Integra Series

Full outdoor & full indoor microwave radios

2.2 Gbps
Capacity

+35 dBm
Tx Power

112 GHz
Bandwidth

4096QAM
Modulation



PRODUCT OVERVIEW

Integra-X2

The series' flagship, full outdoor radio Integra-X2, incorporates two transceivers and two modem chains providing 2+0 XPIC built-in. Data traffic is secured by FIPS-197 certified AES-256 encryption.



General

System design	Full outdoor unit with direct-mount antenna
Frequency bands	4U, 5.5, 6, 7, 8, 11, 13, 15, 18, 23, 26, 28, 30, 38 GHz
Capacity	up to 2.2 Gbps
Modulation	up to 4096QAM
Configurations	1+0, 1+1 SD/FD/HSB, 2+0 XPIC/ACAP/ACCP*
Channel bandwidth	ETSI: 7, 14, 20, 28, 40, 56, 60, 112 MHz FCC: 5, 10, 20, 25, 30, 40, 50, 60, 75, 80, 100 MHz
Tx power	up to +32 dBm
Encryption	AES-256
Display	—

Ports

Antenna	SAF2 ◯	SAF2 circular flange for all frequency bands
Ethernet traffic	SFP+ RJ-45	2 x SFP+ (1, 2.5 and 10 Gbps) 1 x RJ-45 GbE (auto 10/100/1000 Mbps) with PoE
Serial port for config	USB-B	RS232 serial over USB Type-B
Power	DC	Screw type terminal block, pluggable, 2 pin, centerline 5.08 mm / 0.2 in
Control	RSSI LED	3.5 mm RSSI port with audible alignement LED for Power On and RSL control

Ethernet

Ethernet switch		Built-in Carrier Ethernet 10 Gigabit Switch with 50 Gbps Switching Capacity
Management		SNMP v1/2c/3, SSH, Telnet, HTTPS, Serial, RADIUS, NTP; In-band over the same ETH port; Out-band configurable using VLANs
Synchronization		SyncE, IEEE 1588 v2 PTP TC mode
VLAN		802.1Q 4096 VLANs, QinQ (Double Tagging), VLAN Rate
QoS		8 level VLAN 802.1p, 64 level IPv4/6 DSCP, CoS, 8 level MPLS-TP EXP bit, port-based priority; Per port egress schedulers: SP, RR, WRR, DWRR

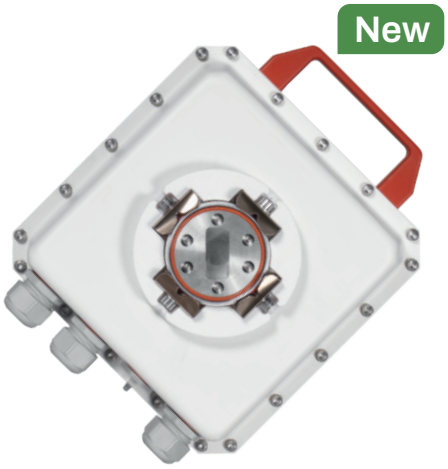
Mechanical & Electrical

Temperature range		-33 °C to 55 °C / -27 °F to 131 °F
Cooling		Active cooling with system temperature controlled fans
Form factor	Size Weight	280 x 437 x 100 mm / 11.02 x 17.2 x 3.9 in up to 8.5 kg / 18.7 lbs
Power consumption		up to 115W
Input voltage	DC	38-57V
Surge immunity		IEC EN 61000-4-5 Level 3 (2kV)

*Contact SAF Tehnika representative for more information

Integra-C

The next-generation single-transceiver radio for reliable, cost-effective communication. Built for full outdoor use, it is IP67 and NEMA 4X rated to withstand the harshest environments. Fanless cooling extends operational lifetime and keeps power consumption below 50 W.



