

MODEL V-151F/V-152F OSCILLOSCOPE

Service Manual

1. SPECIFICATIONS

CRT display

Type	130BUB31
Acceleration Voltage	2 kV
Effective display area	8 x 10 div (1 div = 9.5 mm)

Vertical amplifier

(Identical for both
channels)

5 mV/div - 5 V/div

Sensitivity:

Calibrated in 10 steps (1-2-5 Sequence
up to about 2.5 times on each position
with Variable control)

1 mV - 1 V/div (using x5 GAIN)

Bandwidth

DC to 15 MHz $^{+1}_{-3}$ dB

DC - 5 MHz $^{+1}_{-3}$ dB (using x5 GAIN)

Rise time

Typical 24 ns

Input impedance

1 M Ω shunted by 30 pF ± 5 pF (direct)

Input coupling

AC, GND, DC

Max. input voltage

600 Vp-p, 300 V (DC + AC peak)

Input connector

BNC

CH1 output

Output voltage*

20 mV/div Min.

Bandwidth*

50 Hz - 5 MHz (-3dB)(at x1 GAIN)

Output noise*

10 mVp-p Max.

* Measured by 1 m 50 Ω BNC cable with 50 Ω terminator.

Output impedance Approx. 50 Ω

Output coupling AC

Time base

 Sweep speed 0.2 μ s - 0.2 s/DIV
 19 step, 1-2-5 sequence

 Magnification x10 (max. speed 100 ns/div)

X-Y display

 (V-151F: X = Ext. TRG or ☒ IN, Y = INPUT)

 Sensitivity Y axis: 5 mV/div - 5 V/div
 X axis: Approx. 0.2 V/div

 Bandwidth X axis: DC - 500 kHz

 X-Y phase Less than 3° at 10 kHz

 (V-152F: X = CH1, Y = CH2)

 Sensitivity Y axis: 5 mV/div - 5 V/div
 X axis: 5 mV/div - 5 V/div

 Bandwidth X axis: DC - 500 kHz

 X-Y phase Less than 3° at 10 kHz

Synchronization

 Trigger sensitivity

Frequency	INT. trig	EXT. trig
20 Hz - 2 MHz	0.5 div	200 mV
2 MHz - 15 MHz	1.5 div	800 mV

Vertical MODE (V-152F)

MODE; CH1, CH2 (X-Y), DUAL, ADD, DIFF

DUAL: DUAL trace display

ADD: CH1 and CH2 are added

DIFF: CH2 and CH2 (inverted signal) are added

Trigger MODE

AUTOMATIC : Sweep free-runs.
NORMAL : Sweep runs when triggered.
TV(+), TV(-) : Extracts the synchronizing signal from composite video signal and provides stable synchronization.
Slope switch is selected according to polarity of video signals.

SOURCE; INTERNAL (V-152F; CH1 or CH2) or EXTERNAL or LINE.

Calibration

Waveform	Square wave 1 kHz ± 10 % (typ)
Voltage	0.5 Vp-p ± 3 %
Power supply	AC 100/120/220/240V
size and weight	190(H) x 275(W) x 400(D) mm approx. 8.5 kg [7.5(H) x 10.8(W) x 15.7(D) in 18.7 lbs]