**ADV59** is a DSSS spread spectrum radio modem that uses Multipath Combining Diversity techniques. It operates in the 5.9GHz (C-band) with a raw data rate of 2 Mbps. The main particularity of the **ADV59** is that it embeds a CSMA protocol capable of managing radio channel multiple access. The radio resource is then seamlessly shared between several communications and therefore several equipments.

ADV59 can be customized by inserting a radio front-end between the modem and the antenna to increase the link budget performances.

APPLICATIONS

- Wireless remote control
- Telemetry
- Imagery
- Point to point and point to multipoint
- CSMA management mobile and fixed network
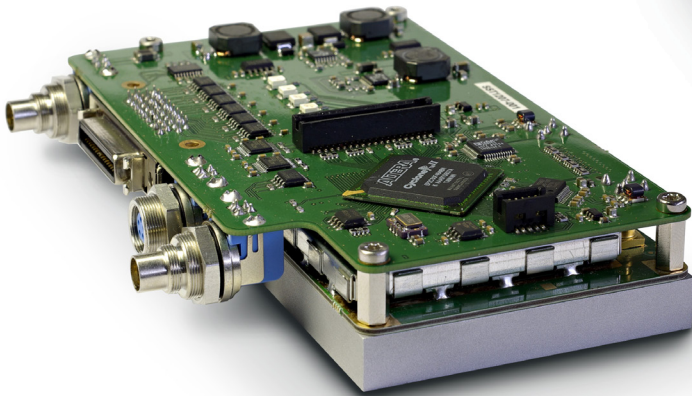
FEATURES

- Frequency: 5.9 GHz
- QPSK modulation
- Raw data rate up to 2Mbps
- Adjustable RF output power over a 20 dB range
- User interface (Channel, RSSI, Output power,...)
- Compact and robust case

SPECIFICATIONS

RF characteristics

Frequency:	5.9 GHz - other up on request
Synthesizer step:	5 MHz
Channel bandwidth:	20 MHz
Channels:	Up to16 non-overlapping
RX dynamic range	- 30 to - 100 dBm
RX sensitivity:	- 85 dBm @ 2 Mbps
TX output range:	From 0 to 20 dBm Available front-end up to 27 dBm
RF Connector:	SMA female

Modulation

	DBPSK or DQPSK
	DSSS - RAKE Receiver
	11 to 255-bit Barker

Data interface

Connector:	MDR-36
Raw data rate:	Up to 2 Mbps
Protocol:	RS232 up to 230 Kbps

MAC protocol	CSMA
Supply voltage	7 to 32 VDC
Consumption	400 mA (@12V)
Operating temperature	- 40 to + 70°C

Mechanical

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Dimensions:	161 x 91 x 34 mm
Weight:	590 gr
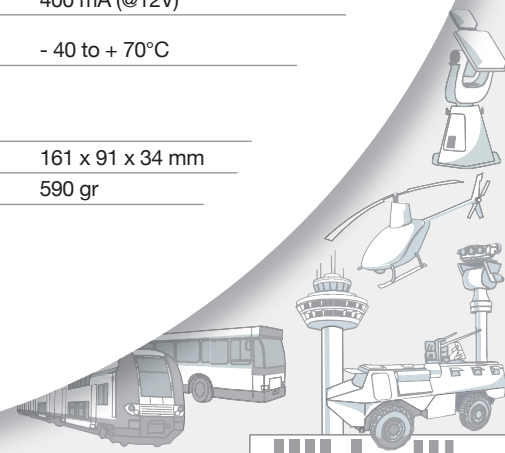
NETWORK TOPOLOGY

ADV59 allows supporting several point to point communications (PPC) and Point to multi-Point communications (PmPC) located in the same area and using the same radio channel.

Considering symmetric configurations, up to 250 equipments may be used simultaneously within the same area.

Up to three channels can be used simultaneously which allows microcell applications.

