

Go 100Mbps Full Duplex Licence Free! →

SAF FreeMile™



SAF FreeMile all outdoor system is a new generation Licence Free **17GHz and 24GHz ISM band radio** for Ethernet packet data and E1/T1 voice transmission. The new radio system combines excellent features like interference-free operation, high availability, Carrier grade 100Mbps Full Duplex Fast Ethernet capacity with no cost of licensing and quick installation, traditionally associated with ISM radios. SAF FreeMile radio also provides user-friendly Web browser based management interface and straightforward installation process to ensure trouble-free experience for any user.

GENERAL

Frequency range (GHz)	24.05 – 24.25 / 17.1 – 17.3
Duplex (Tx, Rx) offset	100 MHz, cross-polar
Channel bandwidth	10 / 30 MHz
Modulation	QPSK / 16QAM / 32QAM / 64QAM
Capacity range	100 Mbps Eth / 2 x E1/T1
Max. permitted radiated power	+20dBm (100mW) e.i.r.p.*

PORTS

Antenna flange	Circular, 10.3mm/13.8mm
Ethernet with power over	RJ-45 (data traffic, management port, power)
Balanced 2xE1/T1, analogue RSSI	1xRJ-45

ETHERNET

Switch Type	Managed Fast Ethernet Layer 2
Max frame size	1916 bytes
MAC table	1K entries; automatic learning and aging
Packet buffer	32KB; non-blocking store&forward
Flow Control	802.3x
VLAN support	802.1Q (up to 15 concurrent traffic VLANs)
QoS	64 level DiffServ (DSCP) or 8 level 802.1P mapped in 4 prioritization queues with VLAN support
Spanning Tree Protocol	802.1D-2004 RSTP

CHANNEL PLAN 24 / 17 GHz

10MHz channel		30MHz channel	
Tx,Rx (MHz)	Rx, Tx (MHz)	Tx, Rx (MHz)	Rx, Tx (MHz)
24055/17105	24155/17205		
24065/17115	24165/17215	24065/17115	24165/17215
24075/17125	24175/17225		
24085/17135	24185/17235		
24095/17145	24195/17245	24095/17145	24195/17245
24105/17155	24205/17255		
24115/17165	24215/17265		
24125 /17175	24225/17275	24125/17175	24225/17275
24135/17185	24235/17285		
24145/17195	24245/17295		

PERFORMANCE

Configuration	1+0
Traffic Interfaces	100Mbps FE (RJ-45) + 2xE1/T1 (RJ-45)
Tx Power (dBm)	-25 to -15 (24GHz); -25 to -12 (17GHz)
RSL Threshold at BER 10 ⁻⁶	-77 (dBm) (30MHz, 32QAM, 100Mbps)
ACM (Adaptive Coding & Modulation)	Hitless

MANAGEMENT FEATURES

Management Port	RJ-45 (in-band, optional VLAN tag.)
RSSI	LED on FODU, WEB management, analogue
TCP/IP	WEB, SNMP, Telnet - local & remote monitoring via Telnet, WEB GUI, SAF NMS, SNMP Manager
Loopbacks	Yes, E1, modem, RF loopback

MECHANICAL & TECHNICAL

Stationary use	Ref. ETSI EN 300 019-2-4, class 4.1E, non weather-protected locations
Temperature range	-33°C to +55°C
Dimensions:	
HxWxD, mm / weight, kg	230 x 230 x 85 / 2
Input DC voltage	48 V DC ±10%
Max. power consumption	<15W

CAPACITY MODES

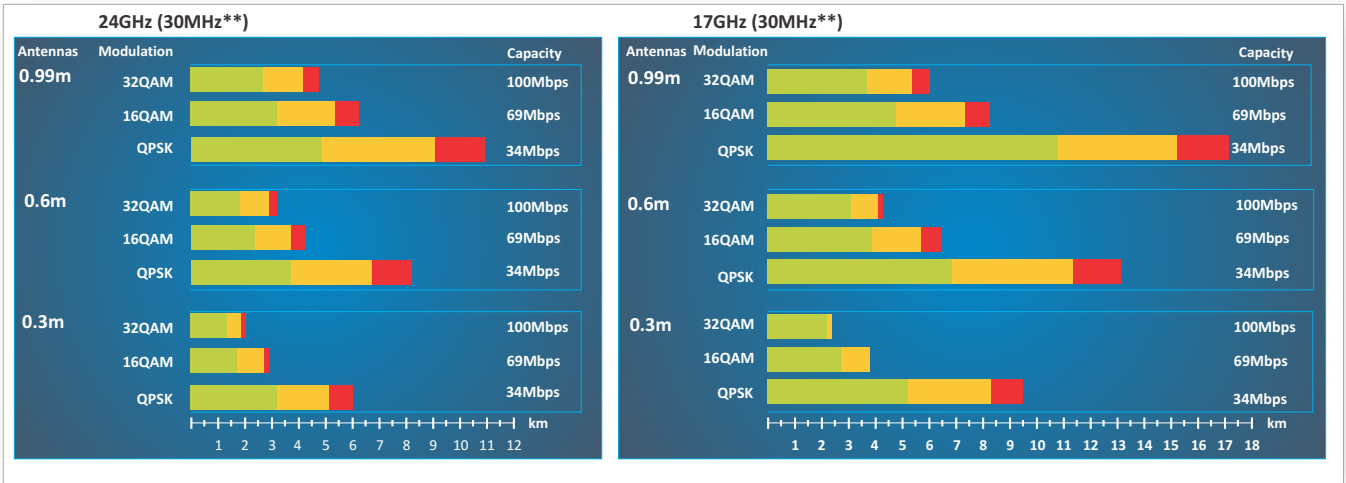
Modulation	10MHz	30MHz
QPSK**	12Mbps Ethernet	40Mbps Ethernet
	8Mbps Ethernet+2E1	38Mbps Ethernet+2E1
	9Mbps Ethernet+2T1	39Mbps Ethernet+2T1
16QAM**	25Mbps Ethernet	81Mbps Ethernet
	21Mbps Ethernet+2E	80Mbps Ethernet+2E1
	21Mbps Ethernet+2T	81Mbps Ethernet+2T1
32QAM	31Mbps Ethernet	100Mbps Ethernet
	27Mbps Ethernet+2E1	100Mbps Ethernet+2E1
	28Mbps Ethernet+2T1	100Mbps Ethernet+2T1
64QAM	41Mbps Ethernet	-
	37Mbps Ethernet+2E1	-
	38Mbps Ethernet+2T1	-

