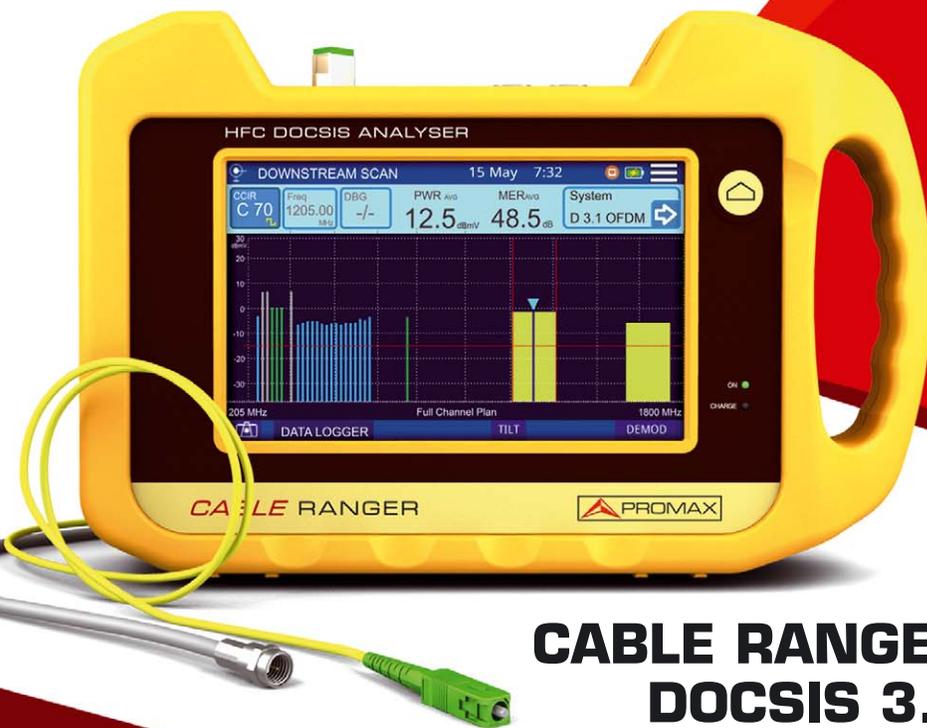


# newsletter 32

## DEPENDABLE ANALYZERS AT THE TOP OF THEIR GAME



Technology is moving at a fast pace. So many changes, so many competing technologies, wired and wireless.

In these times of change it is fundamental to look back and lean on those companies who have always been there.

We'd love to be one of your trusted partners. Thank you for your support and patronage.

