Product Line DRM Exciter LVe

General

The RFmondial LVe is a fully Direct Digital Synthesis (DDS) broadcast exciter, tunable across the LW, MW, and SW frequency bands from 9 kHz to 30 MHz (AM bands), or from 65 MHz to 230 MHz (VHF bands).

Basic Features

- FM modulation
- AM modulation A3E
- DRM modulation from MDI/DCP
- Highly reliable embedded platform

DRM Modulator

DRM30: below 30 MHz, including the SW, MW and LW bands.

- Conform to ETSI ES 201 980
- Robustness modes A, B, C, D
- Spectrum occupancy 4.5, 5, 9, 10, 18, 20 kHz
- MSC modes 16 QAM, 64 QAM, and hierarchical (HMmix, HMsym)
- SDC modes 4 QAM and 16 QAM
- Interleaver length 0.4 s and 2 s
- EEP and UEP with all protection ratios / code rates

DRM+: above 30 MHz, incl. the VHF broadcast bands I, II (FM) and III.

- Robustness mode E
- Spectrum occupancy 96 kHz
- MSC modes 4 and 16 QAM
- SDC modes 4 QAM, CR 0.5 & 0.25
- Interleaver length 0.6 s
- EEP and UEP with all protection ratios / code rates

Interfaces

Input Interfaces

- 2x Ethernet (100 Mbit) for configuration
- 2x Ethernet (100 Mbit) for MDI / Audio over IP streams (IceCast/ShoutCast)
- Balanced analog Stereo input for AM modulation (RJ-45 connector, Telos Alliance Axia® compatible)
- AES3/EBU Input for Audio or DRM-IQ (RJ-45 connectors, Telos Alliance Axia® compatible)
- 10 MHz, 1 PPS, for external GPS/GLONASS/Galileo
- RS232/RS485 (Amplifier control)
- RF feedback input for precorrection

Output Interfaces

- RF output (BNC max 10dBm @50 Ω)
- Envelop output (2Vpeak balanced @600 Ω)
- High performance (MER >45dB)
- AES3/EBU output for audio or DRM-IQ (RJ-45 connectors, Telos Alliance Axia® compatible)
- 10 MHz, 1 PPS

Synchronization

- Built-in GPS/GLONASS receiver for SFN synchronization
- Possible clock sources:
  - Internal incl. adaptive synchronization to MDI
  - External 10 MHz
  - GPS/GLONASS for SFN
  - NTP (optional)
- Reliable operation (no gaps, no delay accumulation) in all possible operating modes

Configuration and monitoring

- OLED display / keyboard / status LEDs
- Web-interface
- Ajax interface
- SNMP

Transmission Features

- SFN (single frequency capability)
- MFN: Multiple Frequency Network (one program on several frequencies)
- Spectrum Shaping: Appropriate windowing and filtering algorithms
- Crest Factor Reduction: Crest factor reduction algorithms reduce the necessary back-off in the transmitter and improve protection ratios
- Advanced adaptive pre-distortion and power-amplifier linearization

Supported Transmitter Types

- Linear transmitters (driven by linear RF only)
- Switch-mode type transmitters (e.g. PWM, PSM or similar; driven by linear or switched RF & envelope signal)

Reliability & Fallback

- Priority-based automatic switchover between audio inputs depending on silence detection
- Reliable Input Connection: Input MDI/DCP stream with data Protection, Fragmentation and Transport (PFT) Layer
- Multi-MDI & Monitoring Failover: Reception capability of two redundant MDI-streams. Monitoring of streams and automatic failover strategy, if one stream fails.
- Local MDI-Backup: If MDI from input interfaces fail, a backup MDI-stream is played from local storage device and looped. (optional)

Device

Electrical

- 1/N/PE 110 – 240 V, 50/60 Hz
- Power consumption: <30 W

Mechanical

- Case: 19" 1RU, Rack-mountable
- Dimensions: 482 x 350 x 44 mm
- Weight: 4 kg
- Temperature range: 5 – 45°C
- Humidity: 20 – 80% non-condensing
- Extended temperature range and humidity range (optional)

Ordering information

LVe_AM: Exciter for the AM bands	LVe_VHF: Exciter for the VHF bands