General	
System design	Full outdoor unit with direct-mount antenna
Frequency bands	6L, 6U, 7, 8, 11, 13, 15, 18, 23, 26, 28, 30, 32, 38 GHz*
Capacity	up to 1 Gbps
Modulation	up to 2048QAM (4096QAM in roadmap)
Configurations	1+0 (1+1 HSB, 2+0 link bonding in roadmap)
Channel bandwidth	ETSI: 1.75, 3.5, 7, 14, 28, 56, 112 MHz FCC: 2.5, 5, 10, 20, 25, 30, 40, 50, 60, 75, 80, 100 MHz
Tx power	up to +30 dBm
Encryption	AES-256
Display	—

Ports		
Antenna	SAF2R ▯ SAF2 ◯	6-13 GHz models: SAF2R rectangular WG flange 15-38 GHz models: SAF2 circular flange
Ethernet traffic	SFP+ RJ-45	1 x SFP (1 Gbps), 1 x SFP+ (10 Gbps connection for protection) 1 x RJ-45 GbE (auto 10/100/1000/2500 Mbps) with PoE
Serial port for config	USB-C	USB Type-C for RS232 serial over USB console connection
Power	DC	Single-Row 2 pin Micro-FIT+ connector (crimped style)
Control	RSSI LED	USB to RSSI adapter LED for Power On and RSL control

Ethernet		
Ethernet switch		5-port 1G / 2.5G / 10G L2 Ethernet switch built-in
Management		Local IP: LANP, LANS. Local serial: USB. Remote IP: LANP, LANS, RF channel. SNMP v1/2c/3, SSH, Telnet, HTTPS, Serial, RADIUS, NTP. In-band over the same ETH port; Out-band can be used on RJ-45 GbE port
Synchronization		IEEE 1588 v2 PTP, SyncE*
VLAN		One 802.1Q VLAN for management, QinQ*
QoS		8 level VLAN 802.1p

Mechanical & Electrical		
Temperature range		-33 °C to 55 °C / -27 °F to 131 °F
Cooling		Passive cooling (fanless design)
Form factor	Size Weight	280 x 280 x 98 mm / 11 x 11 x 3.9 in up to 4 kg / 8.8 lbs
Power consumption		up to 50W
Input voltage	DC / PoE	38-57V
Surge immunity		IEC EN 61000-4-5 Level 3 (2kV)

*Contact SAF Tehnika representative for more information

Integra-G

A full outdoor radio with 2+0 link bonding for added capacity, SyncE for network synchronization, and VLAN and QoS for traffic separation and prioritization.

General	
System design	Full outdoor unit with direct-mount antenna
Frequency bands	7, 8, 17UL, 18, 23, 24UL, 25, 26, 28, 38 GHz
Capacity	up to 1 Gbps
Modulation	up to 2048QAM
Configurations	1+0, 1+1 HSB, 2+0 link bonding
Channel bandwidth	ETSI: 1.75, 3.5, 7, 14, 20, 28, 40, 56, 60 MHz FCC: 5, 10, 20, 25, 30, 40, 50, 60 MHz
Tx power	up to +31 dBm
Encryption	AES-256
Display	—



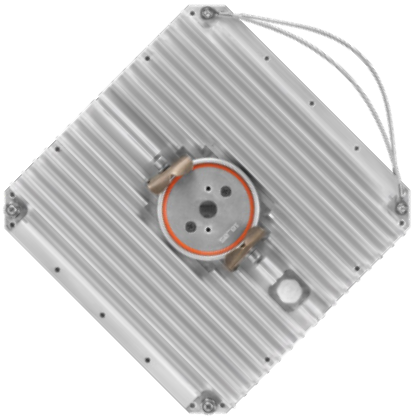
Ports		
Antenna	SAF2R ▯ SAF2 ◯	7-8 GHz models: SAF2R rectangular WG flange 17-38 GHz models: SAF2 circular flange
Ethernet traffic	SFP RJ-45	2 x SFP (1 Gbps) 1 x RJ-45 GbE (auto 10/100/1000 Mbps) with PoE
Serial port for config	USB-B	RS232 serial over USB Type-B
Power	—	—
Control	RSSI LED	3.5 mm RSSI port with audible alignement LED for Power On and RSL control

Ethernet		
Ethernet switch		GbE Network Processor built-in
Management		SNMP v1/2c/3, SSH, Telnet, HTTPS, Serial, RADIUS, NTP; In-band over the same ETH port; Out-band configurable using VLANs
Synchronization		SyncE
VLAN		802.1Q 4096 VLANs, QinQ
QoS		8 level VLAN 802.1p, 64 level IPv4/6 DSCP, CoS, 8 level MPLS-TP EXP bit, port-based priority; Per port egress schedulers: SP, RR, WRR, DWRR