### CABLE RANGER DOCSIS 3.1



2500 MHz, SC-QAM and OFDM modes, 32 channel DBG and, optical fiber, ...D 3.1 measurements made easy

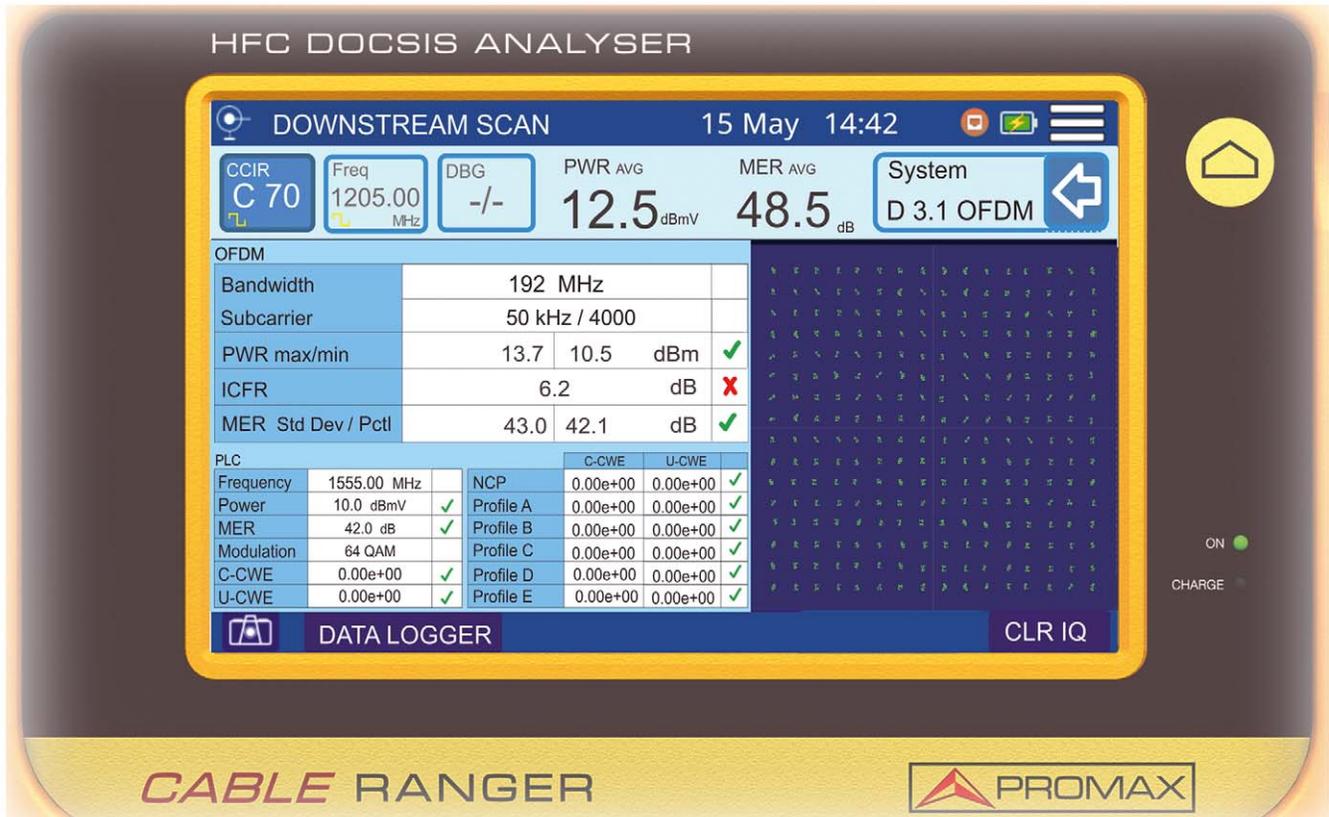


### RANGER Neo

3 different formats – Same functions  
Now with Advanced DAB analysis option, OTT, 4K HEVC, 24/7/365 monitoring, ...



## CABLE RANGER DOCSIS 3.1 ANALYSIS



### DOCSIS 3.1 ANALYSIS

CABLE RANGER 3.1 displays most important measurements together on a dedicated screen conveniently accessible from the DOWNSTREAM SCAN. And do not panic, we know you have many things to worry about so we'll help you find out if your system is good.

For more technical information go to our Website "D3.1 all you need to know".



OFDM					
Bandwidth	192 MHz				
Subcarrier	50 kHz / 4000				
PWR max/min	13.7	10.5	dBm		✓
ICFR	6.2		dB		✗
MER Std Dev / Pctl	43.0	42.1	dB		✓
PLC				C-CWE	U-CWE
Frequency	1555.00 MHz		NCP	0.00e+00	0.00e+00
Power	10.0 dBmV	✓	Profile A	0.00e+00	0.00e+00
MER	42.0 dB	✓	Profile B	0.00e+00	0.00e+00
Modulation	64 QAM		Profile C	0.00e+00	0.00e+00
C-CWE	0.00e+00	✓	Profile D	0.00e+00	0.00e+00
U-CWE	0.00e+00	✓	Profile E	0.00e+00	0.00e+00

## CABLE RANGER DOWNSTREAM SCAN



**OPTIC+RF**  
A single instrument for Fiber Optics and RF.



**HFC Network**  
Designed for HFC hybrid networks.



Web Server to configure user equipment.



