

## DAT103

### DIGITAL TELEVISION SIGNAL ANALYZER

#### MEASUREMENTS PROVIDED:

- Modulation Error Ratio (MER & Noise Margin) total quality quantification, Full & Expanded Spectrum and Constellation diagram functions
- preBER before Viterbi corrector Bit Error Ratio.
- postBER after Viterbi corrector Bit Error Ratio.
- Damaged packet count (RealError), after Reed-Solomon corrector.
- Constellation diagram, a powerful relative signal evaluation tool.
- Lock signal status indicator.
- Digital Channel Power in dB $\mu$ V or dBm.
- Extensive Analogue TV measurements.
- Powers 12V or 24V mast amplifiers whilst measuring current draw and voltage,
- Data Logging and useful PC functions.
- Up to 3 hours of autonomy from the internal Li-ion battery.



#### DAT103 IT tools PC Software

DAT103 IT tools PC Software provides exemplary graphical and operational functions including:

- Spectrum Analysis, Data Logging, Signal Monitoring and detailed Constellation diagram.
- Export graphics etc. into Excel and Word reports.
- Channel Plan creation, set up and saving functions.

Samples of DAT103 IT tools screen views on page 2

MAIN MENU



BER / MER +



FULL SCREEN DISPLAY



DETAILED SIGNAL LEVEL



EXPANDED SPECTRUM



CONSTELLATION



## DAT103

### DIGITAL TELEVISION SIGNAL ANALYZER

#### SPECIFICATIONS

Radio Frequency operating range.....45 – 900 MHz  
 Frequency Resolution.....125 kHz

#### INPUT PARAMETERS

Input impedance.....75 Ohm  
 Digital Channel Power signal level measurement range.....30 – 110 dBµV  
 Analogue signal level measurement range.....30 – 120 dBµV  
 Measurement level resolution.....0.1 dB  
 Accuracy over 30 – 120 dBµV level range (at 23 °C).....±1.5 dB  
 Signal level indication.....4 characters on Liquid Crystal Display  
 Frequency indication.....6 characters on Liquid Crystal Display  
 Channel number indication.....3 characters on Liquid Crystal Display  
 Channel templates.....select with PC via USB

#### INPUT SIGNAL MODULATION

Channel bandwidth.....7 or 8 MHz  
 Channel modulation type.....COFDM  
 Subcarrier modulation type.....QPSK, QAM16 or QAM64  
 Subcarrier number.....8k, 4k or 2k  
 Guard interval.....1/32, 1/16, 1/8 or 1/4  
 Code rate.....1/2, 2/3, 3/4, 5/6 or 7/8  
 Hierarchical modulation type..... $\alpha=1$ ,  $\alpha=2$ ,  $\alpha=4$

#### MER MEASUREMENT

MER measurement range (for QAM64, code rate 3/4).....14 – 35 dB  
 MER measurement resolution.....0.1 dB  
 MER measurement accuracy at operating channel power.....±2.0 dB

#### BER MEASUREMENT RANGE

pre Viterbi BER..... $1.0 \times 10^{-1}$  –  $1.0 \times 10^{-8}$   
 post Viterbi BER..... $1.0 \times 10^{-2}$  –  $1.0 \times 10^{-8}$

Channel power threshold (post Viterbi BER less than  $2 \times 10^{-4}$ )  
 for QAM64, code rate 3/4, SNR=46 dB.....40 dBµV  
 Automatic Frequency Control (AFC) range.....±0.500 MHz  
 Masthead amplifier power.....12 or 24V DC @ <3W

#### POWER INPUT OPTIONS

Internal Lithium-ion battery, capacity.....1500 mAh  
 Any 10 to 14 V DC external supply, with ripple level less than.....0.5 V  
 Current consumed from battery or external power source less than.....0.6 A  
 AC via 12V/1.2A charger, included.....90 – 264V, 50 / 60 Hz  
 Use continuously with an external power source for less than.....24 hrs  
 Typical battery life per charge (1500 mAh capacity).....3 hrs  
 Warm-up time to precision measurement.....<5 minutes

#### MECHANICAL

Input connector.....'F' male, use with replaceable 'F' female female adapter  
 USB connector.....Type B, interfaces with a PC for DAT102 IT tools etc.  
 DC Input connector.....5.5mm Ø 2.1mm ø coaxial type S, protrudes 9.5mm, tip positive

Dimensions.....193 x 94 x 53 mm  
 Weight.....0.5 kg

#### ACCESSORIES INCLUDED

Impact resistant holster.....1 piece  
 Lithium-ion battery, factory fitted.....1 piece  
 "F" – "F" adapter.....1 piece  
 12V/1.2A charger.....1 piece  
 Compact disc with IT tools, manuals, firmware etc.....1 piece  
 Quick reference card.....1 piece  
 Operating manual.....1 piece

#### DAT103 IT tools screen views include:

