

CTFC

Medium & Small Capacity Telephone Switchboard for railways Analogue / VoIP service telephony

CTFC is the Medium & Small Capacity Telephone Switchboard with attendant console: the SELTA solution for legacy telecommunications of railways networks.

This system was originally designed for the French national railway network, where it is working with excellent results. Now it has been suited to all Utilities that want to optimize their investment, not only maintaining, but also maximizing the value of the existing traditional network, supporting them and, especially, empowering them with the most advanced technologies based on IP protocol.

CTFC is a powerful and advanced telephone switch interconnecting the existing legacy telephony devices of the utility network with the VoIP users.

This allows making service telephone calls among the several users of the railways or utility network with a scalable solution.

CTFC is a highly technological and innovative solution, a flexible device interfacing and integrating the rail telephony. It provides significant advantages, such as:

- **convergence** on the same equipment of both traditional telephony and standard VoIP architectures, requiring the interaction with SIP users (SIP-Phone).
- **compliant** with the RFF/SNCF legacy telephony specifications
- only two kinds of card as interface to all legacy lines to ensure maximum efficiency
- modular architecture to optimize the system, fitting it to the site size and with the possibility of future development
- local or remote management system for high flexibility
- easy maintenance and effective diagnostics

Performances



- INTEGRATION BETWEEN TRADITIONAL AND VOIP TELEPHONY
- MANAGEMENT FLEXIBILITY
- MODULARITY
- HIGH SCALABILITY
- HIGH QUALITY CONNECTION
- SIMPLIFIED INSTALLATION USE AND MAINTENANCE/DIAGNOSTICS



System architecture

The CTFC system is connected to the regulation loop and allows the connection of several stations linked through Omnibus lines.

It is possible to manage the point-to-point connections towards legacy phones typical of the railway service telephony and local and central battery phones (BL, BCA, BCB).

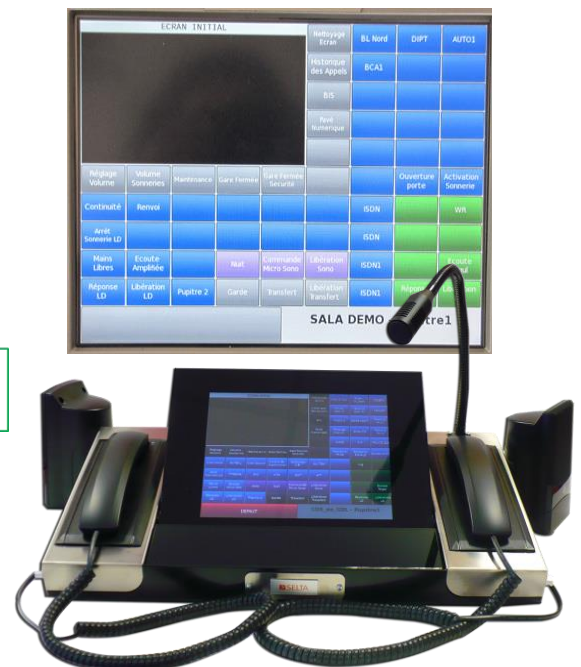
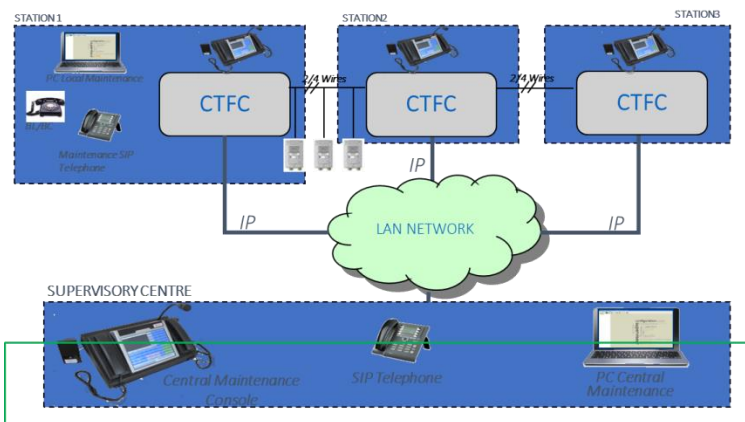
CTFC also serves as a forwarding device both for secondary station (DRPS) and as a remote control device for the main station (DIPT).

Main function

- Analogue Point-to-Point, Point-Multipoint lines and external PBX
- Digital lines (ISDN)
- VOIP
- Bypass
- Forwarding
- Transfer
- Conference
- Public Announcement System
- Management of external contacts
- Multiple scenarios
- Telephone diagnosis

Attendant console

- Tilting console for a better adjustment.
- External stand-alone speakers.
- PC, graphic interface, handsets and microphone integrated in a single solid device.
- Easy to start: the application loads automatically.
- Capacitive screen for better user experience
- No moving mechanical parts (solid state disks).



Mechanical features



The rack of the CTFC is housed in a wall box, which can be placed on the ground or hung to the wall. The box is light and compact. It can be inserted in an existing 19" standard cabinet. It is provided with a hinged door to allow the maintainer an easier access to cards and wiring.