**3.1 DOCSIS**  
3.1.DOCSIS Analyzer.



**CHANNEL BONDING**  
DOCSIS Channel bonding.

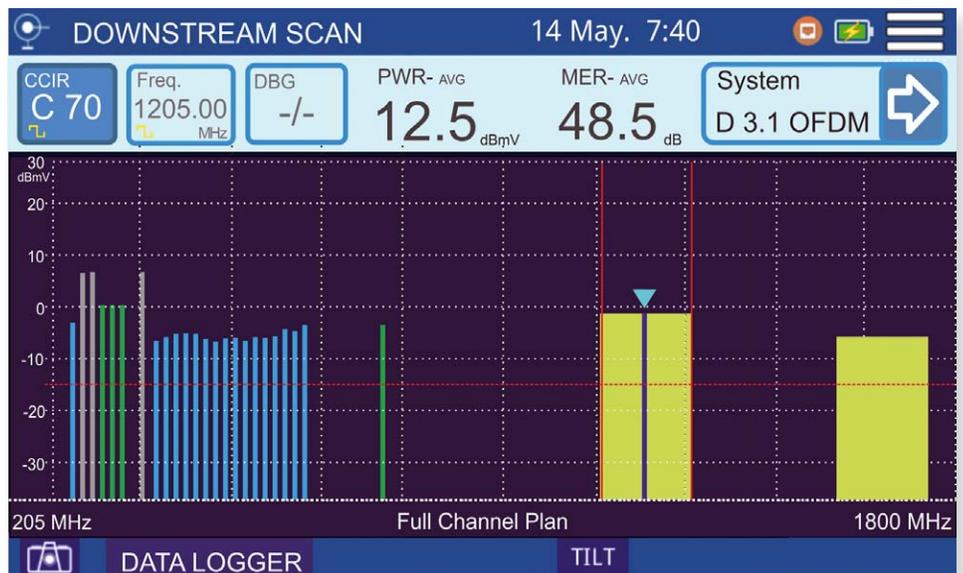


Touch screen High resolution.

