

SEAMLESS DATA FOR SOLAR: ADVANTECH & RADIOCRAFTS

Solar tracking with unmatched connectivity & durability.



SUB-GHZ RADIO MESH GATEWAY FOR SOLAR TRACKING

Solar installations demand rugged, scalable, and intelligent communications. The Advantech ECU-150 gateway combined with Radiocrafts' RIIM mesh network RF module delivers exactly that: industrial-grade edge intelligence with long-range, ultra-reliable wireless coverage. The mesh gateway forms a resilient backbone for solar operations, ensuring data flows seamlessly from the field to the cloud.

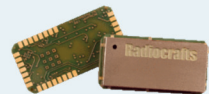
Higher uptime.
Faster insights.
Smarter tracking.

Advantech ECU-150 Compact, High-performance IoT Gateway



- NXP i.MX8M Quad Core Cortex A53 1.3G CPU
- The first NXP 64-bits ARMv8 processor
- Rugged design with industrial-grade IC, wide operating temperature range, and long MTBF
- Linux environment offers open platform
- Hardware self-healing: Independent Watch Dog Timer (WDT)
- VPN to set up security communication network

Radiocrafts RIIM Sub-GHz Wireless Network Module for Solar Tracking



- Connect up to a few thousand trackers per gateway
- Long-range, wide coverage even in areas of uneven terrain
- Efficient downlink communication to control trackers (EG: initiate safe position during high winds or hailstorms)
- Highly-reliable communication when several RIIM networks are operating in close proximity

ECU-150

High-Performance IoT Gateway with NXP i.MX8M Quad Cortex A53

NEW



Features

- NXP i.MX8M Quad Core Cortex A53 1.3G CPU
- DDR4 2/4GB RAM, 16/32GB eMMC for system storage
- 2 x RS-232/485 isolated serial ports
- 2 x 10/100/1000 Ethernet ports
- Modular design with optional second stack for increasing functionality
- Compact, robust, fanless and cable-free
- Supports SD cards and OTA firmware updates

Introduction

The ECU-150 is an IoT gateway built on the i.MX8M platform, featuring a high-performance Quad Core processor. With its open platform design, it offers exceptional flexibility. The gateway includes two RS-232/485 isolated serial ports, two 10/100/1000 Ethernet ports, and a USB 3.0 port, ensuring seamless connectivity. It operates reliably in extreme temperatures ranging from -40°C to 70°C. Equipped with Mini-PCIe and M.2 slots, the ECU-150 allows easy integration of Wi-Fi/4G/5G modules. The gateway supports Linux operating system and is bundled with the user-friendly EdgeLink configuration tool, empowering system integrators to develop precise applications for solar and electricity generation, and factory automation, which often demand extensive data collection, cloud-based solutions, and video monitoring capabilities.

Specifications

General

- **Certification** CE, FCC, UL 62368, IEC-62368
- **Mounting** Wall-Mount/ DIN-Rail
- **Power consumption** 8W @ 24V_{DC}
- **Power Requirements** 10 ~ 30 V_{DC}
- **Dimensions (W x D x H)** Basic unit: 30 x 100 x 93mm
Double stack: 55.1 x 100 x 93mm
- **Enclosure** Aluminum housing
- **Operating System** Yocto 4.14/Ubuntu 22.04

System

- **CPU** NXP i.MX8M Quad Core Cortex A53 1.3G
- **Memory** LPDDR4 2/4GB
- **Indicators** LEDs for Power, LAN (LINK, ACT),
Serial (Tx, Rx), Programmable
- **Storage** 16/32GB eMMC
- **SD Slot** 1 x Micro-SD slot
- **Display** N/A (Optional 1 x HDMI resolution 1280 x 720)
- **Watchdog** Yes
- **SIM Slot** 1 x Nano SIM slot
- **RTC** Yes
- **Security** TPM2.0
- **FRAM** N/A (Optional 128KB)

Communication

- **Serial Port** 2 x RS-232/485, 50 ~ 115200 bps
- **Isolation** 2500 V_{DC}
- **Ethernet Port** 2 x 10/100/1000 RJ-45 ports
- **USB Port** 1 x USB3.0
- **Expansion** Interface: 1x Mini-PCIe (Full-size)
Type: WIFI/Cellular/4G
Signal: USB 2.0 (Optional PCIe)

Environment

- **Operating Temperature** -40~70°C
- **Storage Temperature** -40~85°C
- **Humidity** 5~95% (non-condensing)

EdgeLink*

Protocol Support

SouthBound	NorthBound
IEC 60870-5-101	Modbus Server
IEC 60870-5-103	IEC 60870-104 Server
IEC 60870-5-104	WASCADA (WebAccess)
DL/T 645-2007	BACnet Server
DL/T 645-1997	OPC UA Server
IEC 62056-21	Data Transfer
ODBC	
JDBC	
OPCUA Client	
BACnet IP	
BACnet MS/TP	
SNMP	
Modbus Client	

- **PLC driver support** ABB/Advantech/Allen-Bradley/BECKHOFF/ DELTA/ FATEK/GE/Honeywell/Keyence/Mitsubishi/Omron/ Panasonic/Schneider/Sharp/Siemens/Toyopuc/ Wago 750/Yaskawa/Yokogawa
- **Programming** IEC-61131-3, Linux C, Python
- **Configuration Tool** EdgeLink Studio
- **Data Monitoring** 20000 Tags MAX.
- **Cloud Connectivity(MQTT)** Edge365, WISE-PaaS, Azure, AWS, Google Cloud IoT Core and more
- **Database Transmission** SQL Server, MySQL, ORACLE, FTP Server
- **VPN** Open VPN

* EdgeLink is bundled with Yocto Linux version. Please refer to EdgeLink specification for more details.