Mechanical & Electrical		
Temperature range		-33 °C to 55 °C / -27 °F to 131 °F
Cooling		7-8 GHz models: active cooling with fans 17-38 GHz models: passive cooling (fanless design)
Form factor	Size Weight	7-8 GHz models: 280 x 437 x 100 mm / 11.02 x 17.2 x 3.9 in 17-38 GHz models: 235 x 250 x 72 mm / 9.26 x 9.85 x 2.84 in 7-8 GHz models: 6.5 kg / 14.3 lbs 17-38 GHz models: 2.9 kg / 6.4 lbs
Power consumption		up to 74W
Input voltage	PoE	38-57V

Integra-W

With channel bandwidths up to 112 MHz, this full outdoor radio makes full use of available spectrum in a single polarization, while keeping the other one free. Its compact, lightweight, all-in-one design makes tower-top deployment easy.



General

System design	Full outdoor unit with direct-mount antenna
Frequency bands	17UL, 18, 23, 24UL, 25, 26, 28, 38 GHz
Capacity	up to 883 Mbps
Modulation	up to 1024QAM
Configurations	1+0
Channel bandwidth	ETSI: 40, 56, 60, 112 MHz FCC: 40, 50, 60, 80, 100 MHz
Tx power	up to +33 dBm
Encryption	—
Display	—

Ports

Antenna	SAF2 ◯	SAF2 circular flange
Ethernet traffic	SFP RJ-45	1 x SFP (1 Gbps) 2 x RJ-45 GbE (auto 10/100/1000 Mbps) with PoE
Serial port for config	USB-B	RS232 serial over USB Type-B
Power	—	—
Control	RSSI LED	3.5 mm RSSI port with audible alignement LED for Power On and RSL control

Ethernet

Ethernet switch		Unmanaged Gigabit Ethernet switch
Management		SNMP v1/2c/3, SSH, Telnet, HTTPS, Serial, RADIUS, NTP; Either Out-band or In-band, depending on PN and firmware
Synchronization		—
VLAN		Transparent
QoS		Transparent

Mechanical & Electrical

Temperature range		-33 °C to 55 °C / -27 °F to 131 °F
Cooling		Passive cooling (fanless design)
Form factor	Size Weight	235 x 250 x 72 mm / 9.26 x 9.85 x 2.84 in 2.9 kg / 6.4 lbs
Power consumption		up to 70W
Input voltage	PoE	38-57V

Integra FIDU+

New

XPIC and +35 dBm Tx power capable, this full indoor dual-transceiver radio is the series' powerhouse, built to modernize legacy systems with ease by connecting to existing antenna waveguides.



General		
System design		Full indoor unit
Frequency bands		4U, 6, 7, 8, 11, 13 GHz
Capacity		up to 2.2 Gbps
Modulation		up to 4096QAM
Configurations		1+0, 1+1 SD/FD/HSB, 2+0 XPIC/ACAP/ACCP*
Channel bandwidth		ETSI: 7, 14, 20, 28, 40, 56, 60, 112 MHz FCC: 5, 10, 20, 25, 30, 40, 50, 60, 80, 100 MHz
Tx power		up to +35 dBm
Encryption		AES-256
Display		4.3" LCD

Ports		
Antenna	SMA	Separate Tx/Rx SMA ports, for 1+0 and 2+0 models without diplexer
	N-type/WG	N-type female or standard WG flange, for 1+0 model with diplexer
Ethernet traffic	SFP+	2 x SFP+ for fiber optics, up to 10 Gbps (1, 2.5 and 10 Gbps)
	RJ-45	1 x RJ-45 GbE (auto 10/100/1000 Mbps) with PoE
Serial port for config	USB-B	RS232 serial over USB Type-B
Power	DC	2 x DC; Screw type terminal block, pluggable, 2 pin, centerline 5.08 mm / 0.2 in
Control	RSSI	3.5 mm RSSI port with audible alignement
	LED	LED for Power On and RSL control
	RJ-45	1 x or 2 x RJ-45 management ports for active IBU switching

