

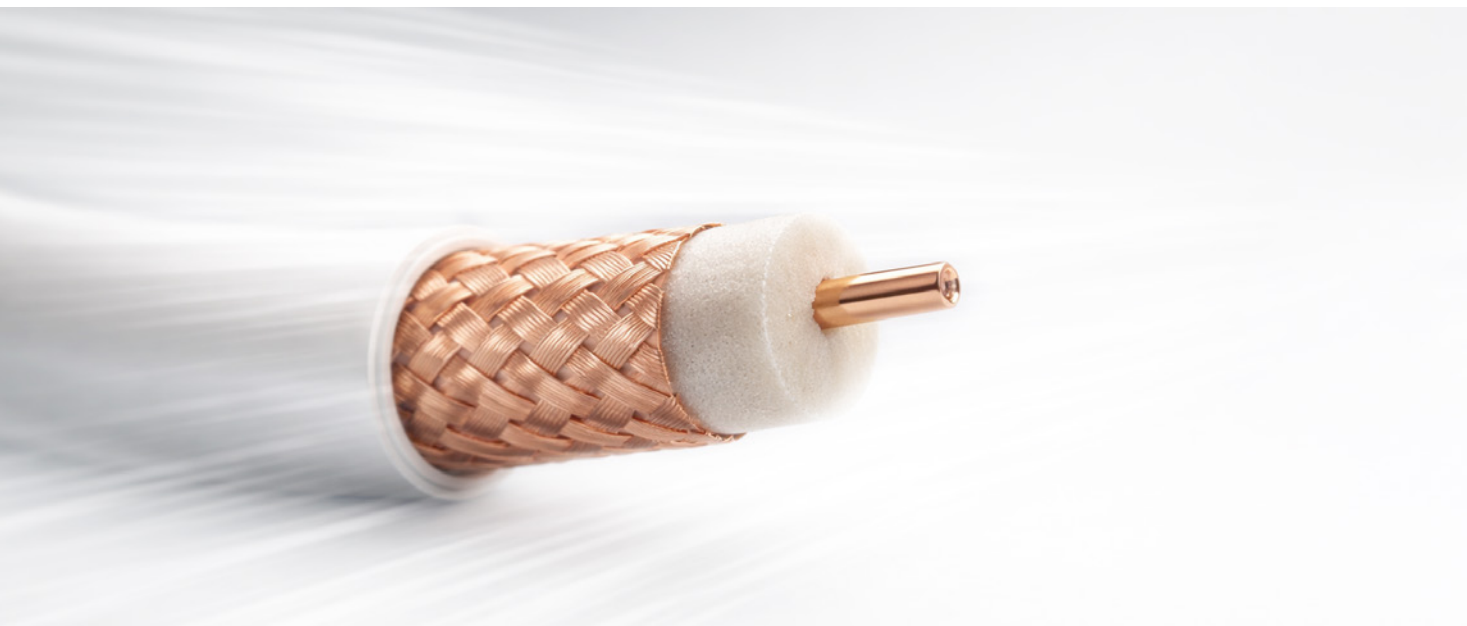


COAXDATA SERIES

Turn your business' TV cable
into a high-speed network

With G.hn. technology





From coaxial cable to ultrafast ethernet network

The coaxial cable network is one of the oldest telecommunications infrastructures and is deployed in all establishments and homes. Its most widespread purpose is to distribute television signals from the antenna to the outlet but it can become a high-speed data highway if it is enhanced with the right technology and equipment.

Our CoaxData series is a **professional solution that leverages this existing coaxial cabling, transforming it into an ultra-fast ethernet network. Wherever the coaxial cable reaches, the internet will reach**, as all rooms with a TV socket will be able to have an internet connection point, without interfering with the existing TV service.

Developed with G.hn technology, speeds of up to **1.7 Gbps are achieved in networks of up to 64 connection points** on cable runs of less than 1.8 km. Designed to operate in point-to-multipoint communication, the master system detects multiple nodes connected to the network and **performs auto-configuration, facilitating the commissioning of conventional installations.** For those experts who need to get the most out of the infrastructure, the system includes advanced network management and configuration functionalities to optimise network performance in intensive usage scenarios, or to customise bandwidth allocation in special situations.

- **1.7 Gbps network speed.**
- **64 network connection points.**
- **0 Euro investment in new cabling.**
- **0 days of interruption of business activity.**
- **100% Designed, developed and manufactured by Televes.**

CoaxData is a professional solution, specially designed for hotels and small to medium sized businesses (up to 64 points), who want a high speed data network without any cabling upgrades or disruption to their business.





CTTR: The simplified version of FTTR that keeps your business up and running

CoaxData offers a CTTR technological proposal: a data network to the rooms through the coaxial cable (Coaxial To The Room), with a management philosophy, control and provisioning of the network very close to the one used in FTTR networks (Fibre To The Room) based on GPON technology.

With CoaxData, **you can modernise the internet connectivity service of your facility live, in a way that is transparent to your customers.** Its CTTR concept, which utilises operational coaxial cabling, avoids retrofitting, while its non-invasive and virtually hot-installation minimises disruption to existing service.

CoaxData improves the performance level of the coaxial network, and bridges the gap with GPON, to offer an ideal alternative for establishments that want to make the leap to ultrafast networks while maintaining their commercial activity.

