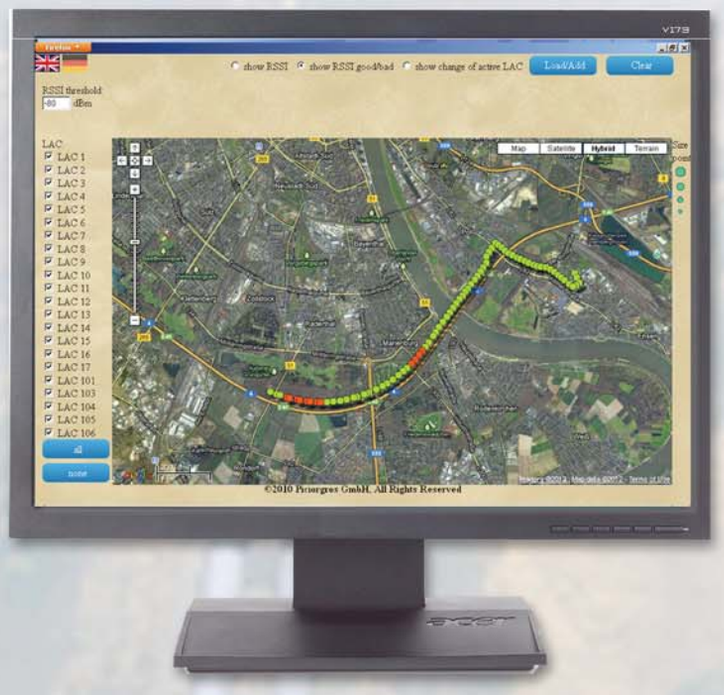
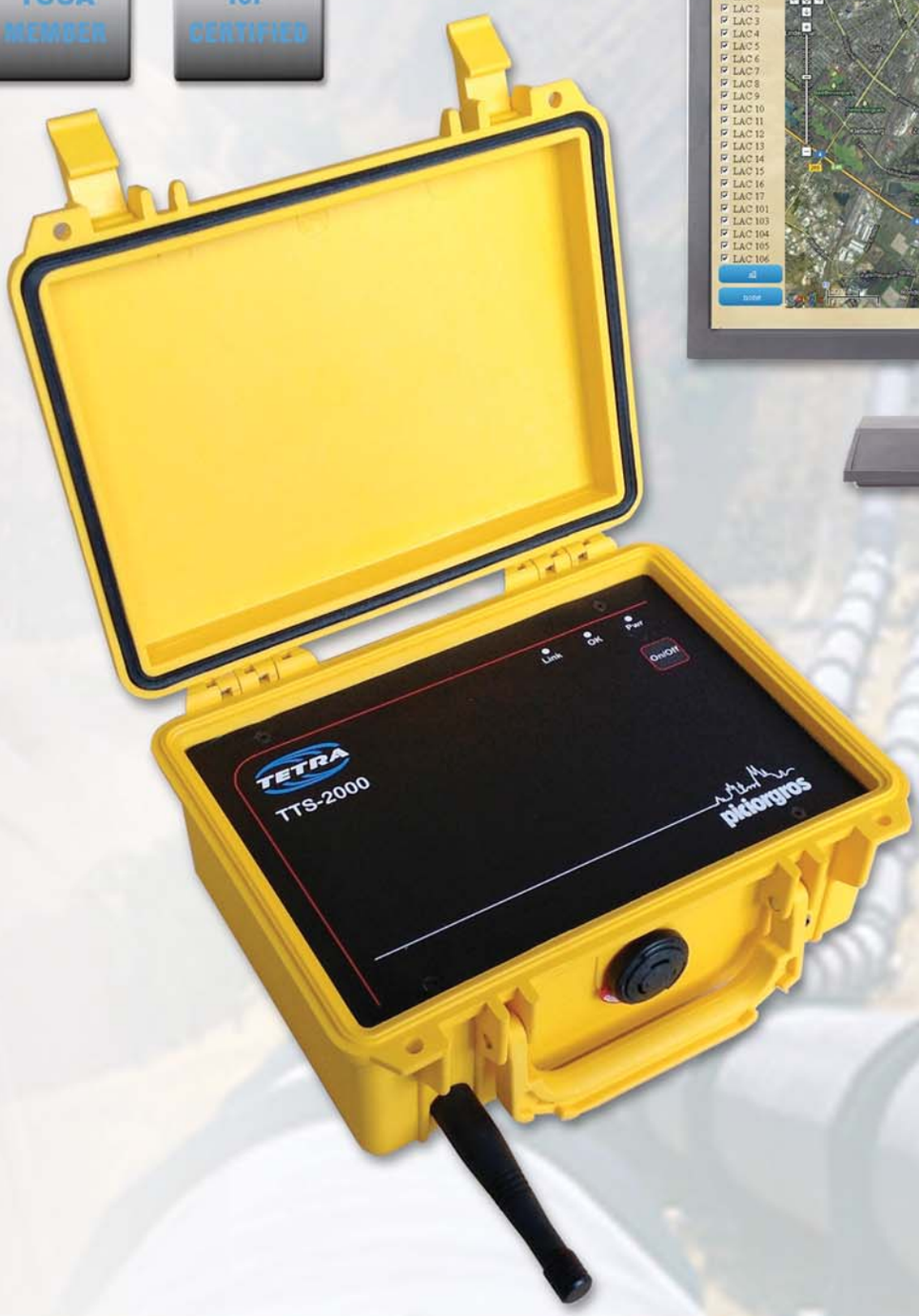
TETRA Site Survey Test Set