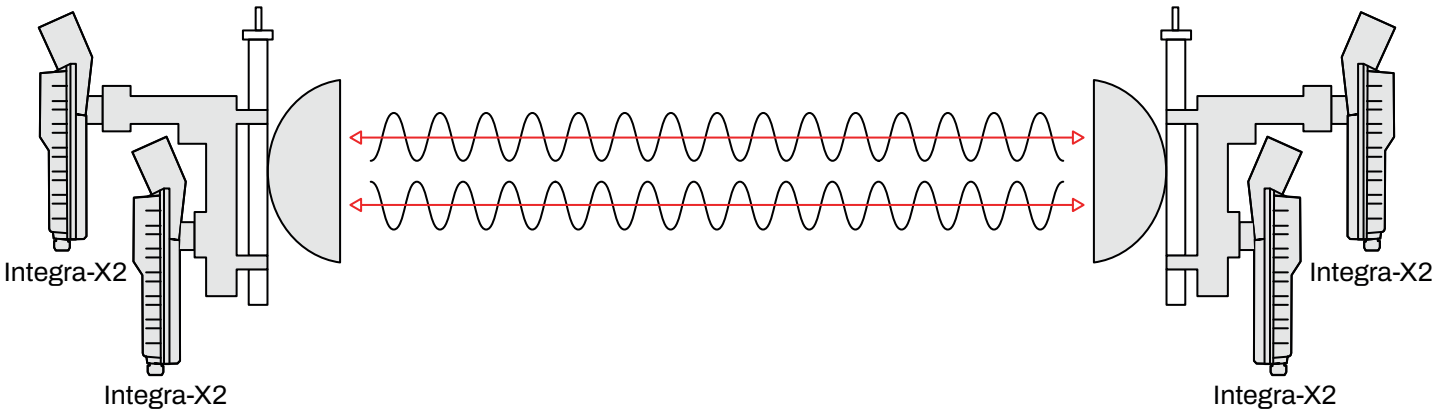
Ethernet		
Ethernet switch		Built-in Carrier Ethernet 10 Gigabit Switch with 50 Gbps Switching Capacity
Management		SNMP v1/2c/3, SSH, Telnet, HTTPS, Serial, RADIUS, NTP; In-band over the same ETH port; Out-band configurable using VLANs
Synchronization		SyncE, IEEE 1588 v2 PTP TC mode
VLAN		802.1Q 4096 VLANs, QinQ (Double Tagging), VLAN Rate
QoS		8 level VLAN 802.1p, 64 level IPv4/6 DSCP, CoS, 8 level MPLS-TP EXP bit, port-based priority; Per port egress schedulers: SP, RR, WRR, DWRR

Mechanical & Electrical		
Temperature range		-5 °C to 55 °C / 23 °F to 131 °F
Cooling		Active cooling with system temperature controlled fans
Form factor	Size	280 x 280 x 98 mm / 11 x 11 x 3.9 in
	Weight	8.5 kg / 18.7 lb
Power consumption		up to 110W
Input voltage	DC	38-57V

