

Ready-to-embed Wireless Modules





SPA Module
OBS433*



SPA Module
OWSPA311g



LAN Module
OWL221a



LAN Module
OWL222a



SPA Module
OZS311



WIRELESS SNIFFERS & PROTOCOL ANALYZERS

connectBlue offers Wireless Sniffers & Analyzers by Frontline Test Equipment. The Bluetooth sniffer is a Multi-mode Bluetooth Protocol Analyzer that sniffs both radio traffic and high speed UART HCI packages. It is the only product on the market to handle Bluetooth up to v2.1+EDR.

connectBlue also offers the MeshDecoder which is a real-time debugging, verification and network display analyzer, that simplifies the understanding of IEEE 802.15.4 / ZigBee networks by simultaneously capturing, decoding, displaying and filtering data, and also detecting errors. The product range of Sniffers and Protocol Analyzers also includes Wireless LAN solutions.

With these tools, you get faster commissioning and development times, and thus also reduced engineering costs. The sniffers and analyzers can be used in combination with the following:

- Industrial communication network analyzer
- Serial, async-only protocol analyzer
- Serial, sync/async protocol analyzer



READY-TO-USE WIRELESS PRODUCTS

connectBlue also offers a wide range of Bluetooth, Wireless LAN and IEEE 802.15.4 / ZigBee ready-to-use products in industrial housings. For more information, see www.connectblue.com or request data sheets.

Bluetooth	Wireless LAN		Wireless LAN		Wireless LAN		IEEE 802.15.4	
2.1+EDR (3.0 ready) SPP DUN PAN FTP OPP -	-	-	-	-	-	-	-	-
	802.11 b/g (54 Mbit/s)		802.11 a/b/g/n (dual band, 65 Mbit/s)		802.11 a/b/g/n (dual band, 65 Mbit/s)			
Internal External 20 dBm 20 dBm 1000 m 1200 m (preliminary)	Int. Ext. ^{Note 1} 20 dBm 20 dBm 400 m 400 m	Int. Ext. ^{Note 1} 20 dBm 20 dBm 400 m 400 m	Int. Ext. ^{Note 1} 20 dBm 20 dBm 400 m 400 m	Int. Ext. ^{Note 1} 20 dBm 20 dBm 400 m 400 m	Internal External 2.5 dBm 4 dBm 200 m 200 m			
Yes	Yes	Yes	Yes	Yes	Yes			
Yes	Yes	Yes	Yes	Yes	Yes			
Yes	Yes	Yes	Yes	Yes	Yes			
Yes	Yes	-	-	-	Yes			
Yes	Option ^{Note 3}	-	-	-	-			
Option ^{Note 3}	-	-	-	-	-			
1.8 M	2.7 M	-	-	-	57.6 k			
Yes	Yes	-	-	-	Yes			
-	-	Max 80 MHz	-	-	-			
-	-	-	Max 50 MHz	-	-			
Yes	Yes	-	-	-	Yes			
7	7	-	-	-	1			
Yes	-	-	-	-	-			
Yes ^{Note 5}	WEP WPA WPA2	WEP WPA WPA2	WEP WPA WPA2	WEP WPA WPA2	Yes			
Yes	-	802.11e	802.11e	802.11e	-			
Point-to-point	Point-to-point	Infrastructure	Infrastructure	Infrastructure	Point-to-point			
Point-to-multipoint	Point-to-multipoint	Ad-hoc	Ad-hoc	Ad-hoc	Optional ZigBee			
Repeater					stack available			
Analog/Digital I/Os OBEX (FTP/OPP) ^{Note 9}	Embedded TCP/IP stack	Driver support: Linux 2.6 WinCE 5/6 Embedded systems	Driver support: Linux 2.6 WinCE 5/6	Driver support: Linux 2.6 WinCE 5/6				
3.3 - 6.0 VDC	3.3 - 5.5 VDC	3.3 - 5.5 VDC	3.1 - 3.6 VDC	3.1 - 3.6 VDC	3.3 - 5.5 VDC			
TBD	0.9 mA @3.3V	4.9 mA	4.9 mA	4.9 mA	27 mA			
TBD	15 mA @3.3V	150 mA	150 mA	150 mA	27 mA			
Yes	Yes	Yes	Yes	Yes	Yes			
Option	-	Option	Option	Option	-			
Option	Option	-	-	-	Option			
-	-	-	-	-	-			
Option	Yes	-	-	-	Yes			
-40 to +85° C	-30 to +85° C	-30 to +85° C	-30 to +85° C	-30 to +85° C	-40 to +85° C			
Yes	Yes	-	-	-	Yes			
Yes	Yes	Yes	Yes	Yes	Yes			
23x36x4.4	23x36x3.1	23x36x3.1	23x36x3.1	23x36x3.1	23x36x3.1			
cB-ACC-24 cB-ACC-34	cB-ACC-24 cB-ACC-34	cB-WDK-03-A cB-WDK-04-A	cB-WDK-01-A cB-WDK-03-A	cB-WDK-01-A cB-WDK-03-A	cB-ACC-24 cB-ACC-34			

