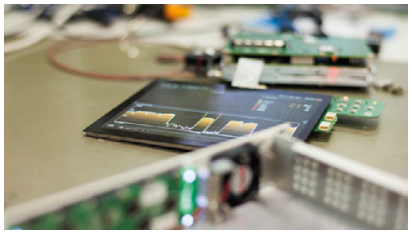
Professional Monitoring Family

Gsertel was born with a key objective: designing and manufacturing professional monitoring equipment that would surpass existing technologies in order to provide the end user with simple solutions that were not covered until now.

How we do it



R&D

In Gsertel we have a **high capacity for innovation** through a highly qualified engineering department, with extensive experience in the development of monitoring and control equipment.

Manufacture

Gsertel belongs to the ***Televes Corporation***. The factory has production and packaging lines fully robotized, which makes possible to minimize human errors and ensure the high performance of our products.

Distribution

We market our products in more than 90 countries through a partners network oriented to the professional segment, with **more than 10,000 units in operation worldwide**.

One family, full monitorization

All the standards

DVB-T/T2

ISDBT-Tb

DVB-C

DVB-S/S2/S2X

TSoIP

All the interfaces

RF

ASI

IP

GPS

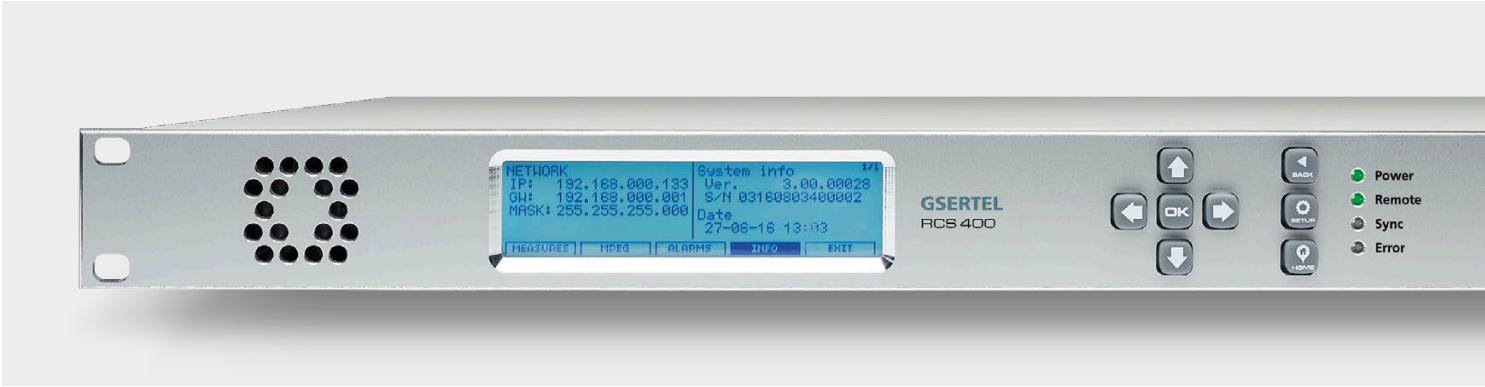
USB

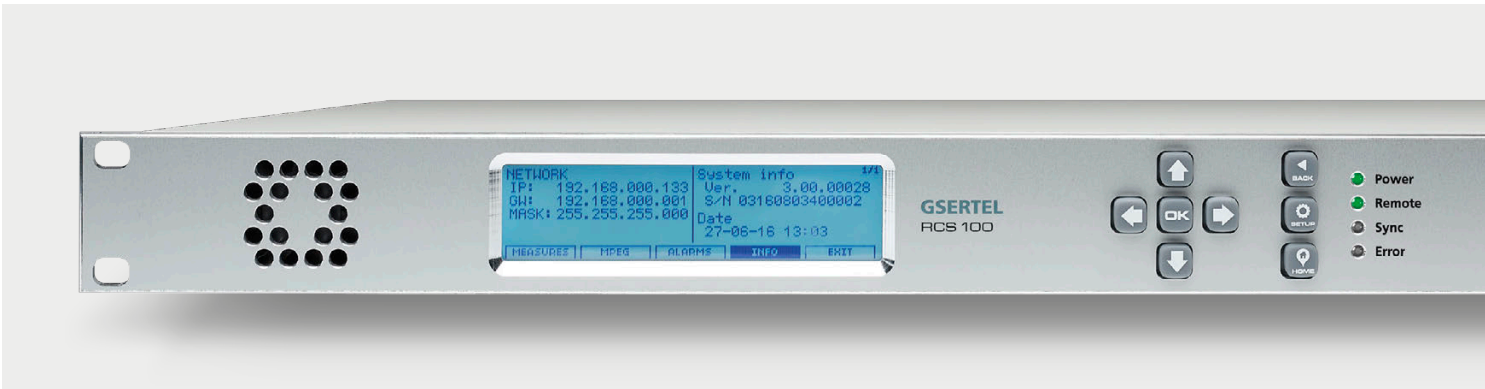
