



# Coax-Wireless Gateway

## A Damery concept providing an economical last mile solution to coaxial wired infrastructure

### CoWiG Capabilities

#### Coax RF Interface

Coax Input Insertion Loss (Port#1 to Port#2) : 20dB +/- 1dB@ 0dB PAD/ with Type2 plug-in

Coax Input Insertion Loss (Port#1 to TP) : 10dB +/- 1dB@ 0dB PAD/ with Type1 plug-in  
25dB +/- 1dB@ 0dB PAD/ with Type2 plug-in

Coax Input Insertion Loss (Port#1 to CM) : 10dB +/- 1dB@ 0dB PAD/ with Type1 plug-in  
25dB +/- 1dB@ 0dB PAD/ with Type2 plug-in

Test point :-20dB  
Output return loss : 10dB(5-770 MHz)

#### Modem Specifications :

Protocol : Full compliant Docsis 3.0

#### Downstream

Bandwidth : 6MHz or 8 MHz

Modulation : 64 QAM , 256 QAM

Data Rates :

- 30 Mbps/64 QAM/DOCSIS
- 42.8 Mbps/256QAM/DOCSIS
- 40 Mbps /64 QAM/Euro DOCSIS
- 54 Mbps /256QAM Euro-DOCSIS

Error Correction : Reed Solomon

Frequency Range : 88MHz to 1002Mhz

Receive power : -15 to +15 dBmV

Error rate :

- 64QAM : >23.5dB @ BER<10<sup>-8</sup>
- 256QAM : >30dB @ BER <10<sup>-8</sup>

#### Upstream

Modulation : QPSK, 16QAM /32QAM/64QAM

Error Correction : Reed Solomon

Frequency Range :

- 5MHz to 45 MHz agile DOCSIS
- 5MHz to 65Mhz agile, Euro-DOCSIS in 100Hz steps

Symbol Rate : 160, 320, 640, 1280, 2560 ksym/s

Transmit Power Level :

- +8 to +58 dBmV QPSK
- +8 to 55 dBmV QAM

Error Rates :

- QPSK : >15dB @ BER<10<sup>-8</sup>
- 16QAM : >22dB @ BER <10<sup>-8</sup>

Channel Bonding : 8 / 4

#### Wireless Interface

Wireless Data Rates : Up to 300Mbps

Frequency Band : 2.4 GHz - 2.4835 GHz

Standards : IEEE 802.11b/g/n

Security : 64/128/152 bit WEP, WPA/WPA2/ WPA-PSK/WPA2-PSK, Wireless MAC Filtering, WPS

Regulation certifications : FCC Part 15/UL, ETSI 300/328/CE

User isolation technology

#### Power Supply

Input voltage : AC 40V~90V or 110/220V AC

Output Power : 25W ( 13W )

PoE current (Max) : 0.3A (12V) Option

Surge Protection : 1,200A @8/20us

#### Network Interfaces

10/100 Base-T Ethernet (RJ45 CAT-5)

## CoWiG

Increase revenues by providing wireless services to previously unreachable users

#### Main Features

The coax-wireless solution allows the transportation of Ethernet data at a very high speed from the nearest CATV signal distribution pylon to the user home at a distance of more than 500 meters.

DOCSIS+: Ethernet data will be transmitted from the optical node to the last street distribution pylon using DOCSIS technology. This transport will be made using the free space over the frequency spectrum without the need of a special technology or additional fiber link.

The street pylon will be equipped with CoWiG wireless gateway associated with Damery hardened Topaz cable modem.

The new hardened Topaz features allow the modem to be used in line or end of line, to be powered from coaxial cable, to power the wireless gateway, and either to be fixed on the pylon or to be hanged on the wire.

#### Architecture

The coax wireless gateway uses an open architecture. The modem and wireless functions are completely independent. This architecture allows equipping wireless unit and hardened modem unit with different transceiver boards providing different protocols and allows an easy upgrade in order to follow the technology progress.

The service gateway includes the following functions :

- RF network bypass module : the unit can be used in line or end of.
- Power over Ethernet (used when the cable modem and wireless gateway are implemented in 2 different units).
- Modem test point.
- The design is compatible with the usage of DOCSIS 3.0 modems and the wireless standards: 802.11b/802.11g/802.11n.
- Radius based embedded software.

The Coax-wireless functions can be implemented in 2 separate units or in one all integrated unit.

#### Embedded Radius based user administration

User authentication based on local RADIUS

- Remote system management
- User administration
- PPTP & H.323 pass-through
- 64/128-bit WEP : (Wired Equivalent Privacy)
- 802.11 .a, g or n standards
- Postpaid or Prepaid billing



#### What is CoWiG?

CoWiG is an all-in-one WiFi gateway system. It combines a radius-based account administration and a billing management. The clients connect by UAM (meaning universal access method).

That means that they power on their laptop, activate their WiFi card, launch their favorite WEB browser and are redirected to the login WEB page.

After being authenticated, they are simply sent back to their home page, granted an Internet connection.

Furthermore, combined with latest wireless and security features, the solution protects either large or small wireless networks. Users do not need to install extra software.

#### Key Benefits

The key benefits of the coax-wireless solution are :

- The limitation of the cable network interface to the distribution pylon.
- The protection of the return path from house ingress.
- The possibility to start with small CMTS, managing only service distribution gateways.
- The creation of additional services to the subscribers, giving them the freedom to work everywhere they want without additional need of internal infrastructure.
- This is a scalable solution.
- Support "IP plug-and-play" function : users can get wirelessly connected without any IP setting changes on the computer.
- Users can simply connect to the login page by opening the WEB browser.

The simple connection interface can reduce service providers training costs to the minimum.

The solution also brings a great management capability to equipment, users and network services.

