology for redundancy, security, and reliability!

#### TRULY ADVANCED DEVICES

The total capabilities provided with C3IMeshPlus devices are unmatched in the industry. Nothing else brings you real time data, reliable connectivity with as many devices, multiple load management options, and total ease of deployment!

#### GETTING STARTED

With decades of experience in the utility automation business, we can help with new load management systems, upgrading existing load management systems, SCADA systems, meter reading, and several combinations of device functionality. Ask for a demo today!

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