EKI-9502G Series

EN50155 Train-To-Ground Wi-Fi/Cellular Router

Features

- Cellular connectivity with dual SIM cards designed for each cellular module
- Supports up to 4 WWAN connectivity
- Supports wide temperature range: -40 ~ 70°C
- Designed with 24Vdc to 110Vdc isolated power input
- Flexible design with serial interface for Modbus RTU and serial communication protocol
- Supports IPSec, OpenVPN secured tunnel
- Firewall with SPI and IPS function prevents cyber attacks and enhances network efficiency
- Complies with EN50155
- Supports multi-WAN load balance
- Supports up to 1.3Gbps with 3x3 MIMO Wi-Fi

Introduction

The EKI-9502G EN50155 train-to-ground Wi-Fi/cellular router is designed for rolling stock applications. It provides secure Internet connectivity while offering superior application flexibility. EKI-9502G provides automatic wireless failover between WLAN and WAN connectivit and supports up to 4 WWAN(LTE) modules with dual SIM cards installation and up to 2 WIFI modules for 802.11a/b/g/n/ac with 2.4Ghz/5Ghz selective. With load balance, VPN tunneling, and configuration backup, it provides stable and reliable wireless connectivity that is ideal for transportation applications.

Specifications

Wireless LAN Communications

- **Compatibility** IEEE 802.11a/b/g/n/ac
- **Date Rates** 11b: 11Mbps
  11a/g: 54Mbps
  11n: 450Mbps
  11ac: 1.3Gbps
- **Operation Modes** Access Point/Client mode
- **Antenna Connector** 6 x RP-SMA Female Connectors
- **Wireless Security** Open System , Shared Key, Lagacy 802.1X

Software

- **Management** Web UI
- **Wireless** Radio on/off, WMM, Output Power Control, Fragmentation Length, Beacon Interval, RTS/CTS threshold, DTIM Interval

Cellular Interface

- **LTE Bit rate** 300 Mbps (DL), 50 Mbps (UL)
- **LTE Bands** B20 (800 MHz), B8 (900 MHz), B3 (1800 MHz), B1 (2100 MHz), B7 (2600 MHz)
- **3G Bit rate** 42.0 Mbps (DL), 5.76 Mbps (UL)
- **3G Bands** B1, B2, B3, B4, B5, B8
- **No. of SIM Slots** 8
- **SIM Card Type** Mini Sim (2FF) 1.8V and 3V
- **ANT Connector** 6 x SMA Female Connector

Mechanics

- **Enclosure** Metal shell with solid mounting kits
- **Mounting** Wall
- **Dimensions (W x H x D)** 280 x 160 x 85mm (11" x 6.3" x 33.5") without wall mount ears
- **Weight** 2.9 Kg

Interface

- **I/O Port** 2 x 10/100/1000 Base-T M12 X-coded Female
- **Console Port** RS-232 (Terminal Block Male)
- **Serial Port** 2 x RS-232/422/485 Selectable (Terminal Block Male)
- **USB Port** 1 x USB 2.0 Front IO (Type A)
- **GPS** 1 x U-Blox NEO-8 with SMA Female connector

Power Requirements

- **Power Input** 24-110 V_{DC} (±30%)
- **Power Connector** M12 A-coded with 4 Poles
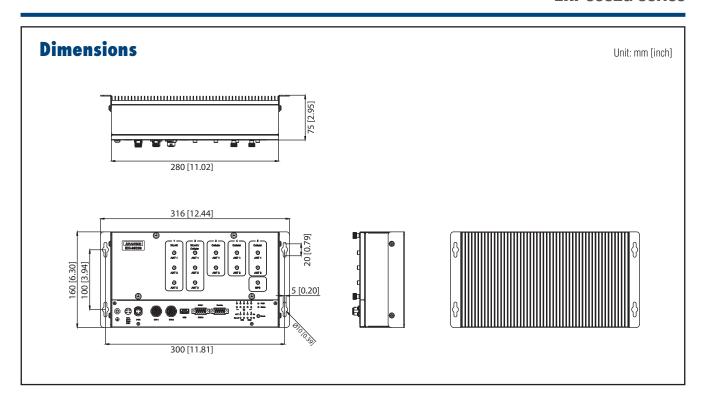- **Power Consumption** 21W

Environment

- **Operating Temperature** -40 ~ 70°C (-40 ~ 158°F)
- **Storage Temperature** -40 ~ 80°C (-40 ~ 176°F)
- **Operating Humidity** 10 ~ 95% RH

Regulatory Approvals

- **EMC** CE, FCC Part 15 Subpart B (Class B)

ADVANTECH **IP Gateway and Serial Device Servers**

All product specifications are subject to change without notice. Last updated: 12-Jul-2023

Dimensions

Unit: mm [inch]

WLAN Modulation Techniques

- **IEEE 802.11a/g**   OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
- **IEEE 802.11b**   DSSS (DBPSK, DQPSK, CCK)
- **IEEE 802.11n**   OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
- **IEEE 802.11ac**   OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)

WLAN Channel Support

- **IEEE 802.11b/g/gn HT20** FCC: CH1 ~ CH11; ETSI: CH1 ~ CH13
- **IEEE 802.11gn HT40**   FCC: CH3 ~ CH9; ETSI: CH3 ~ CH11
- **IEEE 802.11a/an/ac**   FCC: 5.15~5.25GHz;5.725~5.85GHz
  ETSI: 5.15~5.25GHz; 5.47~5.725GHz

Wireless Transmission Rates

- **Transmitted Power**   802.11g 15 dBm
  802.11a 15 dBm
  802.11n/2.4GHz
  HT20: 18 dBm@MCS7
  HT40: 18 dBm@MCS7
      802.11n/5GHz HT20: 18 dBm@MCS7
  HT40: 17 dBm@MCS7
      802.11ac VHT80 15 dBm@MCS9

Receiver Sensitivity

- **802.11a Sensitivity**   -73 dBm @ 54 Mbps
- **802.11g Sensitivity**   -75 dBm @ 54 Mbps
- **802.11n/2.4GHz**   HT20 -72 dBm @ MCS7
  HT40 -68 dBm @ MCS7
- **802.11n/5GHz**   HT20 -70 dBm @ MCS7
  HT40 -68 dBm @ MCS7
- **802.11ac**   VHT80 -57 dBm @ MCS9

Ordering Information

- **EKI-9502G-CXRW**   Tran to Ground Wi-Fi/ Cellular Router

*Package does not include Wi-Fi/Cellular Module