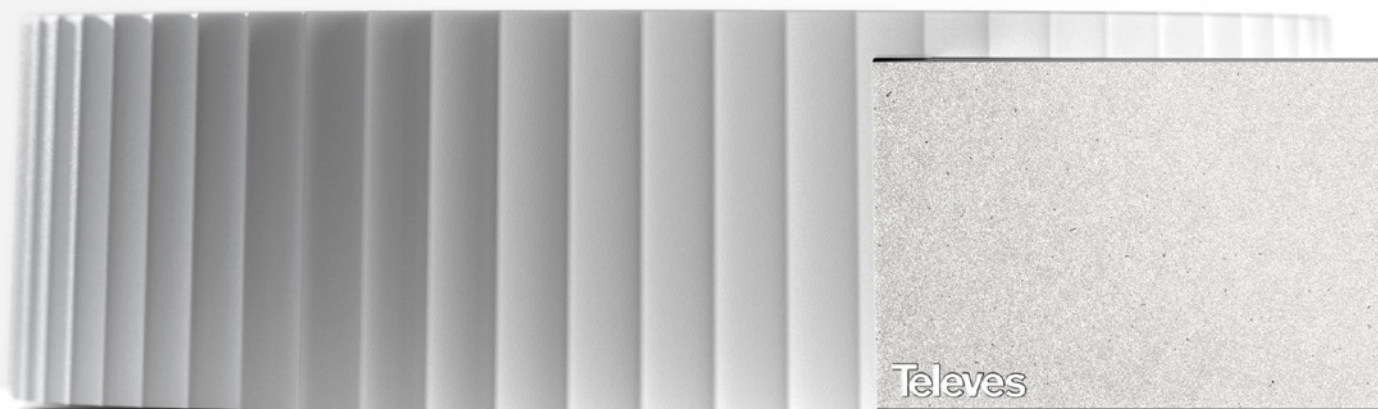
Key factors in choosing the right technology for each type of business:

	CTTR - CoaxData	FTTR - GPON
Speed	Up to 1.7 Gbps (Half-Duplex)	Up to 2.5 Gbps downstream and 1.25 Gbps upstream (Full-Duplex)
Maximum number of connection points	64	512
Minimum guaranteed bandwidth per connection point in a 64-point network	13.3 Mbps	39 Mbps
Required infrastructure	Existing coaxial network in the building	Dedicated fibre optic network
Approximate attenuation of the physical environment	~ 50 dB/km (at frequencies of use)	~ 0.35 dB/km (at the wavelengths of use)
Maximum operating distance	1.8 km	60 km
Network management and configuration	Plug & play Professional tools	Professional tools
Interfaces at the connection points	WiFi and Ethernet (RJ45)	WiFi, Ethernet (RJ45) and FXS (RJ11)
Privacy and security of user data	Yes	Yes
Typical services ecommended for Hospitality*	Public or private WiFi and/or Ethernet data network	Public or private WiFi and/or Ethernet data network
	RF TV	RF TV
	IP Telephony	IP Telephony
	Interactive TV: VoD Service, nPVR Service, Mobile App, Information Services, Casting	Interactive TV: VoD Service, nPVR Service, Mobile App, Information Services, Casting
	CCTV	CCTV
		IPTV/TV
		Digital Signage
		Transcoder
		Access Control
		Home automation
		Analogue Telephony
		...

* The number of services that can be deployed in a CoaxData system is conditioned by the available network width and consumption of each service, as well as the bandwidth of the coaxial sockets. The number of services that can be deployed in a GPON system is determined by the technology itself, up to a maximum of 16 services per ONT.

Developed with G.hn. technology

Based on G.hn (Gigabit Home Networking) technology, **the CoaxData system offers multiple connectivity advantages for commercial networks:**



- **Gigabit broadband connectivity.**

Actual rate of up to 1.7 Gbps (Half-Duplex), far superior to other coaxial cable-based technologies and very close to fibre optics.

- **Up to 64 connection endpoints.**

Hotels and medium-scale establishments can offer wired and wireless internet connection in each of their rooms.

- **Guaranteed service up to 1.8 km.**

Data is transmitted end-to-end without degradation, even in long-range scenarios.

- **Coexistence with established TV services.**

Its operation in the frequency range 0...200 MHz does not interfere with TV services (DTT, SAT or Cable), and is adapted to the European return channel 5...65 MHz.

- **Efficient in unfavourable conditions.**

Transmission rates reach up to 300 Mbps in scenarios with up to 70 dB of attenuation.



The in-house development, design and manufacture of the CoaxData series gives this system multiple benefits in terms of quality, support and sustainability.

- **Save by not investing in new cabling.**

The existing coaxial network is used for data transmission without the need for building work or renovation.

- **Your business stays in business.**

Deployment and installation times are reduced to a minimum, avoiding business interruption.

- **Implementation of hospitality services.**

Compatibility with the deployment of new value-added services for guests (WiFi, IP telephony, interactive TV, etc.).

- **Plug & play.**

The auto-configuration of the system allows for quick commissioning in standard scenarios.

- **Expert configuration.**

Tools with advanced management, control and provisioning functionalities allow for customised and more efficient configurations to make the most of network bandwidth.

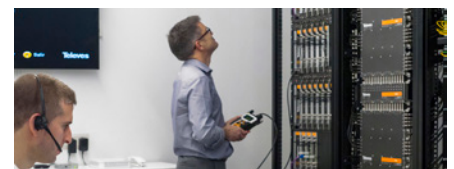
- **Reduction of the carbon footprint.**

Our sustainable policies of efficient manufacturing, and the selection of recyclable materials, promote energy savings and the circular economy.



With technical support from a manufacturer.

Our team of engineers and technicians accompanies the professional, providing the detailed and in-depth knowledge that **only the manufacturer of the product can have.**



The CoaxData series at a glance

The CoaxData Series is characterised by its Point-to-Multipoint (P2MP) operation, so it is **ready to be deployed in any of the typical types of existing coaxial networks.**



Master

It is the main element of the network

One per system is required and it is installed at the head-end of the infrastructure, where the access to the telecommunication services (internet, TV, ...) is located.

It is responsible for providing service to the different connection points distributed throughout the installation. It offers default auto-configuration of the network, as well as an integrated web interface for customised management by the installation professional.