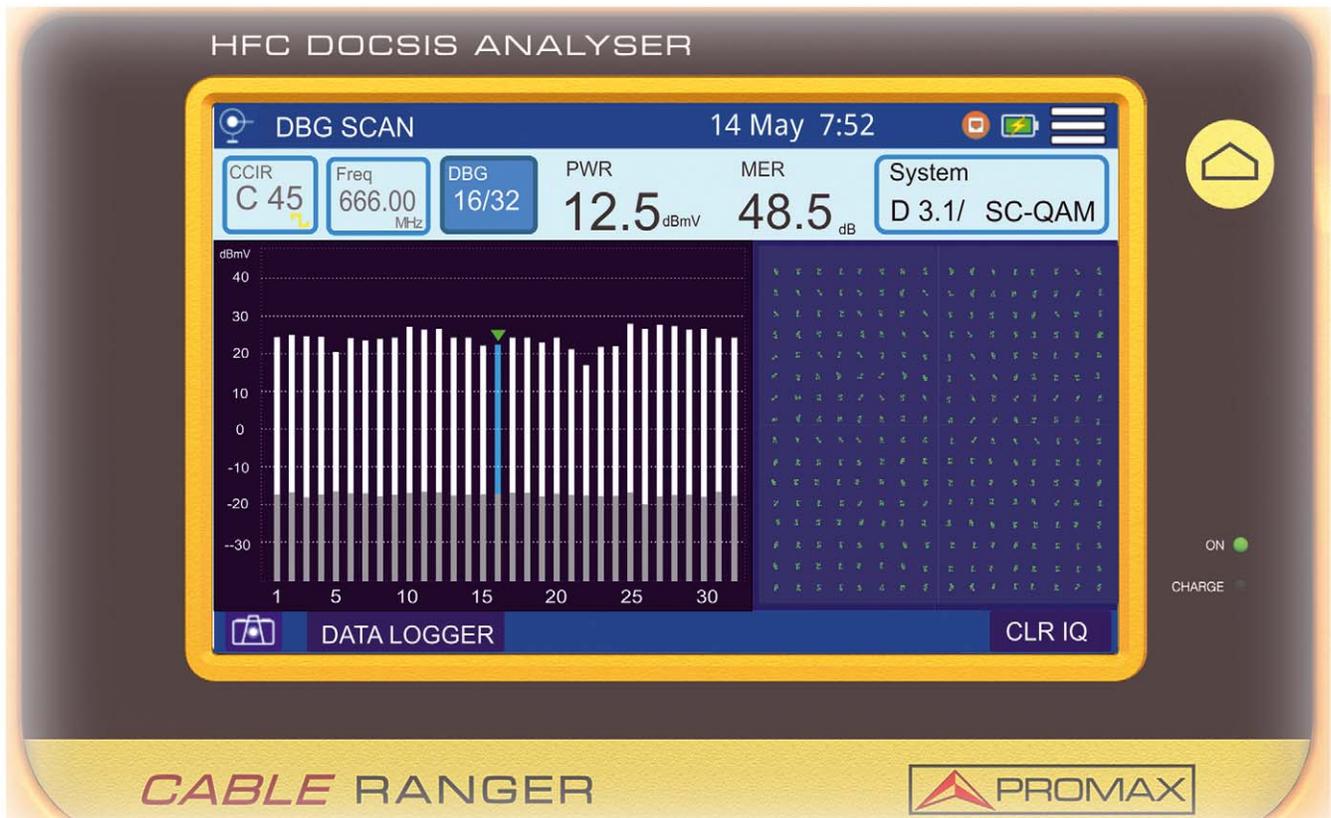
**DVB-C2** **DVB-T** **ITUJ-83 B&C**

### DOWNSTREAM SCAN

A typical DOCSIS 3.1 system will include channels of different bandwidths. You will find the classic 6-7-8 MHz QAM channels along with those new super wide OFDM 100 MHz up to 192 MHz channels, all laid out over a frequency range stretching to 1800 MHz. Placing your finger on a channel is all you need to do to get the first relevant measurements and most importantly you don't need to worry about bandwidths, signal types or any other settings.



## CABLE RANGER DOWNSTREAM CHANNEL BONDING (DBG)



### DOWNSTREAM CHANNEL BONDING (DBG)

### DOWNSTREAM CHANNEL BONDING (DBG)

Both SC-QAM and OFDM modes are available in DOCSIS 3.1. Although MSOs seem to have a preference for D3.1 OFDM operating mode SC-QAM (Single Carrier or classic) is also being used by many operators.

SC-QAM stands for Single Carrier QAM or the classic QAM in simple terms. In this mode multiple upstream and downstream channels can be 'bonded' together to operate as one and thus offer more bandwidth just like a bundle of pipes will drain more water.

**CABLE RANGER** includes a very intuitive and comprehensive channel bonding screen displaying up to 32 channels, DBG and all relevant information.