The most intuitive web application

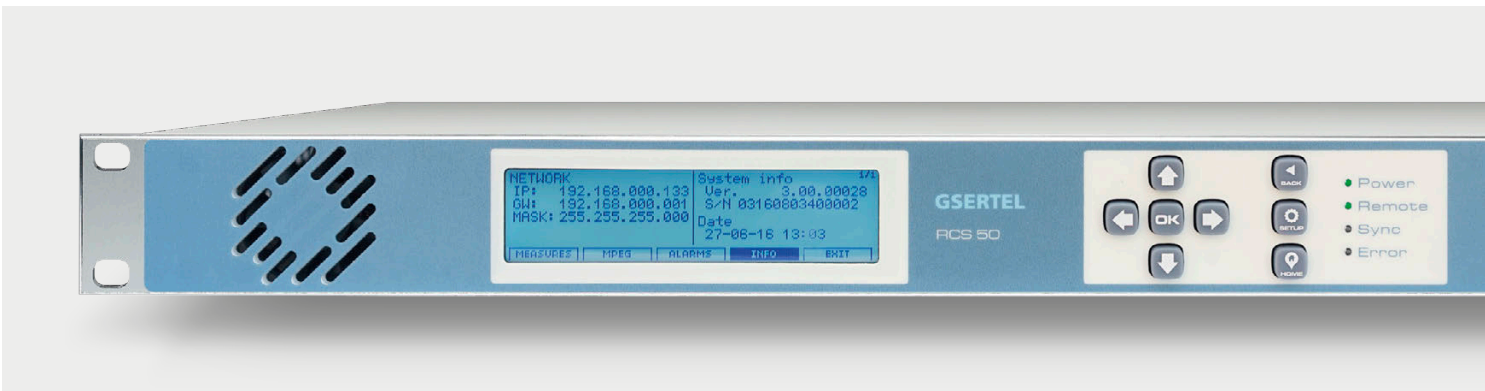
Capability of **parallel processing up to 12 multiplex and simultaneously by RF, ASI or IP inputs** makes the Gsertel Monitoring Family a powerful tool for early detection and diagnosis of potential failures in point of your network.

Full Spectrum Analyser: spectrum analysis from 5 Hz to 1 GHz with mask function and automatic alarm.

The members of the family





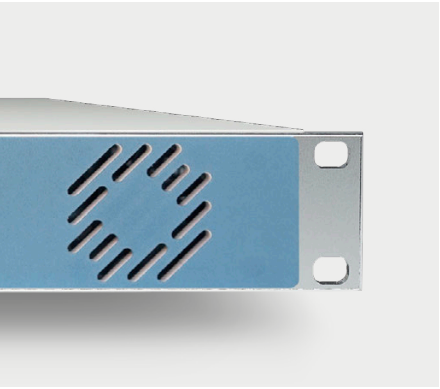


RCS 400

RCS 400 is the big brother of the Gsertel monitoring family. It is a network professional monitoring platform that allows the remote, proactive, simultaneous and real-time monitoring of **up to 4 digital television multiplex, both at RF and transport levels**.

RCS 100

RCS 100 is **designed for a 24x7 monitoring signal**, allowing to ensure the availability of services in a TV network.



RCS 50

Aimed to **small and medium transmitter sites and field monitoring** (reception), with RCS 50 network operators have an alert & diagnosis tool allowing to monitor global trends and anticipate potential failures.

