

bintec WI1040 | WI2040 | WI3040 | WI1065 | WI2065 | WI3065

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The devices of the ruggedized bintec WI Series are optimized for operation under rough conditions, at extreme temperature, in outdoor areas or polluted areas. They support the latest WLAN technology and are particularly designed for the usage in professional applications.

The bintec WI series is available in two variants: the indoor IP40 protected bintec WIx040, and the outdoor IP65 protected bintec WIx065. Depending on the model, the access points are equipped with one, two or three radio modules. The operation mode of each radio can be chosen individually between Client, AccessPoint and Bridge mode.

When using data of different applications it's important to prioritize some of them. The WI series supports WMM (Wireless Multimedia), a technique to prioritize certain data of applications like video or voice in order to provide maximum of transmission quality for time critical applications.

In addition to the WLAN standards 802.11b and 802.11g, these devices also support 802.11a as well as its European counterpart, the 802.11h. This is particularly advisable for building bridge solutions in outdoor areas.

Furthermore, these products also support such modern processes as Multi SSID and VLAN, with which up to 16 virtual access points can be mapped per radio module (depending on the complexity of the configuration).

To ensure highest security, the devices support the 802.1x and 802.11i (WPA2) security standards. The systems can be reliably configured using SSH, SSL or alternatively via https as well. When used as bridges, the devices support the automatic bridge mode and are able to secure bridge connections with the help of TKIP and AES encryption.

- o SFP slot for fiber modules (release 7.6.1 or higher) *
- o Serial interface RS232 (in preparation)
- o wide temperature range from -25°C to +70°C
- o Protection class: IP40 / 65
- o Theft protection optional
- o Up to three radio modules
- o Power over Ethernet (WI10xx, WI20xx)

Versions

Feature	Description
WI1040	One internal radio module, device for indoor use, 2 external antennas, Article Nr: 551000010
WI2040	Two internal radio modules, device for indoor use, 4 external antennas, Article Nr: 551000011
WI3040	Three internal radio modules, device for indoor use, 4 external antennas, Article Nr: 551000008
WI1065	One internal radio module, device for outdoor use, 2 external antennas, Article Nr: 501059000
WI2065	Two internal radio modules, device for outdoor use, 4 external antennas, Article Nr: 501059001
WI3065	Three internal radio modules, device for outdoor use, 4 external antennas, Article Nr: 501059002