Data rate (bps)	Number of simultaneous bidirectional PPC
4800	125
9600	60
19200	30
38400	15
57600	10
115200	5
230400	2
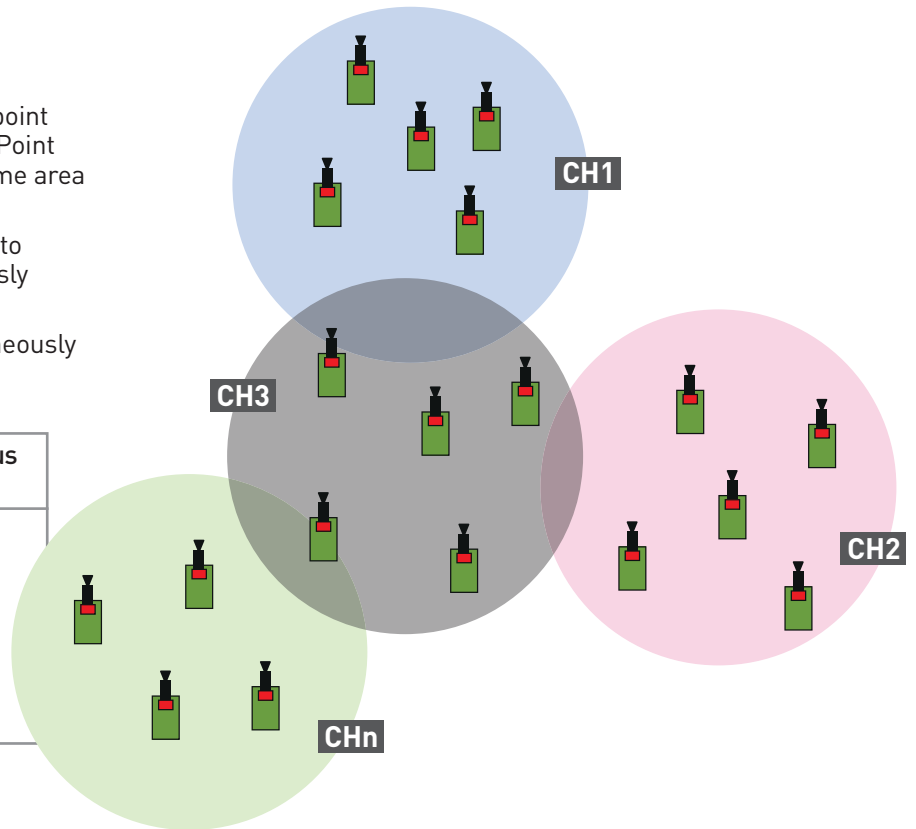
CONFIGURATION SOFTWARE

- Adjustable radio parameters: radio channels, transmitter output power.
- Selection of spreading and transmission mode.
- Asynchronous link: adjustable baud rate, data length, parity and stop bit.
- Protocol configuration depending on the type of application.
- Status: TSSI, RSSI, state.
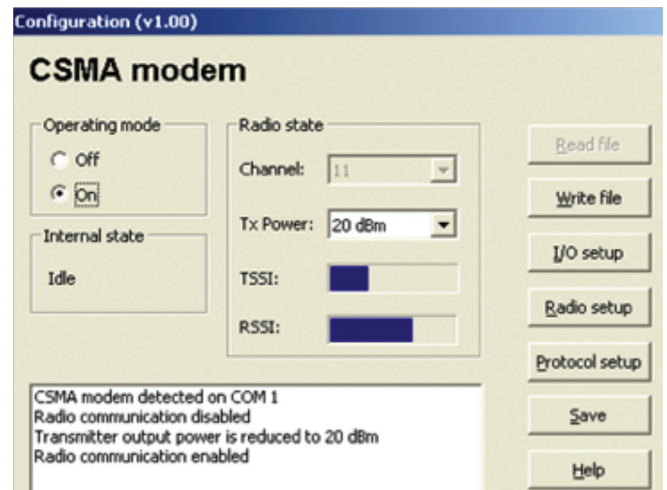
ADDITIONAL MODULE : radio front-end

Tx : 1W and 5W	Rx : NF = 4.8 dB

RFE59 is a Radio Front End with optimal sensitivity in receiving mode and high power (1W and 5 W adjustable).

When necessary, the RFE59 is to be used between the antenna and the modem. It cancels the effect of cable losses so that for a given application, the link budget is improved and the user get much longer range.

RFE59 main characteristics are:
- Bandwidth: 5.88 to 5.97 GHz
- Noise Factor: 4.8 dB
- Tx Gain/5W: 28.5 dB
- Specific RFE59 datasheet is available