

TERC

TRC100

Power line carrier

Power line carrier telecommunication equipment for electrical networks



Many integrated functions



Digital technology

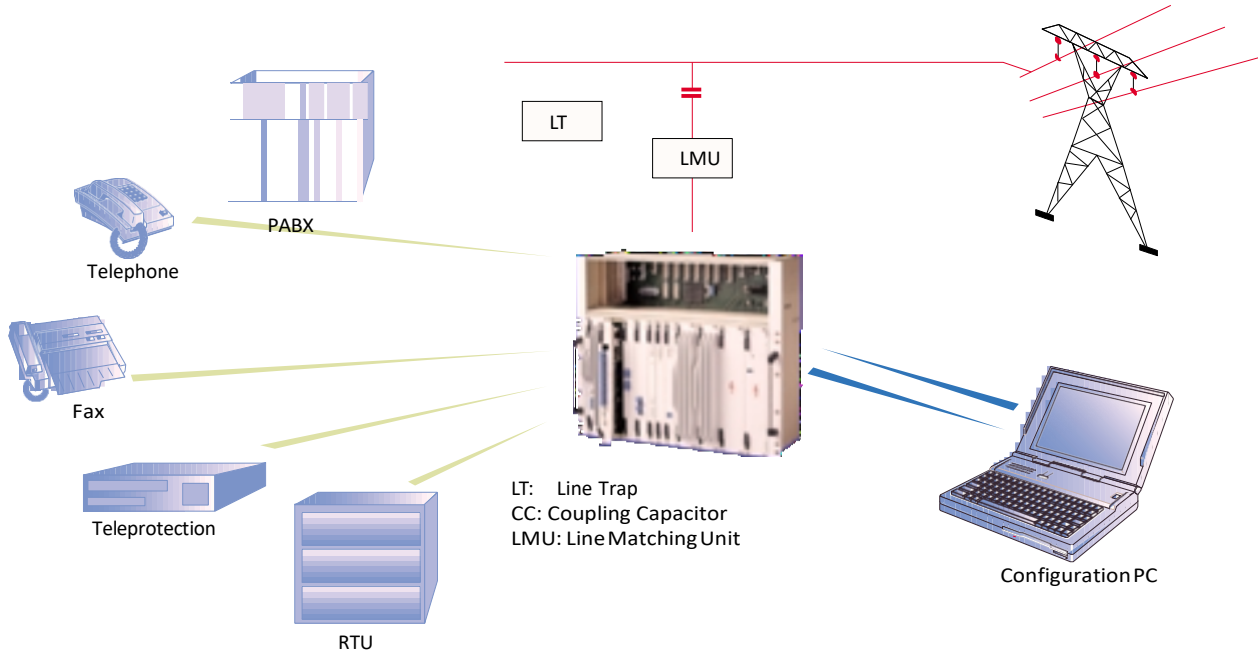
User friendly operation



Modular power levels and capacity

Reinforced electromagnetic compatibility

Presentation



Field of application

Safety and operation of large electrical power transmission networks require extensive communications enabling the exchange of a variety of signals.

The signals concern:

- Operations, maintenance,
- Day-to-day management.

Power Line Carrier Technology (PLC) is an economical method widely used for communication of speech and signals meeting the essential criteria of reliability and availability.

The technique permits transmission over long distances and has the advantage of using an existing medium that extend to all points in the grid.

Principle

The TRC100 equipment is a transceiver providing one or two channels. The analogue signals within a 4 kHz bandwidth are digitally converted into the 40-500 kHz range by single sideband amplitude modulation, amplified and then fed to the power line through a coupling device. At the receiving end, the process is reversed to restore the signals to the LF band.



Main characteristics

System can be fully customized.

Modular capacity:
1 or 2 channels,
3 power output levels.

P.C. controlled operation and maintenance.

Various facilities:
built-in modem,
remote maintenance and configuration...

Compliance with standards:
IEC 495, IEC 950, IEC 1000-4-X,
CE and Y2K

Applications

Utilisation

The system allows the transmission channel to be shared between a number of simultaneous applications:

- Teleprotection.
- Telephony.
- Data:
 - 3 analogue ports for external modem (V-recommendations of ITU-T).
 - 1 digital port for built-in modem up to 1200 bps (V23 or super-imposed band).

