GQ-3770 DRM Modulator

Brief Introduction

The Toncy GQ-3770 DRM Modulation Exciter is a core device for DRM baseband processing based on an embedded platform. It is equipped with channel coding and OFDM modulation capabilities, capable of receiving MDI/DCP streams from DRM encoding multiplexers to generate I/Q signals in compliance with ETSI ES 201 980 standards. The exciter includes functionality to reduce the peak-to-average power ratio (PAPR), effectively lowering the PAPR of OFDM signals, thus enhancing the output capability and efficiency of transmitters. Additionally, it features spectral shaping capabilities, with built-in windowing and filtering algorithms to ensure the output spectrum meets the ITU-R requirements for DRM broadcasts. The device supports multiple output modes, including I/Q or direct RF outputs, making it adaptable to various transmitter systems.

Highlights

- Supports input of MDI/DCP multiplex streams via Ethernet
- Supports modes A, B, C, and D
- Supports standard QAM constellation mapping
- Supports symmetric/hybrid tiered modulation constellation mapping
- Supports long (2 seconds) and short (0.4 seconds) interleaving
- Supports channel bandwidths of 4.5/5/9/10/18/20 kHz
- Coding rates: 1/4 to 8/9 (EEP/UEP)
- Supports internal and external 10 MHz clock sources and 1PPS
- Supports single-frequency/multi-frequency network synchronization
- Supports dynamic reconfiguration
- The output spectrum meets ITU-R spectral requirements for DRM broadcasts
- Supports crest factor ratio suppression (CFR)
- Supports digital I/Q and RF outputs

Technical Specifications

DRM Features	
Robustness mode	DRM30 modes A, B, C, D
Channel bandwidth	4.5, 5, 9, 10, 18, 20 kHz
Modulation	MSC 16 QAM / 64 QAM and HMmix/HMsym, SDC 4 QAM / 16 QAM
Protection	Equal (EEP) and Unequal (UEP) with all coding rates and protection ratios
Interleaver	Short (0.4s) and long (2s) interleaving depth
SFN	Supports Single Frequency Network (SFN)
Spectrum shaping	Spectrum shaping significantly reduces out of band emission level
Crest factor reduction (CFR)	Adjustable Crest Factor Reduction (CFR) enhances RF power amplifier efficiency by minimizing the ratio of the RF signal's peak power to average power
DRM DCP	Supports Forward Error Correction (FEC) and Protection Fragmentation and Transport (PFT)
Input redundancy	Supports MDI/DCP input redundancy and automatic switch over
Input fail-safe	Should the input stream fail, a pre-defined local MDI file will be played

Interfaces (Input – Output)	
Ethernet	2x 10/100 Base-T RJ45 connector for MDI/DCP input and management
10 MHz input	1x SMA for reference input
1PPS input	1x SMA for reference input
Digital I/Q output	2x AES/EBU XLR for digital I/Q output (48 kHz)
RS232	1x UART for monitoring
GNSS antenna input	1x SMA for GNSS antenna input
USB	1x USB 2.0 type A connector

Management	
Web	Integrated Web console
Serial interface	Integrated RS232 console
LCD	2 x 20 character front panel LCD for status monitoring
SNMP	

Physical & Environment	
Mounting	1RU 19" rackmount chassis
Dimension (W x H x D)	438mm x 44mm x 400mm

Power	
Input	AC 110V - 240V@50/60Hz
Typical power consumption	20 watts

Features and specifications subject to change without notice.

For More Information

Please visit our website: http://www.gospell.com or contact your local sales representative:

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