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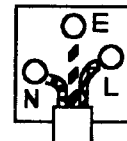
## UNITED KINGDOM ONLY

Lead/appliance must only be wired by competent persons


### THIS APPLIANCE MUST BE EARTHED

**NOTE:** The wires in this lead are coloured in accordance with the following code:

Yellow: Earth  
Neutral  
Live(Phase)



If the colours of the wires in main leads may not correspond with the colours identified in your plug/appliance, proceed as follows:

If the wire which is coloured Green & Yellow must be connected to the terminal marked with the letter E or by the earth symbol  Green or Green & Yellow.

If the wire which is coloured Blue must be connected to the terminal marked with the letter N or coloured Blue or Black.

If the wire which is coloured Brown must be connected to the terminal marked with the letter L or P or coloured Brown or Red.

Consult the instructions provided with the equipment or the manufacturer's supplier.

The appliance should be protected by a suitably rated and type of mains fuse: refer to the rating information on the label and/or user instructions for details. As a guide, cable of 1.5mm<sup>2</sup> should be protected by a 3A or 5A fuse. Larger conductors

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## ary Notes

### unding terminal:

the chassis ground terminal is connected to the earth  
 erting the power plug into the main supply.

### put voltage:

ter may be damaged if any input voltage exceeding  
 d voltage is applied to it. The specified voltage is  
 by adding the peak value of the input signal and the  
 ed DC voltage: 300 V for the 300  $\mu$ V ranges, and  
 he 3 V to 100 V ranges.

### leads:

measured signal level is low (i.e. 300  $\mu$ V) or the  
 signal source impedance is high, the input line is  
 to external noise. To resist the noise, shielded wires  
 al cable should be used depending on the noise

voltmeter adopts a special extended scale which has  
 ange larger than the conventional full scale.

Conventional	Extended
0 to 1.0	0 to 1.12
0 to 3.1 (3.2)	0 to 3.5
-20 to 0 dB	-20 to +1 dB
-20 to +2 dBm	-20 to +3.2 dBm

he term "full scale" considers '1.0' on the 0 - 1.12  
 e rated value. The red ▼ mark is setting at '1.0' on  
 ost scale.

## 4. Panel Description

### (1) Meter

Provide easy readings for both voltage and dB scales.

### (2) ZERO adjustment

Mechanical ZERO adjustment for the pointer.

### (3) Range selector switch

10 dB step attenuator to select a desired voltage range for an easy readout.

### (4) Input connector

The terminal where the measured signal is applied.



*The maximum voltage of DC isolation is  $\pm 30 V$  (peak value)*

### (5) Output connector

Provide output signals when the meter is used as a preamplifier. When the range selector switch is setting at 100 mV, the output voltage will be approximately equal to the input voltage. However, when the range selector switch is setting to the next higher or lower voltage range, the amplification factor is decreased or increased by 10 dB respectively.



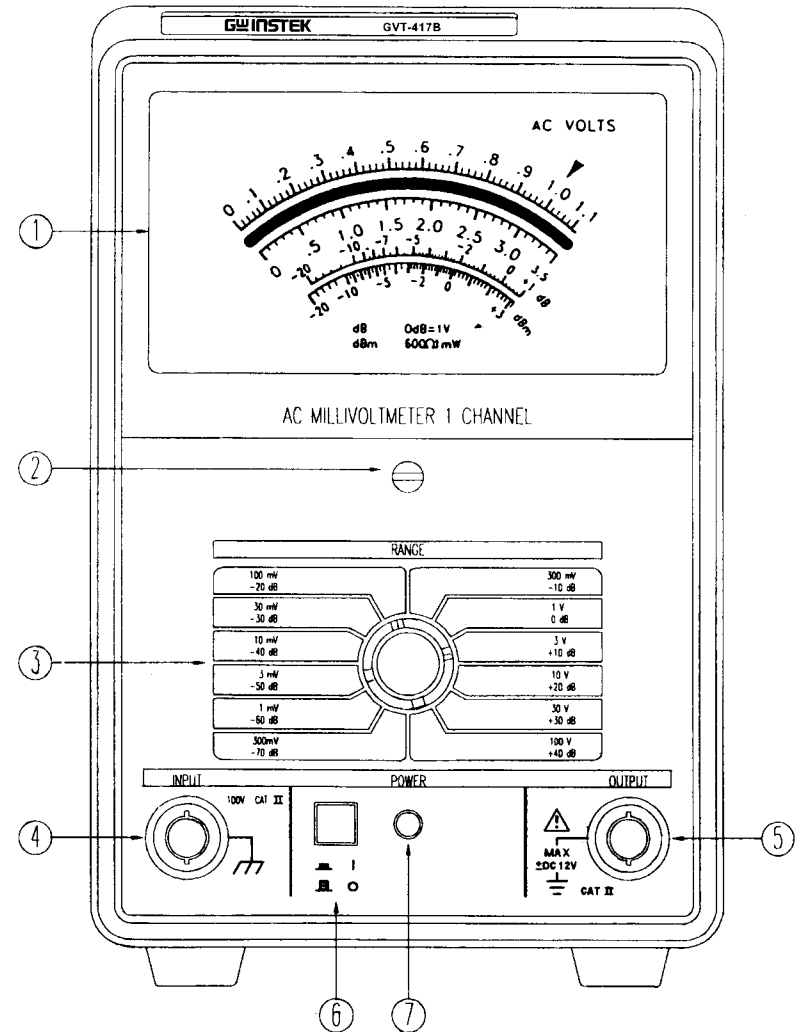
*The maximum voltage of DC isolation is  $\pm 12 V$  (peak value)*

### (6) Power Switch

### (7) Power Indicator

### (8) Appliance AC Inlet

PANEL DESCRIPTION(GVT-417B)



Front Panel

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Decibel is originally the ratio of power as explained above. However, the logarithm of the ratio of other values (ratio of voltage or current) can also be called "decibel".

