



Tone burst generator for testing p.p.ms

The rise time of a peak programme meter is defined by BS4297:1968 as the deflection caused by various short duration tone bursts. This circuit can be used with an audio oscillator for producing these tone bursts. Transistors Tr_3 and Tr_4 form a monostable with switched timing capacitors. The monostable is triggered every five seconds by the astable Tr_1 and Tr_2 . An audio oscillator signal is pulsed by the monostable output via the transistor switch formed by R_{14} and Tr_5 . This switch is biased to handle the required +8dB output, and is designed to avoid d.c. level changes and spurious transients which could give misleading results. The load impedance should not be lower than 10k Ω which results in a transmis-

sion loss of 6dB. If this cannot be tolerated, or the p.p.m. under test has a low input impedance, the switch should be followed by an emitter follower. The residual output in the off condition is adequately low at -26dB, and the minimum input impedance is 10k Ω . Output waveform can be checked on an oscilloscope, in which case C_1 can be temporarily reduced in value to increase the pulse repetition frequency. Power requirements are 5mA at 12V but other voltages can be used if R_{15} is adjusted accordingly. Transistors Tr_1 to Tr_4 can be any silicon n-p-n types but a good quality device is recommended for Tr_5 .

To test a p.p.m. response time the tone burst generator is connected to a 5kHz oscillator which is adjusted for a

reading of 6 on the meter with Sw_1 at continuous. On switching to the various pulse lengths the p.p.m. reading should be within the following limits.

Burst duration	Meter reading (relative to 6)
continuous	0dB
100ms	0 \pm 0.5dB
10ms	-2.5 \pm 0.5dB
5ms	-4.0 \pm 0.75dB
1.5ms	-9.0 \pm 1.0dB

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