



FM BROADCAST EXCITER Model 675B

*QEI advanced technology FM Exciters for outstanding audio performance. The **Model 675B** continues the tradition of superior performance and *reliability* set by its legendary predecessor the venerable Model 675. QEI took this time-proven exciter design and has refined the system to deliver uncompromised performance for today's FM broadcast station.*

The **Model 675B** FM is an "all solid state, on carrier direct FM, phase locked, frequency synthesized exciter", designed to exceed the FCC requirements for use in the FM broadcast band.

The **Model 675B** exciter may be programmed to operate on any 100 kHz increment in the FM band. Direct FM "On Carrier" operation insures spurious free transmission and extremely low distortion, crosstalk, noise, and no stereo degradation. The frequency modulated oscillator (FMO) of the **Model 675B** has superior linearity and does not require any "pre-distortion" networks. *Sound for sound the **Model 675B** will match other FM exciters costing twice as much or more.* The FMO is sealed in steel and foam to shield it from stray magnetic fields and eliminate microphonics.

The Power Amplifier (PA) of the **Model 675B** is unconditionally stable and will withstand any magnitude or phase of VSWR indefinitely without damage. The Model 675B's power output can be varied from 2 Watts to greater than 20 Watts without oscillation or "break up". The **Model 675B** is designed with components that are operated conservatively and well within their ratings.

Housed in a rack space saving 3-1/2" self contained package, the **Model 675B** will fit into virtually all transmitters in use and is the perfect upgrade for older systems.

Complete metering of critical parameters is available at the push of a button. All operational indicators are LED's to eliminate all routine lamp replacement.

RF and audio connections are made by way of back panel connectors. A BNC for composite audio, barrier strip

for monaural audio and a Type "N" RF output connector.

Reliability and simplicity of design and operation make

the **Model 675B** FM exciter an outstanding choice for every FM station.

A short list of features:

- Frequency Synthesized
- Phase Locked
- "On Carrier" Direct FM
- Unconditionally Stable Amplifier
- All Solid State
- Ultra Low Distortion, Crosstalk and Noise
- "VSWR Proof"
- Stability +/- 200 Hz (0° C to 50° C)
- Compact 3-1/2" Rack Mount Package

QEI FM exciters, designed and manufactured with pride in the U.S.A.



QEI Model 675B FM Exciter

Technical Specifications

GENERAL

Power Output:2 to 20 Watts
Frequency Range: 87.5 to 108 MHz (other frequencies optional)
RF Load Impedance:..... 50 ohms
Output Connector:Type "N" Female
VSWR:..... Operation into any phase or magnitude
RF Harmonic/Spurious:Suppression meets or exceeds all FCC /DOC / CCIR specifications
Frequency Stability:..... +/- 200 Hz from 0⁰ to 50⁰C
Modulation Capability: Greater than +/- 200 kHz
Pre-Emphasis:
Standard 75usec (FCC)
Optional 50usec (CCIR)
Asynchronous AM S/N Ratio (AM Noise): -60 dBc (no FM modulation present)
Synchronous AM S/N Ratio (Incidental AM):... -50 dBc with 100 % FM Modulation

ELECTRICAL/MECHANICAL

AC Power requirement:105-125 / 210-250 VAC 50/60Hz.
Power Consumption: 50 Watts
Ambient Temperature Range:
Operating..... -15⁰C to +50⁰C
Startup 0⁰C to +50⁰C
Maximum Humidity:.....95% non-condensing
Size: .3.5"H (8.9cm) x 19"W (48.25cm) x 14" D (35.5cm)
Weight: 17 Lbs.

MONAURAL PERFORMANCE

Input Impedance: 600 ohm balanced,
CMRR >60 dB common mode suppression
Input Level: +10 dBm nominal
For 75 kHz deviation at 400 Hz
Frequency Response:..... +/-0.5 dB, 30 Hz to 15 kHz
Total Harmonic Distortion + Noise:..... 0.08 % or less at 400 Hz
FM S/N Ratio: -73 dB below +/-75 kHz deviation at 400 Hz, measured in a 20 Hz to 30 Hz bandwidth with 75 usec de-emphasis

WIDEBAND COMPOSITE PERFORMANCE*

Inputs:..... (1) unbalanced on rear panel, BNC-connector
Input Impedance: 10K ohm,nominal, resistive

Input Level: 3.5 V_{P-P} nominal for +/-75 kHz deviation
FM S/N Ratio: -73 dB below +/- 75 kHz deviation at 400 Hz, measured in a 20 Hz to 30 kHz bandwidth with 75 usec de-emphasis
Total Harmonic Distortion + Noise: 0.08 % or less at 400 Hz
Amplitude Response:..... +/-0.01 dB, 30 Hz to 75 kHz
Phase Response:..... +/-0.1 degrees from linear phase, 30 Hz to 75 kHz

STEREO PERFORMANCE*

Modulation Type: True numeric digital stereo generation, digitally generated pilot; no alignment required.
Frequency Response:+/-0.1 dB, 30 Hz to 15 kHz, 75 usec or 50 usec pre-emphasis
Total Harmonic Distortion + Noise: 0.08 % or less at 400 Hz
FM S/N Ratio:-73 dB below +/- 75 kHz deviation at 400 Hz, measured in a 20 Hz to 30 kHz bandwidth with 75 usec de-emphasis
Stereo Separation:..... >60 dB or better , 30 Hz to 15 kHz
Dynamic Stereo Separation: >60 dB or better, 30 Hz to 15 kHz (normal program material)
Crosstalk:
(Linear) >60dB
(Non-Linear)..... >60dB

SCA PERFORMANCE

Subcarrier Inputs:... (2) total, unbalanced, BNC connectors
Subcarrier Input Impedance: .. 10K ohm, nominal, resistive
Subcarrier Input Level:1.0 V_{P-P} , nominal for 10 % injection
Subcarrier Amplitude Response:+/-0.2 dB, 40 kHz to 100 kHz

* Model 675B performance is specified using 710 digital stereo generator at rated exciter power output into a 50 ohm resistive load. Specifications are subject to change without notice. Since measurement techniques vary, care should be observed in comparing specifications of different manufacturers.

QEI maintains an ongoing program of research and development to insure the finest product performance and quality. All specifications are subject to change without notice.