

LILY-W1 series

Standard Professional Automotive

SHORT RANGE

Ultra-compact host-based Wi-Fi modules

Highlights

- Extremely small footprint
- On-board antenna
- Integrated LTE filter
- Micro access point feature for up to 8 clients
- Wi-Fi direct



LILY-W131
10.0 x 14.0 x 2.2 mm

LILY-W132
10.0 x 14.0 x 3.8 mm

Product description

The LILY-W1 series ultra-compact Wi-Fi frontend modules include an integrated MAC/baseband processor and RF front-end components. The modules connect to a host via SDIO or USB interface. They provide simultaneous operation as a station and a micro access point for up to 8 clients. Variant LILY-W132 further includes an internal antenna and LTE filter to enable in-device co-existence without jeopardizing Wi-Fi performance. All LILY-W1 modules will be globally certified for target markets accepting modular radio type approvals.

Key features

- Wi-Fi Standards IEEE 802.11b/g/n
- 802.11n 1x1 SISO
- 802.11 PHY data rates of up to 72 Mbps
- Station and micro access point operation with up to 8 clients
- AES-CCMP and WAPI hardware encryption
- MAC address and RF parameters stored on the module
- 1.8 V or 3.3 V IO signal levels
- Extended operating temperature range of -40 °C to +85 °C

Product selector

Model	Radio	Interfaces	Power	Connectors	Features	Grade
	2.4 GHz channels 1-13 Wi-Fi IEEE 802.11 version Max output power incl. antenna Max range Antenna type LTE filter	SDIO 2.0 USB 2.0	Power supply: 3.0 - 3.6 V	Solder pins	Wi-Fi Security and WAPI RF parameters in OTP memory MAC addresses in OTP memory	Standard Professional Automotive
LILY-W131	• b/g/n 20 dBm TBD P	• •	•	•	• • •	Standard Professional Automotive
LILY-W132	• b/g/n 20 dBm TBD I •	• •	•	•	• • •	Standard Professional Automotive

I = Internal antenna P = Antenna pin

Features

Wi-Fi IEEE 802.11	b/g/n (single-stream, 72 Mbps)
Channels	2.4 GHz channels 1-13
Channel bandwidth	20 MHz
Range (max)	TBD
Output power (max)	802.11b: 20 dBm including antenna gain 802.11g: 18 dBm including antenna gain 802.11n: 17 dBm including antenna gain
LTE filter	Embedded LTE frequency filter (LILY-W132 only)

Software features

RF parameters	Available in on-board OTP memory
MAC addresses	Available in on-board OTP memory
Security	WPA-PSK WPA2-PSK TKIP and AES hardware accelerator WAPI
Operational modes	Station (STA) / Client Micro-AP supports up to 8 stations Simultaneous STA and Micro-AP
Driver support	Free of charge drivers for: Android 4.4 Linux 2.6.x Linux 3.x

Electrical data

Power supply	3.0 VDC - 3.6 VDC
Power consumption	Idle (sleep) mode: < 2 mA @ 3.3 VDC Max (Rx/Tx) mode: < 400 mA @ 3.3 VDC

Interfaces

Host interface	SDIO 2.0 USB 2.0 (slave)
I/O signals	1.8 or 3.3 V selectable

Legal Notice

u-blox reserves all rights to this document and the information contained herein. Products, names, logos and designs described herein may in whole or in part be subject to intellectual property rights. Reproduction, use, modification or disclosure to third parties of this document or any part thereof without the express permission of u-blox is strictly prohibited.

The information contained herein is provided "as is". No warranty of any kind, either express or implied, is made in relation to the accuracy, reliability, fitness for a particular purpose or content of this document. This document may be revised by u-blox at any time. For most recent documents, please visit www.u-blox.com.

Copyright © 2016, u-blox AG

Package

Dimensions	10.0 x 14.0 x 2.2 mm (LILY-W131) 10.0 x 14.0 x 3.8 mm (LILY-W132)
Weight	< 2 g
Mounting	Solder edge pins with castellations (visually inspectable)

Environmental data, quality & reliability

Operating temperature	-40 °C to +85 °C
Cold	EN 60068-2-1
Dry heat	EN 60068-2-2
Change of temperature	EN 60068-2-14 and EN 60068-2-27
Vibration	EN 60068-2-6
Road vehicles	ISO 16750
Production & design	IPC-a-610 class 3

Certifications and approvals

Type approvals	Europe (ETSI R&TTE) US (FCC/CFR 47 part 15 unlicensed modular transmitter approval) Canada (IC RSS) Japan (MIC)
R&TTE Directive 1999/5/EC	EN 300 328, EN 301 893 EMC: EN 301 489-1, EN 301 489-17, EN 61000-6-2 Safety Compliance: IEC 60950-1, EN 60950-1

Support products

EVK-LILY-W131	Evaluation kit for LILY-W131. Includes LILY-W131 module mounted on adapter board with SDIO card interface, USB interface, and two external antennas.
EVK-LILY-W132	Evaluation kit for LILY-W132. Includes LILY-W132 module mounted on adapter board with SDIO card and USB interface.

Product variants

LILY-W131-00B	LILY-W1 module with antenna pin
LILY-W132-00B	LILY-W1 module with internal antenna and LTE filter

Further information

For contact information, see www.u-blox.com/contact-us.

For more product details and ordering information, see the product data sheet.