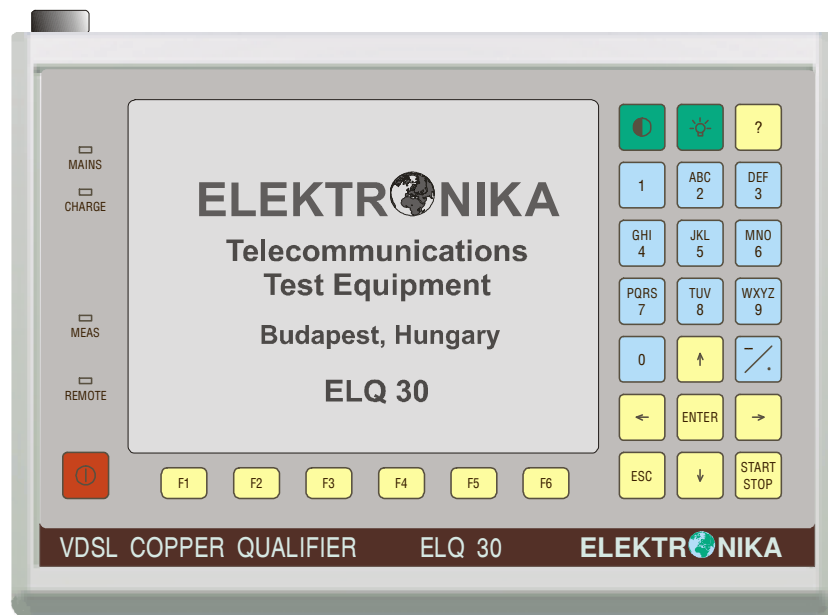


IS THIS PAIR SUITABLE FOR YOUR VDSL2 SYSTEM ?



ELQ 30 VDSL COPPER QUALIFIER GIVES THE ANSWER !



APPLICATIONS

ELQ 30 is a hand held battery operated, multifunction measuring instrument, intended for pre-qualification, installation, fault location and maintenance of balanced copper pairs.

To qualify a pair, end-to-end measurements with two instruments have to be used in MASTER-SLAVE arrangement. Just one person, thanks to the communication between the two instruments, can perform such measurements. Operation is made extremely simple by means of pre-defined automatic test sequences.

ELQ 30 can be programmed as MASTER and SLAVE as well.

Tolerance masks of cable parameters as Loss, LCL, Return Loss, Impedance, and the principal system parameters are pre-programmed for several VDSL systems. New user defined template sets can be created with the parameter editor of ELQ 30 without PC. (PC program is also available.)

When the automatic test sequence is ready ELQ 30 provides an immediate PASS/FAIL indication by comparing the test results with the tolerance masks and the required data rate with the calculated theoretically achievable rate.

Detailed test results are available in graphic and numeric forms. In case of FAIL indication the reason of failure is marked with asterisks.

FEATURES

- Physical parameter measurements to pre-qualify copper wire pairs for high bit rate VDSL services before the installation of modems
- Automatic test sequences with pre-programmed or user defined test parameter sets belonging to different VDSL systems
- Bit rate calculation for each VDSL system
- PASS/FAIL indication
- Parameter set edition with or without PC
- Single end measurements
- 30 MHz frequency range for fix-frequency and spectrum measurements
- Long time wide band and impulse noise measurements with histogram
- The test results can be stored in memory and transferred to PC
- PC program is provided to produce detailed test protocols in Excel format
- 320 x 240 LCD display with backlight
- Internal rechargeable battery with an operating time of approx. 8 hours
- Processor controlled battery manager with three hour fast charging facility
- Selectable English, German or Russian language
- Acoustic pair detection facility
- Service telephone facility
- TDR for fault location (option)
- Micro interruption measurements (option)

