Type Acceptance Test Report

Wideband FM Video Transmit Module

FCC ID: Q4NM1700

FCC Rule Part: 90

ACS Report Number: 03-0168-90TA

Manufacturer: Datawave
Model: Datawave M1700

Theory of Operation

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This module transmits NTSC/PAL video and 1Vp-p audio signals using a standard wideband frequency modulation method.

The module consists of 3 blocks for the transmission of audio/video at 2.4GHz:

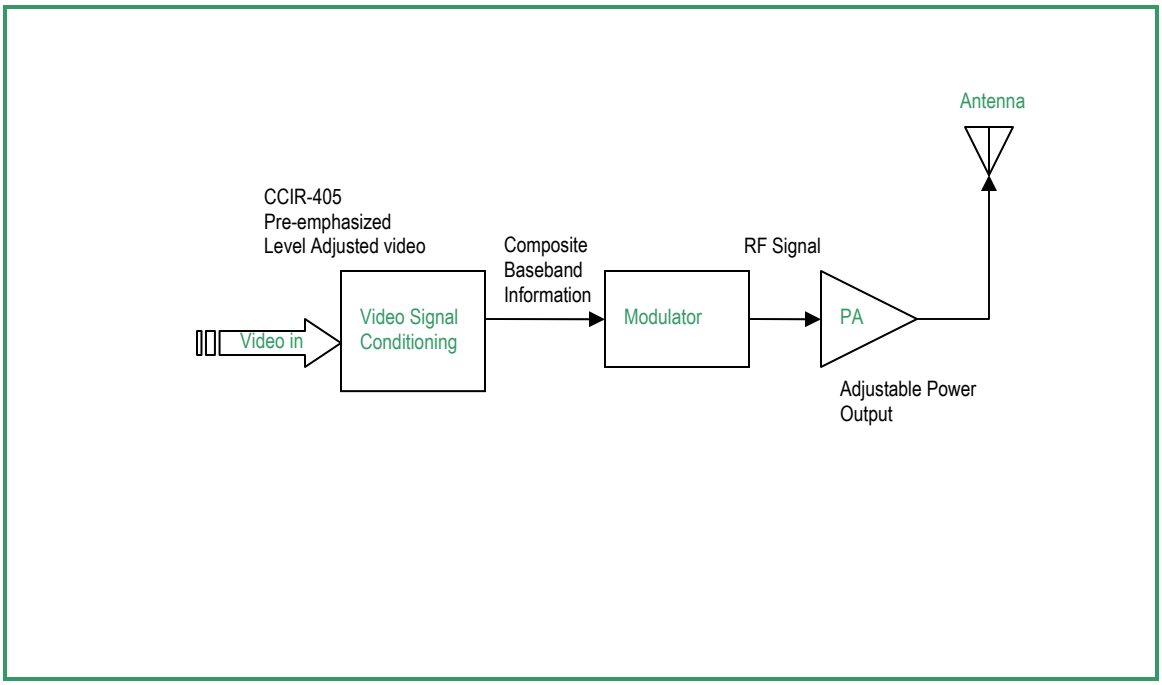

Figure 1 Transmitter Block Diagram

Block Diagram Description

The *Video Signal Conditioning* portion of the transmitter is used to add video pre-emphasis and divide down the incoming video level to provide an adjustable deviation constant for a desired bandwidth. The *Audio Inter-Carrier Modulator* block takes a 1Vp-p audio signal and adds pre-emphasis before it is applied to the modulation input of the *Modulator* block. The *Modulator* block consists of an RF VCO, synthesizer and reference crystal. The synthesizer is programmed by a microcontroller which controls which carrier frequency is selected by the user. The output of the *Modulator* is a frequency modulated carrier. The FM signal is then sent to the *PA* block which consists of a pre-amplifier and a power amplifier whose power output can be adjusted from 1mW to 1000mW. The output of the *PA* block is fed to a frequency trap to reduce the 1st and 2nd harmonics of the carrier and then routed to the antenna port.