Nodes

These are the network connection multipoints

Each one offers a connection point to the network, so they are installed in the different rooms of the hotel or establishment where you want to provide service to users.

It is possible to deploy up to a maximum of 64 nodes per installation.

Optional accessories:

Diplexer filter and mixer

Recommended for independent treatment of system signals on different frequencies (noise suppression, TV amplification, ...).

Software CoaxManager

Optional tool to monitor the status of the coaxial network, and detect possible anomalies, mainly in the return channel (detect noise, interferences, etc.).





Master CoaxData (up to 64 nodes)



Ref. 769310

The master is the main element of the CoaxData installation and performs the management and provisioning of the local Ethernet network deployed over the coax.

Typical installation is at the head-end of the coaxial infrastructure, where the TV and Internet services are located.

Internally, the master is capable of managing 4 independent G.hn domains (G.hn0, G.hn1, G.hn2, G.hn3), with up to 16 nodes in each, being able to serve a total of 64 nodes in the installation (16 x 4).

Its default behaviour is based on each domain using the network 25% of the time with an actual rate of 425 Mbps (1.7 Gbps / 4 domains). However, it is possible to change this behaviour by activating or deactivating domains through its embedded Web/CLI interface, offering great flexibility in managing bandwidth between nodes.

- **Plug and play**

Its default auto-configuration provides internet to the system, as soon as it connects to the operator's router.

- **High dissipation mechanical design**

Its aluminium and Zamak structure withstands high temperatures and can continue to function under adverse operating conditions.

- **A single output cable**

It includes an integrated diplexer that combines the TV signal arriving at the master with the new data signal, eliminating external elements and simplifying the installation.

- **Low power consumption**

Its integrated power supply, which is easily interchangeable, reduces power consumption by up to 19W in the worst-case scenario.

- **Wall and rack mounting**

The chassis is wall-mountable, and thanks to its compactness it is possible to fit it into 19-inch head-end racks (2U high, dimensions 330 × 189 × 66 mm).



Technical characteristics

Ref.		769310	
Interfaces			
Ethernet		4 x RJ45 Female 10/100/1000 Base-T Auto MDI-X	
RF		2 x F Female	
General characteristics G.hn			
Number of embedded G.hn domains		4	
Maximum number of nodes per domain G.hn		16	
Bandwidth	MHz	200	
Max. link speed	Gbps	1.73	
Max. signal strength	dBm/Hz	-81	
Standards and protocols		Complies with ITU-T G.996x recommendations	
		Advanced Encryption Standard (AES) 128 bit	
		Quality of Service (QoS) Prioritisation	
		OFDM up to 4096-QAM	
		Power mask and notch filtering	
RF Diplexor			
Impedance	Ω	75	
Data Band	MHz	1...200	
TV band	MHz	290...2350	
TV feed-through losses	dB	<1.5	
Pass-through losses Data/TV	dB	<1.5	
Return losses	dB	>10	
Device configuration			
Network protocols		802.1D Ethernet Bridge	
		802.1Q VLAN	
		Quality of Service (QoS)	
		IGMP (IPv4) and MLD (IPv6)	
Power supply			
Connector		1 x European IEC-C7 connector	
Input voltage	VAC	100-264	
Network frequency	Hz	50/60	
Max. power consumption	W	19	
Operating temperature	°C	0 ... 45	

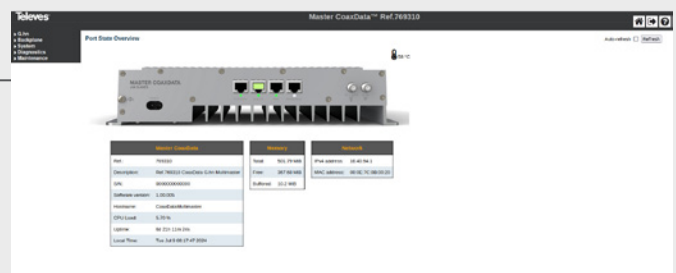
A web interface with advanced functionalities:

The master includes **an intuitive embedded Web/CLI interface** for professionals who want to customise the network configuration and monitor all network elements (master and nodes).

Its functionalities have been designed with the philosophy of a GPON system, so it is possible to control and act very flexibly, not only on the master, but also on the connection points of the network.

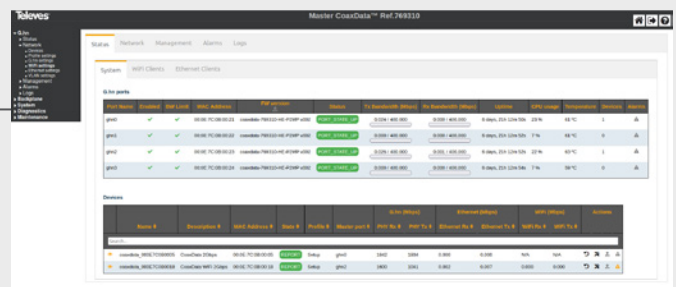
Manages the 4 G.hn domains.

Activates/Deactivates each domain and configure its link rate, so that the total bandwidth can be redistributed among the active domains, and always offer the maximum possible bandwidth.



Adds/removes and pre-configures nodes.

Configures the bandwidth of each node, even before it is connected to the network, as well as adding or deleting them.



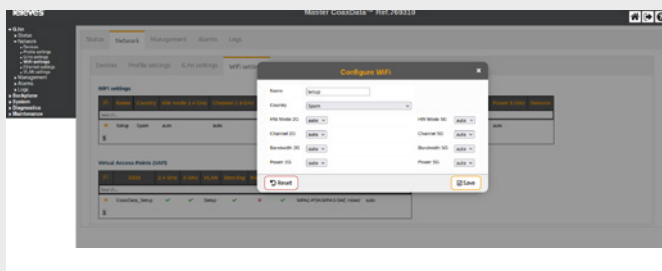
Applies updates to all equipment.

