PROMAX

A NEW STANDARD IN FIELD STRENGTH METERS

TV, CABLE, SATELLITE & WIFI ANALYSER

RANGER*Neo* +

RANGER*Neo* +   PROMAX

DEFAULT 14/02/2017 14:18	WIFI SPECTRUM		AP
CH: 6	MaxPower: -23.8 dBm	N.AP: 0	RSSI: --------- dBm
BW: 20 MHz	AvPower: -41.6 dBm		SNR: -------- dB

YACOM
VODAFONE
ORANGE
JAZZTEL
TELEFONICA
TERRA   AOL
MOVISTAR   YOIGO
WANADOO

-40
-50
-60
-70
-80
dBm

1   2   3   4   5   6   7   8   9   10   11   12   13   14

CH6   Advanced

F1   F2   F3   F4

EXT. ● V/A
DRAIN ● LNB
CHAR. ● BAT.

SENSOR

DVB Digital Video Broadcasting

TOUCH SCREEN

H.265

WiFi

wb LNB

EASY OPERATION

Hybrid user interface (touch + keyboard)

HEVC H.265

High Efficiency Video Codec

WIFI ANALYSER

Dual display: SPECTRUM and DATA

WIDEBAND LNB

The entire SAT band on a single SPAN

---

www.promaxelectronics.com

HEVC H.265 DECODING
High Efficiency Video Codec

RANGER *Neo* + is the new industry-standard in field strength meters and TV analysers. It is capable to offer HEVC signal demodulation compatible with the new DVB-T2 broadcast signals.

RANGER*Neo*

PROMAX

TV 3/3

Berlin_DVB-T2_HEVC
03/01/2017 23:39

VIDEO

SERVICE				
Network		MB DVB-T2 Test		
Provider		MB		
NID	12402	ONID	8468	FREE
TSID	29185	SID	16898	unknown
LCN	4	NIT v.	17	+Info
App. Type				

Type	HEVC		2801 kbps
Format	1920x1080p	16:9	50 Hz
Profile	MP@L4.1@MT	PID	514

AUDIO			
Type	DD+		128 kbps
Format	16bit	48 kHz	Stereo
Language	deu	PID	514

Service 2 (T2-Te...

✓ MPEG2 TS locked: MB DVB-T2 Test

CH: 42   DVB-T2   Tools   Advanced

CHAR. ● BAT.

F1   F2   F3   F4

DVB Digital Video Broadcasting

LIGHT WEIGHT
1,9 KG

TRIPLE SPLIT DISPLAY

ULTRA FAST SPECTRUM

FREE FIRMWARE UPDATES

Field strength meter for the HDTV era

wbLNB COMPATIBLE
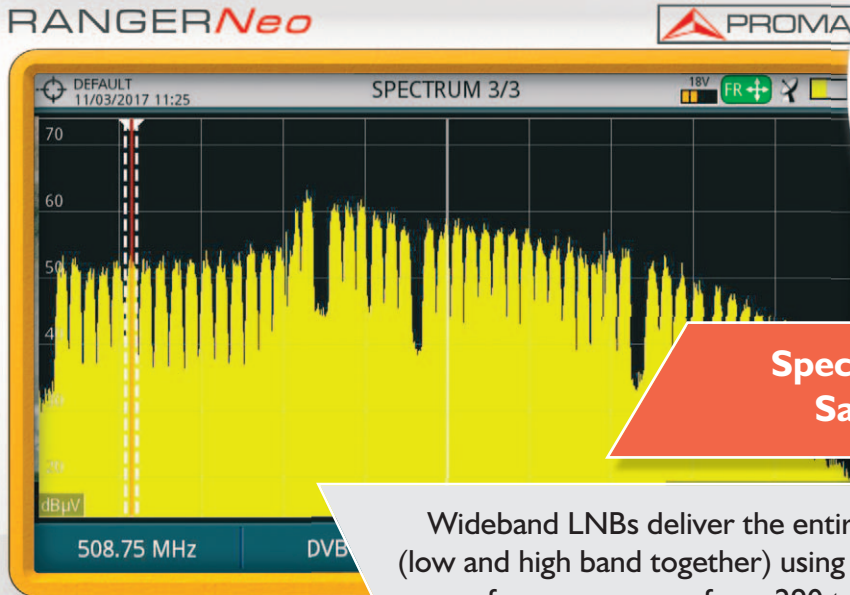
Spectrum analyser from 5 to 2500 MHz
Satellite band from 250 to 2350 MHz

Wideband LNBs deliver the entire Vertical and Horizontal satellite polarities (low and high band together) using two separate RF cables and an extended IF frequency range from 290 to 2,340 MHz. **Is your analyser prepared?**

DCSS LNBs Digital Channel Stacking Switch satellite LNB

Digital Channel Stacking Switch LNB can support several users on a single cable distribution system by allocating specific user bands for each of them. It is not possible to work with this type of LNB unless your field strength meter can communicate using EN50494 and EN50607 standard protocols.

This is the case of **RANGER *Neo* +** which also covers JESS and SATCR.
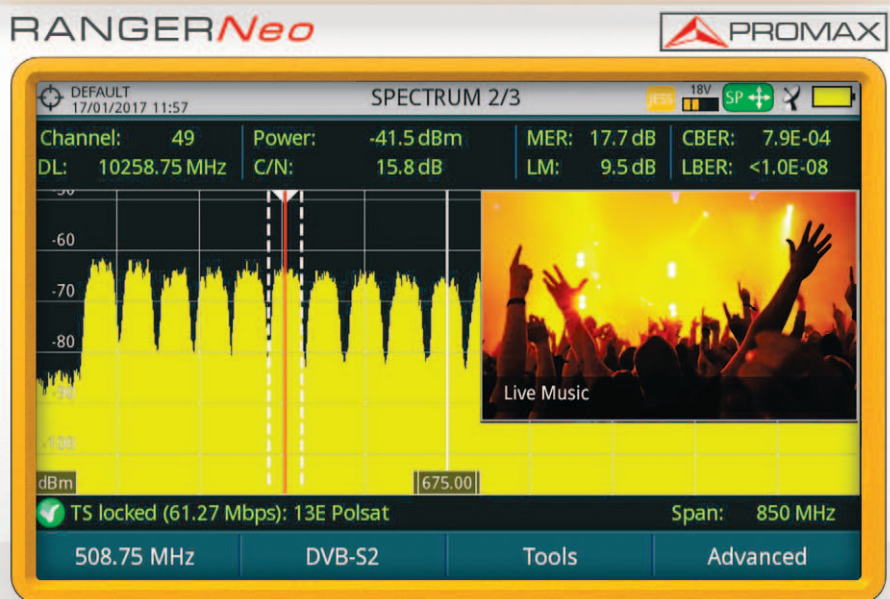
2.4 GHz WiFi ANALYSER

