

Tecstar

Multi-Instrument Series



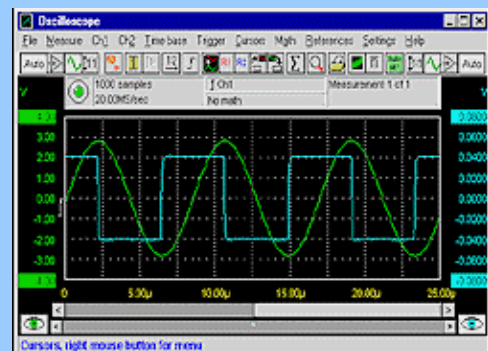
A Complete PC based Instrument System

MI 1005 : 5MHz

MI 1025 : 25MHz

MI 1050 : 50MHz

- Digital Storage Oscilloscope
- Transient Recorder
- Spectrum Analyser
- Multi-Meter
- Arbitrary / Function Generator
- USB 2.0 or 1.1
- 2 x Switch Probes



Specifications

Software

Oscilloscope

Bandwidth: 25 MHz z
 Sample rate maximum: See ordering
 Sample rate minimum: 0.01 Hz
 Time base: to 655 k sec/div
 Time base magnification: 1 x to 50 x
 Y-axis setting: drop and drag
 Pre samples: 0 to 131060
 Post samples: 0 to 131060
 Trigger time out: 0 to infinite sec.
 Trigger input: CH1, CH2, EXT, keyboard
 Measuring modes:
 CH1, CH2, CH1 + CH2, CH1-CH2,
 CH2-CH1 and X-Y mode
 Reference CH1, CH2

Spectrum Analyser

Max Frequency rate Sample rate/2
 Min frequency rate: 0.003 Hz
 Frequency accuracy: <0.02%
 Amplitude axis: linear / dB
 Frequency axis: linear, logarithmic
 Octave bands, 1/3 octave bands
 FFT Windows: Rectangle, Hanning,
 Hamming, Blackman, Bartlett
 FFT points: 16 to 32768
 Distortion calculations: 1 to 100
 Harmonics in dB or %
 Averaging: 1 to 256 spectra
 Measuring method: normal, max mode

True RMS voltmeter

Accuracy: 0.2% +/- 1 LSB
 Display methods: 11 math functions
 available
 Frequency range: 10 Hz to sample
 rate/2
 Number of displays: 1 to 6 user
 selectable

Transient Recorder

Measure points: 1 to 131060
 Measure time (between points):
 0.01 sec to 500 sec

Cursor read out

Read outs: True RMS, Peak-Peak, Mean
 Maximum, Minimum, Dbm,
 Power Crest factor, Frequency, Duty cycle
 Rise time left and right, slew rate left and right,
 THD (spectrum analyser)
 Fonts: user selectable
 Colours: background user selectable

Comment
 User text: three text lines for every print out
 Comment text: three special text lines
 Text balloons: user selectable text,
 colours and arrows
 Print out
 Size: full printer size (A4, A3)
 Colours: black / white and colour prints

Hardware

Acquisition System

Max sample rate: See ordering
 Memory: 256 k Word
 Input sensitivity: 0.1 to 80 Volt full scale
 Resolution: 12, 14 or 16 bits, 0.025%
 Accuracy: 0.2 % +/- 1 LSB
 Input impedance: 1 M ohm / 30 pF
 Input coupling: AC / DC
 Analogue bandwidth: 25 MHz
 Maximum input voltage: +/-200 volt
 (DC + AC peak < 10KHz)

Triggering

Trigger mode: free run, delayed run,
 auto, single, edge triggering, window,
 peak, TV triggering, external
 Trigger system: digital, two trigger levels
 Trigger source: CH1, CH2,
 External and Keyboard
 Trigger level: 0 to 100% full scale
 Trigger resolution: 0.025% (12 bits)
 Pre triggering: 0 to 131060 samples
 Post triggering: 0 to 131060 samples
 Trigger delay: 0 to 131060 samples