Checks the availability of the latest firmware versions, both for the master and the nodes, and selects the ones you want to upgrade.

Creates band-reject or notch filters.

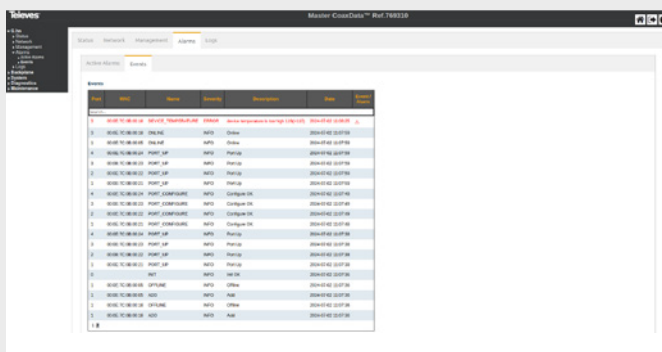
Generates specific filters to avoid interference from other existing services in the 0...200MHz band (e.g. FM).





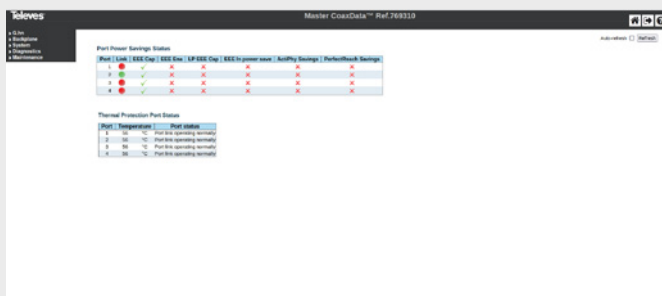
Monitors the WiFi networks of the nodes.

Finds out how many users are connected to each WiFi network, as well as the signal quality and link speed.



Queries alarms and events of the nodes.

Quickly identifies possible error scenarios thanks to system warnings and logs, as well as confirming successfully completed actions.



Optimises energy savings.

Improves energy efficiency with specific functionalities that balance consumption according to the length of the cabling, and the inactivity of the ethernet ports.

Manages the thermal protection of the master.

It applies specific temperature conditions to the ethernet ports, and protects the equipment from overheating.

CoaxData nodes

The nodes are the final equipment of the installation, and **provide a connection point to the network for the users, so they are installed in the rooms where the service is to be provided.**

They are responsible for receiving the signal from the coaxial network, and transforming the data services to Ethernet and/or WiFi, while keeping the TV in the coaxial socket.

Thanks to their Plug and Play feature, as soon as they are connected to the coaxial network, they are automatically recognised and configured by the master. Thus, nodes can start operating without requiring specific configuration, speeding up start-up.



To adapt to the needs of each business, we offer two node models:

Node with 2 Ethernet ports and WiFi Ref. 769321



It is the most common in-room device, offering physical connection via Ethernet cable and wireless connection via WiFi AC.

This node provides the maximum speed of the CoaxData network per user, both in its physical and wireless connection. **Its two Ethernet ports (RJ45) offer rates of up to 1Gbps each, while the high-efficiency WiFi operates at 2.4 GHz (802.11b/g/n) up to 300 Mbps, and 5 GHz (802.11ac) up to 867 Mbps.** Dual 2x2 MU-MIMO antennas offer maximum performance in both transmission and reception for a better user experience. It includes advanced encryption methods to ensure the protection and security of each user's wireless connections, especially relevant in crowded scenarios.

It can be both wall and surface mounted, facilitating clean and safe wiring installation at all times. Includes a power supply UL 36 W and interchangeable AC plugs (UK, EU, Australia).

Node with 1 Ethernet port Ref. 769320



It is ideal for scenarios where a WiFi network is already deployed, and you simply need an Ethernet connection point to the network, to extend a new service.

Its single Ethernet port (RJ45) provides up to 2.5 Gbps, well suited for the most demanding scenarios requiring the full bandwidth supported by G.hn technology.

In addition to typical wall or surface mounting, the compact design and power supply are designed for discreet and secure mounting behind the TV in the room itself. It includes a USB Type-C connector to power it from the TV itself, avoiding the need to install a dedicated external power supply.



Both models at a glance

Ref.		769321	769320
		2x Ethernet node + WiFi	1x Ethernet node
No. of Ethernet ports		2	1
Maximum speed per Ethernet port		1 Gbps	2.5 Gbps
WiFi		Sí	-
No. of RF input/output ports Data+TV		1	1
No. of RF TV-out ports		1	1
Plug and Play		Yes	Yes
Power connector type		Jack	USB-C
Power options		With dedicated external source (included)	Via TV (USB-C cable included) With dedicated external source
Dimensions	mm	147 × 147× 42	147 × 147× 42

Technical characteristics

Ref.		769321	769320
Interfaces			
Ethernet		2 x RJ45 Female 10/100/1000 Base-T Auto MDI-X	1 x RJ45 Female 10/100/1000 Base-T Auto MDI-X or 2500Base-T
WiFi		2.4G IEEE 802.11b/g/n 5G IEEE 802.11ac 2x2 MIMO	-
RF		2 x F Female	2 x F Female
RF Diplexor			
Impedance	Ω	75	75
Data Band	MHz	1...200	1...200
TV band	MHz	290...2350	290...2350
TV feed-through losses	dB	<1.5	<1.5
Pass-through losses Data/TV	dB	<1.5	<1.5
Return losses	dB	>10	>10
Device configuration			
Network protocols		802.1D Ethernet Bridge 802.1Q VLAN Quality of Service (QoS) IGMP (IPv4) and MLD (IPv6)	802.1D Ethernet Bridge 802.1Q VLAN Quality of Service (QoS) IGMP (IPv4) and MLD (IPv6)
Power supply			
Connector		1 x Jack	1 x USB Type-C
Supply voltage	VDC	12-24	5
Max. power consumption	W	8	5
Operating temperature	°C	0 ... 45	0 ... 45

