

BANKURA UNIVERSITY

Corrigendum

No. RO/BKU/03(A)/2019

Date: 04.01.2019

This has reference to the Tender notification No. RO/BKU/03/2019 dated 04.01.2019.

CRO (Dual Channel)

FEATURES

2 Channels, 4 Traces:

DC~50MHz Bandwidth (GOS-6051)

* Vertical Sensitivity : 1mV/div ~ 20V/div

* CRT Readout

* Cursor Measurement, 6 Digit Frequency Counter, 10 sets Memory for Front Panel Setting Save & Recall

* ALT MAG Function (x 5, x 10, x 20)

* Vertical Mode Triggering

* TV Synchronization

* CH1 Signal Output, Z- axis Input

* Buzzer Alarm & LED Indicators

* Compact size(275Wx130Hx370Dmm)and Front Panel Layout Groups for Easy to Use

SPECIFICATIONS	
CRT	
Type	6-inch rectangular type with internal graticule
Accelerating Potential	0%, 10%, 90%, 100% markers. 8x10 div(1div=1cm) : approx.10kV
Illumination	Provided
Trace Rotation Z-axis	Sensitivity : at least 5V ; Polarity : positive going input decrease intensity
Input	Usable frequency range : DC to 2MHz ; Max. input voltage : 30V (DC + AC peak) at 1kHz or less Input Impedance:GOS-6051 : approx.33k Ω ;GOS-6031 : approx.47k Ω
VERTICAL SYSTEM	
Sensitivity and Accuracy	1mV~2mV/div \pm 5%,5mV~20V/div \pm 3%,14 calibrated steps in 1-2-5 sequence
Vernier Vertical	Continuously variable to 1/2.5 or less of panel indicate value
Sensitivity Bandwidth(-3dB)	400V (DC + AC peak) at 1kHz or less AC, DC, GND
and Rise Time	1M Ω \pm 2%/approx. 25pF
Maximum Input Voltage	CH1, CH2, DUAL (CHOP, ALT), ADD, CH2 INV
Input Coupling	Approx. 250kHz
Input Impedance Vertical	8 div at 40MHz, 6div at 50MHz;
Modes Chop Frequency	
Dynamic Range	

HORIZONTAL SYSTEM	
Sweep Time	0.2 μ s/div ~ 0.5s/div, 20 steps selectable in 1-2-5 sequence, continuous variable control between steps at least 1 : 2.5
Accuracy	\pm 3%, \pm 5% at x5 / x10MAG, \pm 8% at x 20MAG x5, x10, x20 MAG
Sweep Magnification	GOS-6051 : 20ns/div (10ns/div are uncalibrated)
Maximum Sweep Time (at MAG)	GOS-6031 : 50ns/div (10ns/div ~ 40nS/div are uncalibrated) Available
ALT-MAG Function	
TRIGGER	
Trigger Mode Trigger	AUTO, NORM, TV
Source Trigger Coupling	VERT-MODE, CH1, CH2, LINE, EXT AC, HFR, LFR, TV-V(-), TV-H(-)
Trigger Slope	“+”or“ - ”polarity
Trigger Sensitivity	
X-Y OPERATION	
Input Sensitivity	X-axis : CH1 ; Y-axis : CH2 1mV/div ~ 20V/div
Bandwidth	X-axis : DC ~ 500kHz (-3dB) 3°or less from DC to 50kHz
Phase Difference	
OUTPUT SIGNAL	
CH1 Signal Output	Voltage:approx.20mV/div(with 50 Ω terminated);Bandwidth:50Hz to at least
Calibrator Output	5MHz Voltage:0.5V \pm 3% ; Frequency : approx. 1kHz, square wave

50MHz, Readout Analog Oscilloscope with Cursor Measurement and Frequency Counter

ACCESSORIES:

User manual x 1, Power cord x 1

Probe-GTP-060A-4: 60MHz (10: 1/1:1) Switchable Passive Probe (one per channel)

Instrument Cart, 450(W) x430(D) mm (120V Input Socket)

Test Lead, BNC-BNC Heads

DSO (Dual Channel)

Key performance specifications

200MHz, 150 MHz, 100 MHz, 70 MHz, 50 MHz, and 30 MHz 1

Bandwidth models 2-channel models

Up to 2 GS/s sample rate on all channels 2.5k point record length on all channels

Advanced triggers including pulse and line-selectable video triggers

Key features

7 inch WVGA (800X480) Active TFT Color Display 34 automated measurements

Dual window FFT, simultaneously monitors both the time and frequency domains

Built-in waveform limit and TrendPlot™ testing Dual channel frequency counter.