Wireless LAN

Feature	Description
Encryption WEP/WPA	WEP64 (40 Bit key) and WEP128 (104 Bit key), WPA Personal and WPA Enterprise (TKIP), WPA2 Personal and WPA2 Enterprise (TKIP, AES)
IEEE802.11i Authentication	802.1x/EAP-MD5, 802.1x/EAP-TLS, 802.1x/EAP-TTLS, 802.1x/EAP-PEAP, 802.1x/EAP-SIM
Automatic Rate Selection (ARS)	available
Data rates	IEEE802.11 Standards: a,h (5GHz) g,b (2.4 GHz) modulation schemes: 11, 5.5, 2 and 1Mbps (DSSS) 2.4GHz; 54, 48, 36, 24, 18, 12, 9 and 6Mbps (OFDM), 2.4 and 5 GHz
Output power	Adjustable from 0dBm up to maximum transmit power in steps of 1 dBm. The maximum transmit power varies from 14dBm to 19 dBm, depending on data rate and frequency band.
Radio admin status	Can be switched on and off.
Channel sets	according to IEEE 802.11d
Delay Spread @ 2.4GHz	PER 8% : 1Mbps 250ns; 2Mbps 250ns; 5.5Mbps 100ns; 11Mbps 100ns. PER 10%: 6Mbps 1000ns; 9Mbps 540ns; 12Mbps 680ns; 18Mbps 420ns; 24Mbps 320ns; 36Mbps 210ns; 48Mbps 160ns; 54Mbps 120n
Delay Spread @ 5GHz	PER 10%: 6Mbps 1000ns; 9Mbps 540ns; 12Mbps 680ns; 18Mbps 420ns; 24Mbps 320ns; 36Mbps 210ns; 48Mbps; 160ns; 54Mbps 120ns
Receiver Sensitivity @ 2.4GHz	PER 8%: 1Mbps -98dBm; 2Mbps -93dBm; 5.5Mbps -92dBm; 11Mbps -88dBm; PER 10%: 6Mbps -92dBm; 9Mbps -90dBm; 12Mbps -88dBm; 18Mbps -86dBm; 24Mbps -82dBm; 36Mbps -78dBm; 48Mbps -73dBm; 54Mbps -71dBm
Receiver Sensitivity @ 5GHz	PER 10%: 6Mbps -90dBm; 9Mbps -88dBm; 12Mbps -86dBm; 18Mbps -84dBm; 24Mbps -79dBm; 36Mbps -76dBm; 48Mbps -71dBm; 54Mbps -69dBm
Antenna diversity	Can be switched on and off
WLAN Modes	IEEE 802.11 Compatibility Mode: 11a Only, 11b Only, 11g Only, Mixed, Mixed-Long Range, Mixed-Short Range
WLAN operating modes	Per radio selectable: 1. Client Mode (routing from Rel. 6.2 onwards; bridging in prep.); 2. AccessPoint / WDS; 3. Bridge
Nitro Mode	Can be switched on / off (fully standard compliant)
Extended Nitro XM Mode	Configurable: Frame compression, Frame concatenation, Piggyback ACK, Direct link
Repeating	Repeating can be switched on / off
Radio quality Information	Signal, noise and data rate per client, and per bridge link
Clients table	Table of associated clients (nodes)
Broadcast SSID	Can be switched on / off
Multi SSID	Depending on configuration up to 16 service sets per radio in AP mode, virtual AccessPoints with own MAC address per radio.
Country Specific settings	Operating Channels according to the regulatory domain possible as defined in IEEE802.11d.
TPC	TPC (Transmission Power Control): At 5 GHz, automatic power reduction according to EN301893
DFS	DFS (Dynamic Frequency Selection): At 2,4 and 5GHz, channels are used dynamically. 5 GHz operation according to EN301893
RTS/CTS	RTS/CTS threshold adjustable.
DTIM	DTIM period adjustable.

Security

Feature	Description
RADIUS	Central check of access authorization at a RADIUS server (.1x Authentication), RADIUS traffic in Management VLAN independent from USER VLAN
Authentication and Encryption	Can be configured individually per Virtual Service Set
Access Control List (ACL):	Via local list

Maintenance and Service

Feature	Description
Device configuration via	DHCP, Telnet, SSH, HTTP, HTTPS, SNMP, ser. console
Console	Serial console via D-Sub9 jack for configuration available.
SNMP	SNMP (v1, v2, v3), SNMP V3: USM Model, VACM Views, Authentication and Encryption; SNMP Traps (v1, v2, v3) configurable, SNMP IP access list configurable
SNMP configuration	Complete management with MIB-II, MIB 802.11, Enterprise MIB
SSH login	Supports SSH V1.5 and SSH V2.0. For secure connections of terminal applications
HTTP/HTTPS	Versions pre1.0, 1.0, 1.1
Setup Tool	Integrated, menu-based, intuitive setup program, Artem CPM; with BOSS software only with restricted functionality
Guarantee	2-year manufacturer's guarantee
Documentation	English documentation on CD
Configuration export	Loading And Saving Of Configurations
On The Fly Configuration	No restart is required after the configuration has been changed.
Discovery Function	Via Artem Discovery Protocol (ADP)

Software Features

Feature	Description
Bridging	Transparent Mode
VLAN	Network segmentation on layer 2 according to IEEE 802.1Q. Supports up to 32 VLANs.
QoS	Data prioritization according to IEEE802.1D. Data prioritization for IP-DSCP. Wireless data prioritisation according to WMM.
BLD	Broken Link Detection (BLD) per SSID possible.
Scheduling	Interfaces can be activated or deactivated and 5 GHz Bandscan can be performed at defined times.
Statistics	Wireless Extended Statistics, Sorted by clients and by data rate.
Console Logging	Events via Telnet/SSH and HTTP/HTTPS visible
Syslog	Client, with different levels of messaging.
DHCP	Client / Server
Power Management For Clients	PSP according to IEEE802.11; Number of Managed Clients per Radio: Up to 250 at the same time.
IAPP	Roaming with Artem Inter-Access-Point-Protocol (IAPP)
WDS	Wireless Distribution System: Interoperabel with other devices from the Funkwerk-EC Portfolio
Bridge: Point-To-Point / Point-To-Multipoint	Point-To-Point Connection between two devices; Point-To-Multipoint Connection between up to eight partners per radio.
Bridge Configuration	Full Remote Auto Configuration: Propr. artem protocol with encrypted transmission. Manual config. possible. RTS/CTS Threshold: Adjustable; Operating Channels: According to the regulatory domain. Transmit Speed: Auto fallback or selectable fixed rate.
Bridge Linktest	Via the linktest the quality of a bridge link can be measured.
Bridgmlink encryption	With high security TKIP and AES possible

