# COMPUTER BASED INSTRUMENT SYSTEM

# CBIS-1400

- PC-based multi-function instrument for electricity/electronics and other experiments
- Digital Storage Oscilloscope with the 2-channel simultaneous 50MS/s sampling rate
- Spectrum Analyzer functions using Digital Storage Oscilloscope(DSO)
- Variable Power Supply(VPS), Function Generator(FG), Analog Output and Digital Output
- Analysis of collected data on PC through the modules of DSO, DMM, FC and Analog/Digital Input
- Numerical and graphical indication of the data measured and analyzed in real time


## > SPECIFICATIONS

### SOFTWARE

- **Software Measurement Specifications**
  - » Digital Storage Oscilloscope
    - › 2-channel wave verification, measurement, storage and print
    - › Spectrum Analyzer
    - › X-Y Scope
    - › Measuring : Frequency, Amplitude, Max/Min, Peak to Peak, RMS
  - » Variable Power Supply
    - › 2-channel power supply(0~25V)
    - › Current limit setup
  - » Digital Multi-meter
    - › Resistance/Voltage/Current/Diode/Continuous
  - » Frequency Counter : Reset, Attenuation, Triggering
  - » Function Generator : 2-channel Triangle/Square/Sine wave output, Sweep functions
  - » OS Environment
    - › Pentium IV 1.7GHz, RAM 512M or higher
    - › Hard Disk Min. 500Mbyte free space
    - › USB 2.0 compatible
    - › Windows NT4.0, 2000, XP(Recommended OS : Windows XP)

### MEASURING INSTRUMENT

- **Digital Storage Oscilloscope**
  - » Channel : 2 channels, 2 x BNC(AC/DC Coupling) + 1 External Trigger
  - » Sampling Rate : 50MS/s(when using 2 channels)
  - » Bandwidth : 25MS/s
  - » Resolution : 12bit
  - » Accuracy : ±1%
  - » Input Impedance : 1MΩ
  - » Overload Protection : ±100V
  - » Buffer Size : 128k
  - » Interface : USB
- **Variable Power Supply**
  - » Number of Output Channels : 2 channels
  - » Output : Variable Power Supply(0~25V, 1A)x2ea
  - » Internal Resistance : < 15mΩ
  - » Stability : < 2.5mV
  - » Recovery Time : < 80μs
  - » Load Regulation : < 0.05
  - » Temperature Coefficient : 0.1%/˚C
  - » Ripple & Noise : < 5mV
  - » Output Current : Max. 1A

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» Current Limit : Adjustable current limiter(10mA to 1000mA)
» Resolution : 100mV step, 10mA step
» Interface : USB

• **Digital Multimeter**
» DC Voltage
› Range : 400mV, 4V, 40V, 400V, 1000V
› Resolution : 10μV, 100μV, 1mV, 10mV, 100mV
› Accuracy : 2V to 1000V : ±0.1%
› Maximum Input Voltage : 1000V for 40V, 400V and 1000V range, 380Vp for 4V range
› Input Impedance : 10MΩ II 70pF
› Input Current : Max. 10pA(23˚C)
» DC Current
› Range : 40mA, 400mA, 4A, 10A
› Resolution : 1μA, 10μA, 100μA, 1mA
› Accuracy : 40mA to 400mA : ±1%, 4A to 10A : ±1.5
» AC Voltage
› Range : 400mV, 4V, 40V, 400V, 750V
› Resolution : 10μV, 100μV, 1mV, 10mV
› Accuracy : 400mV to 40V : ±2% at 40Hz~10kHz
: ±3% at 10Hz~20kHz
400V and 750V : ± 2% at 40Hz~100Hz
› Maximum Input Voltage : 1000V for 40V, 400V and 750V range,
380Vp for 400mV, 4V range
› Input Impedance : 10MΩ ‖ 70pF
» AC Current
› Range : 40mA, 400mA, 4A, 10A
› Resolution : 1μA, 10μA, 100μA, 1mA
› Accuracy(at 40Hz to 100Hz) : 40mA : ±2%,
400mA to 4A : ±3%
» Resistance
› Range : 400Ω, 4kΩ, 40kΩ, 400kΩ, 4MΩ, 40MΩ
› Resolution : 10mΩ, 100mΩ, 1Ω, 10Ω, 100Ω, 1kΩ
› Accuracy : ±1% ; ±1.5% for 20MΩ
› Interface : USB

• **Frequency Counter**
» Number of Channel : 1 channel
» Measurement Range : 0~200MHz
» Input Characteristics : 0~200MHz(DC Coupled),
10Hz~200MHz(AC Coupled)
» Sensitivity : 60mV(1Hz~10MHz),
150mVrms(10MHz~200MHz)
» Measurement Functions : Period, pulse, width, high/low (averaged)
» Min. Pulse Duration : 5ns
» Input Noise : < 100μV, Typical
» Coupling : AC or DC(switch selectable)
» Attenuator : x1, x20(switch selectable)
» Input Impedance : 1MΩ II 40pF
» Max. Input Voltage : 250V(DC+AC peak) from 0~440Hz
» Gate Time
› Range : 100ms to 10s in 3 steps
» Frequency : 10MHz TCXO
» Accuracy : $1x10^{-6}$(10˚C~40˚C)
» Interface : USB

• **Function Generator**
» Number of Output Channels : 2 channels
» Frequency Range
› SINE : 1Hz~5MHz, SQUARE : 1Hz~1MHz, TRIANGLE : 1Hz~1MHz
» Control Method : Variable adjustment on PC
» Resolution : 0.1Hz
» Output Voltage : 20Vp-p(10Vp-p into 50Ω)
» Attenuator
› Max. 60dB
› 2step : 20dB±0.5dB, Variable : 0~20dB
» DC Offset : ±5V(±2.5V into 50Ω load)
» Sweep
› Mode : Linear
› Speed : 20ms~5s
› Range : 1:100
» Signal Type : SINE, SQUARE, TRIANGLE
» Interface : USB

• **Multi-Function**
» Analog Input
› Number of Input Channels : 8 channels
› Resolution : 12bit
› Input Range : ±10V
» Analog Output
› Number of Output Channels : 2 channels
› Output Voltage : 0~5V
› Output Current : 5mA
» Digital Input
› Number of Input Channels : 12 channels
› Input Level : TTL logic level
» Digital Output
› Number of Input Channels : 8 channels
› Output Level : TTL logic level
» Interface : USB

## GENERAL CHARACTERISTICS

• **Input Voltage** : AC220V, 50/60Hz
• **Weight** : 12.5kg
• **Dimension** : 479(W) x 194(H) x 416(D)mm

## ACCESSORIES

• Connection Cord : 1set
• AC Power Cord : 1ea
• User's Manual : 1ea
• Program CD : 1set