## RANGER Neo ADVANCED DAB ANALYZER

# DAB+ ANALYZER



ETI RECORDING & PLAYING

IQ RECORDING

CONSTELLATION

SLIDESHOW

FULL ENSEMBLE CBER

ECHOES

POWER, C/N, MER

NSC CBER

FIC CBER

TII

AUDIO DECODING

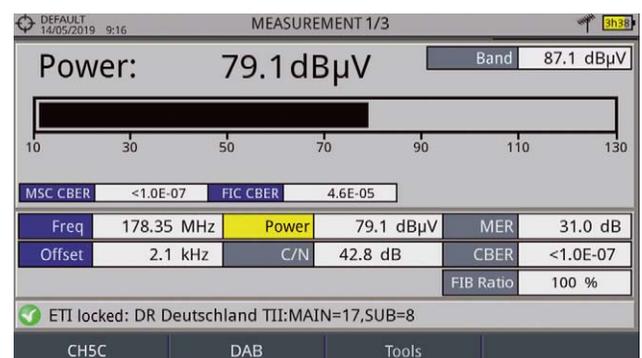


### Advanced DAB analyzer

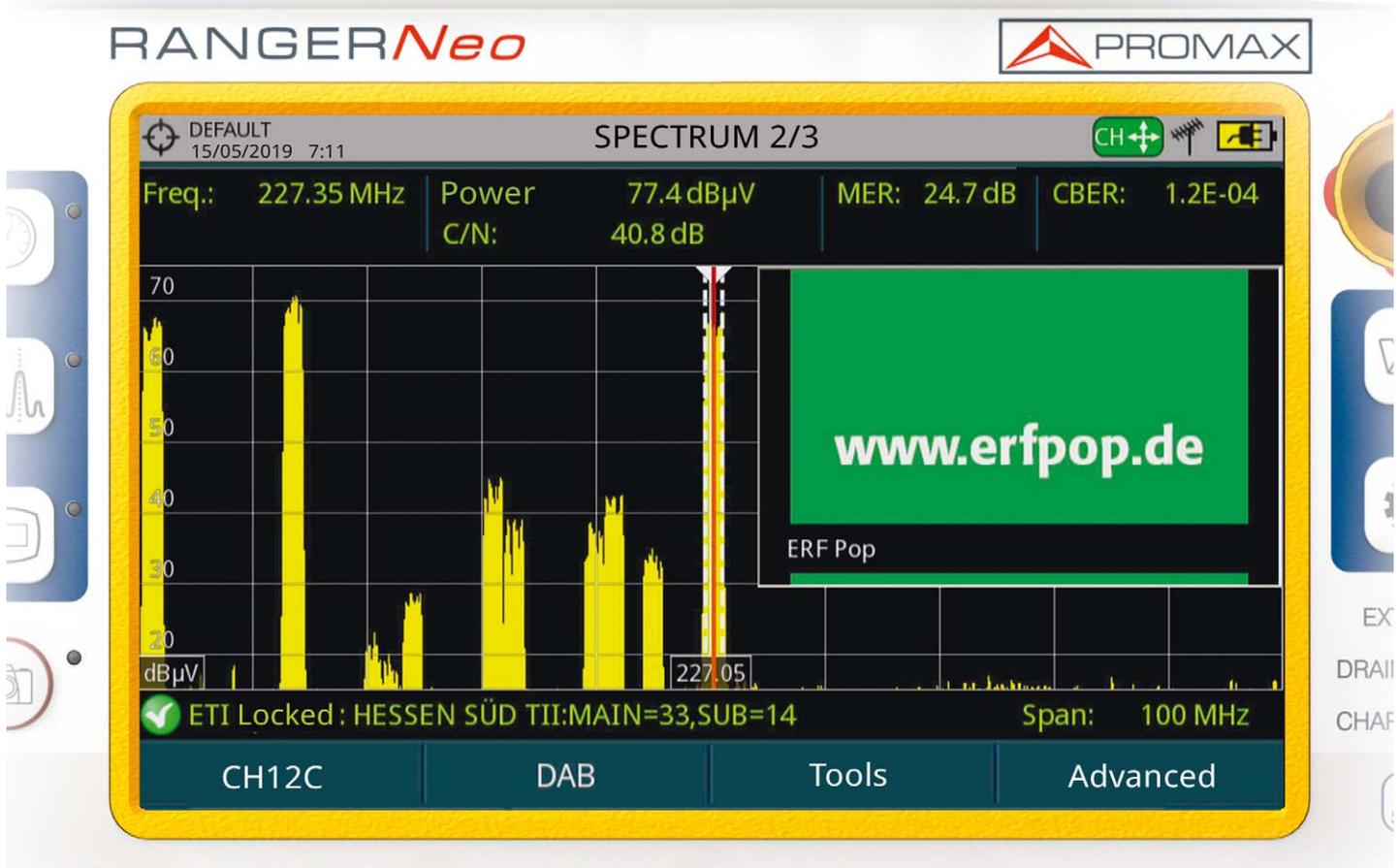
We are introducing a new 'Advanced DAB measurements option' as we call it for RANGER Neo products available for models RANGER Neo 2 and higher.

It's not obvious and therefore worth pointing out that this new Advanced DAB package is not chipset based. This is important because it has an impact on what you can do and how well you can do it. For example the receiver locks in very fast, we can have access to ETI or even record it. These are things which they are normally available in more expensive equipment only.

CBER for example it refers to the measurements of the whole DAB channel. This is quite unique in the sense that most chipset based receivers won't be able to give you that. So when in the market for your DAB analyzer please ask the question, what's inside the box?