* complies with SRD standard (Short Range Device)
 ** ACM mode only

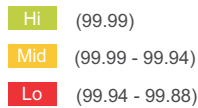
PRODUCT HIGHLIGHTS

- Full duplex capacity 100Mbps + 2E1/T1
- Low interference comparing to links in 2.4GHz and 5.8GHz
- Hitless modulation switching (ACM) feature ensures high availability even at bad weather conditions
- Easy configuration from Web interface and up-to-date network management over SNMP protocol
- Radio polarization sensor for easier installations
- RF Spectrum analyzer

DISTANCES*



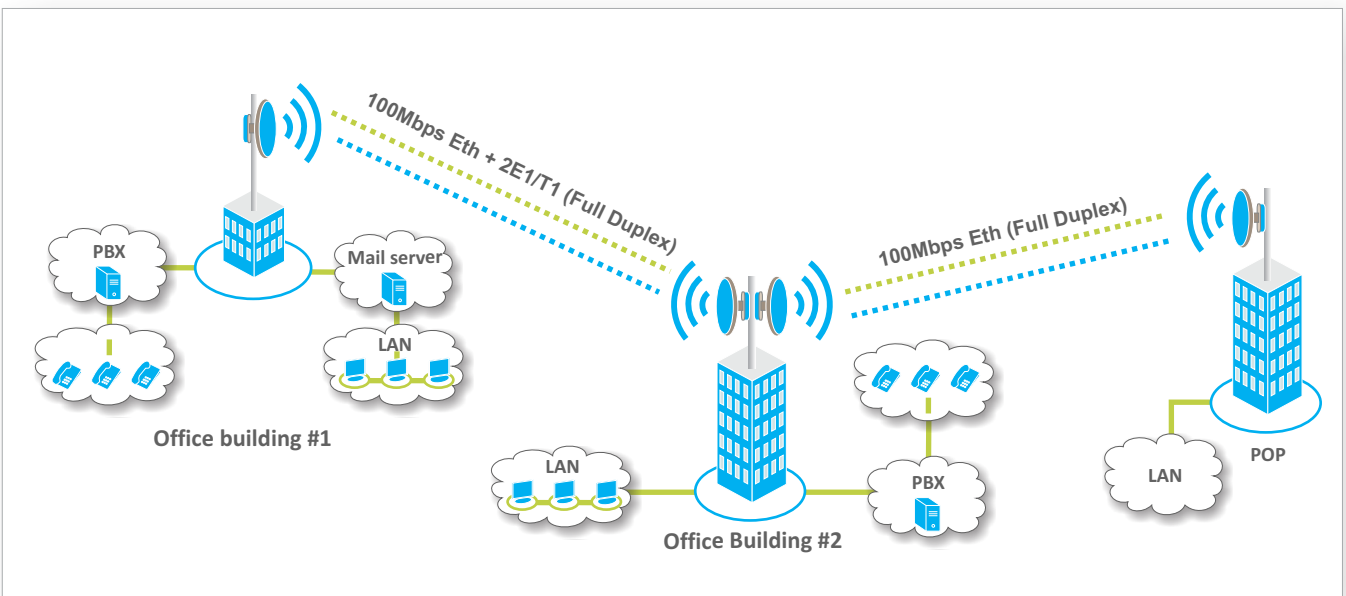
Availability per year, %



* Results are obtained using ITU Rain zone G=30mm/h. The errorless ACM feature will automatically switch to lower modulation during strong rain fading moments.

** At 10MHz channel bandwidth with QPSK modulation the distance is about 1km longer. For detailed link planning please download SAF path calculator at www.saf-freemile.com

CORPORATE WIRELESS NETWORK



! To specify if 17GHz and 24GHz are available frequency bands in your country, please contact the local spectrum regulating authority or SAF sales representative at sales@saftehnika.com



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