Accessories

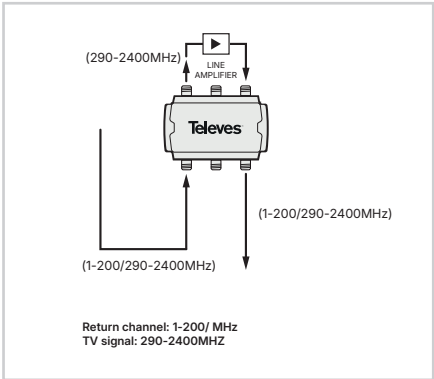
Filter Mixer/Diplexer Ref. 769223

This accessory filter of the range allows filtering of the different frequency bands where the conventional television and the CoaxData data network operate, to eliminate noise and guarantee the quality of the signals. It is recommended for use in installations where there is an existing television service, as it allows the TV signal to be amplified or treated, without interfering with the data signal.



This passive element can be installed anywhere in the coaxial installation, to separate the terrestrial TV and satellite signals (290...2400 MHz), from the data signal (1...200 MHz), and to be able to manage it independently (mainly for amplification).

Its optimised electronic design offers high rejection between filtered bands, thus minimising pass losses and degradation of the original signal.



Technical characteristics

Ref.		769223	
RF Interfaces		4 x F Female	
Filter		Low pass	High Pass
Pass band	MHz	1...200	290...2400
Insertion losses	dB	<1.5	<1.5
Rejection	dB	>55	>40
Impedance	Ω	75	
Operating temperature	°C	-5 ... 45	
Protection index	(IP)	20	
Dimensions	mm	98 × 78 × 27	
Weight	g	195	



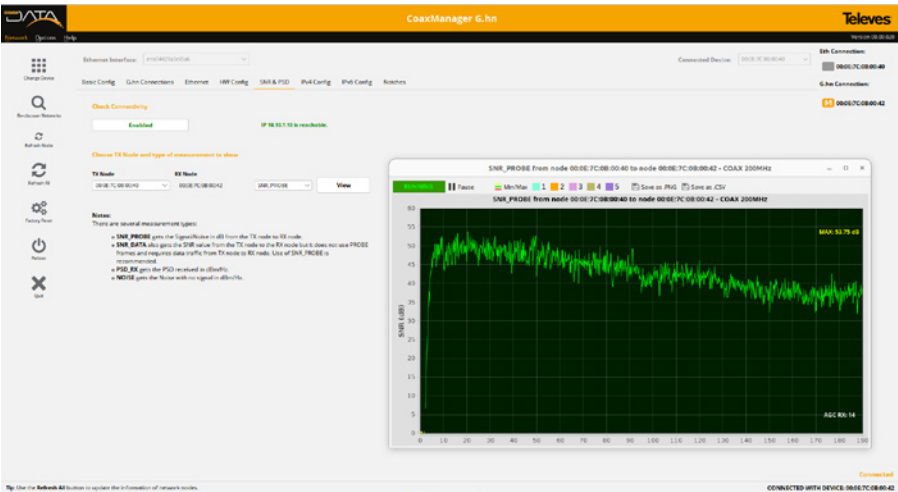
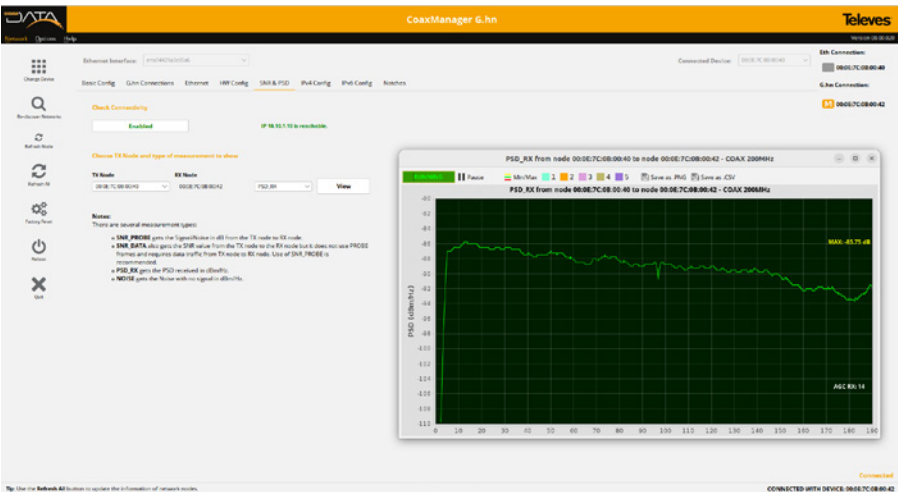
Monitoring software: CoaxManager Ref. 100020

CoaxManager is a monitoring tool, which allows you to view the status of the RF network, to detect possible anomalies in the coaxial infrastructure.

Although its use in a CoaxData deployment is optional, its diagnosis allows you to confirm that the coaxial network is free of noise and interference, in the new frequency bands to be used by the system (mainly the return channel).



Monitoring and evolution over time of RF network parameters: signal to noise ratio (SNR), power spectral density (PSD), noise floor, etc.

