



iU891A-XL

LOW COST AND HIGH RANGE

iU891A-XL is a low cost and high output power USB-adapter supporting LoRa®, LoRaWAN® and wireless M-Bus.

With an integrated +22 dBm power amplifier and a sensitivity of -149 dBm, a sensational link budget of approx. 170 dB can be reached. With this, ranges well beyond 15 km can be achieved.

The iU891A-XL supports the wireless M-Bus modes S, C, T and C/T with packet formats A and B as well

as the OMS security modes 5 and 7. In addition, the sophisticated IMST *ProLink* protocol stack is also available. It combines compliant LoRaWAN functions and proprietary LoRa functions within one stack. This makes the iU891A-XL an ideal solution for numerous applications such as meter reading, wireless M-Bus gateway expansion, LPWAN and IoT sensors, as well as home-, building- and industrial-automation.



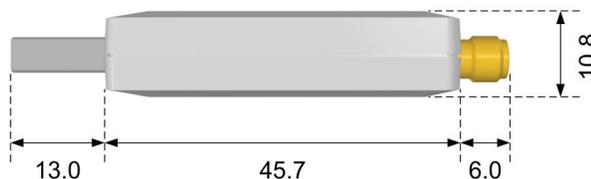
NEW FEATURES

- Frequency 863 - 870 MHz
- Small footprint
- 32-Bit MCU ARM® Cortex® M4
- Unique device identifier 64 bit UID
- 256 Kbyte Flash
- 64 Kbyte RAM
- 128/256 bit AES hardware encryption
- True random number generator (RNG)
- 32 MHz MCU TCXO
- Integrated +22 dBm power amplifier
- Max. sensitivity down to -149 dBm
- Modulations CSS¹, LR_FHSS², (G)FSK
- Spreading factors 5 to 12
- Bandwidth LoRa 7.6 – 500 kHz
- High range > 15 km

1: Chirp Spread Spectrum
2: Long Range Frequency Hopping Spread Spectrum



Dimensions in mm



Dimensions in mm



GATEWAY STUDIO

The screenshot displays the WM-Bus Gateway Studio interface. On the left, a sidebar shows 'Connected Device' information for a Cypress COMM device. The main area is split into several panes: 'Event Log' with a table of events, 'Active Configuration' for 'Encrypt and Send Message', and a 'Send Packet' dialog box. The event log table is as follows:

No.	Event	Time	Application Data
252	EventApplication Management/...	05-12-2023 14:34:48.345	Status: packet sent, Target Time: ...
253	Set-Application Management/...	05-12-2023 14:34:48.454	C-Field: 00, CI-Field: 00, Device ID: ...
254	Set-Application Management/...	05-12-2023 14:34:48.569	C-Field: 00, CI-Field: 00, Device ID: ...
255	Set-Application Management/...	05-12-2023 14:34:48.578	Status: operation succeeded
256	EventApplication Management/...	05-12-2023 14:34:48.581	Status: packet sent, Target Time: ...
257	Set-Application Management/...	05-12-2023 14:34:48.701	C-Field: 00, CI-Field: 00, Device ID: ...
258	Set-Application Management/...	05-12-2023 14:34:48.704	Status: operation succeeded
259	EventApplication Management/...	05-12-2023 14:34:48.706	Status: packet sent, Target Time: ...
260	Set-Application Management/...	05-12-2023 14:34:48.826	C-Field: 00, CI-Field: 00, Device ID: ...
261	Set-Application Management/...	05-12-2023 14:34:48.831	Status: operation succeeded
262	EventApplication Management/...	05-12-2023 14:34:48.835	Status: packet sent, Target Time: ...
263	Set-Application Management/...	05-12-2023 14:34:48.960	Status: operation succeeded
264	EventApplication Management/...	05-12-2023 14:34:48.962	Status: packet sent, Target Time: ...

PROLINK (LoRaWAN AND LoRa) STUDIO

The screenshot shows the LoRaWAN Configuration Studio interface. It features a sidebar with 'LoRaWAN Services' and 'Device Management'. The main area is divided into 'LoRaWAN Services' (showing network status like 'Active (OTAA)') and 'LoRaWAN Configuration' (with tabs for 'LoRaWAN Services' and 'Subnetwork Configuration'). A 'Send Uplink' dialog is open, and a 'Network Time' section is visible at the bottom. A table of network events is also present:

No.	Port	Time	Event	Frequency	Data Rate	Airtime / Tx Power (DBM)	RCS / DMR	Address	Port	Length	Payload
1	COM1	2023-07-21 12:27:20	To Join Done	868100000 Hz	LoRa / SF12 / 125 kHz	1482 ms / 14 dBm					
2	COM1	2023-07-21 12:27:20	Join Request	868100000 Hz	LoRa / SF12 / 125 kHz			-100 dBm / 7 dB			
3	COM1	2023-07-21 12:27:20	To C-Data's Done	868100000 Hz	LoRa / SF12 / 125 kHz	1158 ms / 14 dBm					
4	COM1	2023-07-21 12:27:40	To U-Data - ACK	868100000 Hz	LoRa / SF12 / 125 kHz			-110 dBm / 9 dB	0x0E5A5A5A	0x0F	0
5	COM1	2023-07-21 12:27:40	To U-Data - ACK	868100000 Hz	LoRa / SF12 / 125 kHz			-110 dBm / 9 dB	0x0E5A5A5A	0x0F	0
6	COM1	2023-07-21 12:28:00	To U-Data's Done	LoRa / SF7 / 125 kHz		68 ms / 12 dBm			0x0E5A5A5A	0x02	10
7	COM1	2023-07-21 12:28:00	To C-Data	LoRa / SF7 / 125 kHz				-90 dBm / 7 dB	0x0E5A5A5A	0x0F	0
8	COM1	2023-07-21 12:28:00	To MAC Command	LoRa / SF7 / 125 kHz				-90 dBm / 7 dB	0x0E5A5A5A	0x0F	0
9	COM1	2023-07-21 12:28:00	To MAC Command	LoRa / SF7 / 125 kHz				-90 dBm / 7 dB	0x0E5A5A5A	0x0F	0

HARDWARE	SOFTWARE	PART NUMBER	DESCRIPTION
iU891A-XL	LoRaWAN	404927	iU891A-XL LoRaWAN ProLink firmware
	Wireless M-Bus	404926	iU891A-XL wireless M-Bus firmware

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