Feature	NanoULTRA-Edge (OLD unit)	NanoULTRA - III *Elite*	NanoULTRA - III *Pro*	NanoULTRA - III *Lite*
Mobile	2G (Limited coverage and reducing)	2G, 3G, 4G (LTE Cat1)	2G, 3G, 4G (LTE Cat1)	2G, 3G, 4G (LTE Cat 1)
Other communications	No other comms	Wi-Fi, Ethernet	Ethernet	No other comms
Location	No on-board GPS, cell mast tracking	On board GPS, cell mast tracking when no GPS	On board GPS, cell mast tracking when no GPS	No on board GPS, cell mast tracking
Power	9-30Vdc. < 1 W idle	9 – 30 VDC (4 pin industrial socket), reverse polarity protection; surge protection >31 VDC 10us max . < 2 W idle, < 7 W Max	9 – 30 VDC (4 pin industrial socket), reverse polarity protection; surge protection >30 VDC 10us max . < 1.2 W idle, < 5 W Max	9 – 30 VDC (4 pin industrial socket), reverse polarity protection, surge protection >33 VDC 10us max. < 5 W
Size/Mounting	109*29*109mm. DIN rail bracket	110*50*100mm. DIN-rail bracket	83 x 25 x 74.2 mm – DIN rail bracket	74.5*25*64.4mm-DIN rail bracket
Antenna	1* SMA for 2G	2 x SMA for LTE, 2 x RP-SMA for Wi-Fi, 1 x SMA for GNSS	1 x SMA for LTE for GNSS	1 x SMA for LTE
Environmental	-10 to +75 °C (operational) , -20 to +85 °C (storage)	-40 °C to 75 °C, 10% to 90% non-condensing (operational)	-40 °C to 75 °C, 10% to 90% non-condensing (operational)	-40 °C to 75 °C, 10% to 90% non-condensing (operational)
On board memory (for when communications are interrupted)	Limited on board memory	200 modbus registers, sampled at a 20 second sample rate can be stored for 24 hours before being over written	200 modbus registers, sampled at a 20 second sample rate can be stored for 24 hours before being over written	200 modbus registers, sampled at a 20 second sample rate can be stored for 24 hours before being over written
FOTA (Firmware upgrade over the air)	Limited FOTA	Resilient and scalable FOTA	Resilient and scalable FOTA	Resilient and scalable FOTA
Serial	RS485	RS232/485/Modbus TCP	RS232/485/Modbus	RS485
I/O's	4 digital i/p's, 4 digital o/p's, 4 analogue inputs	3 x digital i/p's, 2 x digital o/p's (1*relay, 1 open collector), 1 analogue input (0-24V). USB2.0	3 x Configurable Inputs/Outputs. Digital input 0 - 6 V detected as logic low, 8 - 30 V detected as logic high. Open collector output, max output 30 V, 300 mA	2 x Configurable Inputs/Outputs. Digital input 0 - 6 V detected as logic low, 8 - 30 V detected as logic high. Open collector output, max output 30 V, 300 mA
On board Ethernet	No	4 x RJ45 ports (1xWAN, 3xLAN), 10/100 Mbps	16 port terminal (1XLAN) 10/100 Mbps	No
Status LEDs	1x Power LED 1* cell connection LED	1 x bi-colour connection status LED, 5 x connection strength LEDs, 4 x LAN status LEDs, 1 x Power LED	1 x bi-colour connection status LED, 3 x connection strength LEDs, 1 x LAN status LEDs, 1 x Power LED	3 x connection type status LEDs, 3 x connection strength LEDs, 1x Power LED