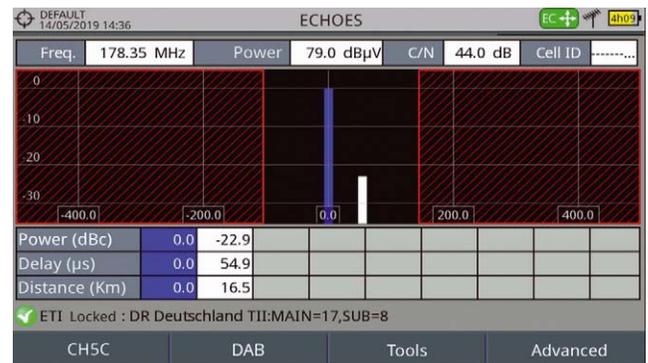
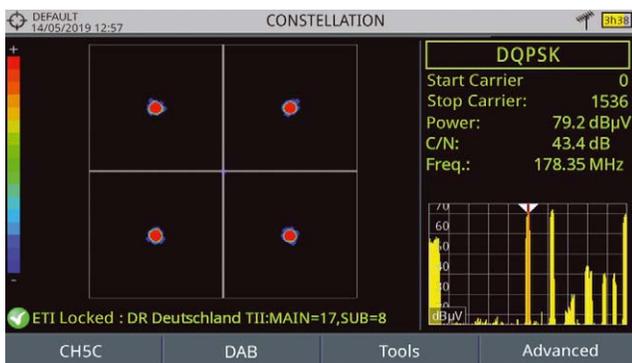
## RANGER Neo ADVANCED DAB ANALYZER