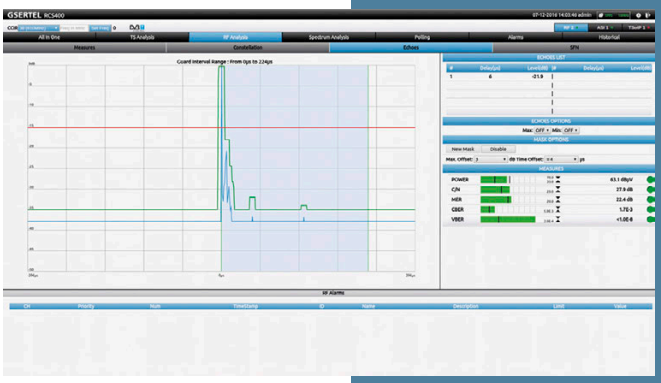
GProbe10

Gsertel's GProbe10 is a cost-effective IP probe that allows remote and real-time IP signal monitoring. With a compact desing, GProbe10 is the **perfect probe for last mile analysis of IP signals**.

RCS RF Analysis

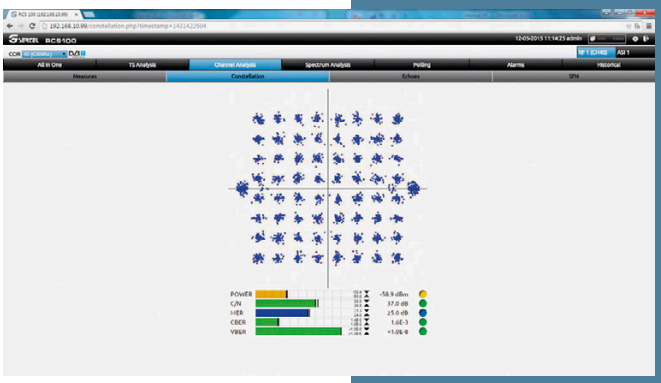
Spectrum

Full band real-time spectrum analyser (5Hz-1GHz) with mask function and automatic alarm.



Echoes

Advanced measure of echoes, with masks in amplitude and delay.



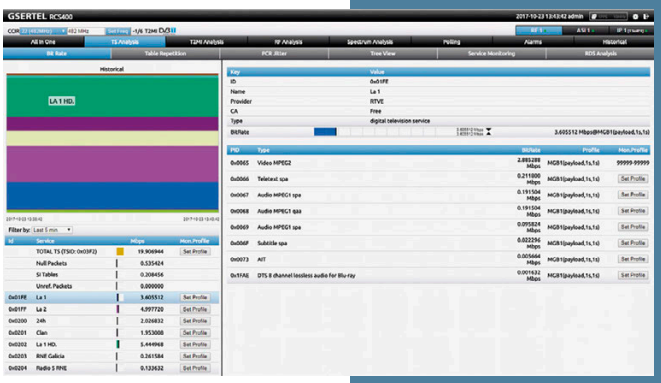
Constellation

Constellation representation including pilot carriers and TPS.

SFN Drift

Temporal deviation in the superframe transmission at the transmitter output with respect to the given synchronization time stamps in the packets MIP of the transport stream, as well as another chart that shows the time evolution of the frequency offset.

RCS TS Analysis

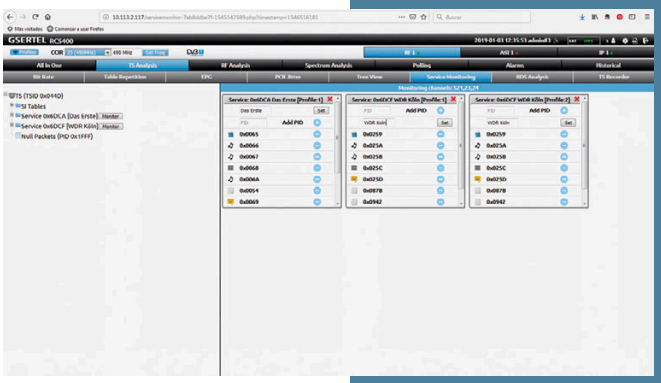


Bitrate

Complete TS Analysis.

