

NN6-FLO

MediaFLO™ Exciter for Mobile TV Broadcast



NN6-FLO modulator/exciter is the transmission solution for Mobile TV broadcast based on the FLO technology. It is the key component of MediaFLO™ system developed by Qualcomm.

NN6-FLO implements the full FLO (Forward Link Only) Air Interface physical layer based on OFDM modulation, processing a FLO compliant input bitstream as a RF broadcast signal. ENENSYS modulator transmits all local and national substreams embedded in the stream into the VHF and UHF band with full support for transmit time and carrier frequency synchronization within the FLO network.

NN6-FLO product takes benefits from its high grade RF up-conversion stage for integration in high power transmitters. For 24 / 7 operation, ENENSYS modulator implements a full SNMP stack and dry relay outputs so that any make of supervision center can monitor the upstream distribution network health and launch appropriate redundancy actions.

Applications

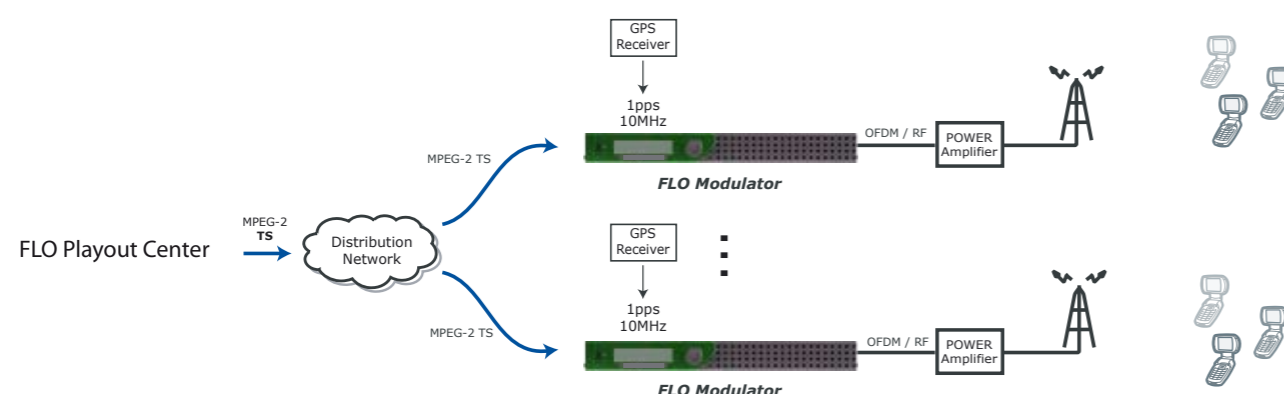
- Mobile TV broadcast
- Power Transmitter instant integration
- Research & Development
- Test and validation

Benefits

- Highly integrated and reliable solution
- Layered modulation and SFN capable
- Excellent MER and stability figures
- Broadcast grade RF output (VHF,-UHF)
- SNMP V2 compliant for supervision
- Dry Relay output for local alarms handling
- Optional built-in FLO stream player for R&D

Characteristics

- 1 ASI input (+1 for redundancy)
- 1 RF main output (30-858 MHz)
- 1 RF monitoring output
- Interfaces for external GPS connection: 1PPS and 10 MHz inputs / 10MHz output
- Fast Ethernet (10/100bT) ports
- Dry Relay outputs
- Embedded HTTP server



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MediaFLO™ SFN Modulator for Mobile TV Broadcast

Input interface

Format/Connectors	DVB-ASI/BNC (75 Ω)
Number of ports	1 main + 1 redundant inputs
Signal processing	Automatic TS adaptation with PCR restamping

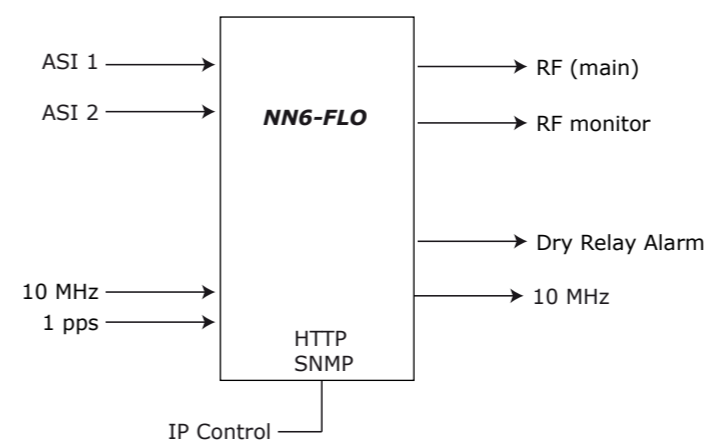
Clock interfaces

Inputs	1 pps + 1x 10 MHz
Output	1x 10 MHz
Internal	10 MHz (5 ppb typical) in 0 - 50°C temperature range
Internal Clock stability	5.10-10 per day, 5.10-9 per month, 4.10-8 first year and 2.10-8 n next years

Control & management

Type	10/100Base-T
Web (HTTP)	Rich client interface with live statistics, monitoring and easy configuration
Front panel	Key values and settings
Redundancy	Dry relays and opto-couplers
Supervision	Full SNMP v2 Gets, sets and configurable traps for NMS supervision

Block Diagram



Output interface

Format/Connectors	RF/BNC (50 Ω)
Number of ports	1 (+ 1 for RF monitoring)
Frequency range	30 MHz - 858 MHz (step 1 Hz)
Output level	-20 to 0 dBm (step of 0,1dB)
MER	> 38dB (predicted)
Shoulders	> 40 dB at +/- 5 MHz from central frequency)
Phase Noise	< -95 dBc/Hz
Spurious	> 55 dBc

Modulation

Constellations	QPSK, QAM16
FFT size	4096 subcarriers
Channel bandwidth	5, 6, 7 or 8 MHz
Outer FEC	Reed Solomon
Inner FEC	1/2, 1/3, 2/3 Turbo codes
Transmission modes	All modes (0 to 11)
Physical Layer data rates	2.8 Mbps to 11.2 Mbps
Single Frequency Network	SFN capable
Test modes	Single tone or PRBS (9, 15, or 23 bits pattern)

Physical

Height/Width/Depth (mm)	44/444/17.48 in.
Format	274 mm / 10.79 in. 1 RU, width 19"
Power supply	100-240VAC

Environment

Operating temperature	0 to 50°C / 0 to 122 °F
Storage temperature	-20°C to 70°C / -4°F to 158°F
Humidity	0 to 95%, non condensing

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