TCCA MEMBER

IOP CERTIFIED





www.TetraModem.com

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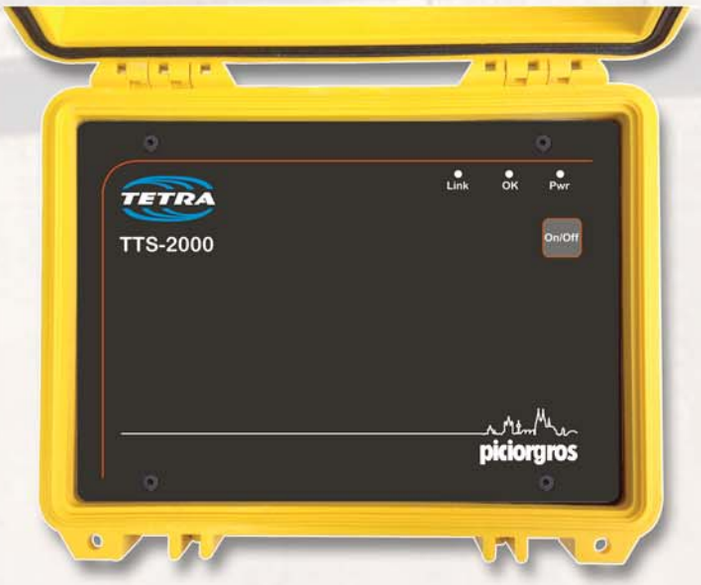
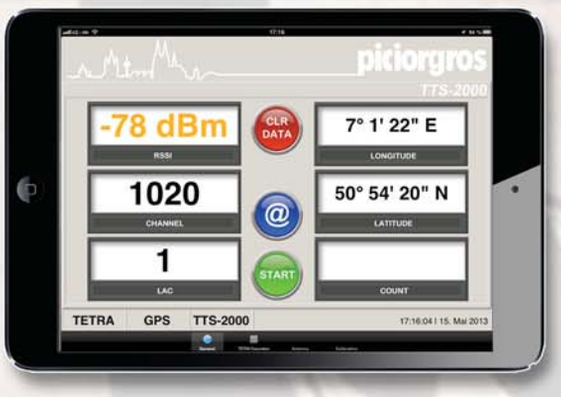
TETRA RF Test Set





User GUI with iPadMini

TTS-2000 TETRA Site Survey Test Set

The TTS-2000 is a complete TETRA Site Survey Test Device to take measures of the RSSI Field Strength of the TETRA carrier as well as all reported neighbor cells. The data is stored as a -dBm value together with the location coordinates, bit error rate, antenna gain or attenuation value, and the RSSI values from all reported neighbor cells.

As graphical user interface, an Apple Mini iPad - that can be easily installed on the car windshield - is used for measuring, configuration as well as for parameter setting and for the device calibration.

During the measuring process that is done once per second (or distance depending), all relevant TETRA parameters like RSSI, LAC, Channel number and coordinates are shown on the iPad in big, well readable numbers.

Additional to the car power connector, the device can be operated for several hours with the internal rechargeable battery. And once the measuring process is completed, the csv-based data can be sent on a WiFi or GSM network with just a finger tip to any e-mail address.

With the powerful Google Maps based application viewer "CoverMap" the user can view the data as graphical coverage overview on a PC or process it with his own Excel application. And he also can simulate certain conditions like switching off Base Stations or setting –dBm levels to check his network in extreme conditions.