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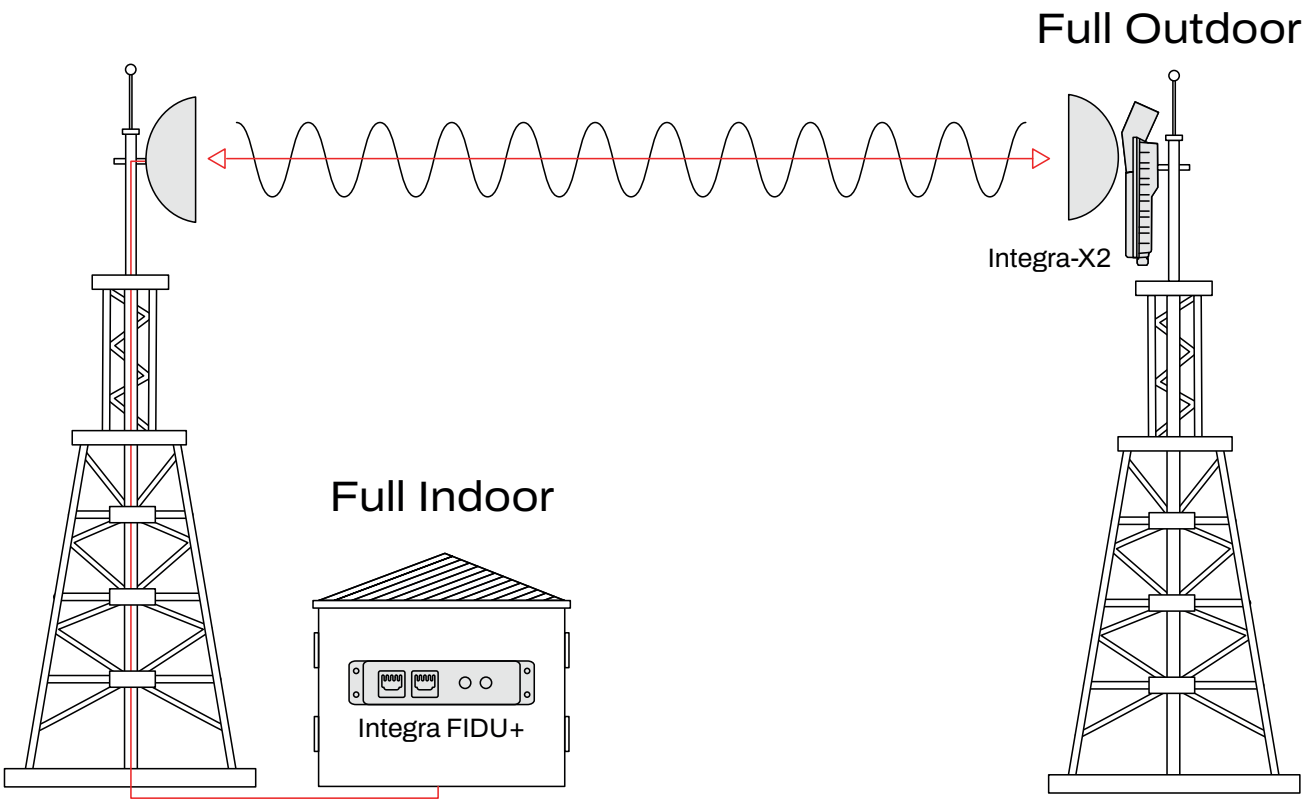
Hybrid OMT

Double the capacity while saving on tower space by combining two Integra-X2 radios on a single antenna at each end of a link. With L1 aggregation and 80 MHz XPIC channels, this 4+0 configuration carries 3 Gbps over 20 km. If one link fails, the other keeps carrying mission-critical traffic at 1.5 Gbps.

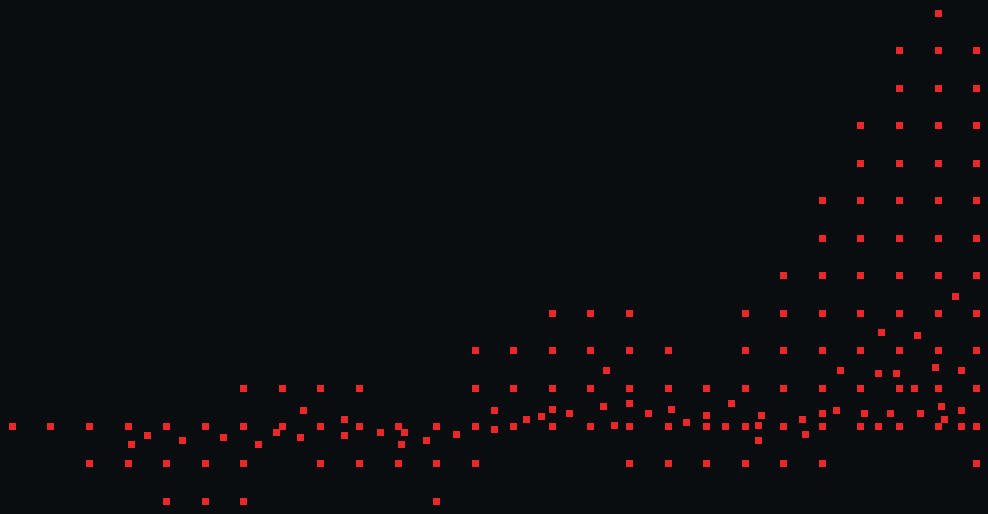


Hybrid System Design

Indoors at one end, outdoors at the other, Integra Series radios let you build each side of a link the way the site demands, a combination rarely found in the microwave industry. With both ends encrypted and delivering up to 2.2 Gbps in a 1+0 configuration, the added flexibility comes without compromising on performance.



Connect
and Protect
What Matters



Designed and manufactured by SAF Tehnika. Product specifications are subject to change without prior notice. For more detailed information about SAF Tehnika products, visit saftehnika.com or contact your SAF Tehnika representative info@saftehnika.com

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