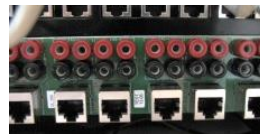
Removable distribution frames for an easy installation. High compactness of the unit. High readability: the record diagram is generated by the configurator



Standard Ftp cables and connectors for an easy cabling



Same interconnection card for all cards



Easy diagnostics through the "test points" drawer and the configurator

Maintenance & configuration system

Configuration, monitoring and diagnostics of all system elements are performed through the SELTA application **CTFC Manager**. Extremely intuitive, it is installed on a maintenance PC. The connection to the CTFC is carried out locally or remotely through a TCP/IP network, with the possibility to manage multiple sites at once.

It can be used in two ways:

configuration: it allows to configure all the system elements;

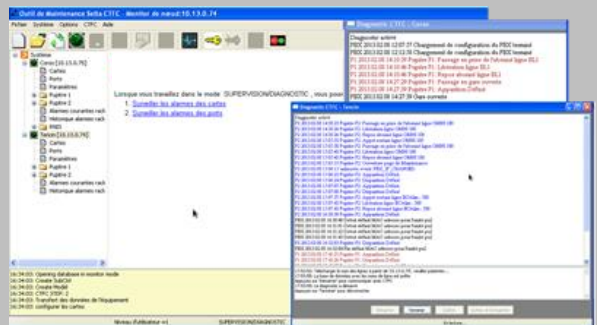
supervision: it allows the view of the electronic cards status, the alarm log stored and saved by the CTFC and the phone activities in real time.

Diagnostics and Maintenance

The remote maintenance system of CTFC can manage, through an IP network, several remote sites equipped with CTFCs linked by an IP connection to a service centre.

The monitoring/configuration tool installed in the centre allows configuring the sites (operating consoles, line features, etc.), alarms view, configuration, telephone diagnosis, updating firmware cards, creating the wiring map, etc.

The operator can choose how to open each site, view several sites at once and carry on more diagnostics simultaneously.



Technical features



Equipment CTFC

Power supply: $\pm 48/\pm 60$ V DC ($\pm 20\%$)

Power consumption max. 280 W

Electronic cards of the base section

- Power Supply Unit 120 W – 48/60 V
- Central Unit
- Service Unit
- PBX_GW Unit
- Inverter unit

Repetitive cards

- FA Unit
- FAS Unit

Composition

Base part + up to 10 redundant units

CTFC rack dimensions: 250 x 480 x 240 mm (h x l x w)

Wall box dimensions: 1000 x 700 x 400 mm (h x l x w)

CTFC operating temperature limits: -5°C / $+55^{\circ}\text{C}$

Managed line interfaces

- BL Line 2/4 wires 600 Ω (FAS Unit)
- BC Line feeding 2 wires 600 Ω (FA Unit)
- BC Line looping 2 wires 600 Ω (FA Unit)
- Switched analogue Line
- Automatic BC Line 2 wires 600 Ω (FA Unit)
- Switched digital Line
- ISDN Line base access, 4 wires (2B+D) S0 interface
- Omnibus Line and PN
- Line BL 2/4 wires 600 Ω / $>100\text{k}\Omega$ RX $>20\text{k}\Omega$ TX (FAS Unit)
- Line DIPT/DRPS
- Line 4/6 wires, 600 Ω / $>100\text{k}\Omega$ RX, $>20\text{k}\Omega$ TX (FAS Unit)
- Regulation line 5 Tones
- Line 4/6 wires, $>100\text{k}\Omega$ RX, $>20\text{k}\Omega$ TX (FAS Unit)
- Regulation line Western Speed (Rapid):
- Line 4 wires, $>100\text{k}\Omega$ RX, $>20\text{k}\Omega$ TX (FAS Unit)
- Interphone line
- Line 2/4 wires 600 Ω / $>100\text{k}\Omega$ RX, $>20\text{k}\Omega$ TX (FAS Unit)
- Public-address system line
- Line BL 4 wires 600 Ω (FAS Unit)
- Line UST Line BL 2/4 wires 600 Ω (FAS Unit)

CTFC console

Dimensions

200 -100 (adjustable to 5 steps) x 515 x 286 mm (h x l x w)
2 combined

- Left handset: Various lines (LD)
- Right handset: Specialized lines (Regulation)

Gooseneck microphone

- Free hands LD + sound

Speaker

- Free hands LD + loudspeaker + listening regulation
- Ringtones.

Touch screen

- Touch area + cell lines display

Input power

- $9 \div 36$ V_{DC}
- Optional 48/24V_{DC} converter installed in the cabinet CTFC

Power Consumption

- 120 W

Weight of console

- 8,5 Kg

Operating temperature limits

- -5°C / $+45^{\circ}\text{C}$

Touchscreen size

- 10.4 inches

EMC compatibility

- EN 300386 (public network equipment)
- ENV 50121 (Railway applications. Electromagnetic compatibility Section 5: Emission and immunity of fixed power supply installations and associated equipment)
- EN 55022 (electromagnetic emission)
- EN55024 (immunity to electromagnetic interference)
- ENV 50121-4, level 1: LT, DCN, ETH interfaces
- ENV 50121-4, level 3: FA and FAS line interfaces.

