



Synthesized LF/MF Exciter

Model LFE-2

Technical Bulletin 204-4118

- 200 mW, 10KHz to 2MHz
- Solid State
- Rapid Digital Frequency Selection
- CW, AM, SSB, ISB, FSK, FAX
- Compact Package
- Remote Control Capability



The Model LFE() Synthesizer/Exciter is the low frequency counterpart of the Model MMX for higher frequencies. The LFE() covers all frequencies from 10 KHz to 1.9999 MHz in increments of 10 Hz. Like the MMX, it is simply necessary to set the desired mode of operation and frequency. Adjustable output in the mode desired is then instantly available. This all mode exciter function is self-contained in only 5¼" of panel space.

Your attention is directed to the range of 10 to 30 KHz. Since the transmitted intelligence becomes a significant part of the output frequency, care must be exercised in the use of sideband in this portion of the overall frequency coverage. CW and FSK at suitable keying rates of course will always be satisfactory in this range.

Advanced circuitry innovations and printed circuit techniques have enabled TMC to provide ultra-stable operation under all environmental conditions. Solid state components assure dependable and stable performance over the long life of this equipment. The use of plug-in printed circuit cards facilitates maintenance. Special circuitry is incorporated to improve linearity, limit distortion and enable the associated transmitter to deliver a constant RF output level in all modes and under all conditions of operation.

THE TECHNICAL MATERIEL CORPORATION

TECHNICAL SPECIFICATIONS

OPERATING PARAMETERS

FREQUENCY RANGE	10KHz-1.99990MHz
FREQUENCY SELECTION	Direct synthesis in 10Hz steps.
FREQUENCY STABILITY	One part in 10 ⁸ per day/15°C change
Optional	One part in 10 ⁹ per day/15°C change
FREQUENCY DISPLAY	Front-panel digital
MODES OF OPERATION	CW (A1)/AM (A3)/AME (A3H)/USB, LSB (A3A, A3J)/ISB (A3B)
Optional	FSK (F1)/FAX (F4)
POWER OUTPUT	200 milli-watts PEP and Average (CW)
INPUT/OUTPUT IMPEDANCE	50-ohm (nominal) unbalanced. BNC-type connector.
TUNING	Six front-panel rotary switches.
REMOTE CONTROL Optional	Interface circuits are available for remote monitoring and control of frequency, mode, carrier, RF level, mains power, and status of complete exciter system including antenna.

AUDIO PARAMETERS

AUDIO SIDEBAND RESPONSE	250-3040Hz, ± 1.5 db CCIR; Other filters on request.
EQUALIZED FILTERS Optional	250-3040Hz; 1.5db max.; Other filters on request.
Optional	Phase Jitter: Less than 5 degrees in two successive 10 msec. periods.
Optional	Envelope delay: Less than 500 usec, 600-2900Hz
	Less than 150 usec for any 100Hz step, 500-3050Hz
AUDIO INPUT	1. Independent 600-ohm channels, balanced or unbalanced -20 to + 10 dbm; rear-apron terminals.
	2. Built-in microphone pre-amplifier for low-level dynamic input; -55 db into 47K-ohms; front-panel jack.
KEYING INPUT	1. CW key jack on front panel; 200-baud and higher.
	2. FSK: 75-baud or optional 200-baud and higher. Shift ± 42.5/85/170/425Hz; Others on request. Input 20/60 ma, 50 or 100 volts, dry contact ± to ground
	3. FAX: + 1 to + 10VDC produces 800Hz linear shift.
Note	Tone keys are available for audio FSK operation (single or multi-tone)

TRANSMIT CHARACTERISTICS

UNWANTED SIDEBAND REJECTION	500Hz tone is minimum 60 db below PEP
SPURIOUS SIGNALS INTERMODULATION DISTORTION	Minimum 50 db below PEP
RISIDUAL NOISE AND HUM	Minimum 40 db below either tone of a two-tone test at rated PEP
CARRIER SUPPRESSION	Minimum 70 db below PEP. Power supply ripple 55 db below PEP Selectable at -6, -20, -30, -55 db (FULL); Other values on request

ENVIRONMENTAL AND INSTALLATION

COOLING	Convection.
ACOUSTIC NOISE	Less than 70 db above reference level of 10 ⁻¹⁶ w/cm ² at 3.25 feet from cabinet (average conversation) when installed to TMC spec.
OPERATING CONDITIONS	0 to ± 50°C; up to 90% relative humidity at MSL.
STORAGE CONDITIONS	-30°C to + 80°C; up to 95% relative humidity at MSL.
POWER SUPPLY	Totally solid-state. 115 or 230 volts AC + 10%, 50/60/400Hz, single-phase.
SIZE and WEIGHT	5.25" (13.4 cm) high x 19" (48.3 cm) wide x 20" (50.8 cm) deep. 36 pounds/16.4 kg installed.
SHIPPING DATA	Commercial packing for domestic U.S. (air) shipment. One (1) container — 10" x 30" x 30". Total weight/cube — 58 pounds/5.2 cu. ft.

Technical Specifications Are Subject to Change Without Notice

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