

## Selective Level Meter



### Features

- ★ Digital Synthesized Local Oscillator
- ★ Two Selective Bandwidths : 20Hz, 3.1KHz
- ★ Wideband, Low Noise and Low Distortion Measurements
- ★ dB/dBm Operation
- ★ High Frequency Stability
- ★ Internal Calibration Facility
- ★ Recorder Outputs
- ★ Frequency Tracking Facility with Level Oscillator SLG620
- ★ Storage of Nine Spot Frequencies
- ★ Reference Level Set Facility
- ★ Autotune Feature
- ★ Operates on AC Mains or Internal Rechargeable Battery
- ★ Built in charger
- ★ Graphic LCD Display with Backlight

### Application

Aplab SELECTIVE LEVEL METER Model SLM620 and LEVEL OSCILLATOR Model SLG620 forms a measuring set covering frequencies from 200Hz to 620KHz for the measuring of carrier frequency systems. Its compactness and light weight as well as the versatile power-supply makes the SELECTIVE LEVEL METER suitable for use in places where no mains is available (e.g. measurements of remote supplied repeater stations, PLCC installation & servicing).

The SELECTIVE LEVEL METER (Low Noise & Low Distortion modes) is equally suitable for wide-band and selective measurements. The adapter supplied as an accessory allows impedance, balance attenuation and return loss measurements.

Wide frequency range and sensitivity range of the SELECTIVE LEVEL METER allows the measurement of transmission characteristics as well as crosstalks and other interference signals.

The selective level meter has two filters :

- a wide band filter with an effective bandwidth of 3.1KHz for noise measurements.
- a narrow band filter with a bandwidth of 20Hz for the measuring of carrier leak, crosstalk and non-linear distortion.

The facility to set the reference at currently read level and storage for nine frequency spots are provided. AUTOTUNE feature will capacitate the user to find the peak near the center frequency automatically.

### Specifications

#### INPUTS

Balanced	: 200Hz to 620KHz.
Unbalanced	: 50Hz to 620KHz.

#### INPUT IMPEDANCES

Terminated Input	: 75, 125, 150, 600 Ohm.
Unterminated Balanced Input	
10KHz to 300KHz	: $\geq 8$ Kohm.
300Hz to 620KHz	: $\geq 5$ Kohm.
200Hz to 300Hz	: $\geq 3.5$ Kohm.

#### Unterminated

Unbalanced Input	: $\geq 10$ Kohm // 60pF.
Balance of Input	: $\geq 40$ dB.

#### OUTPUTS

DC Output (Recorder)	: 150mV across 2.5K ohms at 0dB meter deflection.
AC Output (Recorder)	: -20dB, 600 ohms at 0dB meter deflection.

#### WIDE BAND LEVEL MEASUREMENT

Frequency Range	: 50Hz to 620KHz (usable upto 650KHz).
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#### Sensitivity in Steps of 10 dB

Balanced Input	: -60 to +40dB/dBm.
Unbalanced Input	: -70 to +30dB/dBm.
Min. Readable Level	: Approx. -80dB/dBm.

#### LEVEL MEASUREMENT ACCURACY

At 0 dB level at the 0 scale division after calibration at 20KHz	: $\leq \pm 0.1$ dB.
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#### Frequency Response Related to 20KHz

1 to 200 KHz	: $\leq \pm 0.1$ dBm.
0.2 to 620 KHz	: $\leq \pm 0.15$ dBm.

#### Attenuator Error Referred

To the 0 dB range at 20KHz	: $\leq \pm 0.1$ dB.
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**Additionally in the most Sensitive range** :  $\leq \pm 0.1$  dB.

#### SELECTIVE MEASUREMENT

**Frequency Range (continuously without band changeover)** : 200 Hz to 620 KHz (usable upto 650KHz).

**Frequency Settings** : Manually coarse & fine, continuously adjustable with  $\Delta$  &  $\nabla$  key or rotary knob.

