

# Laird Connectivity

## RAMP Line Card



Range Amplified MultiPoint (RAMP™) modules provide the perfect solution for machine-to-machine (M2M) applications where the need is to transmit serial data or sensor data over long distances, wirelessly, with the highest degree of reliability. RAMP modules utilize various technologies to provide immunity to interference and multipath in industrial applications. They are capable of operating in a point-to-point or point-to-multipoint network and can support a virtually unlimited number of nodes in a network.

	FHSS MODULES				FHSS PACKAGED SOLUTIONS		DSSS MODULES
	RM024	AC4490	AC4790	LT1110	CL4490	CL4790	ProFLEX
<b>Chipset</b>	TI CC2510	TI CC1010	TI CC1010	TI CC1110	TI CC1010	TI CC1010	TI CC2520 and CC2591
<b>Wireless Protocol</b>	FHSS	FHSS	FHSS	FHSS	FHSS	FHSS	(802.15.4) - ZigBee®, 6LoWPAN, SimpliciTI, FLEXconnect™
<b>Physical Interface</b>	SMT or Pluggable	Pluggable	Pluggable	Pluggable	RS232 or RS485	RS232 or RS485	SMT
<b>Frequency</b>	2.4 GHz	915 MHz	915 MHz	915 MHz	915 MHz	915 MHz	2.4 GHz
<b>Range</b>	Up to 4 km (US) Up to 1 km (EU)	Up to 5 km (-200 version) Up to 30 km (-1000 version)	Up to 5 km (-200 version) Up to 30 km (-1000 version)	Up to 5 km	Up to 30 km	Up to 30 km	Up to 4000 ft
<b>Size</b>	Various. Smallest is 25.4 x 39 x 3.6 mm	49 x 42 x 5 mm	49 x 42 x 5 mm	25 x 30 x 4 mm	111.8 x 68.6 x 35.6 mm	111.8 x 68.6 x 35.6 mm	22.9 x 41.4 x 5.1 mm
<b>RF Rate</b>	280 kbps/500 kbps	76.8 kbps	76.8 kbps	230 kbps/500 kbps	76.8 kbps	76.8 kbps	250 kbps
<b>Output Power</b>	Up to 21 dBm (US) 10 dBm (EU)	Up to 23 dBm (-200 version) Up to 30 dBm (-1000 version)	Up to 23 dBm (-200 version) Up to 30 dBm (-1000 version)	Up to 23 dBm	Up to 30 dBm	Up to 30 dBm	Up to 20 dBm
<b>Receiver Sensitivity</b>	-95 dBm	Up to -110 dBm in Long Range Mode	Up to -110 dBm in long-range mode	-89 dBm	-100 dBm typical	-100 dBm typical	-98 dBm
<b>Temperature Range</b>	-40° to +85°C	-40° to +85°C	-40° to +85°C	-40° to +85°C	-40° to +85°C	-40° to +85°C	-40° to +85°C
<b>Software</b>	RAMP Configuration and Testing Suite	RAMP Configuration and Testing Suite	RAMP Configuration and Testing Suite	RAMP Configuration and Testing Suite	RAMP Configuration and Testing Suite, ConnexLink Configuration Utility	RAMP Configuration and Testing Suite, ConnexLink Configuration Utility	Full debug and programming software
<b>Certifications</b>	FCC, IC (125 mW variant) CE (10 mW variant)	FCC, IC	FCC, IC	FCC, IC	FCC, IC	FCC, IC	FCC, IC, ETSI

Modules not shown at actual size.

To learn more, visit [connectivity.lairdtech.com/ramp](http://connectivity.lairdtech.com/ramp)  
or contact us at [CS-Sales@lairdtech.com](mailto:CS-Sales@lairdtech.com)