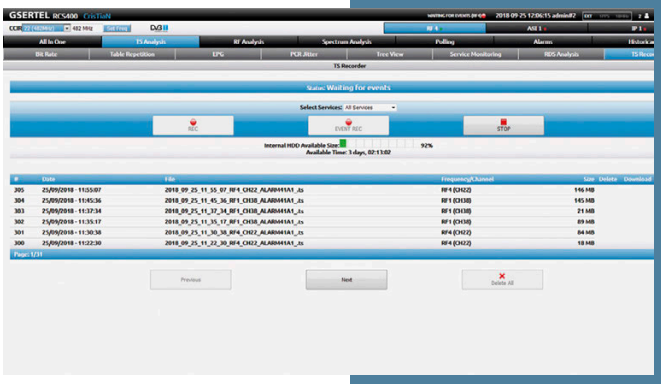
PCR Jitter

Measurement and temporal representation of the PCR Jitter.



Service monitoring

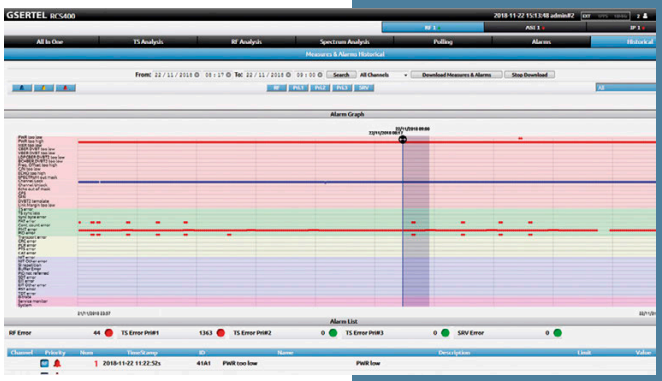
Detects changes in the selected services y activates an alarm automatically.



TS Recording:

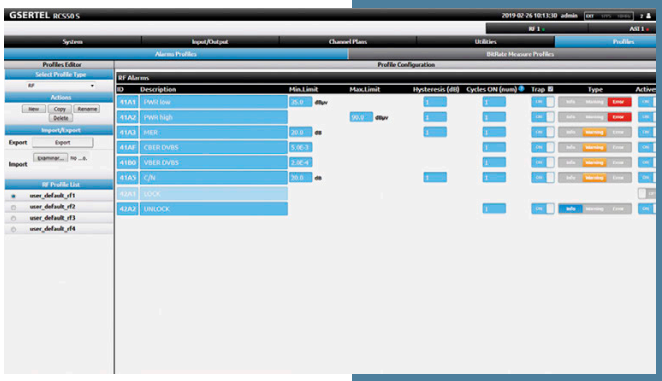
Direct recording or event recording of the transport stream.

RCS Management



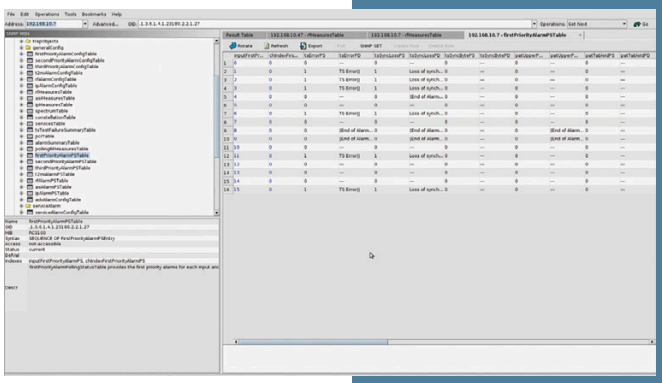
Historical of Alarms

Intuitive graphical filtering of alarms.



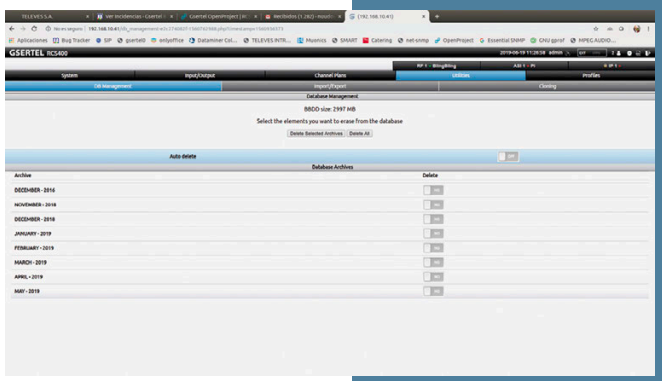
Alarms setup

Configure the Alarms the way you want.