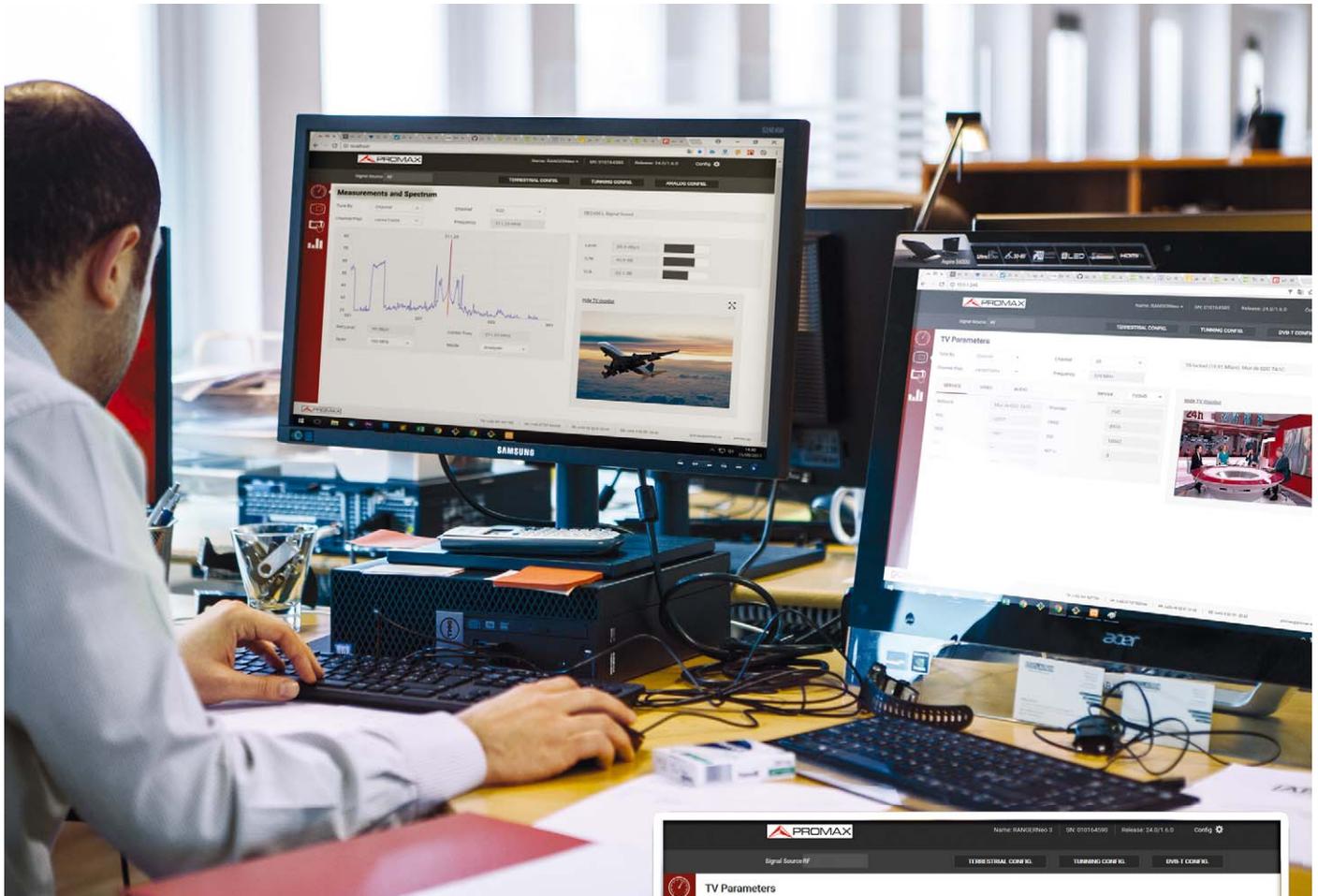
### Advanced dab analyzer

DAB is using DQPSK modulation which is differential. It means that although the constellation has 4 points only phase differences matter and therefore only four states are possible.

Echoes analysis is another interesting function. DAB can be operated in single frequency networks in which case and again because of the way we have implemented the DAB receiver we can show echoes not only in but also out of the guard interval.



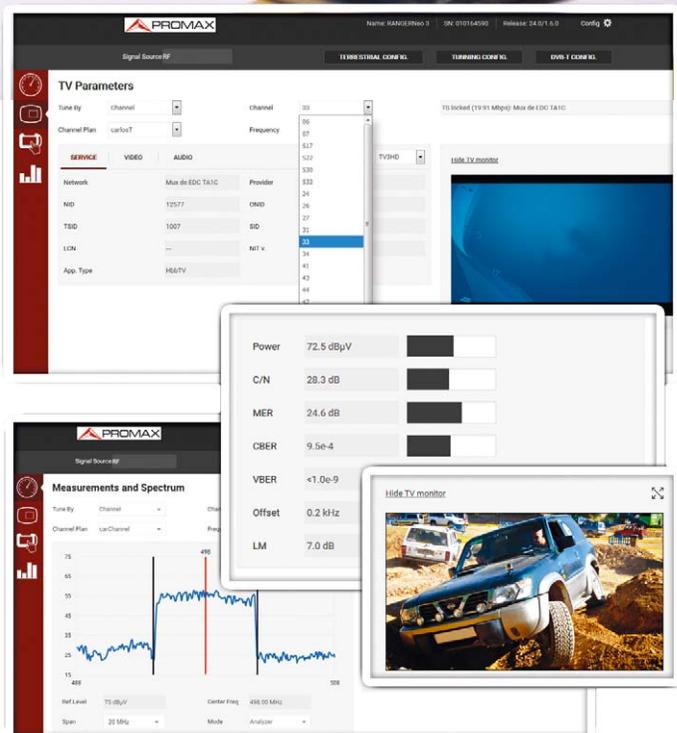
## RANGER Neo REMOTE CONTROL and VIDEO STREAMING



