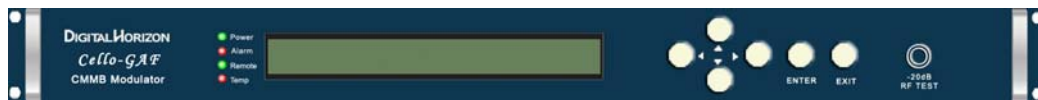


CMMB Modulator

Chinese Mobile Multimedia Broadcasting

Model: *Cello-GAF*



Main Feature:

- Compliant with CMMB GY/T 220.1-2006 and 220.2-2006
- 2 TS ASI inputs
- Support I , II , III Interleaver modes
- RS code: (240, 240), (240, 224), (240, 192), (240,176)
- LDPC: 1/2, 3/4
- Constellation: BPSK, QPSK, 16QAM
- Scrambler Mode: I ~ VIII mode
- Support SFN and MFN
- Channel Bandwidth: 8MHz
- MAX Time Slot: 40
- MAX Remux Frame: 40
- RF agile for 48MHz to 900MHz with step 1Hz
- MER>40dB, Shoulder>50dB
- External 1pps and 10MHz Clock inputs
- Linear and non linear pre-correction
- Front panel control and IP remote control
- Ultra Linear Pre Amplifier option

Address: Room 507, Legacy Business Center 25 Wan Liu East Road, Hai Dian, Beijing 100089, China

Tel: (8610) 8255 1072/73/98/99, **Email:** support@dh-tv.com, **Web site:** www.dh-tv.com

TS Input:

- ◆ Compliant with EN 50083-9 ASI interface standard
- ◆ 2 ASI inputs, Packet mode and Burst mode
- ◆ Connector type: BNC female, Impedance 75Ohm

TOD Input:

- ◆ Data Format: 8 bit BCD Coding
- ◆ Connector type: DB 9 female

Modulation and channel coding:

- ◆ Support I , II , III Interleaver modes
- ◆ RS code: (240, 240), (240, 224), (240, 192), (240,176)
- ◆ LDPC: 1/2, 3/4
- ◆ Guard Interval: 1/4,1/8
- ◆ Constellation: BPSK, QPSK, 16QAM
- ◆ Scrambler Mode: I ~ VIII mode
- ◆ Channel Bandwidth: 8MHz
- ◆ MAX Time Slot: 40
- ◆ MAX Remux Frame: 40
- ◆

CMMB Network:

- ◆ SFN: Static Delay setting, 0-500mS, step=100nS
- ◆ Transmitter ID setting
- ◆ MFN: modulation mode setting

Linear Pre-correction:

- ◆ Spectrum tilt adjustment: +/-12dB, step=0.2dB
- ◆ 6 Pre defined filter curves to increase the spectrum edge slope from 0.5dB to 3dB

Alarm:

- ◆ DB-9 with 2 Contact Relays for alarms: TS Sync Loss, TS Data error, 1pps or 10MHz loss, TOD Loss, Temperature high etc

Control Mode:

- ◆ Local control: 6 buttons, LCD screen, LED
- ◆ Remote control: IP Ethernet RJ-45 or RS232
- ◆ SNMP (Option)

Non linear Pre-correction:

Correction	Nb point	Abscissa range	Ordinate range	Step
AM/AM	16	-12 dB to +12dB	-6dB to +6dB	0.1dB
AM/PM	16	-12 dB to +12dB	-25° to +25°	0.1dB/0.2°

RF Output:

- ◆ Central frequency: 48MHz~900MHz by 1Hz
- ◆ Signal level(Main): 0~-10 dBm by 0.1dB step
- ◆ Signal stability: +/- 0.2dB
- ◆ Modulation error ratio(MER): >40dB
- ◆ Shoulder: >50dB @ +/-4.2MHz from central frequency
- ◆ Spurious: <-50dBc
- ◆ Return loss: >15dB
- ◆ Connector type: N female, Impedance 50 Ohm

RF Test Point:

- ◆ Signal level: -20 dB compared to main output
- ◆ Connector type: BNC female, Impedance 50 Ohm

RF Amplifier Option:

- ◆ Ultra linear amplifier for VHF, UHF Bands
- ◆ Gain 15- 25dB
- ◆ Gain Flatness <1dB
- ◆ Gain Stability <0.1dB
- ◆ Return loss: >15dB
- ◆ Connector type: N female, Impedance 50 Ohm

Clock Reference:

- ◆ **Internal 10MHz**
Stability: 0.5ppm(typ); 3.0ppm(full temperature range)
Aging: 0.8ppm; Output level: 0dBm +/- 3dB
- ◆ **External 10MHz**
Stability: +/-2.5 x 10⁻¹⁰ when lock to GPS
Input level: -5dBm to +10dBm
Input connector type: BNC female, 50 Ohm
- ◆ **External 1pps reference**
Input level: TTL level; Pulse width: 1us
Input connector type: BNC female, 50Ohm
- ◆ **Loss of Reference Signal** 1pps, 10MHz management

Physical conditions:

- ◆ Power supply: AC 90-260V+/-10%, 80W
- ◆ Operating temperature: 0-50°C
- ◆ Storage conditions:
-10-70°C, humidity 10%-80% at 50°C
- ◆ Dimension: L=540mm, W=483mm, H=44mm (1RU)
- ◆ Weight: Net 7 kg, Gross 10 kg