✓ Certified and pre-tested

Benefit from the advantages of low-power modules, fully certified and pre-tested



Bluetooth SPA Starter Kit USB Bluetooth SPA Starter Kit RS232 I/O Development Kit BTIODK311i SPA Accessory Kit RS232 SPA Accessory Kit USB

WIRELESS STANDARD	Bluetooth	Bluetooth	Bluetooth	-	-
CONTENTS					
Wireless module	OEMSPA311i	OEMSPA311i	2x OEMSPA311i	-	-
Development/adapter board	USB adapter	RS232 adapter	2x I/O boards	RS232 adapter	USB adapter
Others	USB extension cable, documentation and configuration tools	9-pin serial cable, USB Power cable, documentation and configuration tools	2x 9-pin serial cables, 2x USB Power cable, documentation and config tools	9-pin serial cable, USB Power cable, documentation and configuration tools	USB extension cable, documentation and configuration tools
COMPATIBLE MODULES					
Bluetooth, OHCI406i/x	-	-	-	-	-
Bluetooth, OHCI411i/x	Yes	Yes	-	Yes	Yes
Bluetooth, OEMSPA310i	Yes	Yes	Yes	Yes	Yes
Bluetooth, OEMSPA311i/x	Yes (included)	Yes (included)	Yes (2 included)	Yes	Yes
Bluetooth, OBS411i/x	Yes	Yes	Yes*	Yes	Yes
Bluetooth, OEMSPA331i/x	Yes	Yes	Yes	Yes	Yes
Bluetooth, OEMSPA312i/x	Yes	Yes	Yes	Yes	Yes
Bluetooth, OEMSPA332i/x	Yes	Yes	Yes	Yes	Yes
Bluetooth, OEMSPA333i/x	Yes	Yes	-	Yes	Yes
Wireless LAN, OWSPA311gi/x	Yes	Yes	-	Yes	Yes
Wireless LAN, OWL221ai/x	-	-	-	-	-
Wireless LAN, OWL222ai/x	-	-	-	-	-
802.15.4, OZS311i/x	Yes	Yes	-	Yes	Yes
ORDER NUMBER	cB-OEMSPA311i-00	cB-OEMSPA311i-01	cB-BTIODK311i-01	cB-ACC-26	cB-ACC-41



Wireless LAN SPA Starter Kit USB Wireless LAN SPA Starter Kit RS232 Wireless LAN SDIO Eval. kit Wireless LAN SPI / SDIO Eval sys. Wireless LAN SPI Eval. system

WIRELESS STANDARD	Wireless LAN	Wireless LAN	Wireless LAN	Wireless LAN	Wireless LAN
CONTENTS					
Wireless module	OWSPA311gi	OWSPA311gi	OWL222ai	OWL221ai / 222ai	OWL221ai
Development/adapter board	USB adapter	RS232 adapter	SDIO adapter	Keith&Koep μConXS	μConXS adapter
Others	USB extension cable, documentation and configuration tools	9-pin serial cable, USB Power cable, CD with documentation and config tools	WinCE 5/6 (ARM) drivers in binary code	Trizeps IV board, μConXS adapter, SDIO adapter, drivers in binary code ^{Note 8}	Cheetah USB-SPI adapter, WinXP drivers in binary code
COMPATIBLE MODULES					
Bluetooth, OHCI406i/x	-	-	-	-	-
Bluetooth, OHCI411i/x	Yes	Yes	-	-	-
Bluetooth, OEMSPA310i	Yes	Yes	-	-	-
Bluetooth, OEMSPA311i/x	Yes	Yes	-	-	-
Bluetooth, OBS411i/x	Yes	Yes	-	-	-
Bluetooth, OEMSPA331i/x	Yes	Yes	-	-	-
Bluetooth, OEMSPA312i/x	Yes	Yes	-	-	-
Bluetooth, OEMSPA332i/x	Yes	Yes	-	-	-
Bluetooth, OEMSPA333i/x	Yes	Yes	-	-	-
Wireless LAN, OWSPA311gi/x	Yes (included)	Yes (included)	-	-	-
Wireless LAN, OWL221ai/x	-	-	-	Yes (included)	Yes (included)
Wireless LAN, OWL222ai/x	-	-	Yes (included)	Yes (included)	-
802.15.4, OZS311i/x	Yes	Yes	-	-	-
ORDER NUMBER	cB-OWSPA311gi-00	cB-OWSPA311gi-01	cB-WDK-01-A	cB-WDK-03-A / 04-A	cB-WDK-10-A