Improve your network performance

RANGER *Neo* +

Your analyser for the new world

2.4 GHz WiFi ANALYSER
Improve your network performance

RANGER*Neo* — PROMAX

DEFAULT 14/02/2017 08:44 — **WIFI SPECTRUM** — AP

| CH: 6 | MaxPower: -62.3 dBm | N.AP: 2 | RSSI: -70 dBm |
| BW: 20 MHz | AvPower: <-76.0 dBm | | SNR: 19 dB |

INTERMEC123 — Visitas
CH 6 — Advanced
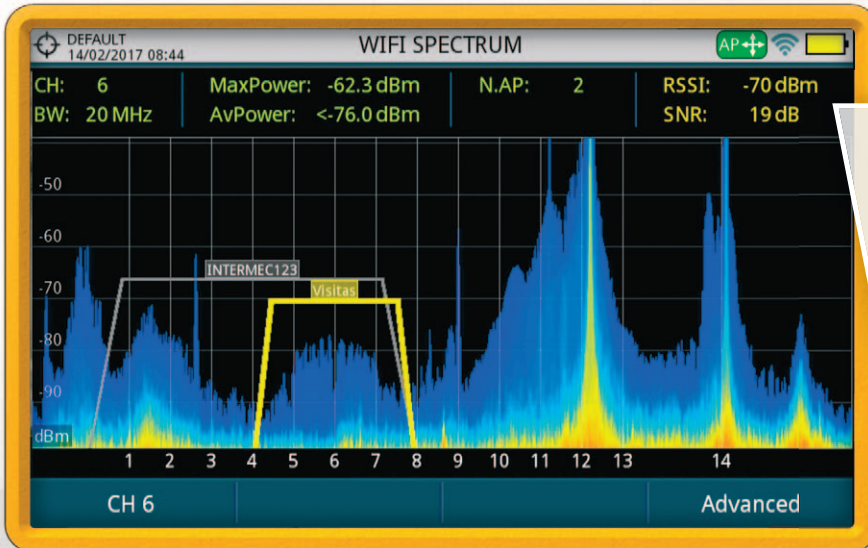
Simultaneous real spectrum analyser information + WiFi access point data

