Specifications

Air Link Payload

Subscriber unit	1Mbps
Radio cell	Up to 80Mbps

Telephony Services

Voice	Toll quality voice over ADPCM / PCM
Voice band data	Fax (G3), Modem (V.92 / 56Kbps)
Bandwidth on demand	Dynamic PCM allocation for fax / modem
Network interface	V5.2, V5.1*, CAS*, Analogue A/B*
Extended services	Full transparency to: Tax metering (12/16KHz), reverse polarity, CLASS services

Data Services

Access	'Always-on', up to 512Kbps full duplex (symmetrical)
Bandwidth management	MIR
Protocols	IP, DHCP, transparency to VLAN-tag, PPPoE, IP-VPN
Network interfaces	100BaseT (RJ-45)
Subscriber interface	10BaseT (RJ-45)

Radio

Operating bands (GHz)	1.5, 1.9, 2.4, 3.4 - 3.8, 5.7
	1.5 GHz band: 1.428 - 1.525 GHz (ETS 301 179)
	1.9 GHz band: 1.850 - 1.950 GHz (ETS 301 179)
	2.4 GHz bands: 2.400 - 2.499 GHz (standard version)
	or
	2.401 - 2.479 GHz (ETS 300-328 version)
	or
	2.400 - 2.483 GHz (FCC Part 15 version)
	3.5 GHz band: 3.400 - 3.535 GHz (ETS 301 253)
	3.57 GHz band: 3.425 - 3.575 GHz
	3.6 GHz band: 3.475 - 3.600 GHz
	3.7 GHz band: 3.575 - 3.700 GHz
	3.8 GHz band: 3.600 - 3.728 GHz
	5.7 GHz band: 5.725 - 5.850 GHz
	(other bands are available upon commercial agreement)
Air interface	Frequency Hopping CDMA
Access	TDM / TDMA
Duplex method	TDD / FDD
RF channel bandwidth	1MHz, hopping up to 150MHz band
Range	32km @ LOS (25km in 1.5GHz band)
FWA standards	ETSI EN 301 179, EN 301 253, ETS 300 328 (ISM)

Network Management System

Local Craft IMS	Single GUI, single NE manager
Regional IMS	Multiple GUI, multi-NE manager
Higher-level OS*	Over DCOM, CORBA, SNMP
Base station interfaces	10BaseT, PPP over E1 or V5.2 E1

Environmental Conditions

Outdoor units (eRPC, eFAU, eBBU, eBRU, eRPR)	Temperature: -40°c to +60°c
Indoor units (eRPCU, ePCU)	Temperature: -5°c to +40°c

Dimensions (HxWxD)

eRPCU	40x48x36 cm
eRPC	33x21x14 cm
eRPR	37x21x14 cm
eBBU	33x21x14cm
eBRU	25x18x9cm
eFAU	25x18x9 cm
ePCU	16.5x16x8.5 cm

* Available upon commercial agreement

eMGW™

Cost-effective wireless data & toll quality voice services

eMGW - The Complete Access Solution
The eMGW is a highly cost-effective point to multipoint FWA system optimized for SOHO and residential markets, for all urban, suburban and rural areas. The eMGW provides fast Internet access, corporate access and carrier-class telephony in a single system.
hybrid-switching uses circuit switching for toll quality voice and packet switching for fast data services, optimizing spectrum utilization.
The eMGW is based on state of the art and field proven FH-CDMA technology that ensures robust, secure and reliable service in a wide variety of deployment scenarios.

Product Highlights

eMGW delivers a wide range of features to ensure toll quality TDM telephony and fast Internet services:

Maximize Revenues

Multiple High Quality Services
- 'Always-on' fast Internet access including CoS.
- VPN and VLAN.
- Toll quality voice, modem (V.92), fax (G3).
- Transparency for telephony signaling (including CLASS).

Flexible Deployment Scenarios
- Optimized for small business and high-end residential markets.
- Large and scalable capacity for urban and suburban applications.
- Optimized for rural applications: 32km coverage range, low-cost base station for low density areas using remote outdoor unit with an optional self-backhaul in sparsely populated areas.
- Widest range of frequencies: 1.5-3.8, 5.7GHz.

Superior Transmission Immunity
- Synchronous FH-CDMA ensures excellent immunity to interference.
- Improved multi-path immunity using patented antenna diversity and FH-CDMA enables NLOS coverage.
- Reliable data transmission provided by non-redundant error correction and ARQ.

## Minimize Costs

Minimal Initial Infrastructure
- Modular and scalable architecture of base station allows minimal initial configuration and network expansion based on subscriber demand.
- Fast and simple installation.
- Low maintenance costs due to remote provisioning and software download.

High Spectrum Utilization
- Bandwidth on demand.
- Dynamic PCM channel allocation upon fax / modem detection.
- Optimizes spectrum use: 1 Mbps payload for every 1MHz in every adjacent cell.
- FH-CDMA optimizes use of non-contiguous frequency spectrum.
- Supports both licensed and unlicensed (2.4, 5.7 GHz) bands.