Feature	NanoULTRA -Edge (OLD unit)	NanoULTRA - III *Elite*	Nano ULTRA - III *Pro*	NanoULTRA - III *Lite*
Sampling frequency	Sampling time limited to 2 minutes	Sampling time down to 20 seconds (tested to 200 registers on 4 slaves). Event driven, burst sampling to 1second available	Sampling time down to 20 seconds (tested to 200 registers on 4 slaves). Event driven, burst sampling to 1second available	Sampling time down to 20 seconds (tested to 200 registers on 4 slaves). Event driven, burst sampling to 1second available
SIM Holder	Single SIM	Dual SIM card slots for application that require redundancy at this level	Dual SIM card slots (Mini SIM) for application that require redundancy at this level	Single SIM
Modbus handling	Limited modbus handling	Resilient, scalable and reliable modbus handling via CDLSmartHub™.. Supports block and singular register reads. Modbus register maps stored and provisioned via CDLSmartHub™.	Resilient, scalable and reliable modbus handling via CDLSmartHub™. Supports block and singular register reads. Modbus register maps stored and provisioned via CDLSmartHub™.	Resilient, scalable and reliable modbus handling via CDLSmartHub™. Supports block and singular register reads. Modbus register maps stored and provisioned via CDLSmartHub™.
Gateway diagnostics	Limited diagnostics	Comprehensive diagnostic capabilities. Live interrogation of field-based unit	Comprehensive diagnostic capabilities. Live interrogation of field-based unit	Comprehensive diagnostic capabilities. Live interrogation of field-based unit
Extra functionality	-	On board ethernet for routing ethernet based devices to the CDLSmartHub™. e.g. Matrix+	On board ethernet	-
Approvals	CE	CE/RED, FCC, IC/ISED, EAC, RCM, PTCRB, RoHS, WEEE, Wi-Fi Alliance CE/RED, FCC, IC, PTCRB, RCM, EAC, CCC, RoHS, WEEE, IP rating, Anatel, GCF, REACH, E-mark, DNV GL, ECE Regulation 118, Morocco ANRT, Thailand NBTC, Ukraine UCRF, SDPPI (POSTEL), WiFi Certified, MODBUS Conformance AT&T, Verizon Vehicle- ECE R10 (E-mark), ECE R118	CE/RED, EAC, RoHS, WEEE	CE/RED, EAC, RoHS, WEEE
SD Card	Yes	Yes	No	No
CDLSmartHub™ IoT platform connectivity	Yes	Yes	Yes	Yes
Extensive range of signal conditioning/expansion modules	Yes	Yes	Yes	Yes

Nano ULTRA-III
UNIVERSAL ASSET TO CLOUD SOLUTION

050-EAA- Elite DATA SHEET

Managing a network of field assets has never been easier with the NanoULTRA – III. It has the flexibility of up I/Os, option of integrated SD card and communication via mobile phone networks. Its high-resolution data transfer happens seamlessly and securely from multiple assets to our secure cloud platform, the CDLSmartHub™, where the raw data can be turned into actionable insights.

From the CDLSmartHub™ you can configure and manage assets, set alarms, view audit trails, integrate and export
data, view trends, visualise data and integrate 3rd party analytics. Investing in the NanoULTRA - III and CDLSmartHub™, gives you access to a fully integrated end-to-end IoT solution to effectively manage your assets.

Key Features

- Seamless cellular communication with the CDLSmartHub™ asset cloud platform.
- Simple installation and configuration, achievable at scale with non-technical employees
- RS485/232 communication with toolset to quickly set up Modbus communications (one

  off configuration charges apply – see price list)
- On board Wi-Fi and Ethernet connectivity
- Digital and Analogue i/o's available (CDL also offer wide range of expansion modules)
- Worldwide accreditations offering a truly global, enterprise grade solution
- GPS location and tracking capabilities
- Integrated SD card storage for mass storage of granular data sets
- Firmware Over The Air (FOTA) for agile innovation and system management

Cloud based IoT platform

Email and SMS alerts

Application Examples

Single and multi-site installations • nationally and internationally • Embedded solutions for original equipment manufacturers (OEM) • Energy & carbon management systems • Voltage optimisation • Water quality instrumentation • Process monitoring and control • Corrosion monitoring • Clean renewable & Hybrid power • Portable generators • UPS & emergency power systems • Smart building controls • Smart grid transformer monitoring

TECHNICAL SPECIFICATION

Physical

- Aluminium housing, plastic panels
- 100 x 110 x 50mm
- Weight 287g
- Supplied with DIN rail adapter

Standard On-board Inputs and Outputs

- 3 x Inputs
- (Digital, Digital galvanically isolated,
- Analog) + 1 Digital Input on power connector
- 2 x Outputs (30 V, 250 mA digital open
- output / 24 V, 4 A SPST relay output) + 1 Digital O.C. Output on power connector

Communication connectivity

- RS232
- RS485
- Enhanced tool set for Modbus register mapping

Power Supply

9 – 30 VDC (4 pin industrial socket), reverse polarity protection; surge protection >31 VDC 10us max. < 2 W idle, < 7 W Max