WiFi signals can be disturbed by interference from other WIFI stations, for example other access points, but also from non-WIFI signals such as wireless CCTV cameras or, like in the picture, a microwave oven! **RANGER *Neo* +** can display both simultaneously.
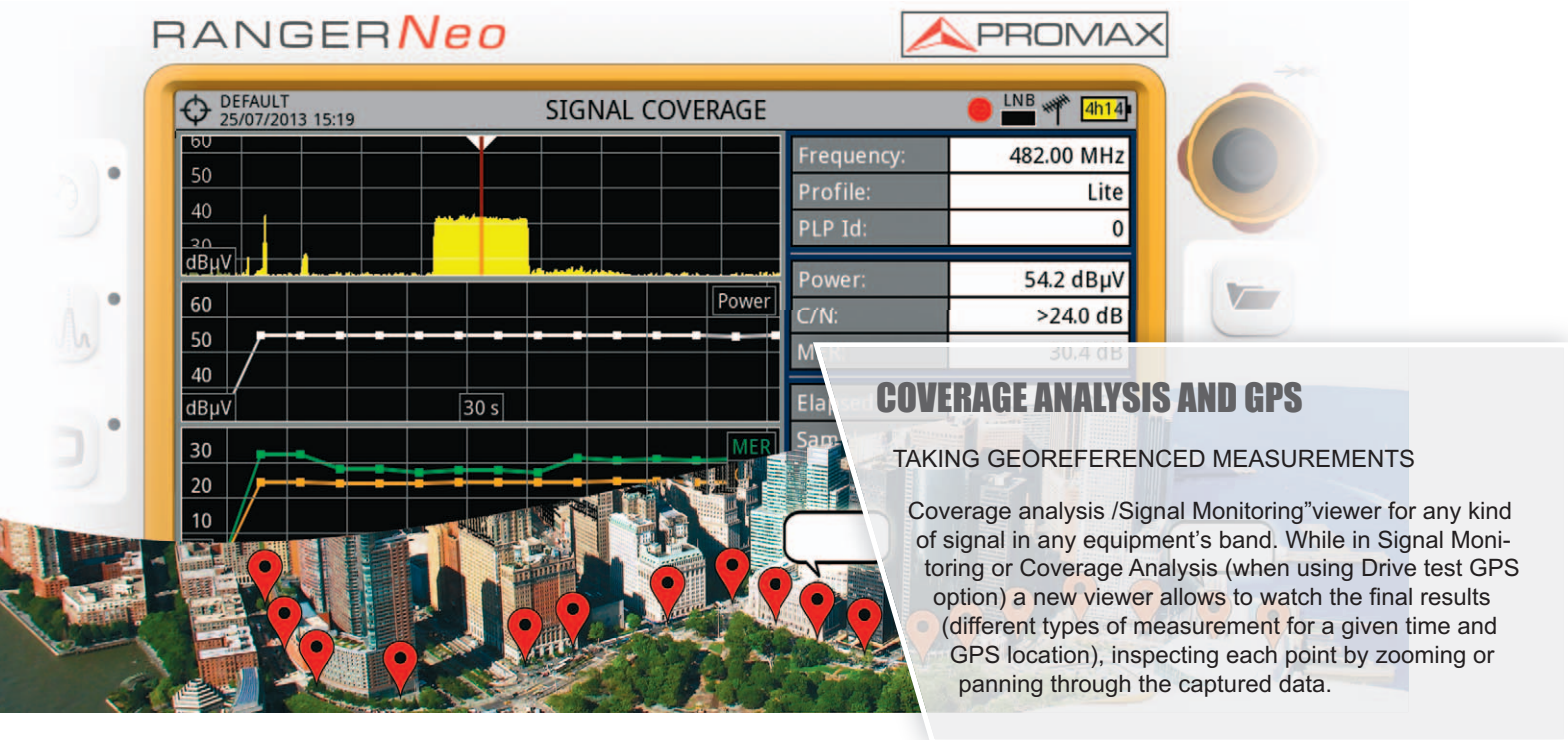
RANGER *Neo* + shows convenient information from the access points such as SSID, RSSI, SNR, security information, etc.
It also indicates the number of access points per channel.
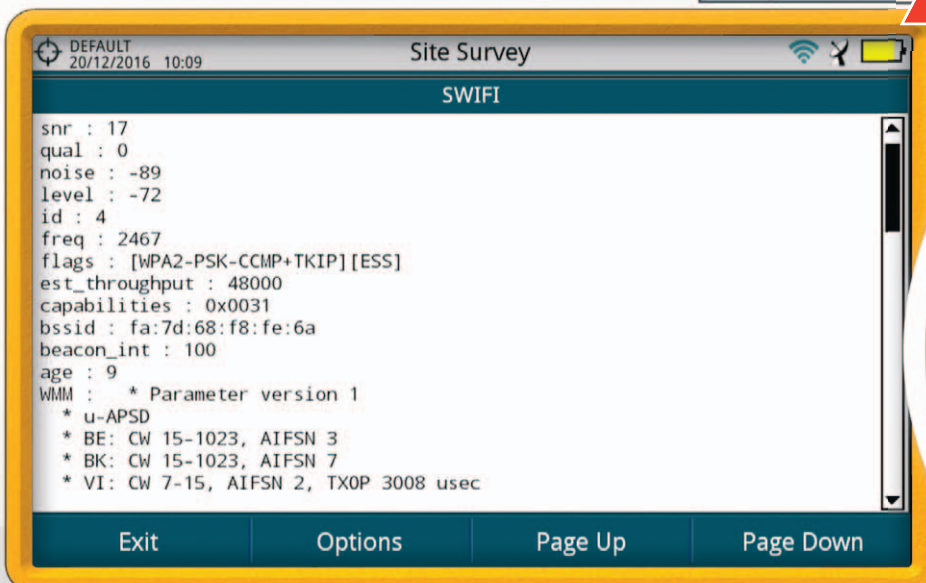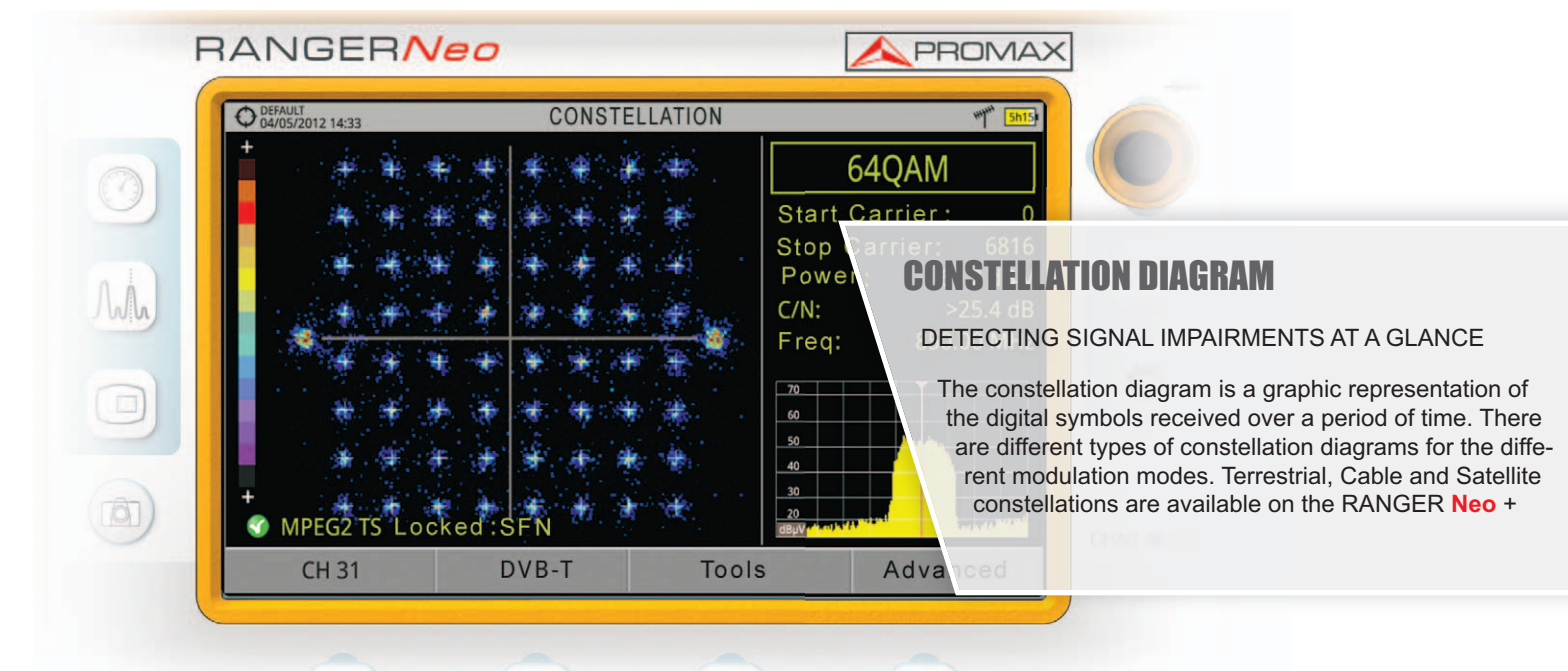
WiFi™