Investment Protection
- Fully coexistent with globally installed MGW.
- Unified monitoring interface for both MGW and eMGW.
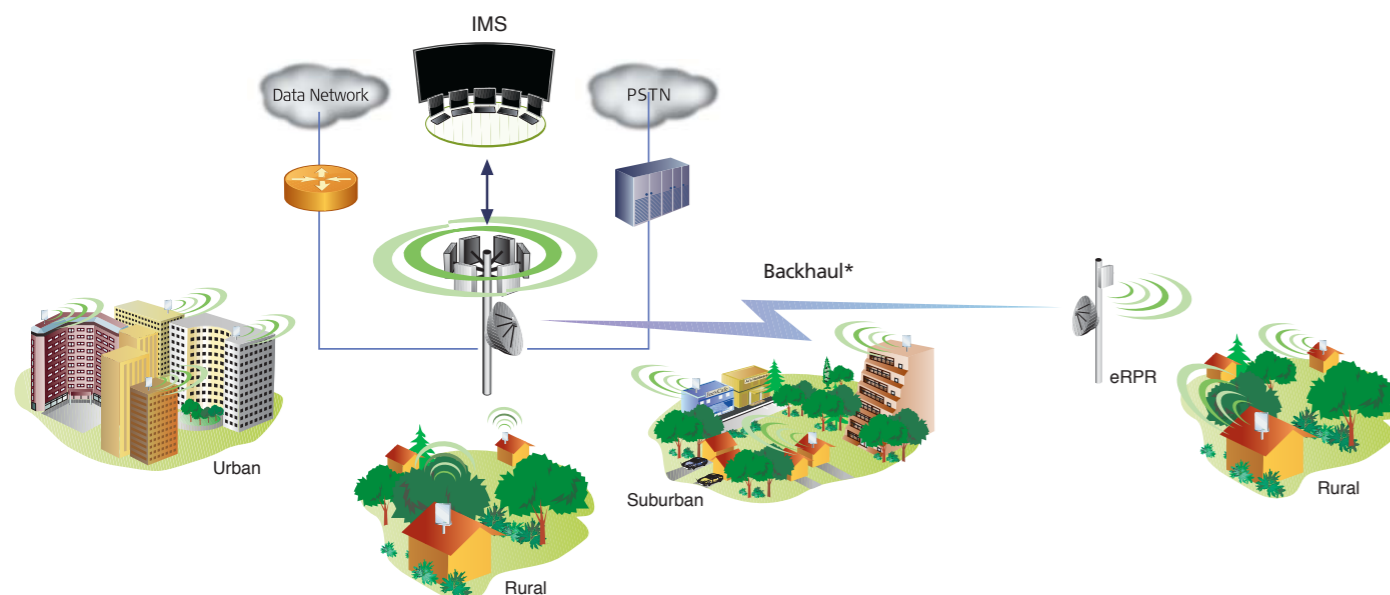
* eMGW's self-backhauling solution is tailored for sparsely populated areas

Scalable and Modular Architecture

eRPCU - Indoor Base Station Controller
Connects to the telephony network via a variety of interfaces, and to the data network over 100BaseT or E1 line. An eRPCU shelf supports up to 8 base station radios that can serve a combination of up to 2048 POTS and 2048 hosts. Up to 10 eRPCUs can be located in the same base station.

eRPCU

eRPC/eRPR - Outdoor Base Station Radio
Simple-to-install, self-contained and easily connected via standard twisted pairs. The eRPC is collocated with eRPCU and has a built-in 60° or 120° sectorized antenna. A single base station can support up to 80 co-located eRPCs, achieving a total air payload up to 80 Mbps.
The eRPR is remotely located for low density cells enabling a complete outdoor, low cost, base station solution that can be powered from a solar panel.

eRPC   eRPR

IMS - Network Management System
Scalable architecture supports multi-user and multi-network elements, featuring Fault, Configuration, Performance and Security management.
The IMS implements standard management protocols (SNMP, COM/DCOM, etc) and supports standard interfaces to higher-level management systems.

eFAU - Outdoor Subscriber Terminal
Easily mounted, small and lightweight subscriber unit with a built-in antenna. The eFAU supports POTS and Ethernet.

eFAU

ePCU - Indoor Subscriber Interface
Compact, elegant and wall-mounted unit provides power and battery backup for the eFAU. The ePCU serves as the connection box for both telephony and data equipment.

ePCU

eBBU/eBRU - Self-backhauling Units
Low cost self-backhaul for remote outdoor base station (eRPR) located in sparsely populated areas. Composed of two elements:
eBBU - co-located with the eRPCU at the base station and powered by eRPCU.
eBRU - co-located with the eRPR at the remote base station and can be powered by a solar panel.
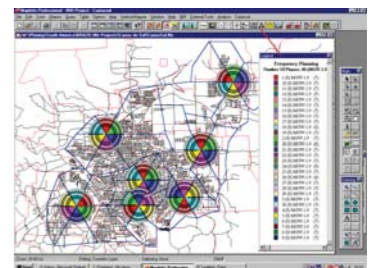
eBRU   eBBU

Network Planning Tool
Provides propagation modeling, traffic analysis, interference analysis, frequency planning and system sizing.
Together with extensive deployment experience, the tool generates optimized network plans that minimize infrastructure costs.

eMGW — A Variety of Applications

Wireless Telephony
eFAU-1, 2 - one or two independent telephone lines
- Toll quality voice, fax (G3) and dial-up modem (V.92/56Kbps) services for residential subscribers

eFAU-1P, 2P, 4P - one, two or four public telephone lines
- Payphone signaling support

eFAU-4 - Four independent telephone lines supporting fax, modem and payphone signaling. The unit can be powered independently by each subscriber. The eFAU-4 is available only in 3.5 GHz and 3.57 GHz band.

Wireless DSL & Telephony
eFAU-E - one Ethernet port
eFAU-1E, 2E, 4E - one Ethernet port + one, two or four independent telephone lines
- Simultaneous high-speed data and telephony services
- Remote access to corporate servers for teleworkers
- LAN to LAN connectivity over IP-VPN tunnels for businesses
- CoS differentiation based on MIR