Arbitrary Waveform Generator

Sample rate: 0-50 MHz
 Resolution: 14 bit
 Output impedance: 50 Ohm
 Frequency range: 0-2 MHz
 Frequency step: 0.01 Hz
 Output amplitude: 0 - +/- 12 volt
 Amplitude step: 0 +/-0.1 Volt 8192 steps
 +/-0.1 - +/-1.0 Volt 8192 steps
 +/-1.0 - +/-12 Volt 8192 steps
 DC level: 0 - +/-12 Volt in 8192 steps
 Waveforms: sine, triangle, square, noise,
 DC and user defined (256 K word)
 Symmetry: 1-99%, 1% steps

General

Power supply: from USB port
 Power consumption: 500 mAmp @ 5Volt
 Connection: USB 1. 1 and USB 2.0
 port
 Cable length: 1.8 meter (70 inch)
 Ambient temperature: 15°C to 25°C
 (59°F to 77°F)
 Dimensions: 25x170x140mm (H x L x W)
 Weight: 480 gram (17 ounce)

Ordering:-

MI 1005 5MHz Sample rate

MI 1025 25MHz Sample rate

MI 1050 50MHz Sample rate

Each unit is supplied complete with software for Windows 98/2000/ME/XP, an instruction manual, 2 x switch probes and USB cable. NB the unit operates via the USB port on a PC and supports 2.0 and 1.1 versions.

Tecstar Electronics Limited
Tecstar House
Bramley Road
St Ives, Cambs
England PE27 3WS

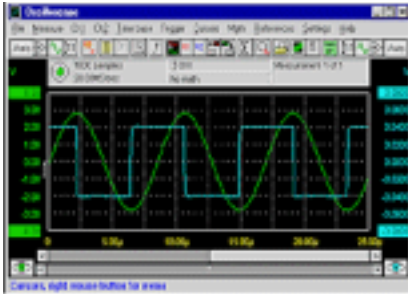
Tel 00 44 1480 399499 Fax 00 44 1480 399503
 E mail sales@tecstar.co.uk www.tecstar.co.uk



PC based Universal Measuring System

The new Tecstar series of multi-instruments adds a further dimension to PC measurement. Each model comprises of several full featured instruments in one compact package. Each part can be operated independently or together as part of a complete measuring system. The instruments include : Digital Storage Oscilloscope : Multimeter : Spectrum Analyser : Transient Recorder : Arbitrary Function Generator ; The software is easy-to-use and includes a number of analysing tools, which improve productivity and measuring quality. The key measuring instruments can be expanded to full screen, which enables changes and settings to be clearly read. Print out is in full colour thus enhancing documents and reports. The difference between each model is the speed of the Oscilloscope. All other parts are identical.

Digital Storage Oscilloscope



The sampling oscilloscope provides 2 channels, which can be configured individually, The channel sensitivity is from 200mV full scale to 80V full scale. It is a digital sampling oscilloscope, which means that the oscilloscope takes samples at fixed times. From each sample the value is determined and the size is displayed on the screen. The speed at which the samples are taken, is adjustable. The time base runs from 50 Msamples/sec down to 25 samples/sec

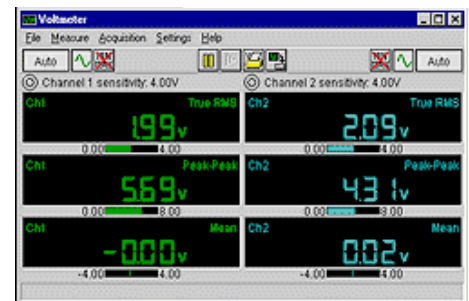
Cursors are also provided to perform voltage, time or frequency measurements on the displayed signal.