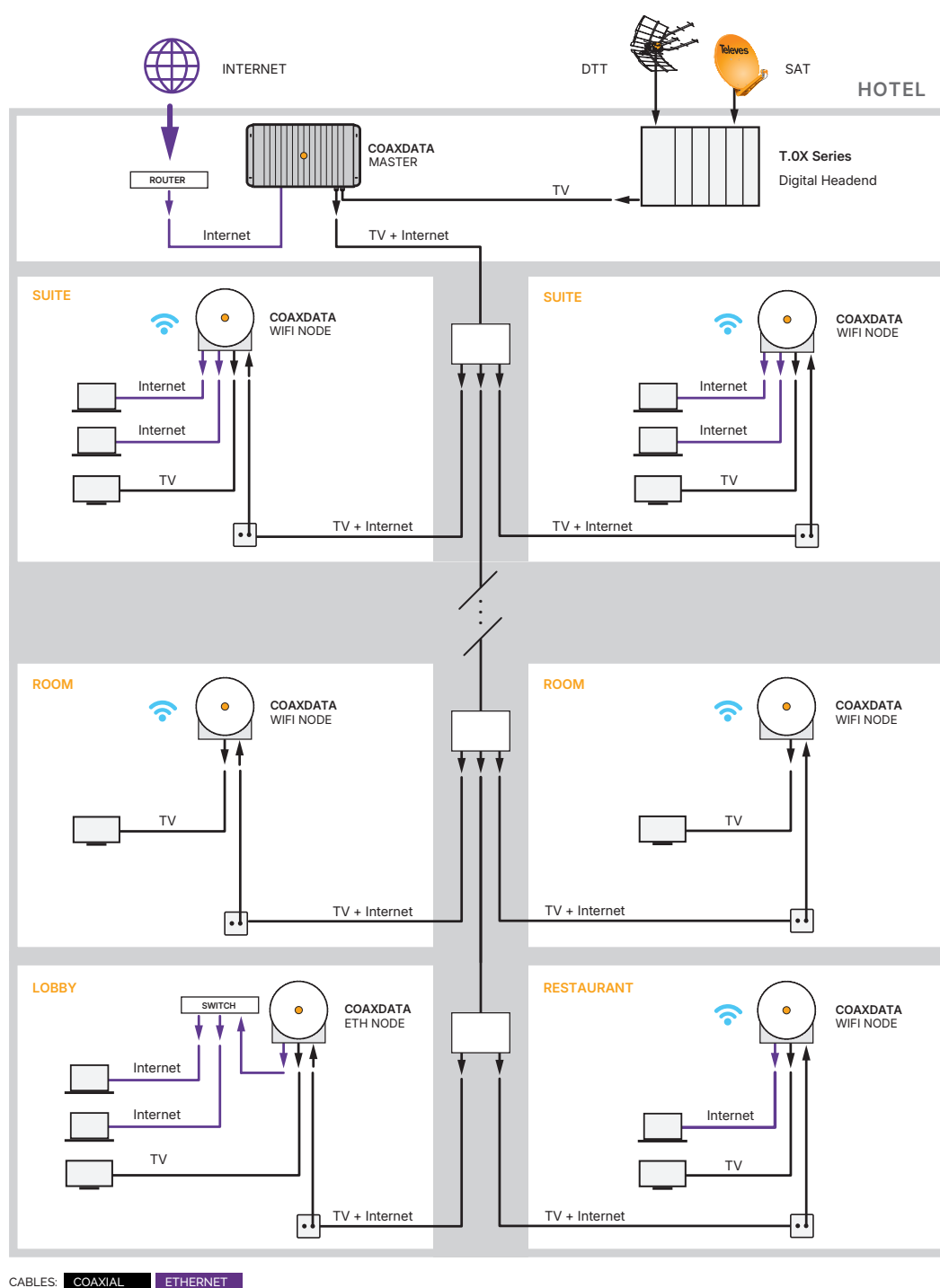


Hotel with existing TV, extended with high-speed internet connection and WiFi

This hotel already has a coaxial cable infrastructure with TV service (DTT and satellite). They want to expand their services with ultrafast internet connection.

as many nodes as access points (max. 64), **we manage to provide each room with WiFi and wired internet connection (2 connections), without having to carry out renovations or stop business activity.**

By adding the CoaxData system, with a master at the head-end connected to the internet, and