SNMP

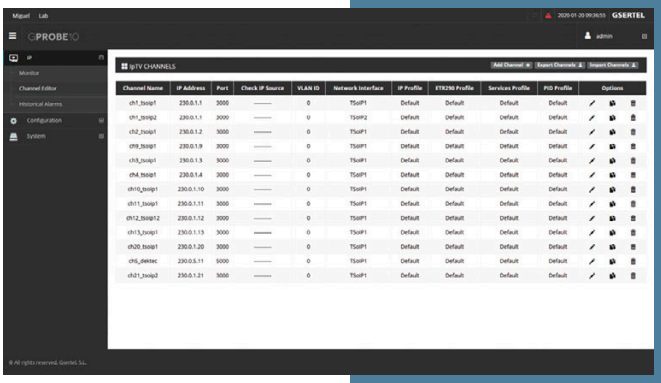
Full management through SNMP v2.0.



BBDD

System alarms are saved in the meter database, grouped by months, so you can check them easily.

GProbe10

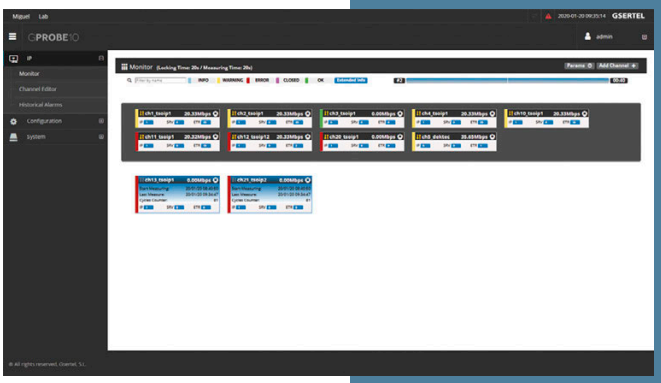


Monitor

Multiple IP flows in parallel (up to 64).

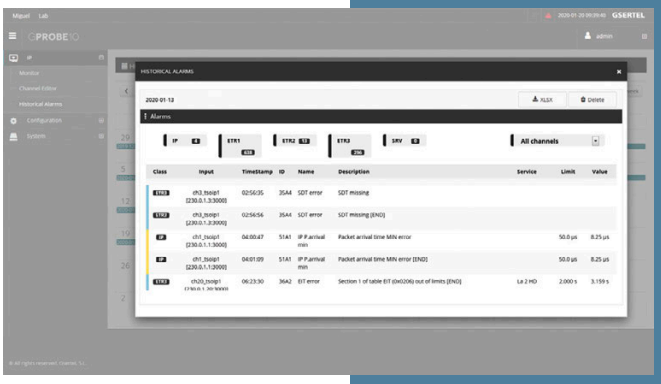
Channel Card

IP and UDP payload bitrate, Media loss rate and loss IP frame, IP Jitter.



Extended information

Complete analysis of all the IP signals.



Alarms

Level 1 and level 2 priority errors and Configurable type of alarm (Info, Warning, Error).

RCS Specifications

RCS General Specifications	RCS 50	RCS 100	RCS 400
Display	Graphic LCD STN. Resolution: 256x64		
Format	1U 19" rackable unit		
Weight	3250 g.		
Dimensions	448x380x43.3mm		
Operating temperature	-5ºC to 45ºC (23ºF to 104ºF)		
Storage temperature	-20ºC a 70ºC (-4ºF a 158ºF)		
Humidity	5% to 95% non-condensing		
Interfaces	Web and keyboard		
Power supply	100-240 VAC 50-60Mz 1.4A		
Storage capacity	500 GB	1 TB	
Internal GPS	-	Option 902566	