Zoom Function

Automated, extended data logging feature Autoset and auto-ranging functions.

Built-in context-sensitive help Multiple-language user interface.

Small footprint and lightweight - Only 4.9 in. (124 mm) deep and 4.4 lb. (2 kg)

Connectivity

USB 2.0 host port on the front panel for quick and easy data storage USB 2.0 device port on rear panel for easy connection to a PC

Power supply (15V-0-15V) & 0-15V Variable

SPECIFICATIONS:

OUTPUT	32V/2A	±15V/0.5A	5V/5A
Input Voltage	230V AC, ±10%, 50Hz, 1 Phase		
Output Voltage	0 to 32V	12V to 15V	4.50 to 5.50V
Output Current	0 to 2A	0.5A	5A
Line Regulation CV *	±2mV	±0.1%	±0.1%
Load Regulation CV	±0.01%±2mV	±0.1%	±0.1%
Line Regulation CC *	±0.1% ±250µA	N.A.	N.A.
Load Regulation CC	±0.1% ±250µA	N.A.	N.A.
Output Ripple CV	1mV rms	1mV rms	1mV rms
Output Ripple CC	0.04% rms	N.A.	N.A.
Operating Temp.	0 to 50°C	0 to 50°C	0 to 50°C
Protection	OL/SC (CC type)	OL/SC (fold back	OL/SC (fold back
O/P OVP	N.A.	N.A.	Crowbar type
3 Digit DPM	V & I	Common 3 digit voltmeter with sel.	
Meter Accuracy	±3 counts	±3 counts	±3 counts
Input on/off	Rocker switch	Rocker switch	Rocker switch
Single Turn Pots	Coarse & fine to set V	V set	V set
Dimensions apprx. W × H × D (mm)		430 × 133 × 250	
Weight apprx.		12.0kg.	

Multi -meter (Digital)

Specifications

	Range	Best accuracy
DC Voltage	60mV/600mV/6V/60V/600V/1000V	$\pm(.5\%+1)$
AC Voltage	60mV/600mV/6V/60V/600V/750V	$\pm(1\%+3)$
DC Current	600 μ A/6000 μ A/60mA/600mA/6A/10A	$\pm(1\%+3)$
AC Current	600 μ A/6000 μ A/60mA/600mA/6A/10A	$\pm(1.2\%+5)$
Resistance	600 Ω /6K Ω /60K Ω /600K Ω /6M Ω /60M Ω	$\pm(1\%+2)$
Capacitance	40nF/400nF/4 μ F/40 μ F/400 μ F/4000 μ F	$\pm(3\%+5)$
Frequency	10Hz-10MHz	$\pm(.1\%+4)$
Temperature	-40 ⁰ C~1000 ⁰ C	$\pm(1.2\%+3)$
Band Width	45Hz~3KHz	
Analog Bar Graph	61	
Display Count	6000	
Auto Range	Yes	
True RMS	Yes	
Diode	Yes	
Auto Power off	15 minutes	
Continuity Buzzer	Yes	
Duty cycle	0.1~99.9%	Yes
Low Battery indication	<7.5V	Yes
Data Hold	Yes	
Relative Mode	Yes	
Max/Min	Yes	
Peak Value	Yes	
LCD Backlight	Yes	
Input Protection	Yes	
Input impedance for DCV	Around 10M Ω	Yes

General Characteristics

Power	9V Battery
LCD Size	65mn x 43 mn
Accessories	Battery, Test lead, Multi-purpose socket, PC software cd, usb interface cable

Temporal Coherence experiment

Temporal coherence using specially designed Michelson interferometer with one extended arm (preferably at least more than 30cm)to study temporal coherency of light source The movement of the mirror should be very smooth so that it does not deviate from its axis of motion and perfectly aligned.

Pockels Effect experiment

Experiment possible: To find half wave voltage of lithium niobate crystal and study change in polarization due to electric field.

Complete setup on optical bench with diode laser along with laser mount and base, polarizer, analyser, Lithium niobate crystal mounted with stand and its high voltage power supply, silicon detector and meter along with other accessories to conduct experiment, experiment is complete in itself.

N.B:- All the instruments must have data sheet and the complete experiment setup must be demonstrated.

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