Explanations on Table Notes

- 1 Diversity supported
- 2 Approximate range measures in line-of-sight
- 3 Via external transceiver
- 4 Special multipoint firmware for 3 or 7 slaves available
- 5 Encryption and Link level authentication on/off. Bluetooth 2.1 units also support Simple Pairing.
- 6 Dependent on used Bluetooth host stack
- 7 Applies to OHCI411 only
- 8 SDIO drivers for WinCE 5.0/6.0 (ARM). SPI drivers for WinCE 5.0/6.0 (ARM) and Linux 2.6 (ARM).
- 9 The modules are fully Bluetooth qualified for the profiles listed. FTP/OPP is however not included by default.

* In progress

Compatible and futuresafe

All modules share the connectBlue standard for form factor and fitting, connectors, antennas as well as configuration and control software tools



	1/2 wave length antenna	Rugged Puck antenna	Rugged Stub antenna	1/4 wave length stub antenna	1/2 wave length dual band antenna
MECHANICAL					
Type	½ wave dipole	Patch antenna	½ wave dipole	¼ wave dipole	½ wave dipole
Polarization	Linear	Linear	Linear	Linear	Linear
Gain	+2.5 dBi	+1 dBi	+2 dBi	0 dBi	+3 dBi
Frequency	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz + 5 GHz
Dimensions (mm)	Ø10 x 100	Ø76 x 20.7	Ø14.3 x 61.1	Ø9 x 26	Ø10 x 90
IP classification	-	IPX6 / IPX9K	IP54	-	-
Mounting	-	M16x13.6 mm	-	-	-
Cable Length	-	3 m	-	-	-
Cable Loss	-	-	-	-	-
Manufacturer	Laird Tech.	Reel (Reel planTec)	Radiall/Larsen	Mobile Mark Communications	ProAnt
CONNECTOR OPTIONS					
SMA (order number)	Yes (ACC-16)	Yes (ACC-17)	Yes (ACC-21)	Yes (ACC-23)	Yes (ACC-54)
RPSMA (order number)	Yes (ACC-36)	Yes (ACC-37)	-	-	Yes (ACC-53)
U.FL. (order number)	-	-	-	-	-



	Antenna Cable U.FL-SMA/RPSMA	1/2 wave length antenna with u.fl	1/2 wave length antenna with u.fl	NanoBlue PCB antenna with u.fl
MECHANICAL				
Type	Antenna cable	½ wave dipole	½ wave dipole	Patch antenna
Polarization	-	Linear	Linear	Linear
Gain	-	+2 dBi	+2 dBi	+2 dBi
Frequency	2.4 GHz	2.4 GHz	2.4 GHz	2.4 GHz
Dimensions (mm)	-	Ø10 x 108	Ø10 x 108	48 x 13 x 0.8
Housing	-	-	-	-
Mounting	-	Snap-in	Snap-in	-
Cable Length	12 cm	10 cm	25 cm	10 cm
Cable Loss	Less than 0.5 dB	-	-	-
Manufacturer	-	Laird Tech.	Laird Tech.	Laird Tech.
CONNECTOR OPTIONS				
SMA (order number)	Yes (ACC-18 / 48)	-	-	-
RPSMA (order number)	Yes (ACC-38)	-	-	-
U.FL. (order number)	Yes (mandatory)	Yes (ACC-27)	Yes (ACC-29)	Yes (ACC-28)

Maximum throughput and robustness ready to embed

For nearly a decade, connectBlue has helped some of the world's most demanding brands to exploit the new possibilities of wireless technology. By applying a connectBlue wireless mindset, and by adapting that to their specific environment, companies achieve improved productivity, logistics and safety. Now comes the next phase in the wireless revolution: the demand for greater data throughput and reliability. All modules presented in this folder comply with connectBlue quality standards with outstanding performance in range, data capacity and field proven robustness.

connectBlue[™]

*The strongest connection in a **wireless** world*

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