RCS Technical Specifications	RCS 50	RCS 100	RCS 400
Frecuency			
Range	47-862MHz (Demodulation) 5-1000MHz (Spectrum)		
Resolution	100 KHz		
Tuning	Channel and frequency		
Inputs			
RF	1 x N 50Ω connector	1 x N 50Ω connector	4 x N 50Ω connector
ASI	1 x BNC 75Ω connector (option 902554)	1 x BNC 75Ω connector	4 x BNC 75Ω connector
Synchro	-	1 x 1pps BNC 50Ω connector 1 x 10MHz BNC 50Ω connector	
IP	-	Option 902518	
Outputs			
ASI	1 x BNC 75Ω connector		
A/V	1 x HDMI 1.4		
Spectrum Analyzer (Option 902511 only for RCS100 y RCS400)			
Span	-	10, 20, 50, 100, 200, 500, 1000 MHz	
Scale	-	-100 dBm to 20 dBm	
Max. & Min. Hold	-	✓	
Marks	-	2	
Mask	-	✓	
RF Analysis			
U.A.L. Technology (Universal Auto Lock)	Automatic detection of signal characteristics and modulation parameters.		
RCS-T (DVB-T/T2)	**RCS 50**	**RCS 100**	**RCS 400**
Demodulation	ETSI EN 300744 (DVB-T), ETSI EN 302755 (DVB-T2)		
Constellation	**DVB-T:** COFDM (QPSK, 16QAM, 64QAM)		
	DVB-T2: COFDM (QPSK, 16QAM, 64QAM, 256QAM)		
Power	-100 dBm to 20 dBm		
C/N	Up to 50 dB		
MER	Up to 40dB		
Constellation Diagram	Option 902511	✓	
Echoes	✓		
BER Measurements	**DVB-T:** CBER: 9.9E-2 - 1.0E-6 / VBER: 1.0E-3 - 1.0E-8		
	DVB-T2: LDPCBER: 9.9E-2 - 1.0E-6 BCHBER: 1.0E-3 - 1.0E-8 / Link Margin: up to 30dB		
Left Shoulder	-	< 50 dB	
Right Shoulder	-	< 50 dB	
SFN Drift Graphs	-	Option 902511	
Polling Feature	Option 902557	✓	
Frequency offset	-	Option 902511	
Base Band Frame Error Rate (BBFER ETR 290) Only for DVB-T2	1.0E0 - 1.0E-6		
LDPC iterations (Only for DVB-T2)	✓		
RCS-I (ISDB-T/Tb)	**RCS 100**	**RCS 400**	
Demodulation	ARIB STD-B31 (ISDB-T/Tb)		
Constellation	DQPSK, QPSK, 16QAM y 64QAM		
Power	-100 dBm to 20 dBm		
C/N	Up to 50 dB		
MER	Up to 38dB		

BER Measurements	**Pre-BER (by layer):** 1.0E-2 - 1.0E-6	
	Post-BER (by layer): 9.9E-2 - 1.0E-8	
Left Shoulder	< 50 dB	
Right Shoulder	< 50 dB	
Constellation Diagram	✓	
Echoes	✓	
Polling Feature	✓	
Frequency offset	Option 902511	
SFN Drift Graphs	Option 902511	
RCS-C (DVB-C)	RCS 100	RCS 400
Demodulation	ITU-T J.83 Annex A/C	
Constellation	16, 32, 64, 128, 256QAM	
Power	-100 dBm to 20 dBm	
C/N	Up to 50 dB	
MER	Up to 43 dB (6.9Msym/s, QAM256, Level>-45dBm)	
BER Measurements	**BER (Annex A/C):** 1.0E-3 - 1.0E-9	
	BER: 1.0E-3 - 1.0E-8	
	CBER: 1.0E-3 - 1.0E-9	
Constellation Diagram	✓	
Polling Feature	✓	