Environmental

-40 °C to 75 °C, 10% to 90% non-condensing (operational)

Connectors

- 4 pin DC connector
- 1 x 4 pin DC
- 4 x Ethernet
- 2 x Mobile SMA
- 2 x WiFi RP-SMA
- 1 x GPS SMA
- 1 x RS232
- 1 x 6 pin RS485
- 1 x 10 pin I/O
- USB 2.0

LEDs and Button

- 1x Power
- 1 x bi-colour connection status
- 5 x connection strength
- 4 x LAN status

Expansion signal conditioning module options

- 8* Relay output
- 16* Digital input
- 8* Analogue input (0-10V), 2* analogue o/p (0-10V) 4*DO
- 8* Analogue input (4-20mA/thermocouple/thermistor)
- 4*DI

Modem

2G/3G/4G
4G (LTE Cat1) – Cat 4 DL up to 150 Mbps, UL up to 50 M bps; DC-HSPA+; UMTS; TD-SCDMA; EDGE; GPRS

On board Ethernet

4 x RJ45 ports (1xWAN, 3xLAN), 10/100 Mbps
On board ethernet for routing ethernet based devices to the CDLSmartHub e.g. Matrix+

Other communications

Wi-Fi, Ethernet

Approvals

CE/RED, FCC, IC/ISED, EAC, RCM, PTCRB, RoHS, WEEE,
Wi-Fi Alliance CE/RED, FCC, IC, PTCRB, RCM, EAC,
CCC, RoHS, WEEE, IP rating, Anatel, GCF, REACH, E-mark,
DNV GL, ECE Regulation 118, Morocco ANRT, Thailand NBTC,
Ukraine UCRF, SDPPI (POSTEL), WiFi Certified,
MODBUS Conformance AT&T, Verizon
Vehicle- ECE R10 (E-mark), ECE R118

TECHNICAL SPECIFICATION

Modem
Resilient and scalable FOTA

Location
- Can be tracked with GPS
- Cell mast location if GPS not available collector

Sim
2* External SIM holders

Antenna and Connector
2 x SMA for LTE, 2 x RP-SMA for WiFi, 1 x SMA for GNSS
Stub antenna included with unit
GPS antenna ordered separately

Modbus handling
Resilient, scalable and reliable modbus handling via CDLSmartHub™.
Supports block and singular register reads.
Modbus register maps stored and provisioned via CDLSmartHub™.

Gateway diagnostics
Comprehensive diagnostic capabilities.
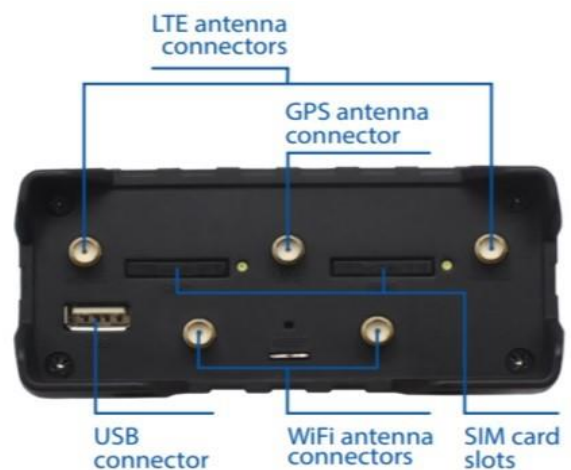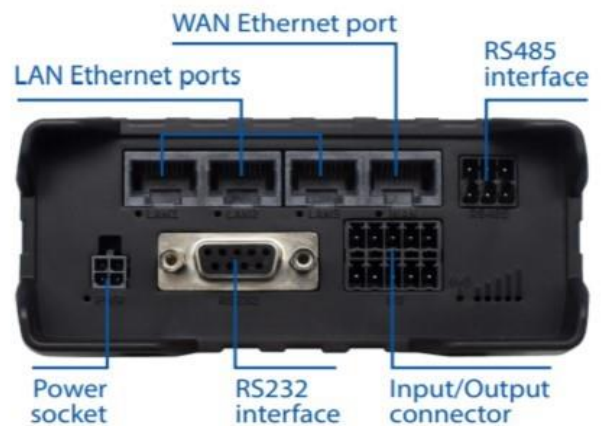Live interrogation of field-based unit

SD Card
- SD card non-volatile data storage

Software CDLSmartHub™ IoT platform connectivity
Expansion signal conditioning module options available

Part codes - 050-EAA

Nano ULTRA-III

UNIVERSAL ASSET TO CLOUD SOLUTION

050-PAA- Elite DATA SHEET

Managing a network of field assets has never been easier with the NanoULTRA – III *Pro*. It has the flexibility of up I/Os, and communication via mobile phone networks. Its high-resolution data transfer happens seamlessly and securely from multiple assets to our secure cloud platform, the CDLSmartHub™, where the raw data can be turned into actionable insights.