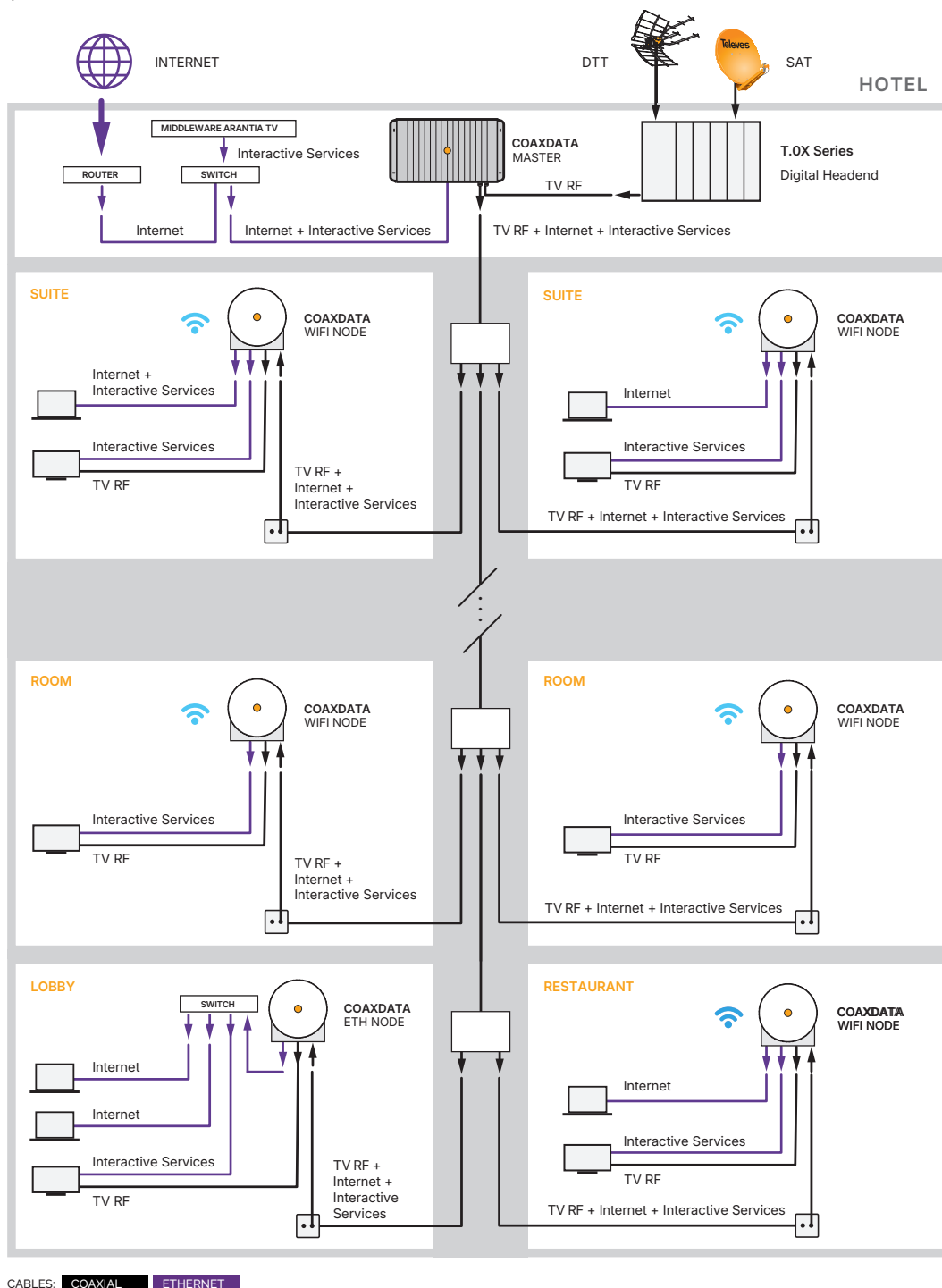




Hotel with existing TV, extended with high-speed internet connection, WiFi and interactive services

This hotel already has a coaxial cable infrastructure with TV service (DTT and satellite). In this case, in addition to extending the internet service, it was also decided to improve the guest experience by installing middleware with interactive services (welcome message, hotel information, corporate channel, alarms, etc.).

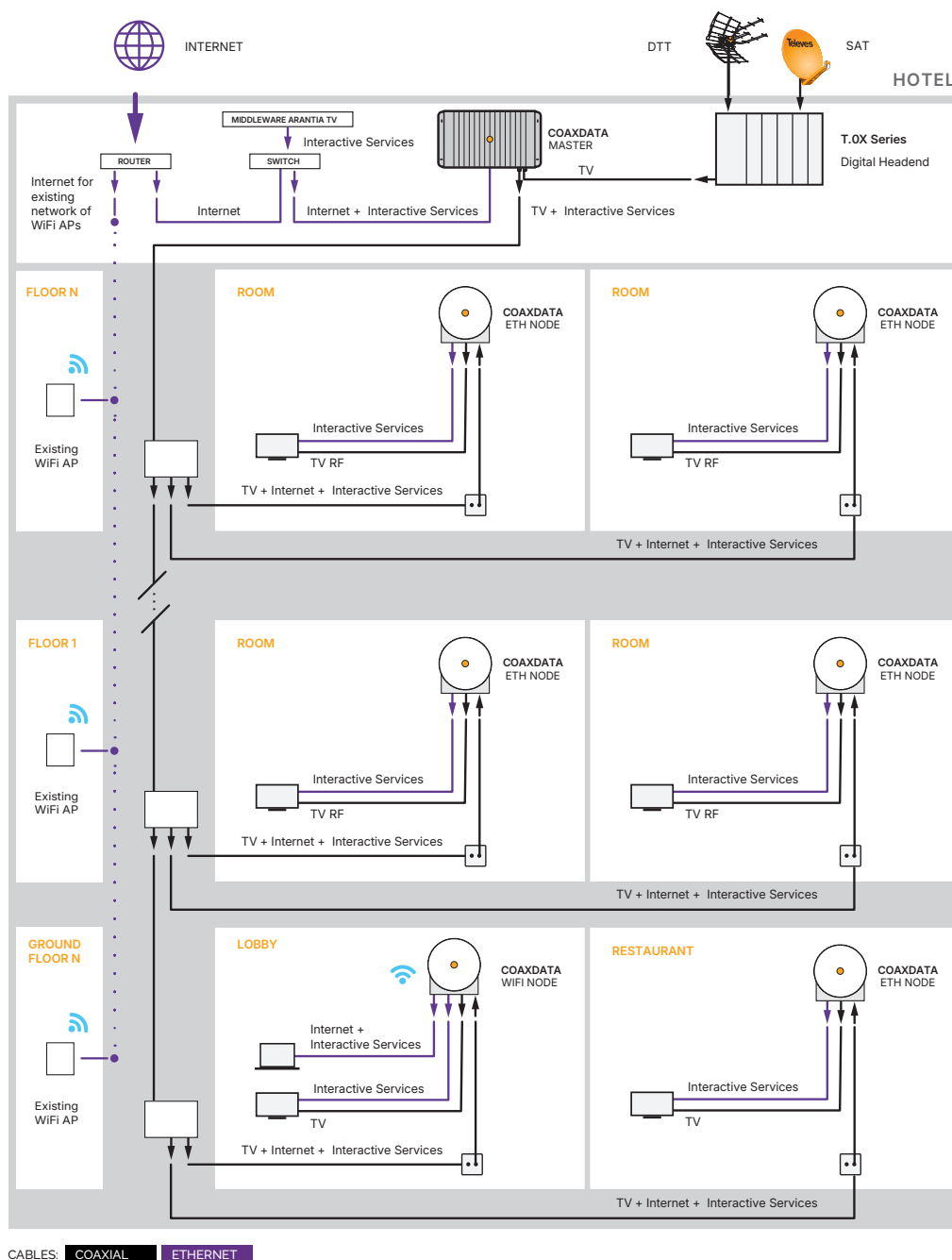
By installing the CoaxData system, with a master in the headend, and as many WiFi nodes as access points required (max. 64), **we manage to deploy in each room the ultrafast wired internet connection, WiFi, and interactive services.**



Hotel with existing TV and WiFi, extended with interactive services

This hotel already has a coaxial cable infrastructure with TV service (DTT and satellite), and several WiFi APs with a dedicated ethernet network to the common areas. In this case, it was decided to extend the service with middleware to improve the guest experience with interactive services (welcome message, hotel information, corporate channel, etc.), but maintaining the existing WiFi internet service.