RCS-S (DVB-S/S2/S2X)	RCS 50	RCS 100	RCS 400
Demodulation	ETSI EN 300421 (DVB-S), ETSI EN 302307 (DVB-S2)		
Constellation	QPSK, 8PSK		
Power	40 to 85 dBuV		
BER Measurements	**DVB-S:** C/N: Up to 20 dB / MER: Up to 20 dB CBER: 9.9E-2 - 1.0E-6 / VBER: 1.0E-4 - 1.0E-8		
	DVB-S2/DVB-S2X: Link Margin: up to 10 dB MER: Up to 20 dB / LDPCBER: 9.9E-2 - 1.0E-6 BCHBER: 9.9E-2 - 1.0E-8		
Constellation Diagram	Option 902511	✓	✓
Polling Feature	Option 902557	✓	✓
TS Analysis			
Service Bitrate	✓		
Table Bitrate	✓		
PID Bitrate	✓		
Captures of all Services	Option 902553	✓	
Network Delay	-	Option 902512	
Tree View	✓		
Scramble Status	✓		
Table Repetition	✓		
PCR Jitter Graphs	-	Option 902512	
BTS Analysis (ONLY RCS-I)	-	Option 902516	
ETSI TR 101 290	Level 1 and 2 priority errors: Option 902555) Level 3 priority errors: Option 902559	Level 1, 2 and 3 priority errors (Level 3 option 902512)	
Live Streaming of the selected service	Option 902520		
Manual TS Recording	Option 902556	Option 902519	
Alarm TS Recording	-	Option 902519	
RDS Analysis	-	✓	
Electronic Program Guide	-	✓	
Loudness metering according EBU Tech Doc 3341	-	Option 902569	
T2-MI Measurements ONLY RCS-T (Option 902513 only for RCS100 and RCS400)			
T2-MI BitRate	-	✓	
Transport Stream BitRate	-	✓	
Packet Analysis	-	✓	
TR 101 290	-	Priorities 1, 2 and 3 implemented	
T2-MI PLP extraction (Up to 4 streams)	-	✓	
Extended T2-MI PLP extraction (Up to 8 streams)	-	Option 902567	
IP Measurements (Option 902518 only for RCS100 and RCS400)			
Maximum arrival interval between packets	-	✓	
Minimum arrival interval between packets	-	✓	
IP payload bitrate	-	✓	
UDP payload bitrate	-	✓	
Media loss rate	-	✓	
Loss IP frame	-	✓	
Corrected IP	-	✓	
Polling	-	✓	
Alarms			
4 groups: RF, Levell1, Level2, Level3	Level 1 and 2 priority erros Option 902555	✓ (Level 3 option. 902512)	
Configurable type of alarm (Info, Warning, Error)	✓		
T2-MI TR 101 290 alarms	-	Option 902513	
TS recording by alarms	-	Option 902519	
System alarms	Temperature, Power supply (only for RCS with double power supply) and alarms deletion		

GProbe10 Specifications

GProbe10 General Specifications	
Weight	495g without 1 RU adapter
Dimensions	120mm x 140mm x450mm without 1 RU adapter
Operating temperature	-5°C to 45°C (23°F to 104°F)
Storage temperature	-20°C to 70°C (-4°F to 158°F)
Humidity	5% to 95% non-condensing
Control Interfaces	1xEthernet RJ45 / Web (HTML5) / SNMP
Storage	20 MB
External Storage	USB
Power Supply	12V - 1.5A power supply / -48VDC (optional)

GProbe10 Technical Specifications	
Inputs	
IP Input	2 x GE RJ45 (TSoIP) (Option)
IP Analysis	
Multiple IP flows in parallel (up to 16)	✓
Additional IP flows (16 additional flows each license up to 64)	Option
Max. arrival interval between packets	✓
Min. arrival interval between packets	✓
IP payload bitrate	✓
UDP payload bitrate	✓
Media loss rate	✓
Loss IP frame	✓
Jitter IP	✓
UDP and RTP mode (auto)	✓
Alarms	
4 groups: RF. Level1, Level2, Level3	✓ (Level 3 opt.)
Configurable type of alarm (Info, Warning, Error)	✓

Specifications are subject to change without notice

Support

In Gsertel **we guarantee the quality and reliability of all our products**. We also want our customers to feel supported after purchasing them, to ensure they get the most benefit from them.

All of our clients have our Customer Service including:

Access to online and telephone support:
Consultation and resolution of doubts.
Opening of technical assistance and repair of equipment cases. Should you require examination of the equipment, in our support center we guarantee a maximum repair time of 10 days for its repair or updating. We coordinate collection and delivery. We even provide online access to track your analyzer through the whole process.

