



## RF Dongle for Sensor Platform

Aplica's advanced RF Sensor platform provides a cost effective solution for the deployment of a wireless network of remote sensors and automatic meter reading (AMR) elements. The advanced platform is based on Texas Instruments state-of-the-art RF transceiver System on Chip (SoC) CC111x or CC251x. These SOC's combine the excellent performance of the CC2500 or CC1101 with an industry-standard enhanced 8051 MCU, up to 32 KByte of in-system programmable flash memory and 4 KByte of RAM, and many other powerful features.

The wireless network of point to multipoint topology includes single RF Dongle 2.4G device and up to 5 RF Sensor devices. The Dongle is attached to a USB port of the customer PC.

The RF Dongle supports a sub GHz operating frequency or a 2.4 GHz frequency and has an on-board 2.4 GHz meandered inverted F-Antenna. A 50 ohm SMA output is available for a user selected antenna.

| Characteristics                        | Specification  |
|--|--|
| <b>System on Chip</b>                  |  |
| <b>Assembly options</b>                | <b>CC111x or CC251x SoC</b>  |
| <b>Operating Frequencies ISM Bands</b> |  |
| <b>CC111x</b>                          | <b>Sub 1 GHz</b>   |
| <b>CC251x</b>                          | <b>2.4 GHz</b>   |
| <b>Supported Antennas</b>              |  |
| <b>On-Board</b>                        | <b>2.4GHz Meandered Inverted F-Antenna</b>   |
| <b>External option</b>                 | <b>50 ohm SMA female output</b>  |
| <b>Data Rate</b>                       |  |
| <b>Rate</b>                            | <b>500 kbps maximum</b>  |
| <b>Modulation Formats</b>              | <b>FSK/GFSK/MSK/OOK/ASK</b>  |
| <b>Sensitivity</b>                     |  |
| <b>CC111x</b>                          | <b>Sub 1GHz: -110dBm</b>   |
| <b>CC251x</b>                          | <b>2.4GHz: -88dBm@250kbps; -98dBm@10kbps (1% PER)</b>  |
| <b>Serial Port</b>                     |  |
| <b>Interface</b>                       | <b>RS232 or RS485</b>  |
| <b>Connector</b>                       | <b>DB9 pin, Male</b>   |
| <b>USB</b>                             |  |
| <b>Ports</b>                           | <b>1 USB 2.0 port</b>  |
| <b>Connector</b>                       | <b>Mini USB 5 Pin Female SMD, B-Type</b>   |
| <b>General Purpose I/O</b>             |  |
| <b>Discrete Inputs</b>                 | <b>8 Inputs for dry-contacts/open drain/5V tolerant</b>  |
| <b>Discrete Outputs</b>                | <b>3 TTL compatible</b>  |
| <b>Connector</b>                       | <b>Weidmuller 22-pin connector,<br/>P/N: S2L-SMT3.5/22/90 SN</b>   |
| <b>A/D</b>                             |  |
| <b>Channels</b>                        | <b>3 A/D channels, 12bit resolution.<br/>Input range (default): 0-12V</b>  |
| <b>Connector</b>                       | <b>Weidmuller 22-pin connector,<br/>P/N: S2L-SMT3.5/22/90 SN</b>   |
| <b>Indicators</b>                      |  |
| <b>LEDs</b>                            | <b>3 General Purpose LEDs (shared with discrete outputs)</b>   |
| <b>Power</b>                           |  |
| <b>Supply Voltage</b>                  | <b>Option#1: External 6-24VDC via EJ508A connector, or 2 pin;<br/>Option#2: External 3-6VDC via 2 pin header</b> |