RANGER*Neo* — PROMAX

DEFAULT 20/12/2016 10:09 — **Site Survey**
SWIFI

```
snr : 17
qual : 0
noise : -89
level : -72
id : 4
freq : 2467
flags : [WPA2-PSK-CCMP+TKIP][ESS]
est_throughput : 48000
capabilities : 0x0031
bssid : fa:7d:68:f8:fe:6a
beacon_int : 100
age : 9
WMM :    * Parameter version 1
   * u-APSD
   * BE: CW 15-1023, AIFSN 3
   * BK: CW 15-1023, AIFSN 7
   * VI: CW 7-15, AIFSN 2, TXOP 3008 usec
```

Exit — Options — Page Up — Page Down

Free WiFi

DRIVE TEST GPS - OPTION

COVERAGE ANALYSIS AND GPS

TAKING GEOREFERENCED MEASUREMENTS

Coverage analysis /Signal Monitoring"viewer for any kind of signal in any equipment's band. While in Signal Monitoring or Coverage Analysis (when using Drive test GPS option) a new viewer allows to watch the final results (different types of measurement for a given time and GPS location), inspecting each point by zooming or panning through the captured data.

CONSTELLATION DIAGRAM

CONSTELLATION DIAGRAM

DETECTING SIGNAL IMPAIRMENTS AT A GLANCE

The constellation diagram is a graphic representation of the digital symbols received over a period of time. There are different types of constellation diagrams for the different modulation modes. Terrestrial, Cable and Satellite constellations are available on the RANGER **Neo** +

PROFESSIONAL SPECTRUM ANALYSER
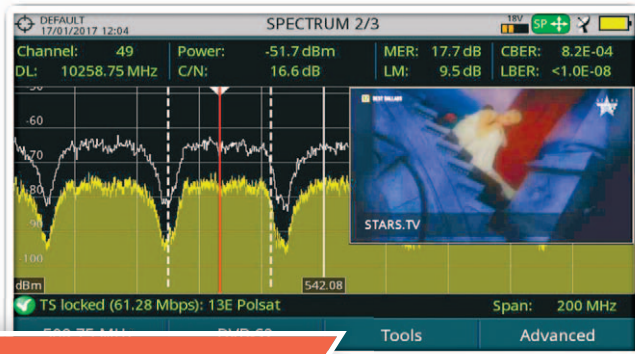
Reference traces
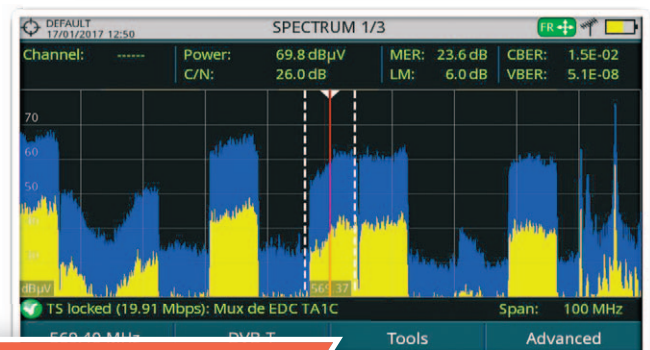Freeze the spectrum graph and compare it with the running trace.
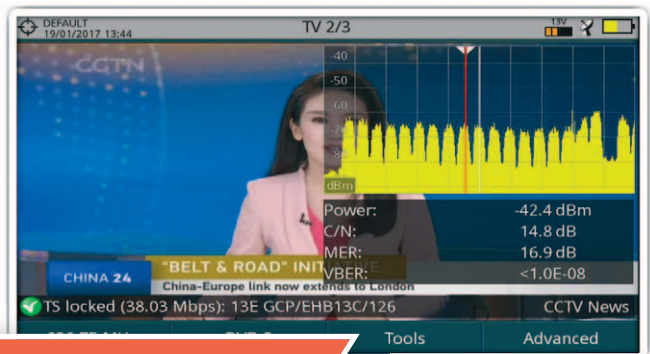
Triple split display
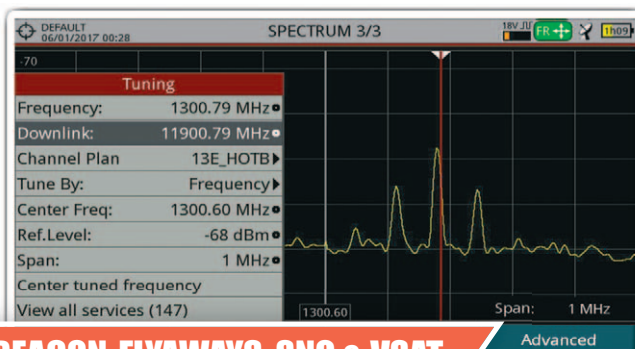Say goodbye to switching between TV, measurements and spectrum modes.
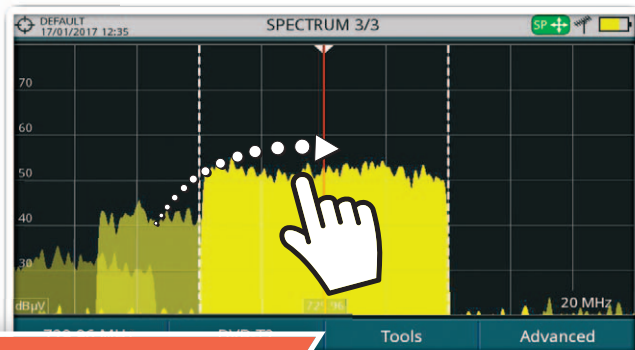
Touch screen
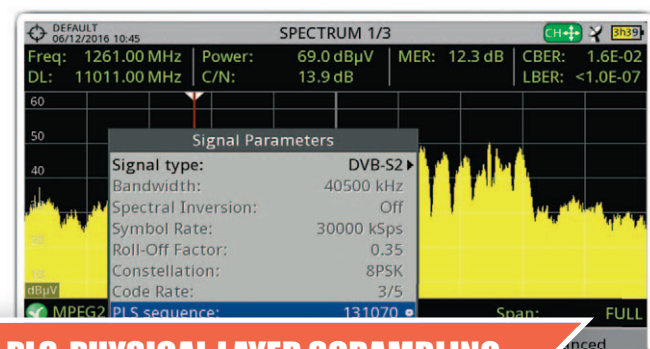Place the marker on any channel and move the trace using your finger.