MEASUREMENTS

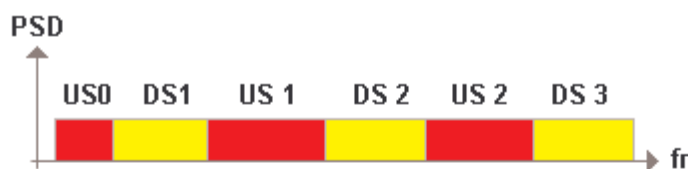
Automatic Measurements with two instruments

- Loss
- Noise spectrum
- Bit load calculation
- Achievable bit rate calculation
- LCL
- Return loss
- Impedance
- NEXT
- FEXT

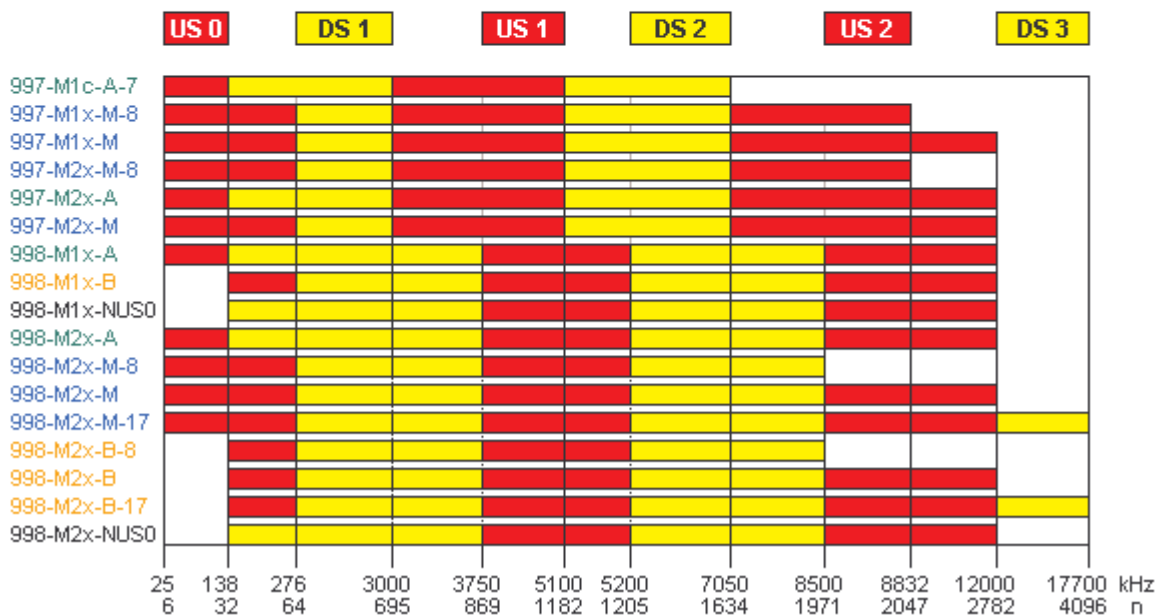
Manual Measuring Modes

- Transmitting/ Receiving
- NEXT
- LCL
- Impedance
- Return loss
- Weighted noise
- Spectrum
- Impulse noise
- Fault Location with TDR (option)
- Micro interruption measurements (option)

PREPROGRAMMED VDSL 2 PARAMETER SETS



A=OVER POTS
 B=OVER ISDN
 M= EXTENDED USO
 NUSO=WITHOUT USO



SPECIFICATIONS

Transmitter

Frequency range.....25 kHz to 30 MHz
 Resolution 4.3125 or 5 kHz
 Impedance..... 100, 120, 135 or 150 Ohm
 Transmitting modes:
 Generation of 1 single frequency
 Generation of 30 frequencies at the same time
 Output level
 In 1 frequency mode.....-10 to +10 dBm
 In 30 frequency mode.....-12 dBm/fr
 Accuracy at 0 dBm
 25 kHz to 100 kHz ±1 dB
 100 kHz to 5 MHz ±0.3 dB
 5 MHz to 30 MHz..... ±1 dB