Operation

Operation of the system is facilitated by a user-friendly man-machine interface (PC under Windows) permitting local or remote control of the following:

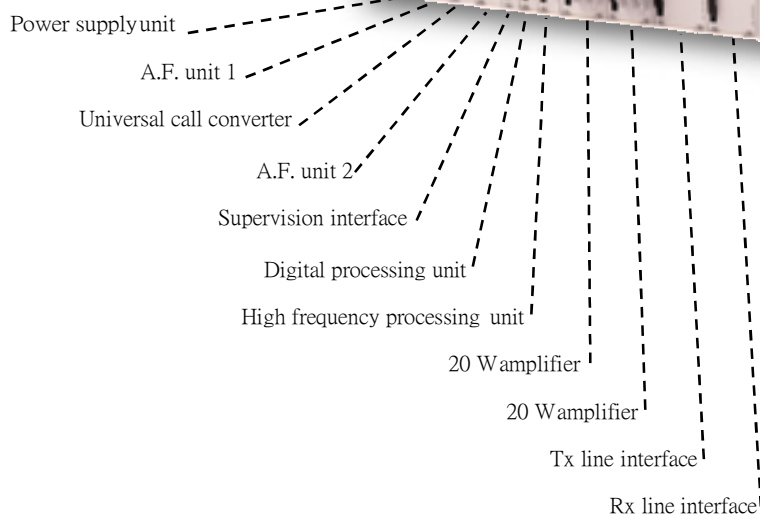
- System configuration (selecting or modifying many parameters).
Examples: band sharing, signaling channel levels...
- System testing and maintenance.
Examples: remote loop test, remote parameters display...

The system is under continuous supervision. Indications covering «transmitting», «receiving», power supply, digital processing faults, and so on, are provided by lights and alarm contacts.

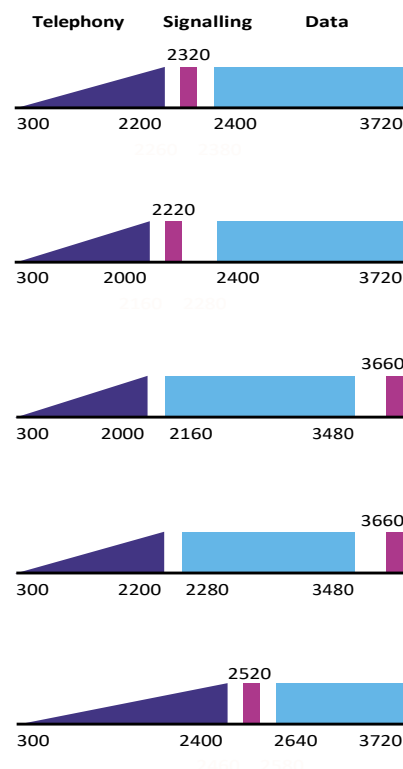
Facilities

The TRC100 system incorporates the following functions:

- Programmable squelch (activation and threshold).
- Voice compandor.
- HF equalizer: manual or automatic correction of attenuation distortion.
- Telephone service channel.
- Data drop/insert.



Examples of bandsharing programming



Characteristics

Operation

- Nominal impedance of analogue input/output:600 ohms
- Input/output levels:
 - speech input: - 22 to + 1 dBm
 - speech output: - 30 to + 7 dBm
 - data input/output: - 33 to + 5 dBm0.5 dB steps
- Signalling channel:F.S.K. (± 30 Hz)
- Built-in modem:
 - Interface:RS 232C
 - Asynchronous channel (50 to 1200 bps) with band sharing or not:F.S.K. and Q.P.S.K.
- Teleprotection access.

H.F. Transmission

- Output power:10, 20 or 40 W
- Output impedance:50, 75, 125 unballanced.
125, 150 ballanced.
- Carrier frequency range:40 to 500 kHz programmable by 1 kHz steps.
- Selectivity:
 - at 300 Hz from receiving channel: $\leq - 65$ dBmO
 - at 4 kHz from receiving channel: : $\leq - 75$ dBmO

Environment

- Power supply:48 Vdc (- 15% /+ 20%)
- Maximum consumption:150 W
- Operating temperature:0 °C to + 55 °C (IEC 495)
- Storage temperature:- 40 °C to + 70 °C
- Humidity at 40 °C:93% without condensation
- Insulation - EMC:IEC 495 and IEC 1000-4-X

Mechanics

- Maximum weight: 23 kg