From the CDLSmartHub™ you can configure and manage assets, set alarms, view audit trails, integrate and export data, view trends, visualise data and integrate 3rd party analytics. Investing in the NanoULTRA - III *Pro* and CDLSmartHub™, gives you access to a fully integrated end-to-end IoT solution to effectively manage your assets.

Key Features

- Seamless cellular communication with the CDLSmartHub™ asset cloud platform.
- Simple installation and configuration, achievable at scale with non-technical employees
- RS232/RS485 communication with toolset to quickly set up Modbus communications (one off configuration charges apply – see price list)
- Ethernet connectivity
- Integrated SD card storage for mass storage of granular data sets
- Digital and Analogue i/o's available (CDL also offer wide range of expansion modules)
- Worldwide accreditations offering a truly global, enterprise grade solution
- Tracking capabilities
- Firmware Over the Air (FOTA) for agile innovation and system management
- GPS location and tracking capabilities

Cloud based IoT platform

Email and SMS alerts

Application Examples

Single and multi-site installations • nationally and internationally • Embedded solutions for original equipment manufacturers (OEM) • Energy & carbon management systems • Voltage optimisation • Water quality instrumentation • Process monitoring and control • Corrosion monitoring • Clean renewable & Hybrid power • Portable generators • UPS & emergency power systems • Smart building controls • Smart grid transformer monitoring

TECHNICAL SPECIFICATION

Physical
Aluminium housing with DIN rail mounting option
(Additional kits needed for wall mounting)
83 x 25 x 74.2mm
Weight 165g

LEDs and Button
1 x Eth port status
3 x connection status (2G/3G/4G
3 x Signal connection strength
1x Power

Power Supply
9 – 30 VDC, 2 pin in terminal block

Connectors
1 x 2 pin DC in terminal block
1 x 4 pin RS485 (in 16 pin terminal block)
1x 4 pin RS232 (in 16 pin terminal block)
1 X SMA for LTE*(+ Micro USB)
1 x SMA Connector for GNSS
2 x Sim slots (mini SIM)
1 x LAN

Sim Holder
Dual SIM card slots (Mini SIM) for
application that require
redundancy at this level

Standard On-board Inputs and Outputs
200 modbus registers, sample at 20 second
24-hour Storage

On board Ethernet
16 port terminal (1XLAN) 10/100
Mbps

Environmental
-40 to +75 °C (operational)

Communication connectivity
RS485
RS232
Enhanced tool set for Modbus register mapping

Modem
2G/3G/4G (LTE Cat1)

Location
Cell mast location
GPRS

SD Card
No

Approvals
CE/RED, FCC, IC/ISED, EAC, RCM, PTCRB, RoHS, WEEE,

TECHNICAL SPECIFICATION

On board memory (for when communications are interrupted)
200 modbus registers, sampled at a 20 second sample rate
can be stored for 24 hours before being over written

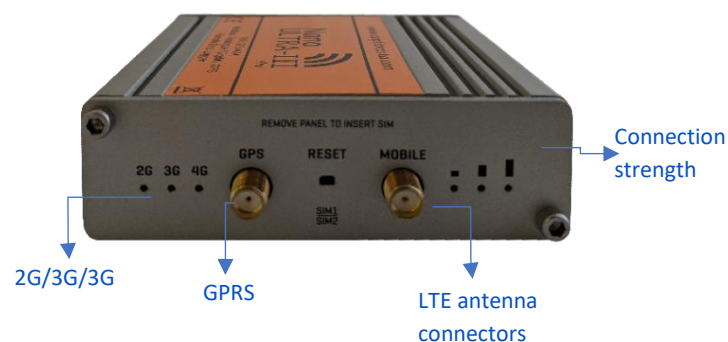| Description	Part code
Modbus RTU to 8 DO Digital Output, Power Relay module	003-ADI-001
Modbus RTU to 16 DI Digital Input module	003-ADJ-001
Modbus RTU to 8AI (0-10V),2AO(0-10V), 4 DO module	003-ADK-001
Modbus RTU to 8 AI Analogue module	006-ACZ-001