When a quick indication of the input signal is required, a simple click on the auto setup button will immediately give a good overview of the signal. The auto setup function ensures a complete setup of the time base, the trigger levels and the input sensitivities.

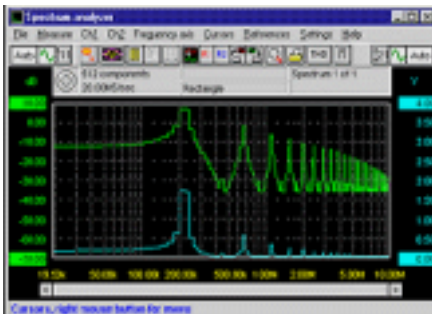
A two-channel autoranging multimeter provides simultaneous readout of up to three measurements for each channel. Input sensitivities 200 mV, 400 mV, 800 mV, 2V, 4V, 8V, 20V, 40V and 80V full scale, measurements are user selected and can include: -

- | | |
|-------------|---------------|
| True RMS | Peak to Peak |
| Mean | Maximum |
| Minimum | dBm |
| Power Crest | Frequency |
| Duty Cycle | Moment Value. |

Digital Multimeter



Spectrum Analyser

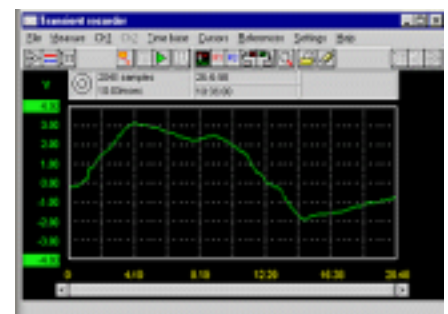


Whilst the oscilloscope provides signal information on a time domain basis the spectrum analyser displays signals on a frequency basis. This is particularly useful for examining circuits like filters, amplifiers, mixers and modulators, which can best be characterised by their frequency behaviour.

The spectrum analyser offers frequency range of 0.003 Hz to the sample rate/2 of the specific model and a frequency accuracy of <0.02% with a range of frequency axis and FFT windows. FFT points can be selected from 16 to 32,768 and distortion calculations are displayed as 1 to 100, harmonics in dB or as a percentage.

Special modes include: Rectangle, Hanning, Hamming, Blackman and Bartlett.

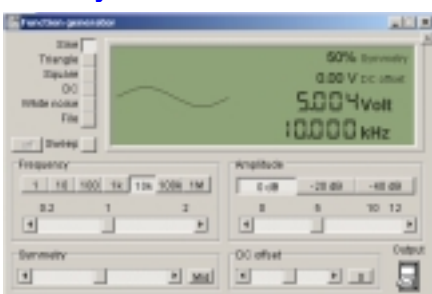
Transient Recorder



The transient recorder is ideal for measuring slow changing signals. It is a 2 channel device which displays changes in the input signals graphically on the PC screen. The Transient recorder measures customer settable or fixed times and can process the measured value. The number of acquisitions is also controllable.

The time between two measurements is adjustable from 0.01 second to 500 seconds. The number of samples is also selectable between 1 and 131060. The maximum measuring time is 500 seconds x 131060 samples = 65530000 seconds or 758 days.

Arbitrary Function Generator



The arbitrary function generator provides five standard signal wave shapes with 14 bit resolution plus arbitrary shapes downloadable from a PC. Standard shapes include : Sine: Square: triangle: DC and white Noise. All aspect are fully adjustable including: Sweep, Amplitude, Frequency, DC offset and Symmetry.

The function generator uses the DDS technique. DDS stands for Direct Digital Synthesis, a technique that uses digital data processing blocks to generate a frequency-tuneable with a fixed-frequency precision clock. DDS allows the generation of low distortion signals with very accurate frequency adjustment, in a fully digital way.

The function generator contains a sweep generator, which can in combination with the spectrum analyser, be used for creating frequency response characteristics of components or circuits.