MIN and MAX hold
Display them separately or simultaneously along with the current spectrum trace.

BEACON-FLYAWAYS, SNG & VSAT
Satelite BEACON signals can be clearly seen thanks to the 1 MHz SPAN and 10 kHz resolution filters.
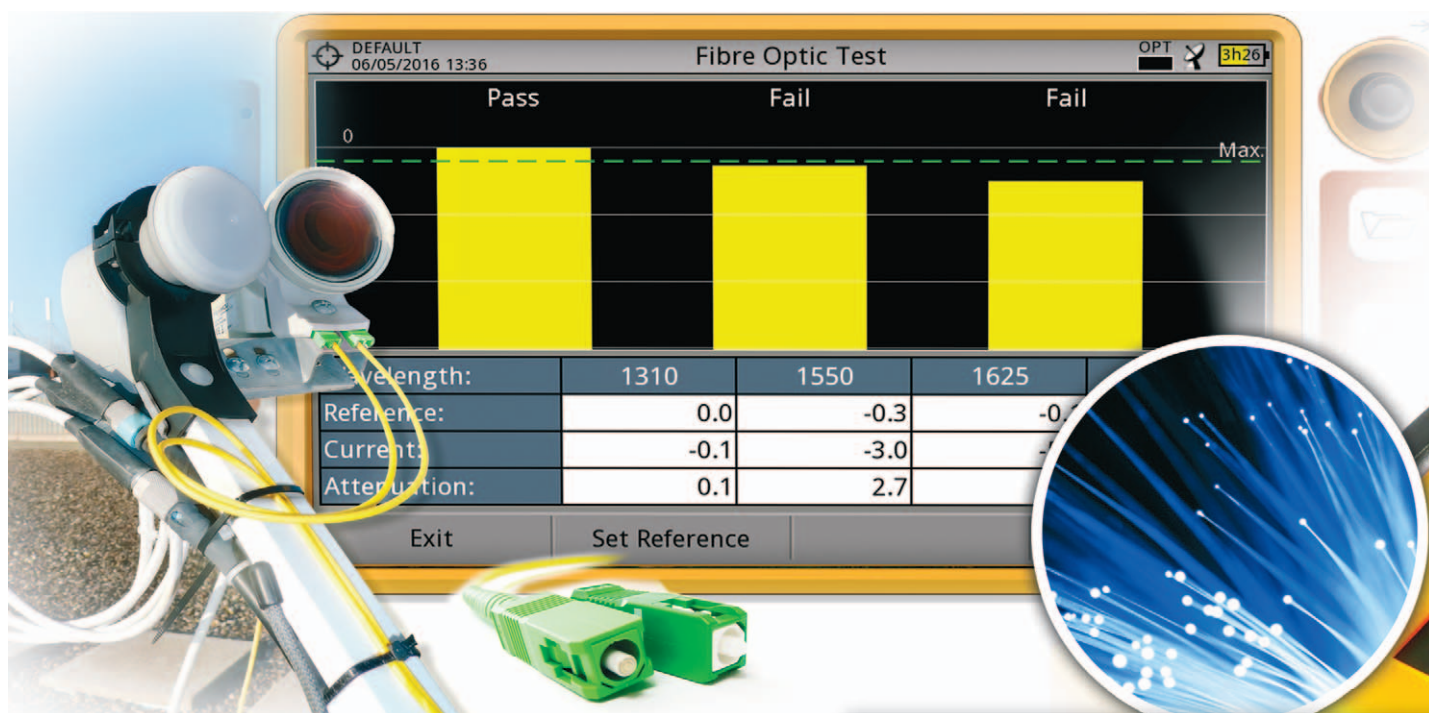
PLS-PHYSICAL LAYER SCRAMBLING
PLS is a number generated by the broadcaster that must be properly decoded by the customer so that demodulation is possible.

OPTICAL MEASUREMENTS-OPTION


Selective Optical-to-RF converter

RFoG (Radiofrequency-over-Glass), as well as optical TV&SAT distribution, is used more and more by operators because it allows them to benefit from the advantages of fibre optics to compete with FTTH service providers. The RF signal at the converter output can be analyzed, measured and decoded by the meter as one would usually do with any signal over copper wires.
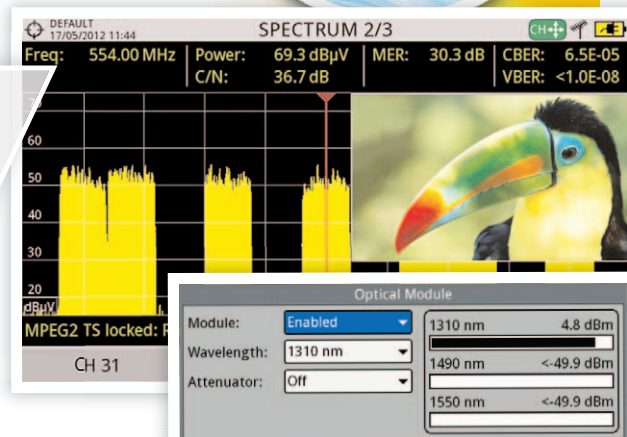
5 GHz RF Auxiliary input

The RANGER*Neo* + optical fibre option comes along with 5 GHz RF auxiliary input which can be used among other applications for direct connection to optical LNB's with 5.4 GHz output. This RF input covers three bands:

