CFM

Ethernet Indoor Units

CFM is safe and economical digital microwave radio link system that provides wireless point-to-point channels for digitized voice and data communications in both metropolitan and rural areas between sites up to 40 km apart. CFM radio in combination with any of Remote Ethernet Bridge Indoor Units provides excellent tool to build medium capacity data networks, to access backbones by power hungry user, to design modern private data networks and high performance networks for any provider of data services. CFM is available with 4, 8, 16 and 34 Mbps Full Duplex traffic capacity. In hands of professional user and installer CFM Microwave radio provides extremely high data channel quality, which is as high as good quality cooper or fiber cable channels. It is characterized by ultra low error rates and very high channel stability.

Typical installation site consists of the following components: Indoor Unit (IDU), Outdoor Unit (ODU), antenna, coaxial cable connecting IDU and the ODU and power supply unit providing electric current for the equipment (mounted indoors). CFM product line offers several Indoor Units for various business requirements.

Product description and typical applications

SAF Tehnika's Ethernet Indoor Units are designed for operation in conjunction with the CFM Radio Units. The whole system will serve as a perfect building block for any data transmission network. Some typical applications for the product are:

• Medium capacity backbones in ISP networks,
• Interconnection of Points of Presence (POPs),
• Access for clients to backbones,
• Private networks for serious corporate users,
• Community/governmental networks.

Building networks with high speed Backbones and powerfull access using SAF CFM Radio and REB series Indoor Units
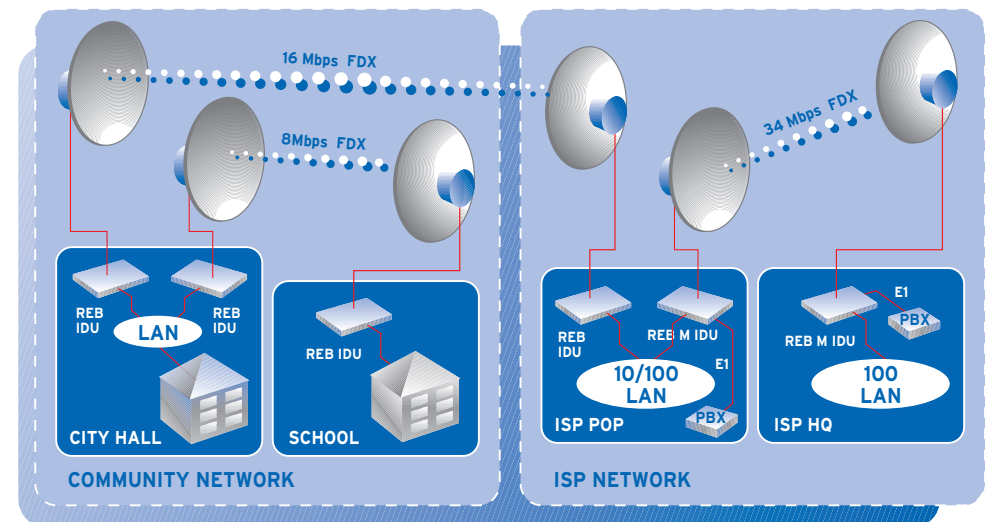
Choose our microwave radio, if you are willing to:
• Reduce expenses from leasing channels for your transmission network,
• Find cheaper solution than optical cable but with similar channel quality and capacity,
• Get "plug-in" FDX wireless solution for Ethernet connectivity,
• Find a solid alternative to 2.4/5.8 Ghz radio solutions.

Ethernet Indoor Units (4 and 8 Mbps)

Each Ethernet Indoor Unit is build around high performance Ethernet Bridge chipset, switching traffic from 10Base-T to 4 or 8 Mbps FDX WAN channel (over the radio). Indoor Units provide all basic functionality to integrate 4 or 8 Mbps FDX radio with standard Ethernet network. Units support long packets up to 1534 bytes (including VLAN tagged), management system provides full radio configuration functionality and basic Bridge status information, provides extended LAN/WAN port statistics counters, extended management functionality and built in tools for testing WAN channel performance. 4 Mbps Indoor Unit is compatible with CFM L4 Radio Unit, 8 Mbps Indoor Unit is compatible with CFM LM Radio Unit.

Modular Remote Fast Ethernet Indoor Units (16, 34 Mbps)

Modular Indoor Units are the latest addition to CFM product line. Units are based on fixed single port Bridge and extends further convienience of using CFM radio system.
In addition to fixed 10/100 Mbps Ethernet port (as a primary traffic interface) new Indoor Units provide 2 slots for optional interface modules (E1, V.35, Ethernet). Each additional module operates at the fixed data rate of 2 Mbps. Ethernet Bridge will operate at full radio capacity − 16 or 34 Mbps if additional slots are disabled, or full capacity minus 2 or 4 Mbps if 1 or 2 slots are enabled. Units provide remote access to far end terminal in order to manage and control the system remotely. Indoor Unit is compatible with CFM LM Radio Unit.

