

Transmitter, TMR-GSX100 Circuit Description

OUTLINE:

TMR-GSX100 is a Transmitter of Sony Mini Hi-Fi Component System, MHC-GSX100W. This transmitter is operated within 913.5 - 914.5 MHz.

CIRCUIT DESCRIPTION:

As an example, suppose frequency of CH1, CH2 and CH3 are 913.5MHz, 914.0MHz and 914.5MHz respectively.

- When the audio input signals are inputted, Q401 detects them and Q402, 405,406 supplies the power to VCO UNIT. If there are no audio input signals over five minutes, the power to VCO UNIT is stopped.
- The audio input signals (L,R) are amplified at ALC AMP in IC401 and pass through 75 μ s PRE-EMPHASIS.
- L, R signals from 75 μ s PRE-EMPHASIS pass through Low-pass Filter which maximizes the attenuation at 19kHz and go to IC403, STEREO MODULATOR. In STEREO MODULATOR, MPX signal and PILOT signal (19kHz) are made and mixed to generate COMPOSITE signal.
- COMPOSITE signal goes to VCO UNIT and is frequency-modulated at MOD in Q501.
- By selecting CH1, CH2, CH3 (S402), DC voltage inputted to VCO UNIT changes. And the carrier frequency from DR (Dielectric Resonator) OSC is fixed by this deviation of DC voltage.
When switching CH1, CH2, CH3 (SW402), the carrier frequency and DC voltage are as follows.
CH1: 913.5 MHz at 3.5 V
CH2: 914.0 MHz at 2.8 V
CH3: 914.5 MHz at 2.4 V
- Frequency-modulated signal is amplified by DRV AMP and is radiated at the above carrier frequency from the built-in antenna after passing through LPF.