Band I   From 2000 MHz to 3000 MHz

Band II   From 3400 MHz to 4400 MHz

Band III From 4400 MHz to 6000 MHz
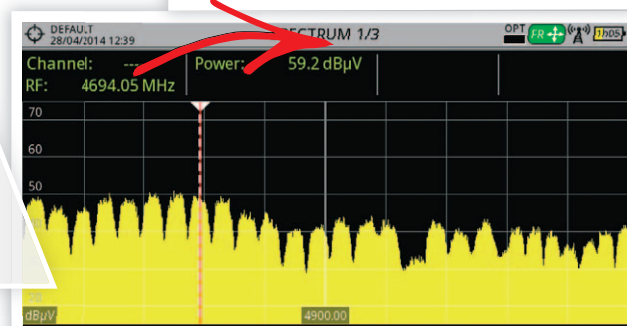
Enjoy a wide variety of functions

ETHERNET CONNECTIVITY remote control and web server
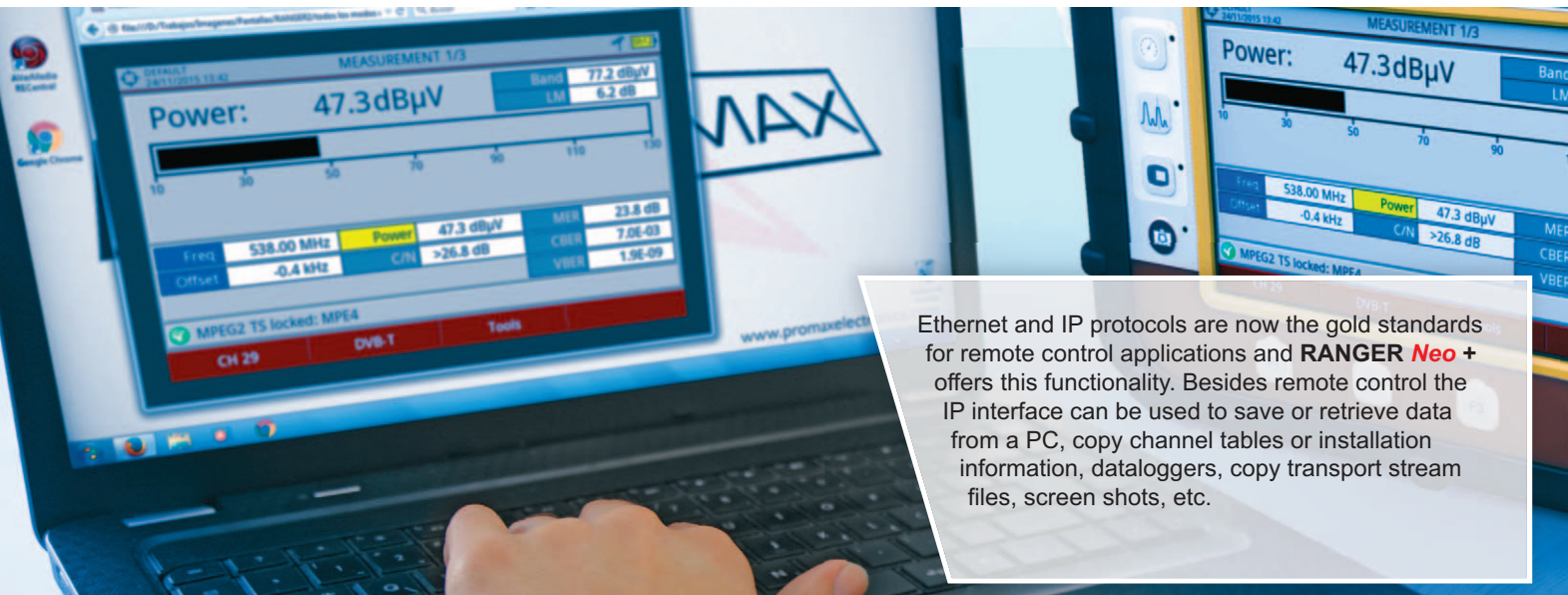
Ethernet and IP protocols are now the gold standards for remote control applications and **RANGER *Neo* +** offers this functionality. Besides remote control the IP interface can be used to save or retrieve data from a PC, copy channel tables or installation information, dataloggers, copy transport stream files, screen shots, etc.

# MORE INTERNAL MEMORY up 7 GB for user data

There is more data a **RANGER *Neo* +** can store in the internal memory every time, dataloggers, screen shots, signal monitoring files, etc... However, it is the transport stream recording what uses up memory faster.

Even though the information can be downloaded to a PC or even copied to a memory stick in the field, the 7 GB of internal memory in the **RANGER *Neo* +** are far from negligible.
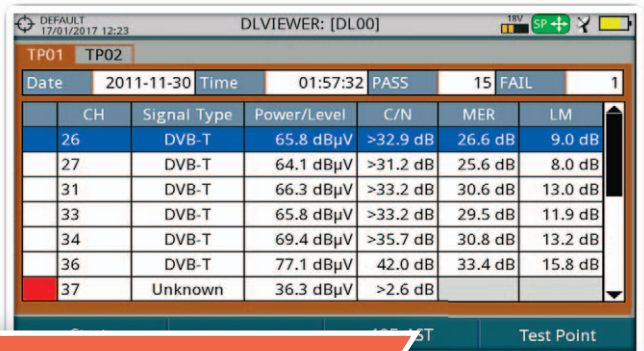
PROMAX

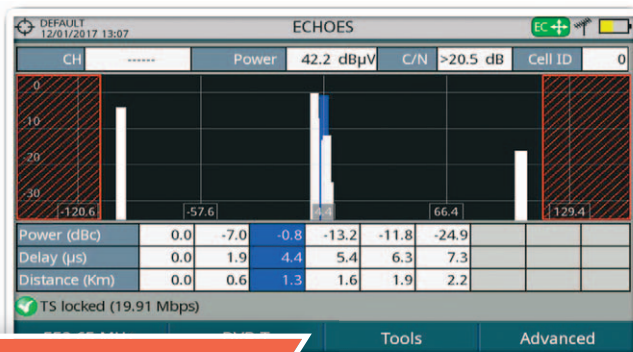## Enjoy a wide variety of functions

MANY USEFUL FUNCTIONS
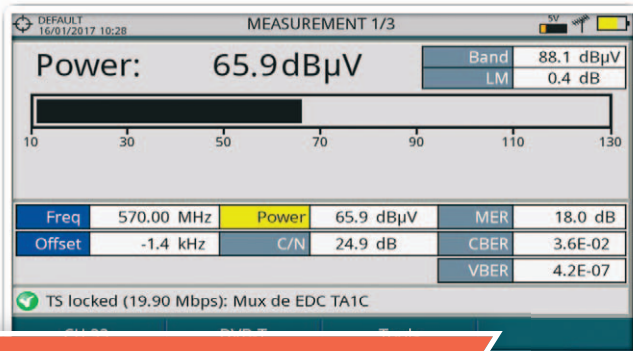
Simultaneous measurements
More computing power for real-time measurements displayed on a single screen.