Antenna and Connector
1 x LTE anetenna (magnetic mount, SMA male, 3 m cable
1.5M Ethernet cable
FOTA (Firmware upgrade over the air)
All firmware is FOTA enabled
(Firmware upgrade over the air)

Software CDLSmartHub™ IoT platform connectivity
Expansion signal conditioning module options available

Power
16 Pin Terminal
RS485
Ethernet

Connection strength
2G/3G/3G
GPRS
LTE antenna connectors

Part codes
050-PAA

Nano ULTRA-III

UNIVERSAL ASSET TO CLOUD SOLUTION

050-LAA-*Lite* DATA SHEET

Managing a network of field assets has never been easier with the NanoULTRA – III *Lite*. Its high-resolution data transfer happens seamlessly and securely from multiple assets to our secure cloud platform, the CDLSmartHub™, where the raw data can be turned into actionable insights.

From the CDLSmartHub™ you can configure and manage assets, set alarms, view audit trails, integrate and export data, view trends, visualise data and integrate 3rd party analytics. Investing in the NanoULTRA - III *Lite* and CDLSmartHub™, gives you access to a fully integrated end-to-end IoT solution to effectively manage your assets.

Key Features

- Seamless cellular communication with the CDLSmartHub™ asset cloud platform.
- Simple installation and configuration, achievable at scale with non-technical employees
- RS485 communication with toolset to quickly set up Modbus communications (one off configuration charges apply – see price list)
- Digital and Analogue i/o's available (CDL also offer wide range of expansion modules)
- Worldwide accreditations offering a truly global, enterprise grade solution
- Tracking capabilities
- Firmware Over the Air (FOTA) for agile innovation and system management

Cloud based IoT platform

Email and SMS alerts

Application Examples

Single and multi-site installations • nationally and internationally • Embedded solutions for original equipment manufacturers (OEM) • Energy & carbon management systems • Voltage optimisation • Water quality instrumentation • Process monitoring and control • Corrosion monitoring • Clean renewable & Hybrid power • Portable generators • UPS & emergency power systems • Smart building controls • Smart grid transformer monitoring

TECHNICAL SPECIFICATION

Physical
Aluminium housing
74.5 x 25 x 64.5mm
Weight 130g

Power Supply
9 – 30 VDC, 4 pin DC connector

Standard On-board Inputs and Outputs
2 x Configurable Inputs/Outputs.
Digital input 0 - 6 V detected as logic low,
8 - 30 V detected as logic high.
Open collector output, max output 30 V, 300 mA

Communication connectivity
RS485
Enhanced tool set for Modbus register mapping

Location
Cell mast location

Approvals
CE/RED, EAC, RoHS, WEEE

Modem
2G/3G/4G
4G (LTE Cat1)

On board Ethernet
No

LEDs and Button
3 x connection status (2G/3G/4G
3 x Signal connection strength
1x Power

Connectors
1 x 4 pin DC
1 x 6 pin RS485
1 X SMA for LTE*(+ Micro USB)

Environmental
-40 to +75 °C (operational)

SD Card
No

SIM Holder
Single Sim

Nano ULTRA-III
UNIVERSAL ASSET TO CLOUD SOLUTION

TECHNICAL SPECIFICATION

On board memory (for when communications are interrupted)
200 modbus registers, sampled at a 20 second sample rate
can be stored for 24 hours before being over written

Description	Part code
Modbus RTU to 8 DO Digital Output, Power Relay module	003-ADI-001
Modbus RTU to 16 DI Digital Input module	003-ADJ-001
Modbus RTU to 8AI (0-10V),2AO(0-10V), 4 DO module	003-ADK-001
Modbus RTU to 8 AI Analogue module	006-ACZ-001

Antenna and Connector
1 x LTE antenna (magnetic mount, SMA male, 3 m cable
FOTA
All firmware is FOTA enabled
(Firmware upgrade over the air)

Software CDLSmartHub™ IoT platform connectivity
Expansion signal conditioning module options available

Power socket

RS485

Connection strength

USB Connector

LTE antenna connectors

2G/3G/3G

Part codes 050-LAA