

## Technical Bulletin

### No: 707 – TR-20 – 32 kHz Master Synchronized Version

#### **General**

The system utilizes a master 32 kHz oscillator reference signal which slaves remote frequency synthesizers, located at each remote transmitter site.

The master oscillator is housed in a one unit high rack mount cabinet which also includes circuitry to mix the 32 kHz reference with the station audio. The combined (composite) signal is then routed to an FM modulator, and from there distributed via the on-premise cable system.

At each remote transmitter, an “F” connector is installed to input the FM signal. In the transmitter, the signal is first demodulated via an FM radio and then the composite audio signal is routed to the frequency synthesizer board. This circuitry picks off the audio signal and routes it to the audio input on the transmitter exciter board. Next, the 32 kHz reference is digitally multiplied to derive the operating frequency. A local crystal is also present on this board to provide a stand-by (non-synchronized) local oscillator, in case the system loses master synchronous drive.

#### **Calibration**

The system is shipped from the factory fully pre-calibrated for proper frequency and operating level. No use adjustment of internal or front panel level controls should be necessary.

Adjust the level of the studio audio feed for 100 V.U. max on the FM modulator meter. Do not allow peaks to stay above 0 dB (into the red). Note that a reading of approximately 40 V.U. on the meter with no studio audio applied is normal (this is due to the always present 32 kHz drive signal). Do not adjust the level set on the Distribution Amplifier (master oscillator) or FM modulator. These are factory pre-set.

NOTE – The coupler must be field set. It is not factory pre-set. Follow directions in the manual.

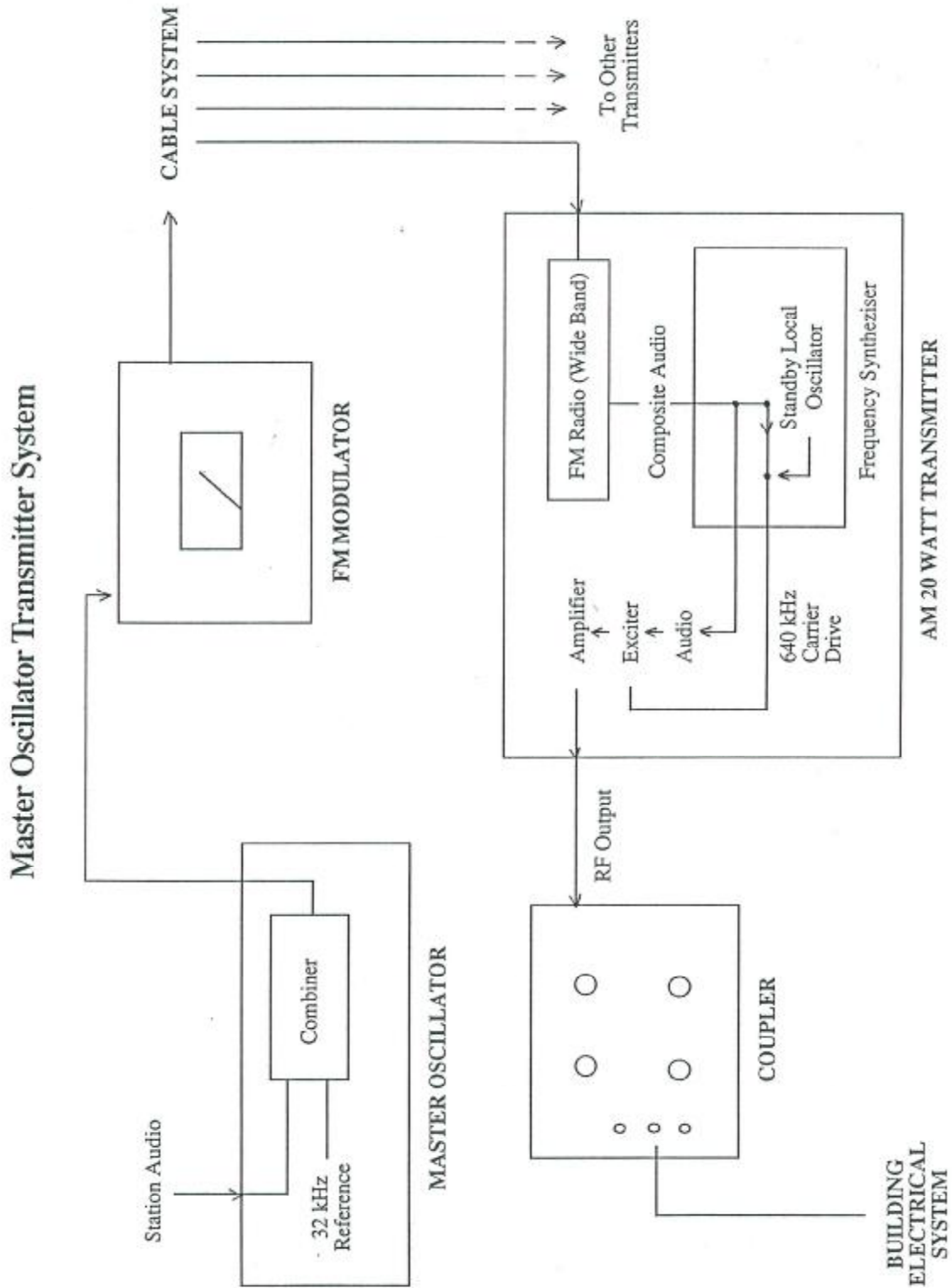
#### **Connections**

1. Connect a balanced audio feed from the studio compressor limiter to the audio input screws on the master oscillator rear barrier strip.
2. Connect the #1 output from the master oscillator to the FM modulator input (pin 1 – ground, pin 2 – high, pin 3 – low).
3. Connect the output of the FM modulator to the cable system input.
4. At each transmitter, apply the cable feed to the “F” connector, AC power to the line cord, connect the coupler to the transmitter with the coaxial patch cable provided, and connect the coupler to the building AC system.



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