Datalogger and Test&Go
Collect data for your reports faster and easier using the auto-setup Test&Go.

Dynamic echoes
A must-have utility for testing DVB-T, DVB-T2 and DVB-C2 networks.
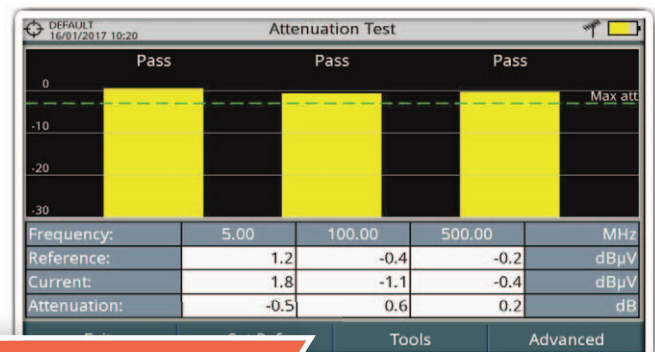
Attenuation test
Test the frequency response of your installation using RP-050, RP-080, RP-110B signal generators.

FM RADIO RECEIVER & ANALYZER
FM radio signals can be scanned, measured and demodulated

OPTION FOR DAB AND DAB+
Standard radio services can be detected, measured, analysed and demodulated.

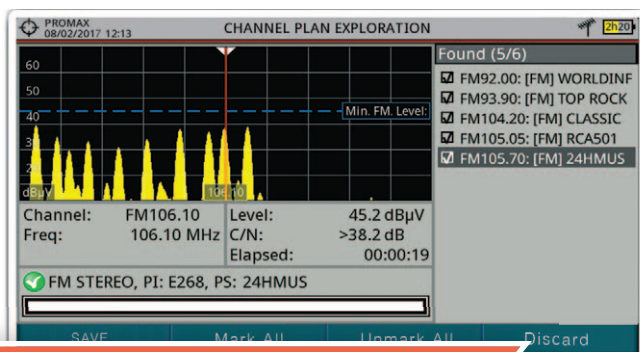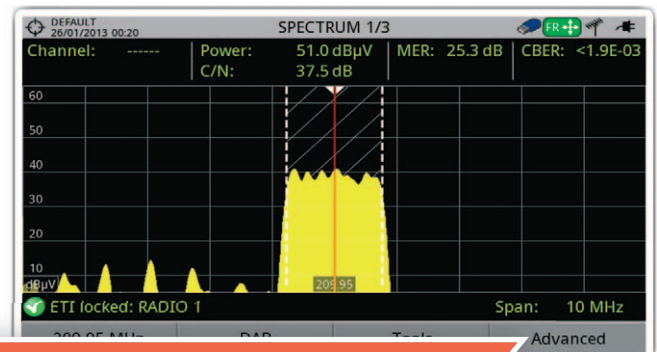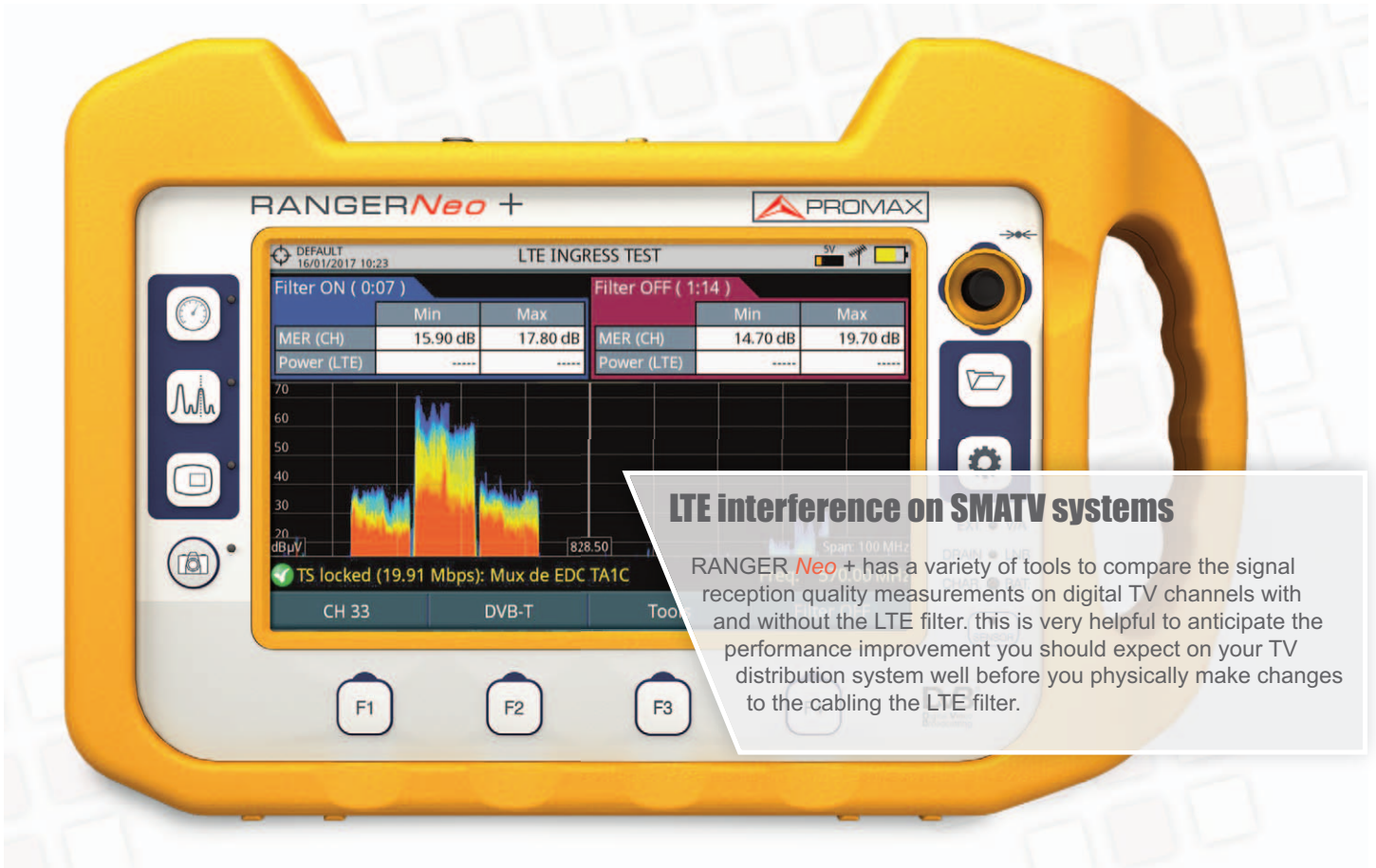# A new breed of analysers for a new world