**Automatic Tuning (synchronisation)** : Automatic tracking between level meter and generator is provided.

#### SELECTIVITY

	Narrow	Wide
Pass Bandwidth $\Delta a \leq 0.5$ dB	$\pm 4$ Hz	$\pm 800$ Hz
Bandwidth $\Delta a = 3$ dB	$\approx 20$ Hz	$\approx 3.1$ KHz
Stop Band Attn. $\Delta a \geq 30$ dB	$\pm 80$ Hz	--
Stop Band Attn. $\Delta a \geq 50$ dB	--	$\pm 10$ KHz
Stop Band Attn. $\Delta a \geq 60$ dB	$\pm 500$ Hz	--

**Image Frequency Rejection** :  $\geq 70$  dB for  $f_m + 2f_{i1}$   
 $\sim 80$ dB for  $f_m + 2f_{i2}$

**Dynamic Measurement Range** : 70dB.

**Sensitivity in steps of 10 dB**

Band-width	Mode	Frequency Range/KHz	Input	
			Unbalanced	Balanced
20Hz	Low Distortion	0.2 to 620KHz	-120 to +30dB/dBm	-110 to +40dB/dBm
	Low Noise	0.2 to 620KHz	-100 to +30dB/dBm	-90 to +40dB/dBm
3.1KHz	Both Modes	10 to 620KHz	-100 to +30dB/dBm	-90 to +40dB/dBm

**Min. Readable Level** : Approx. -125dB (20Hz BW unbal low distortion mode).  
Approx. -110dB (20Hz BW unbal low noise mode).

#### LEVEL MEASUREMENT ACCURACY

**At 0 dB level, at the 0 Scale Division after calibration at 100KHz** :  $\leq \pm 0.1$ dB.

**Frequency Response related to 20KHz**

**1 to 200KHz** :  $\leq \pm 0.1$ dB.

**0.2 to 620KHz** :  $\leq \pm 0.15$ dB.

**Attenuator error referred to the 0dB range at 100KHz** :  $\leq 0.1$ dB.

**Additionally in Balanced Mode**

**In the range -100dB** : 0.2dB

**-110dB** : 0.8dB

**Additionally in Unbalanced Mode**

**In the range -110dB** : 0.2dB.

**-120dB** : 0.8dB.

**Operating Time** : Continuously.

**RETURN LOSS / IMPEDANCE MEASUREMENT** (Optional Attachment SLM620-1)

#### IMPEDANCE

**Impedance Range** : 300Hz to 620KHz.

**Measurement Range** : 50 to 3000 ohm.

**Measurement Accuracy** :  $\pm 10\%$  (upto 300KHz)  
 $\pm 20\%$  (300KHz to 620KHz).

#### BALANCE & RETURN LOSS

**Frequency Range** : 300Hz to 620KHz.

**Impedance Limit** : 60 ohms to 1200 ohms.

**Balance or Return Loss Measurement Accuracy** :  $\pm 1$ dB (upto 300KHz)  
 $\pm 2$ dB (300KHz to 620KHz).

**Accuracy**

**Balance Measurement** : At 600, 150, 125 & 75 ohms.

**GENERAL SPECIFICATIONS**

#### Display

Resolution : 128 x 64 Graphic LCD with Backlit.

Resolution : 0.01dB with 5 digit display.

**Frequency Resolution** : 1Hz with 6 digit display (upto 100KHz cursor settable).

**Frequency Accuracy** :  $1 \times 10^{-5} \pm 1$  digit at 27°C.

**Frequency Stability** : 10 ppm/°C.

**Power (Mains)** : 230V AC  $\pm 15\%$ , 50Hz  $\pm 5\%$ , 14VA.

**Battery Operation** : Built-in rechargeable battery provided.

Battery Charging : Built-in charger.

Battery Consumption : 6V / 0.8A

Battery Backup : 3 Hrs.

Battery Type : 6V, 4AH SMF Battery.

**Dimension** : 330 (W) x 165 (H) x 435 (D) approx.

**Weight** : 11.5 Kg approx.

#### STANDARD ACCESSORIES

- 3-core Power Cord - 1 No.
- 2-core External Battery Connector with Jack - 1 No.
- 3 Pin to 3 Pin Cable - 1 No.
- BNC to BNC Cable - 1 No.
- Instruction Manual - 1 No.
- Carrying Case - 1 No.

#### OPTIONAL ACCESSORIES

- Return Loss & Impedance Measurement Accessory (SLM620-1) - 1 No.
- Carrying Case - 1 No.

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