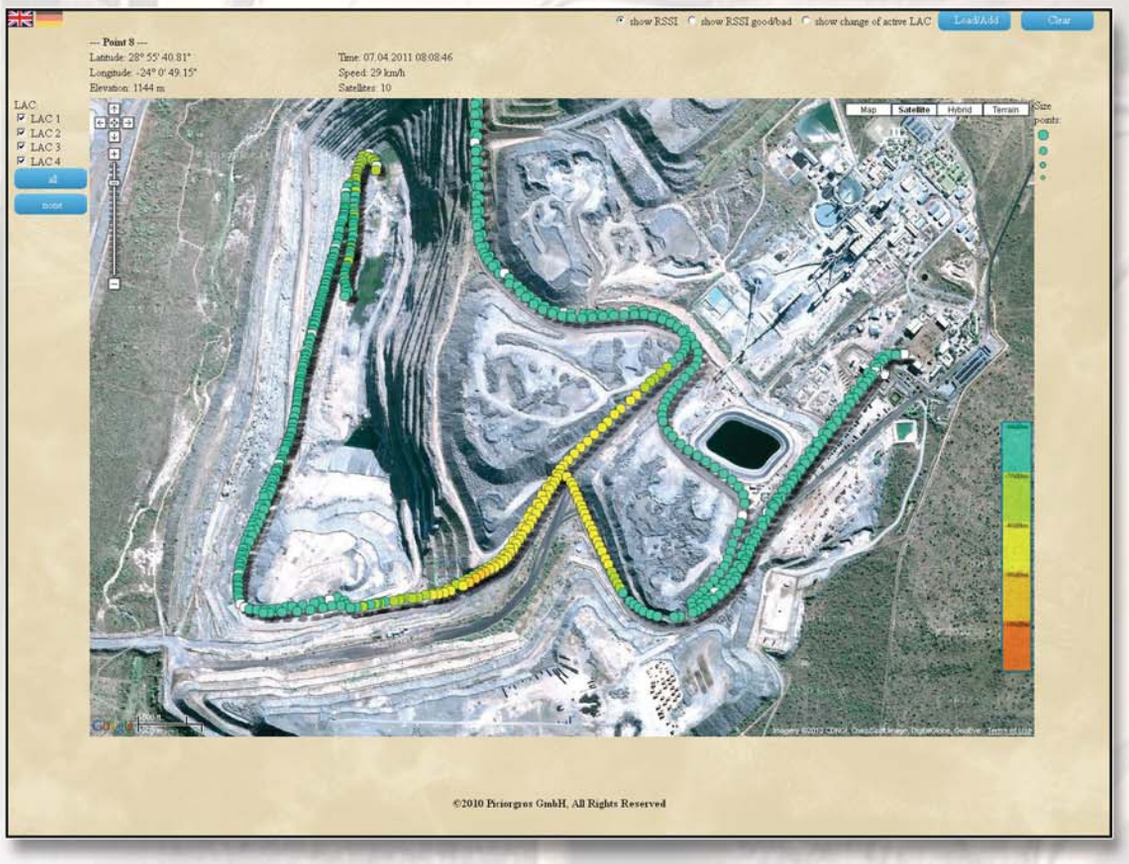
The TTS-2000 is installed in a small Pelicase box of only about 24 * 11 * 19 cm and can be used in a car or - due to its very light weight - is also ideal for hand carry measuring.

The Test Set is delivered together with an iPad Mini with installed software, the PC based application viewer CoverMap, magnetic antenna and a car changer cable.