LTE INGRESS TEST

LTE interference on SMATV systems

RANGER *Neo* + has a variety of tools to compare the signal reception quality measurements on digital TV channels with and without the LTE filter. this is very helpful to anticipate the performance improvement you should expect on your TV distribution system well before you physically make changes to the cabling the LTE filter.

H.265 H.265 HEVC analyser and decoder	**WiFi** Home network, commercial, point to point	**6GHz** 5 GHz RF input (optional)
Webserver control via Ethernet port	**7GB** Fast-storage 7 GB capacity for user data	**USB** 2x USB ports
DAB+ DAB and DAB+digital radio (optional)	Digital Channel Stacking Switch LNB (dCSS)	
Optical power meter and RF converter (optional)	GPS for signal coverage analysis (optional)	

SPECIFICATIONS	RANGER *Neo* +		
DIGITAL STANDARDS	DVB-T, DVB-T2, DVB-T2 lite DVB-C, DVB-C2 DVB-S, DVB-S2, DVB-S2 Multistream, DSS, ACM / VCM		
AUDIO CODECS	MPEG-1, MPEG-2, HE-AAC, Dolby Digital, Dolby Digital Plus		
VIDEO CODECS	MPEG-2, MPEG-4 / H.264, HEVC / H.265		
INPUTS AND OUTPUTS	Universal RF connector 75 Ω HDMI output IP input for remote control Analogue Video/Audio input 2 USB connectors for data tranferring and GPS module (Type A)		
FUNCTIONS	Merogram and Spectrogram Constellation diagram for all DVB standards StealthID (instant identification of tuning parameters) PLS (Physical Layer Scrambling) Ultra fast spectrum analyser (70 ms sweeping time) with max. and min. hold Screenshots and Datalogger for measurement reports Field strength Measurements Dynamic echoes analysis	Wideband LNB WiFi 2.4 GHz LTE 1.8 GHz LTE OTT FM RDS radio measurements and decoding DVB-S2 multistream GPS Coverage Analysis (option)	Resolution Bandwidth: 100, 200 kHz, 1 MHz Task planner Web server MER by Carrier Signal monitoring Service Recording Beacon-Flyaways SNG & VSAT

MEASUREMENT MODE
  Frequency Margin
 	
  DVB-T COFDM
  DVB-T2 Base and Lite COFDM
  DVB-C QAM
  DVB-C2 COFDM
  PAL, SECAM and NTSC analogue TV
  FM radio
  DVB-S QPSK
  DVB-S2 QPSK, 8PSK, 16APSK, 32APSK
  DSS QPSK
	From 5 - 1000 MHz (Terrestrial)
	From 250 - 2350 MHz (Satellite)
	Power (35 to 115 dBμV), CBER, VBER, MER, C/N, Link margin.
	Power (35 to 115 dBμV), CBER, C/N, LBER, MER, Link Margin, BCH ESR, LDP iterations, wrong packets
	Power (45 to 115 dBμV), BER, MER, C/N and Link margin
	Power (45 to 115 dBμV), CBER, MER, C/N, LBER, BCH ESR, LDP iterations and wrong packets
	M, N, B, G, I, D, K and L
	Level measurement
	Power (35 to 115 dBμV), CBER, MER, C/N and Link Margin
	Power (35 to 115 dBμV), CBER, LBER, MER, C/N, BCH ESR, wrong packets and Link Margin
	Power (35 to 115 dBμV), CBER, VBER, MER, C/N and Noise margin		

SPECTRUM ANALYZER
  Frequency Margin
 	
  Measurement range
  Span
	From 5 - 1000 MHz (Terrestrial)
	From 250 - 2500 MHz (Satellite)
	From 10 - 130 dBμV
	Full / 500 / 200 / 100 / 50 / 20 / 10 MHz		

OPTIONS
  OP-001-PS
  OP-001-WL
  OP-001-DAB+
  OP-001-GPS
  OP-001-19
	OPM & OPT to RF conv & WiFi 5 GHz & LTE 2.6 GHz
	WiFi 5 GHz & LTE 2.6 GHz
	DAB, DAB+
	GPS Coverage Analysis
	For rack assembly		

INTERNAL STORAGE	7 GB for measurement protocols, screenshots and transport stream recordings		
PC CONNECTION (via ethernet interface)	NetUpdate 4 (free software); Free and automatic firmware updates; Remote control (webserver); User customised channel plans; Measurement reports and screenshot;		
GENERAL	Hybrid operation: Touch screen (7") or conventional keyboard Battery >4 h. in continuous mode DiSEqC 1.2 SATCR / SCD (EN50494) DCSS / SCD2 (EN50607)		

DESIGN AND SPECIFICATIONS SUBJECT TO CHANGES WITHOUT PRIOR NOTICE   03-17