Receiver

Frequency range.....25 kHz to 30 MHz
 Resolution 4.3125 or 5 kHz
 Impedance..... 100, 120, 135, 150 Ohm
 Receiving modes:
 Receiving of 1 single frequency
 Receiving of 30 frequencies at the same time
 Measuring range+10 to -100 dBm
 Accuracy at 0 dBm
 25 kHz to 100 kHz ±1 dB
 100 kHz to 5 MHz ±0.3 dB
 5 MHz to 30 MHz..... ±1 dB

LCL Measurement

Frequency range.....25 kHz to 30 MHz
 Impedance..... 100, 120, 135 or 150 Ohm
 Display range 0 to 70 dB
 Accuracy at 35 dB with special balanced cable
 25 kHz to 100 kHz ±2 dB
 100 kHz to 5 MHz ±1 dB
 5 MHz to 30 MHz..... ±2 dB

Impedance Measurement

Frequency range.....25 kHz to 30 MHz
 Measuring range50 Ohm to 400 Ohm
 Accuracy
 100 kHz to 30 MHz 5% ±5 Ohm

Return Loss Measurement

Frequency range.....25 kHz to 30 MHz
 Impedance..... 100, 120, 135 or 150 Ohm
 Measuring rangeup to 40 dB
 Accuracy at 20 dB
 100 kHz to 5 MHz ±1 dB
 5 MHz to 18 MHz..... ±2 dB

NEXT, FEXT, Loss Measurement

Frequency range.....25 kHz to 30 MHz
 Resolution 4.3125 or 5 kHz
 Impedance..... 100, 120, 135 or 150 Ohm
 Measuring range
 NEX, FEXT up to 80 dB
 LOSS up to 90 dB

Spectrum Analyzer

Frequency range.....25 kHz to 30 MHz
 Display range..... down to -140 dBm/Hz
 Impedance 100, 120, 135, 150 Ohm or
5kOhm // 5pF with high impedance probe
 Bandwidth/ frequency step

Range MHz	Bandwidth / frequency step kHz					
	100/100	50/50	20/20	10/10	5/5	5/2.5
30						
18	60/60	20/20	10/10	5/5	5/2.5	
12	40/40	20/20	10/10	5/5	5/2.5	
9	30/30	15/15	10/10	5/5	5/2.5	
3	10/10	5/5	5/2.5			
1.5	5/5	5/2.5				

Number of Displayed frequencies 300
 Saving of result..... the actual content of display
 Evaluation Normal, Peak, Average
 Units..... dBm, dBm/Hz

Wideband Noise Measurement

Frequency range.....25 kHz to 30 MHz
 Impedance 100, 120, 135, 150 Ohm
 Filters for noise measurement ADSL
 ADSL 2+
 VDSL
 VDSL2-8
 VDSL2-17
 VDSL2-30
 NO FILTER
 Measurement times 1, 5, 10, 30 sec
 1, 5, 10, 30 min
 1, 2, 4, 8, 12, 24, 48, 72 hours
 Evaluation
 For 1 sec to 1 min..... Quasi analog
 Over 1 min..... Histogram with 60 time slots

Impulse Noise Measurement

Impedance 100, 120, 135, 150 Ohm
 Pulse width..... >500 ns
 Interval size 10 ms
 Threshold range.....0 to -60 dBm
 Maximum count..... 65000
 Measurement times..... 1, 5, 10, 30 sec
 1, 5, 10, 30 min
 1, 2, 4, 8, 12, 24, 48, 72 hours
 Evaluation
 For 1 to 30 sec Numeric
 Over 30 sec..... Histogram with 60 time slots

High Impedance Active Probe (option)

Frequency range.....25 kHz to 30 MHz
 Attenuation..... 15 dB
 Input Impedance:.....5 kOhm // 5pF
 Accuracy
 25 kHz to 5 MHz ±0.3 dB
 12 MHz to 30 MHz ±1dB