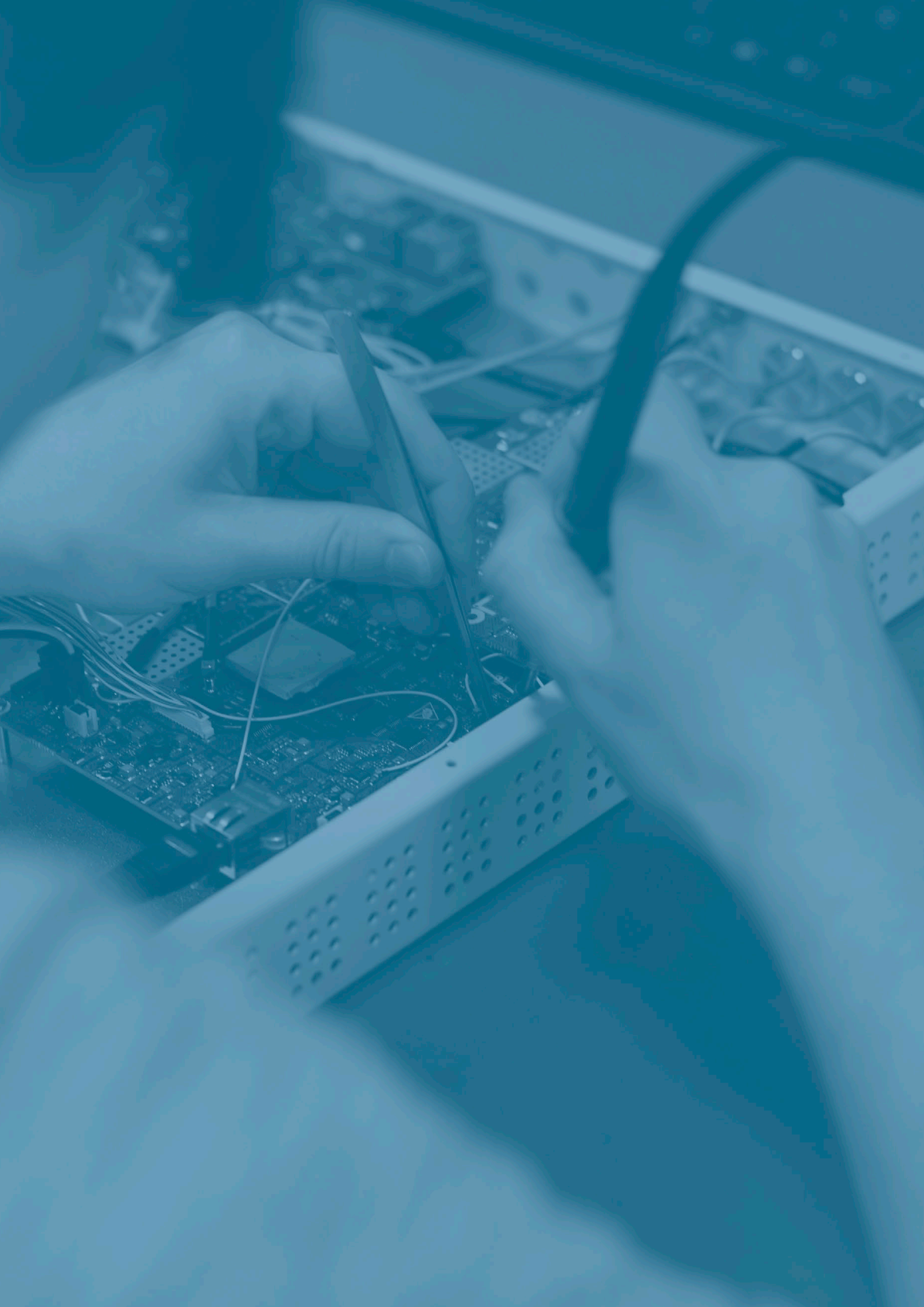
Access to new versions of firmware:
All of our new software and firmware versions are available from our website, adding new functions to equipment in a fast and convenient way.

Warranty:
Two-year warranty on any equipment and one year on batteries for portable equipment.

Technical Service telephone number:
+34 981 522 447

Technical Service e-mail:
support@gsertel.com

www.gsertel.com



GSERTEL

Sistemas Integrados de Servicios de Telecontrol S.L.

Volta do Castro, s/n
15706 Santiago de Compostela
A Coruña (SPAIN)

T +34 981 522 447
F +34 981 523 886

info@gsertel.com
www.gsertel.com

www.gsertel.com/
broadcast

Televes Corporation