



Microwave Radio Link

FNJ-MOJ Family (13-38 GHz)



Version 2
Summer 2023



Description

Fanamoj Company with more than 22 years' of telecom and electronic experience, is one of the pioneers of wireless radio links in Iran. The company is committed to design and production of customer-adapted, high-quality wireless solutions at competitive prices. Wide variety of licensed and license free microwave radio links from 5 to 38 GHz have already been designed and produced for different governmental and private sector customers.

FNJ-MOJ-XX (XX = 13/15/18/23/26/38 GHz) family are split mount radio links for carrier-class multi-technology traffic aggregation. As high performance radio links, they are capable of high capacity transport with Carrier Ethernet, IP engine and multiple 1/10 Gbps ports, while maintaining full support of the E1 traffic. MOJ split mount radio links family are compact, cost effective, easy to install and efficient solution that offer up to 1 Gbps traffic on modulation schemes from QPSK to 1024 QAM.



Features

- ODU from 13-38 GHz
- Up to 310 Mbps throughput upgradable to 1 Gbps
- Carrier-class multi-technology traffic aggregation
- Monitoring and control via SNMP V3
- Optimized for TCP/IP transport compliant to LTE traffic.
- QPSK to 1024 QAM modulation
- Hitless Adaptive Code and Modulation
- L2/L3/L4 Header Compression
- Radio LAG over multiple ODU with XPIC
- Multi Carrier Aggregation up to 2+0/4+0
- Mixed TDM/Ethernet interfaces for dual native transport
- Single Universal ODU for any capacity and modulation
- Network Management System (NMS)



Technical Descriptions

➤ ODU+ Outdoor Accessories Specifications

Power Supply	-72 ~ -36V DC
Power Consumption	< 25W
Aperture Polarization	Vertical & Horizontal
RF Interface	Integrated WR standard
Outdoor Connector	N Type, 50ohm, Female
IF Cable	up to 80m coaxial cable
ODU dimension	280*92*280
Weight	<4.5
IP code	IP66
Antenna diameter	0.3/0.6/0.9/1.2 m
VSWR	1.3
Regulatory compliance	ETSI class 3
Cross polarization	30
Polarization	V or H



➤ ODU Technical Features

Frequency Range	13/15/18/23/26/38 GHz
Power control	1 dB step
Tx Max Power	+24 dBm for QPSK +21 dBm for 16QAM +18 dBm for 32QAM +18 dBm for 64QAM +18 dBm for 128QAM +17 dBm for 256QAM +16 dbm for 512QAM +15 dBm for 1024QAM
Phase Noise @ 10 KHz	-60 dBc/Hz
Frequency Step	250 KHz
Max RF Input	-20 dBm
Rx Sensitivity	-83 dBm for QPSK/CS 14MHz
Rx Gain Range	60 dB
Rx Noise Figure at Max Gain	6 dB
Tx IF Center Frequency	350 MHz
Rx IF Center Frequency	140 MHz
Frequency Stability	Better than ± 5 ppm
Operational Temp.	-40 to 60 °C

➤ IDU Interface Specification

Type	MOJ-IDU-01	MOJ-IDU-02 (Available from 12-2023)
Modulation	Up to 256 QAM	Up to 1024 QAM
Channel Spacing	14/28/56 MHz	
XPIC Support	No	Yes
Double IF Output	No	Yes
IF Interface	TNC-Type	
RF Direction	2	4
RF Configuration	1 + 1 2 + 0 2 × (1 + 0)	3 + 1 4 + 0 4 × (1 + 0) XPIC
Adaptive Modulation	Upgradable	Supported
Cards	2 × Single output modem card 1 × CSU (E1 and Ethernet interfaces) 1 × Ethernet Extension card	2 × single/double output modem card 1 × CSU (E1 and Ethernet interfaces)
E1 Inputs	16 E1 cross connect	
Impedance E1 Inputs	75 Ω	
Ethernet Inputs	2SFP/2GbE/1 NMS port	
VLAN	IEEE 802.1 VLAN	
QoS	Egress 8 classes Queueing, ingress 8 classes classify	
Loop Detection	RSTP (IEEE 802.1w)	
LAG	LAG, radio traffic aggregation	
Header compression	L2/L3/L4 header compression	
Maintenance	G826 RMON (IETF RFC 2819)	G826 RMON (IETF RFC 2819) OAM
Traffic Shaping	Ingress & Egress	
Flow Control	IEEE 802.3X	
Management plane	In-band control network Access control list	
Physical interface	2 × RJ45 electrical port 2 × optical SFP port 1 × RJ45 NMS electrical port	
MAC table	Up to 8192	Up to 16384
Synchronization	No Support	1588 V2, SyncE
Support Jumbo frame bytes	Up to 9600	
Management Protocol	SNMP V3 Protocol & WEB UI	
NMS features	Fault, Configuration, Report, Performance, Security and Topology-Management	
Heat dissipation	Fan Cooling	
Operational Temp.	-5 to 55 °C	
Case	Standard 2U 19-Inch Rack Mounted	
Weight	< 8 Kg	
Dimension (H*W*D)	442 × 225 × 90 mm	
Power	1 + 1 Hot Standby Power Modules	

Contact Information



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