Hardware Features

Feature	Description
Optical Interface	Via SFP slot, common optical interfaces can be used, from Rel. 7.6 onwards.
Serial interface	One RS232 9 pin Sub-D jack (DCE, female) in prep.
LAN / WAN	2 x 10/100 Mbps Ethernet twisted pair, autosensing, auto MDI/MDI-X
Ethernet Jack	2 RJ45 shielded, fits to standard RJ45 Ethernet plugs
WLAN	IEEE 802.11a/b/g/h 1, 2 or 3 internal radio modules, 2,4 and 5 GHz band, 2 or 4 external antennas, max. 100mW RF power
Antenna	WI10xx: 2 RTNC-jacks; WI20xx, WI30xx:4 RTNC-jacks
Antenna diversity	Supported by WI10xx, WI20xx, WI30xx by one of the three modules.
Real time clock	Even at power loss the system time will be available for two days.
Temperature sensor	Temperature supervision and software triggered actions possible from Rel. 7.6 onwards
Alarm relay	In case of overtemperature or failure alarm via relay possible from Rel. 7.6 onwards: galvanically isolated normally open contact, 1A 125VAC / 2A 30VDC
Watchdog	Hardware Watchdog integrated
Redundant power supply	Operation with two 24V power supplies and PoE possible
Polarity independent	Operation is independent of polarity of power source
Reset	Reset and Reset to Factory default via two switches possible
Ramp up limited	To prevent load peaks at powering up
MTBF	Mean Time Between Failure (calculated at ambient air temperature): WI-Device: 330.000h at 20°C, 41.250h at 50°C; Each Radio: 300.000h at 20°C, 37.000h at 50°C
SD Card	Saving and loading of configuration via MMC/SD Card possible (optional, in preparation)
Status LEDs	Status+Activity for WLAN, Ethernet, SFP, Failure-LED
Mounting	Wall mounting. Optional mast (indoor and outdoor variant) or rail mounting set available (indoor variant only).
Theft protection	Theft protection optional available
Protection class	WIx040: IP40; WIx065: IP65
Dimensions	WIx040: approx. 215mm by 40mm by 155mm (w by h by d); WIx065: approx. 260mm by 56mm by 256mm (w by h by d)
Weight	WIx040: approx. 1200g; WIx065: approx. 1800g
Power supply	Power supply not included in delivery
Power consumption	Max. 0,8A at 24V
Environment	Storage: -40°to +85°C; Power up without damage; operating: -25° to 70° C; Max. rel. humidity 95% (non condensing)
Standards	Wi-Fi conform for IEEE 802.11a/b/g/h; IEEE 802.11a,b,d,g,h,i; IEEE 802.3, IEEE 802.3af, IEEE 802.1Q (VLAN Tagging)
Certifications	R&TTE Directive 1999/5/EG; Directive of the European Parliament and of the Council relating to Radio Equipment and Telecommunications Terminal Equipment and the Mutual Recognition of their Conformity.
Certifications	Conformity with the essential requirements of the directive is attested by adherence to the following standards: EN 60950-1 : 2003-03; Safety of Information Technology Equipment
Certifications	EN 301 489-1 V1.4.1 : 2004-11; Electromagnetic Compatibility for Radio Equipment and Services; EN 301 489-17 V1.2.1 : 2002-08"
Certifications	Specific Conditions for Wideband Transmission Systems and High-Performance Radio Local Area Network (HIPERLAN) Equipment
Certifications	EN 300 328 V1.6.1 : 2004-11; Electromagnetic Compatibility and Radio Spectrum Matters; EN 301 893 V1.3.1; Broadband Radio Access Networks (BRAN) - 5-GHz high-performance RLAN