

RFN430EL-A3 User's Guide

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1 About the RFN430EL-A3

The RFN430EL-A3 is a radio communications device designed for use in Elster A3 meters. The RFN430EL-A3 provides a 915 MHz radio interface to an RF mesh network.

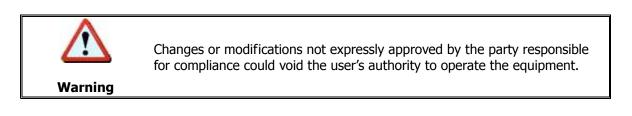
The RFN430EL-A3 operates from a power source of 13.5 VDC, received from the host device. The radio modules operate in license-free bands at 915 MHz (902.75 to 927.25 MHz). RFN430EL-A3 Nodes are fully compatible with mesh network hardware, protocols and operations. Two radio transmission data rates are available: 76.8 kb/s and153.6 kb/s. The transmission power of the 915 MHz radio is adjustable from 27 dBm to -20 dBm.

2 Regulatory Notices

\wedge	The Original Equipment Manufacturer (OEM) must ensure that FCC Labeling requirements are met. This includes a clearly visible label on the outside of the OEM enclosure specifying the Cooper Power Systems FCC identifier (FCC
Warning	ID: P9X-RFN430EL-A3) and IC Number (IC: 6766A-RFN430ELA3) as well as the FCC Notice below.

	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
Warning	(1) This device may not cause harmful interference, and(2) This device must accept any interference received, including interference that
warning	may cause undesired operation.

\wedge	Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
	(1) l'appareil ne doit pas produire de brouillage, et
Warning	(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



 Warning This equipment has been tested and found to comply with the Class B digital device, pursuant to part 15 of the FCC Rules. Thare designed to provide reasonable protection against harmful in a residential installation. This equipment generates, uses an radio frequency energy and, if not installed and used in accordations, may cause harmful interference to radio communic However, there is no guarantee that interference will not occur particular installation. 	
	If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
	 Reorient or relocate the receiving antenna.
	 Increase the separation between the equipment and receiver.
	 Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
	• Consult the dealer or an experienced radio/TV technician for help.



The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website www.hc-sc.gc.ca/rpb.

	To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operate in conjunction with any other antenna or transmitter."
Warning	As such, the radio component of this device is intended only for OEM integrators under the following two conditions:
	The antenna must be installed such that 20 cm is maintained between the antenna and users.
	The transmitter module may not be co-located with any other transmitter or antenna.
	As long as the two conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed (e.g., digital device emissions, PC peripheral requirements).
	In the event that these conditions cannot be met (for example, co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re- evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.
	End Product Labeling
	This transmitter module is authorized only for use in devices where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example access points, routers, wireless ASDL modems, certain laptop configurations, and similar equipment). The final end product must be labeled in a visible area with the following: "Contains FCC ID: P9X-RFN430EL-A3, IC: 6766A-RFN430ELA3".
	The radio component is an integral part of the RFN430EL-A3 and cannot be removed.

	Transmitters with Detachable Antennas
	This device has been designed to operate with the antennas listed below, and having a maximum gain of 8 dB. Antennas not included in this list or having a gain greater than 8 dB are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.
	Antennas that may be used with this product include:
Warning	 GH908U-PRO 900MHz Omnidirectional – 8dBi Gain TRA9023NP - Antenex Phantom 902-928MHz – 3dB Gain 915MHz Co-linear Antenna -2dB gain
	To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

3 **RFN430EL-A3 Specifications**

Radio Specifications

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Operating frequency	902.75 – 927.25 MHz
Reliable data transmission	Error detection, correction and retransmission
RF output power	915 MHz: 27 dBm to -20 dBm
Data rate	76.8 kb/s, 153.6 kb/s
Receiver sensitivity	-101 dBm (@ 1% PER, 76.8 kbps, +25° C)
Range (w/ omni antenna)	
Outdoor	1,000 m (3200 ft)
Indoor	75 – 150 m (225 – 490 ft)
Mode	Frequency hopping spread spectrum

Mechanical Specifications	
Weight	Unavailable
Dimensions	100 mm x 120 mm

Operating Conditions	
Environmental	-40° C to +85° C 0 – 95% non-condensing humidity
Power supply	DC 13.5V (regulated to 3.3 VDC on-board)
Power consumption	< 1W



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