By installing the CoaxData system, with a master at the head-end and ethernet nodes (without WiFi) in the different rooms, **the new interactive services can be deployed in the rooms, without interfering with the existing WiFi in the common areas.** In the case of the lobby, it has been decided to install a WiFi node to provide an ultra-fast internet connection.





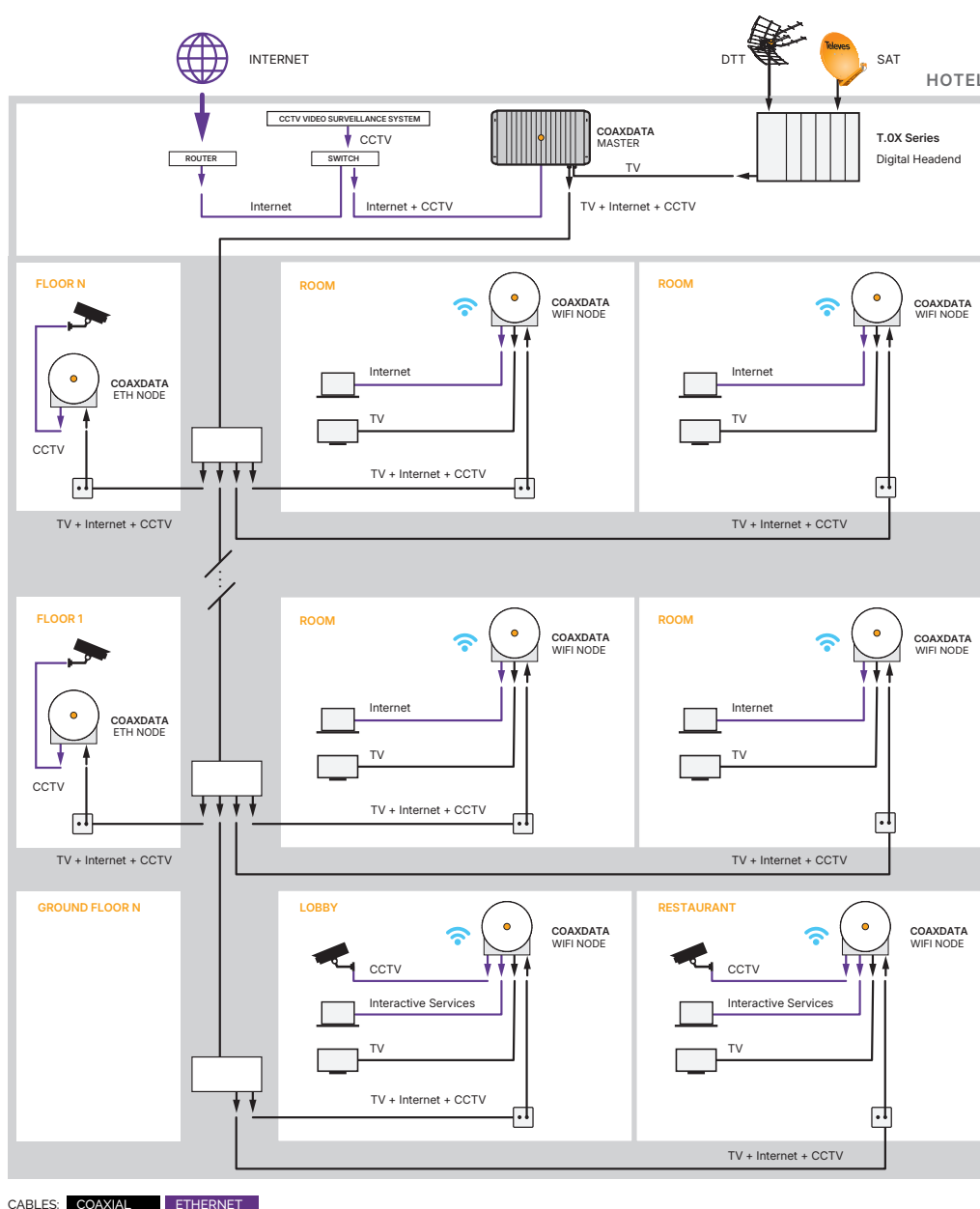
Hotel with existing TV, extended with high-speed internet connection, WiFi and CCTV

This hotel already has a coaxial cable infrastructure with TV service (DTT and satellite). In addition to extending the service with ultrafast internet connection and WiFi throughout the establishment, it was decided to add a CCTV system to install video surveillance cameras in the corridors and common areas.

A CoaxData master is installed in the headend and different types of nodes depending on the area (max. 64): WiFi nodes in the rooms and

ethernet nodes (without WiFi) at the points where a camera needs to be connected. Thanks to the system's profile configuration functionality, **we were able to bring ultra-fast internet to the rooms, while deploying a video surveillance service in the common areas.**

In the most frequented areas, such as the lobby and restaurant, a WiFi node has been installed to implement CCTV and at the same time offer guests an ultra-fast internet connection.



We study your specific project without obligation

As every business is different, contact us and we will advise you on the best solution so that you can offer your customers all the connectivity services you want.

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