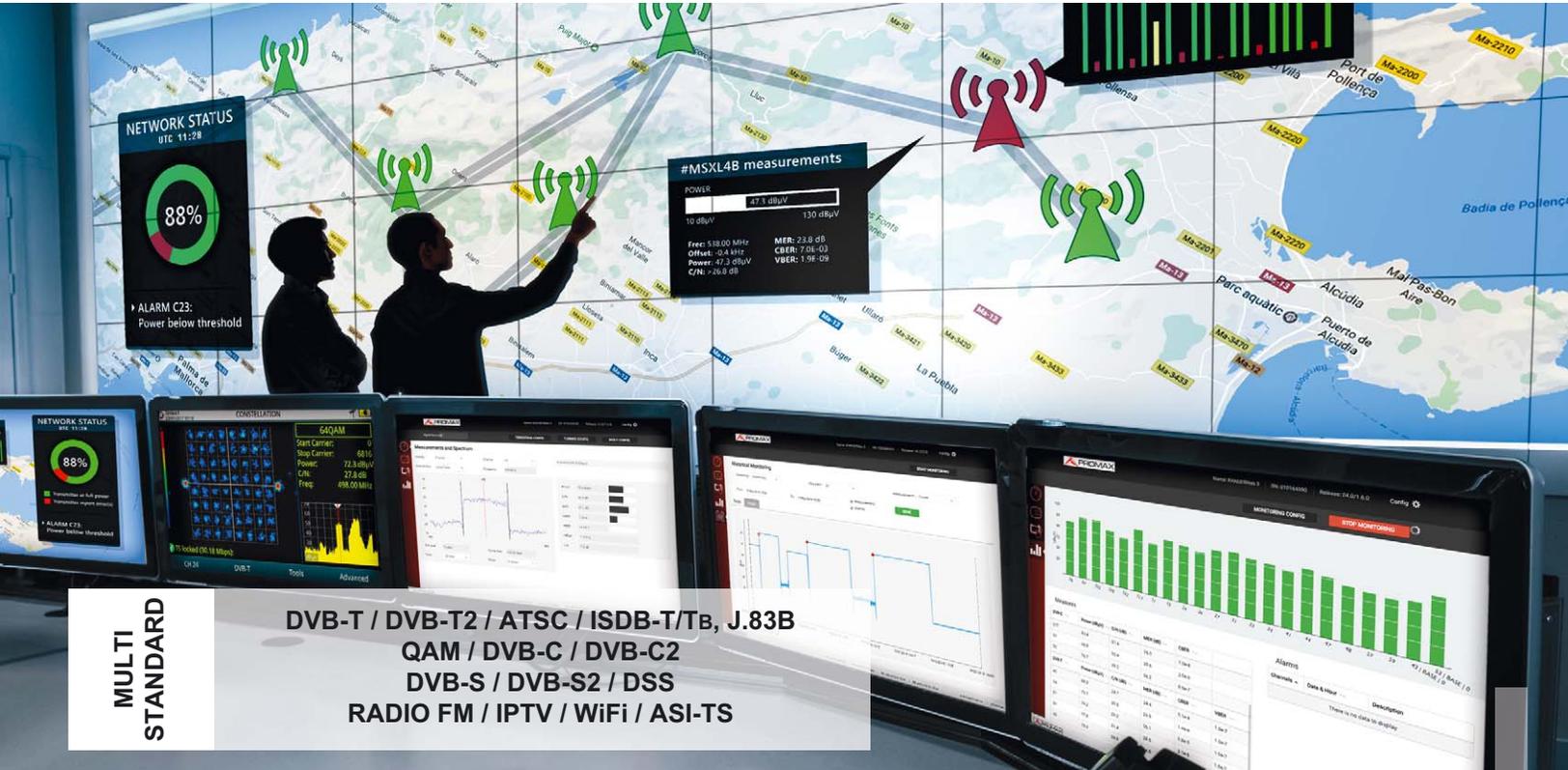
### Remote Control and video streaming

Everything you can do on the analyzer you can do remotely and that's everything and moreover at no extra cost. The RANGER Neo include a webservice which is organised in different tabs offering you full flexibility depending on what's your application but most importantly on what's the bandwidth available as well.

Some of the tabs will operate normally and they can be used comfortably even using poor bandwidth connections. If Mbps are at hand then tabs such as the REMOTE CONSOLE will make you feel you are physically there with your analyzer.



# RANGER Neo 24/7/365 MONITORING APPLICATIONS



MULTI STANDARD

DVB-T / DVB-T2 / ATSC / ISDB-T/Tb, J.83B  
 QAM / DVB-C / DVB-C2  
 DVB-S / DVB-S2 / DSS  
 RADIO FM / IPTV / WiFi / ASI-TS

## 24/7/365 MONITORING APPLICATIONS

All analysers come along with an integrated and comprehensive webserver based remote control monitoring software but they are also compatible with most well known NMS and data mining solutions such as 'Dataminer'. RANGER Neo, PROWATCH Neo or RANGER Neo RACK in combination with any of those software solutions will offer you virtually endless possibilities. They will integrate seamlessly into your NMS solution as well.



3 FORMATS - 1 SOUL