For example, If the input voltage of an amplifier is 10 mV and output voltage is 10 V, the degree of amplification could be  $10 \text{ V} / 10 \text{ mV} = 1000$  times. This is also expressed in dB as follows:

$$\text{Degree of amplification} = 20 \log (10 \text{ V} / 10 \text{ mV}) = 60 \text{ dB}$$

**dBm**

"dBm" is the abbreviation of dB (mW). This decibel value expressed the power ratio with respect to 1 mW. Normally, "dBm" implies the condition where the power exists in impedance of 600 Ω.

Therefore, "0 dBm" can be signified as the following:

$$0 \text{ dBm} = 1 \text{ mW or } 0.775 \text{ V or } 1.291 \text{ mA}$$

The power or voltage levels are determined by adding up the scale readings and the selected RANGE settings.

Example:

Scale	RANGE	Level
(-1 dB)	+ (+20 dB)	= +19 dB
(+2 dBm)	+ (+10 dBm)	= +12 dBm

4. The dB and dBm scales of the indicating meter are as stated the following:

Range setting	dB	dBm
+40	+20 to +41	+20 to +43
+30	+10 to +31	+10 to +33
+20	0 to +21	0 to +23
+10	-10 to +11	-10 to +13
0	-20 to +1	-20 to +3
-10	-30 to -9	-30 to -7
-20	-40 to -19	-40 to -17
-30	-50 to -29	-50 to -27
-40	-60 to -39	-60 to -37
-50	-70 to -49	-70 to -47
-60	-80 to -59	-80 to -57
-70	-90 to -69	-90 to -67

% of full scale at 1 kHz (signal without any interference).

signal input at 100kHz, the shielded wire is used for the signal and the CORE is used for the purpose

per IEC-1000-4-3:

frequency range: 80 MHz~1GHz,

field strength: 3 V/m

modulation: AM 80%, at 1

accuracy is  $\pm 10\%$  (full scale)

accuracy is  $\pm 15\%$  (full scale)

range of 630 ~ 640 MHz testing

$> 1 M\Omega$

$\mu V \sim 1 V$  ranges)

$\sim 100 V$  ranges)

% for each range of 1 kHz (without load)



Table 1: Specifications (Cont.)

AC Output Frequency Response	10 Hz to 1 MHz, $\leq \pm 3\%$ (reference: 1 kHz. without load)
Stability against Line Voltage Fluctuation	Indication change with respect to line voltage fluctuation of $\pm 10\%$ ; is within $\pm 0.5\%$ of full scale.
AC Power Requirement	115 (97~132) Vac / 230 (195~250) Vac, 50/60 Hz
AC Power Consumption	10VA or 4.0 Watts, Maximum
Fuse Replacement for 115 Vac selected	T type, 0.2 A, 250Vac
Fuse Replacement for 230 Vac selected	T type, 0.1 A, 250Vac
Operation Environment	Indoor user, Altitude up to 2000M Installation Category II Pollution Degree 2 Operating Temperature : +0° C to +40°C, < 80% relative humidity Storage Temperature : -10° C to +70°C, < 70% relative humidity
Dimensions	130 (W) x 210 (H) x 295 (D) mm
Weight	Approximately 2.7 kg

\* : Between the input common and chassis.

## 7. Maintenance

This section includes the basic maintenance information for GVT-417B.

### 7-1. Cleaning

To clear GVT-417B, use soft cloth dampened in a solution of mild detergent and water. Do not spray cleaner directly onto the instrument, since it may leak into the cabinet and cause damage.

Do not use chemicals containing benzene, benzene, xylene, acetone, toluene, or similar solvents.

Do not use abrasive cleaners on any portion of this equipment.

### 7-2. Troubleshooting

Troubleshooting the GVT-417B is limited to checking the input power fuse. If you have other operational difficulties with your GVT-417B, contact your Good-Will representative for assistance.



**WARNING.** To avoid electrical shock, the power cord protective grounding conductor must be connected to ground.



**WARNING.** To continued fire protection. Replace fuse with the specified type and rating, and disconnect the power cord before replacing fuse.

## 8. Interchangeable Parts

Interchangeable parts can be ordered from your authorized GoodWill dealer directly.

### Accessories

The items are shipped with the GVT-417B as following:

Table 2: Accessories

Accessory	Good Will Part Number
Test Leads GTL-101 x 1 (for GVT-417B)	1100-TL101U0
User Manual	82VT-417B0MC