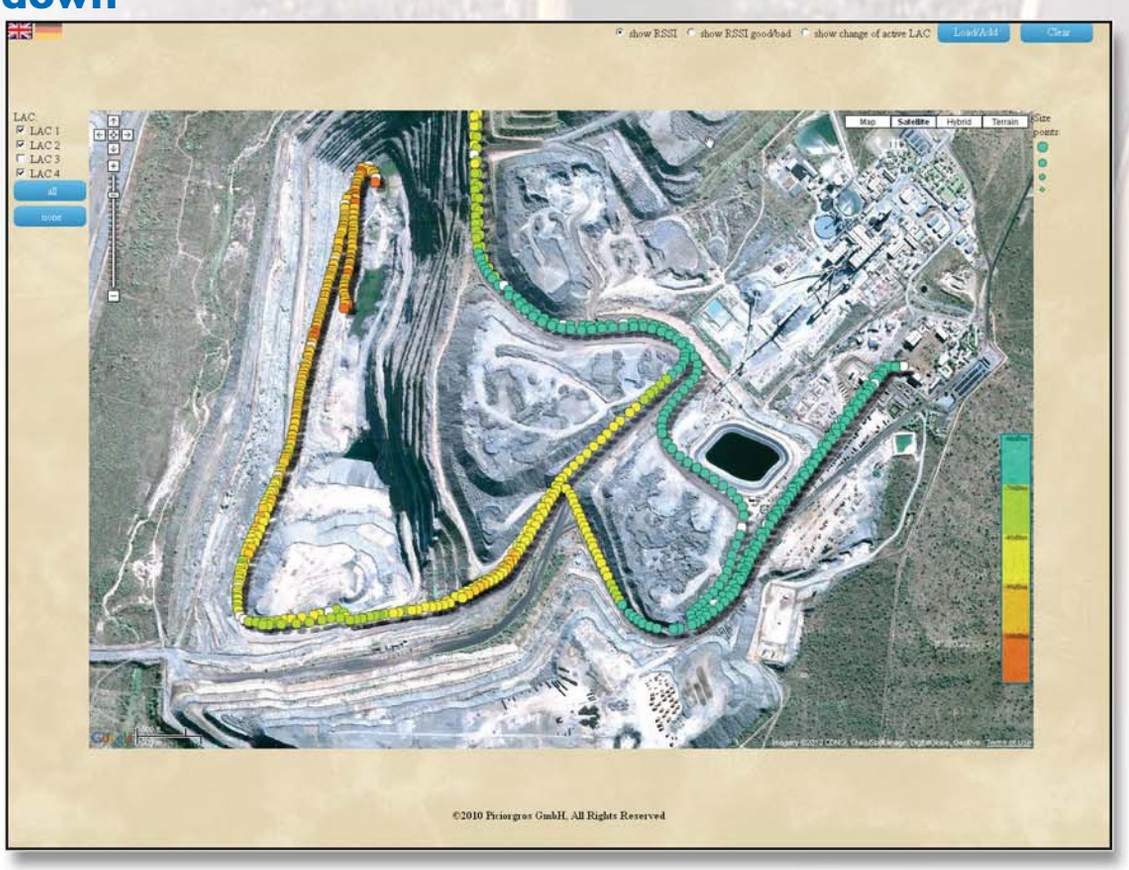
TTS-2000

- Ready-to-go solution
- Manage Coverage
- Observe Coverage
- Understand Infra-structure
- Easy to handle
- Many Applications
- All accessories included

TETRA RF Coverage Map using Google Maps



Analysis of Same Area with One Base Station shut down



System Features:

General Info

Type of Device:
TETRA Modem for Serial and IP Communication
Alarm Device for SDS and Status Messages
TETRA Mini RTU with digital and analog I/O

Hardware Options:
Data Modem/ Mini RTU/ IP Router
DVI-100: Digital Voice Interface

Data + Voice Option:
Via Microphone Speaker Set

Field Strength Display:
LED bar graph on the front panel

Operating Voltage:
12-24 Volt DC +/- 20%

Average Power Consumption:
P <= 3 Watt

Operating Temperature:
-20 deg C to +70 deg C

Enclosure:
Anodized aluminium with plastic ends according to DIN 43880

Mounting:
35 mm DIN rail

Dimensions:
80mm x 162mm x 62mm

Frequency Range:
350-370 MHz
370-390 MHz
410-430 MHz
450-470 MHz
806-870 MHz

Sustainability:
Waste Electrical and Electronic Equipment (WEEE) and Restriction of Hazardous Substances (RoHS) compliant

Technical Info

Interfaces:

COM:	RS-232 or RS-485/422, SubMin-D
AUX:	RS-232 or RS-485, RJ12
Ethernet:	Ethernet interface 10/100 MBit
I/O:	Embedded 16DI, 8DO, 4AI (Option)

Operating Modes:
Status Messages send (Alarm) and receive (Control)
SDS-based data Communication
Packet Data based data Communication
Multi Slot Packet Data Communication
Text Messages send via digital or analog
Alarm Inputs

Protocols:
Modbus-RTU, Modbus/IP,
IEC-60870-5-101, IEC-60870-5-104
DNP3, DNP3/IP, PakBus, ROC, BSAP
Siemens Sinaut ST1, ST7, and more
Customer Specific Protocols

TETRA Features:
SDS, Status, SCCH, PD, MSPD
SDS size up to 2047 Bit, Multi SDS transmission
Encryption, Authentication
Auto PPP-Link set up after Power on
Class 3 (3 Watts) Output Power (350 - 470 MHz)
Class 1 (1 Watt) Output Power (800 MHz)
Static RX Sensitivity: min -112 dBm (Typ -115 dBm)
Dynamic RX Sensitivity: min -103 dBm (Typ -107 dBm)

Special Device Features:
Embedded Web Server for Configuration
Embedded User Application Interface
PicoLogo™
Embedded MySCAD micro SCADA
Embedded Data Logger
Embedded IP Router
Remote I/O Control by SDS and Status
AUX-Port can interface to GPS Receiver

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Local Partner: