DSSS IP-Radio modem
UHF 225 – 400 MHz

ADV14-IP

ADV14-IP modem provides robust wireless communications for IP/Ethernet devices. It embeds a CSMA-CA protocol allowing a variety of network topologies such as Point to Point (P2P), Point to Multipoint (P2M) and Multipoint to Multipoint (M2M) communications. Supported network protocols include: ARP, TCP, UDP, ICMP, HTTP, FTP.

ADV14-IP is powered by a Direct Sequence Spread Spectrum (DSSS) transceiver within the 225-400 MHz frequency band, up to 1 Mbps. It uses Multipath Combining Diversity (RAKE) reception techniques to enhance radio communications against multipaths in harsh propagation conditions.

The main particularity of the ADV14-IP is its large range of options making it highly configurable. The user is able to select 1 over 4 spreading modes. Moreover, an optional channel coding (Reed-Solomon) may be used to further enhance communication quality. Finally, a 128-bit block cipher supporting 128-bit, 192-bit and 256-bit keys may be used for data encryption.

APPLICATIONS

- Unmanned Aerial Vehicles
- Unmanned Ground Vehicles
- Fleet management
- Wireless video and remote control
- Telemetry
- Voice communication (VoIP)
- File transfer (FTP)

FEATURES

- Frequency: 225 - 400MHz (UHF-band)
- Raw data rate up to 1 Mbps
- Long range, high speed communication with excellent receiver sensitivity
- User interface through web browser
- Supports Point-to-Point, Point-to-Multipoint, Gateway and Peer-to-peer
- Adjustable RF output power (1 dB step)
- Optional channel coding and encryption
- Local / remote firmware upgrading through FTP
- Compact and robust case

SPECIFICATIONS

RF characteristics

Frequency:	225 – 400 MHz
Synthesizer step:	1 MHz
Channel bandwidth:	10 MHz
Channels:	Up to16 non-overlapping
RX dynamic range	-100 to - 30 dBm
RX sensitivity:	- 99 / - 95 dBm (with / no FEC)
TX output range:	3 to 20 dBm (33 dBm with a FE)
Connector	SMA female

Modulation

Spread spectrum:	DSSS
Diversity technique:	RAKE receiver
PN code:	11 to 255-bit Barker
Modulation:	DBPSK or DQPSK

Options

Channel coding:	Reed-Solomon
Encryption:	128-bit block cipher

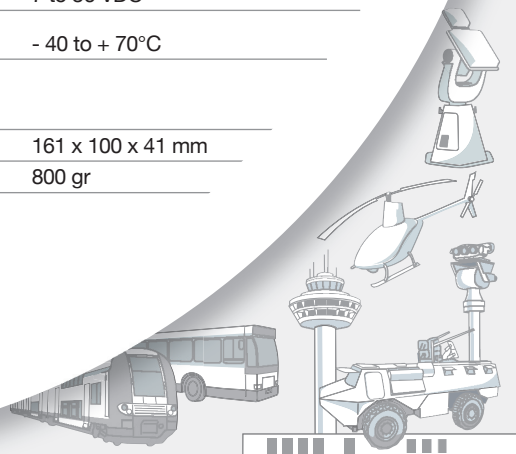
Data interface

Interface:	10 / 100 Base T IEEE 802.3
Connector:	RJ45
Raw data rate:	Up to 1 Mbps

Network protocols	TCP, UDP, ARP, ICMP, DHCP, HTTP, FTP, VoIP
Supply voltage	7 to 36 VDC
Operating temperature	- 40 to + 70°C

Mechanical

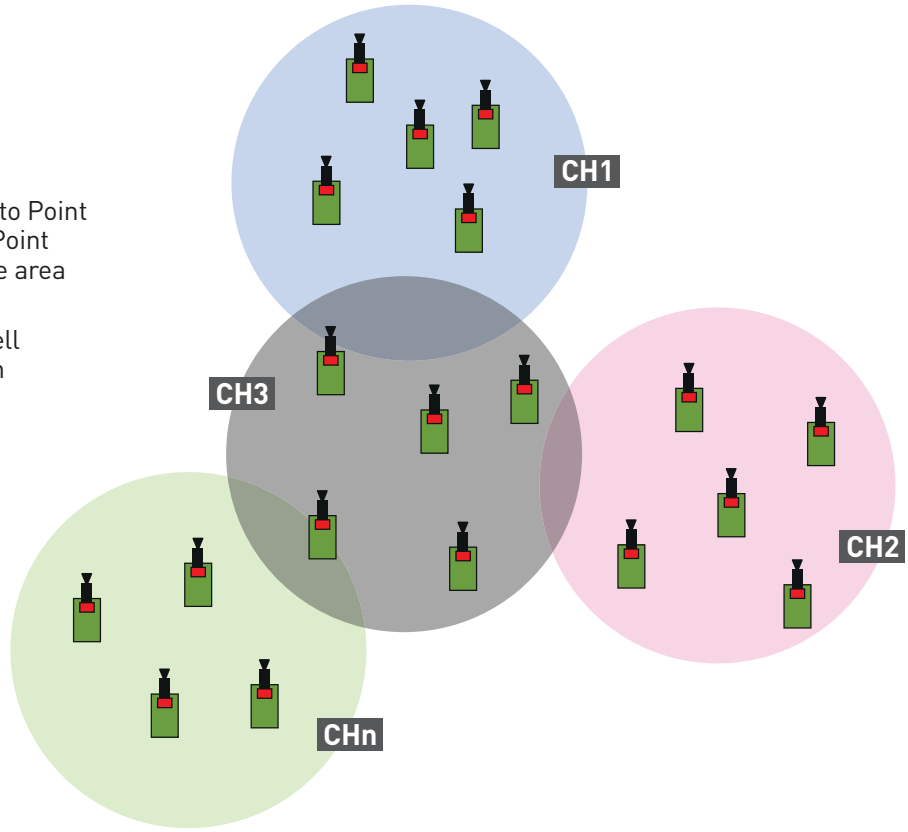
Dimensions:	161 x 100 x 41 mm
Weight:	800 gr



NETWORK TOPOLOGY

ADV14-IP allows supporting several Point to Point communications (P2P) and Point to Multi-Point communications (PMP) located in the same area and using the same radio channel.

Up to 16 channels may be used for microcell applications. Inter-channel communication may be achieved through IP routing.

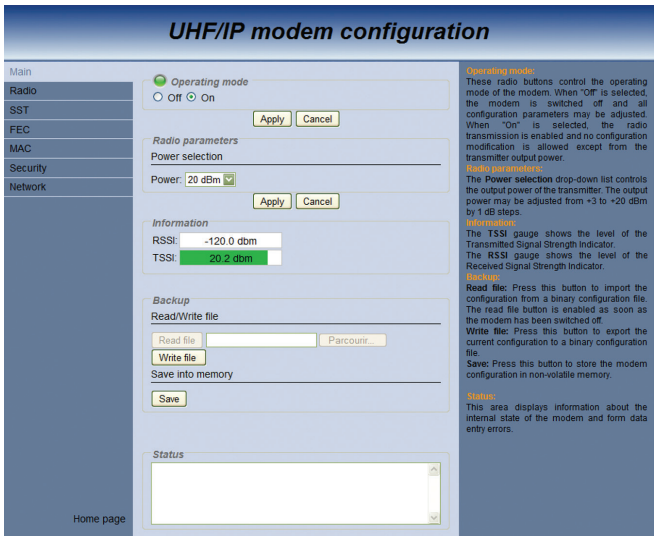


WEB USER INTERFACE (WebUI)

The Web configuration interface allows the user to view and modify both modem and network parameters through a Web browser.

The WebUI is divided into 3 parts:

1. The left menu allows selecting a specific configuration category.
2. The center panel displays the available parameters for the selected category: IP address, radio channel, transmitter output power, spreading mode, baud rate, data length, RSSI...
3. The right panel displays a short description of the configuration parameters.



ADDITIONAL MODULE : radio front-end

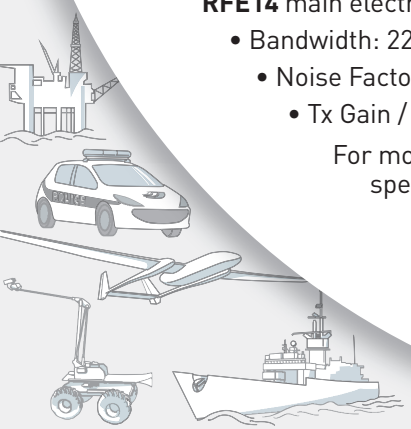
RFE14 is a bidirectional half-duplex Front-End, characterized with an optimal sensitivity in receiving mode and a high power output in transmitting mode.

RFE14 is designed to be used between the modem and the antenna, typically when the latter is far from the modem. It cancels the effect of cable losses so that for a given application, the link budget is improved and the user gets much longer range.

RFE14 main electrical characteristics are:

- Bandwidth: 225 – 400 MHz
- Noise Factor: 3.5 dB
- Tx Gain / 2W: 24 dB

For more information, see RFE14 specific data sheet.



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