

TECHNICAL BULLETIN NUMBER 6005

Primary Frequency Standard TMC Model CSS-2



Model CSS-2

The Model CSS-2 Primary Frequency Standard is Technical Materiel Corporation's newest frequency standard. Completely transistorized, it features highly stable outputs at 10 mc, 1 mc, and 100 kc. Its basic crystal oscillator is contained in a hermetically sealed temperature-stabilized oven and has a stability of at least one part in 10^9 for 24 hours. A multi-turn front panel control with 3600 divisions provides total deviation of ± 100 parts in 10^9 . Additionally, Model CSS-2 will accept external DC correction voltage to provide correction of ± 100 parts in 10^9 . This circuit provides correction when the standard is used with a comparison unit and a still more stable frequency source, such as a standard VLF transmission, to increase stability by at least one order of magnitude. The electrical correction circuit can be remoted for central control and correction of more than one of this type of standard.

Features such as low current drain, small size, and ruggedness make it ideal for both mobile and fixed operation. Because of its versatility it is applicable in many areas where an ultra-stable frequency standard previously could not be used.

An accessory battery pack, Model BPS-1() automatically provides operating power in the event of AC power failure.

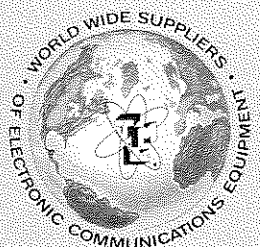
TMC's new completely transistorized Model LFS-1 synthesizer (described in Bulletin 6004) will provide adjustable output frequencies between 100 cps and 99.999 kilocycles in one cycle steps with the same high stability, when used with this standard.

Primary Frequency Standard

TECHNICAL SPECIFICATIONS, TMC MODEL CSS-2

STABILITY:	At least 1 part in 10^9 for 24 hours after warm-up of 24 hours.
FREQUENCY ADJUSTMENT:	Multi-turn front panel control with 3600 divisions provides total deviation of ± 100 parts in 10^9 with resettable accuracy of 1 part in 10^9 .
ELECTRONIC CORRECTION:	The frequency of the standard can be varied ± 100 parts in 10^9 by application of appropriate DC control voltage.
OUTPUTS (FRONT PANEL):	<ol style="list-style-type: none">1 mc at 1 volt across 50 ohm load (BNC).100 kc at 1 volt across 50 ohm load (BNC).10 mc at 1 volt across 50 ohm load (BNC). (1, 2 and 3 are outputs from transistor amplifiers.)
OUTPUTS (REAR PANEL):	<ol style="list-style-type: none">1 mc at 1 volt across 50 ohm load (BNC).100 kc at 1 volt across 50 ohm load (BNC).10 mc at 1 volt across 50 ohm load (BNC). (1, 2 and 3 are in parallel with front panel outputs.) <ol style="list-style-type: none">1 mc output direct from standard through isolation resistor.
FRONT PANEL METER:	A front panel meter is provided which is switchable to the following functions: <ol style="list-style-type: none">Monitors operating voltage.Indicates correct oven temperature.Meters all amplified output signals.
OPERATING POWER:	105/115/125/210/230/250, 50/60 cycle single phase AC, 10 watts maximum.
BATTERY SUPPLY: (accessory equipment) Model BPS-1()	Batteries capable of operating the unit for a minimum of 4 hours. Batteries are maintained on trickle charge and will automatically power the unit in the event of AC power failure. Unit power consumption on battery operation, 5 watts.
DIMENSIONS:	3½" × 19" × 13¾" deep.
WEIGHT:	8 lbs.
COMPONENTS AND CONSTRUCTION:	All equipment manufactured in accordance with JAN/MIL specifications wherever practicable.

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