| SYSTEM SPECIFICATIONS	MODELS			
	4 Mbps **Remote Ethernet Bridge** (Model name: CFM-4 REB)	**8 Mbps** **Remote Ethernet Bridge II** **(REB II)** (Model name: CFM-22 REB)	**16 Mbps** **Modular Remote** **Fast Ethernet Bridge** (Model name: CFM-16 REB M)	**34 Mbps** **Modular Remote** **Fast Ethernet Bridge** (Model name: CFM-34 REB M)
Compatibility with following CFM radio	CFM L4	CFM LM	CFM LM	CFM LM
PACKET SWITCHING ENGINE				
LAN port interface	10Base-T	10Base-T	10/100Base-Tx	10/100Base-Tx
LAN port wire speed	10 Mbps FDX/HDX	10 Mbps FDX/HDX	10/100 Mbps FDX/HDX	10/100 Mbps FDX/HDX
Frame throughput (pps – packets per second)	15.000 pps	15.000 pps	15.000/150.000 pps	15.000/150.000 pps
Supported frames	Standard, VLAN tagged	Standard, VLAN tagged	Standard, VLAN tagged	Standard, VLAN tagged
Throughput latency	1 frame	1 frame	1 frame	1 frame
LAN MAC address table size	8.192	8.192	1000	1000
Frame buffer size	256 frames	256 frames	170 frames	170 frames
MANAGEMENT				
Bridge configuration options	management	management	DIP switches+management	DIP switches+management
Remote management	+	+	+	+
Web management support	+	+	+	+
Telnet/ASCII console management support	+	+	+	+
Loop test facility	+	+	+	+
Capability of access to the remote IDU via data channel	+	+	+	+
Expanded Telnet/ASCII command tree for the Bridge	+	+	-	-
Supports frames up to 1534 bytes, including VLAN tagged frames	+	+	+	+
Provides statistics counters for WAN/LAN ports	+/+	+/+	+/-	+/-
Advanced SNMP monitoring/Traps	+	+	+	+
Standard SNMP monitoring	+	+	+	+
Advanced Telnet/CLI and Web based control and monitoring	+	+	+	+
LAN link performance test facility	+	+	-	-
WAN link performance test facility	+	+	+	+
Far-end access over service channel, remote management	-	-	+	+
CHANNEL CAPACITY				
Supported WAN channel rate (full radio capacity)	4 Mbps FDX	8 Mbps FDX	16 Mbps FDX	34 Mbps FDX
OPTIONAL INTERFACE FEATURES				
Slots for optional interface modules	-	-	2 slots	2 slots
Types of modules available	-	-	E1, V.35 & Ethernet	E1, V.35 & Ethernet
Capacity per module	-	-	2 Mbps	2 Mbps
Capacity with 0/1/2 modules enabled	-	-	16/ 14+2/12+2+2 Mbps	34/ 32+2/30+2+2 Mbps
POWER CONSUMPTION				
Power consumption				
w/o Radio	7.2 W	7.2 W	11 W	11 W
w/Radio	17.2 W	17.2 W	21 W	21 W
Power supply	20 to 72 VDC, any polarity			
MECHANICAL DIMENSIONS				
Dimensions H x W x D mm/ weight kg	44 x 482 x 284/ 1.7			
ENVIRONMENTAL				
Ambient temperature	-5 ºC to +40 ºC			

Management system

A convenient and modern management system has been created to provide complete configuration and monitoring of the equipment in operation locally and remotely.

Remote access to far end terminal can be organized through main traffic channel or analog line modem connected to serial port of the management controller. For Modular Indoor Units system provide far end management over service channel which is separate from main traffic channel. CFM management system utilizes Web, SNMP and Telnet/Terminal interfaces. TCP/IP protocol suite as a transport mechanism for management information traffic.

Screenshots of the management system windows
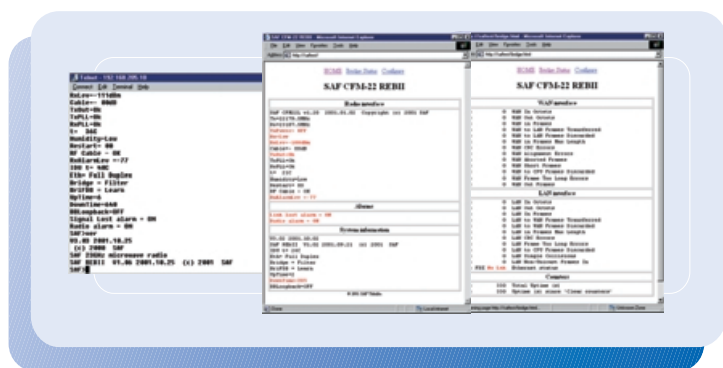
Main features

- **Excellent reliability,**
- **Easy to reallocate to new sites,**
- **Affordable solution in terms of costs,**
- **User friendly management system,**
- **Particularly suitable for ISP,**
- **Easy integration in any Ethernet network.**

We are offering to clients

- **Flexible business approach and continuous support,**
- **Fast warranty and after sales service.**

All equipment specifications are subject to change without prior notice.

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