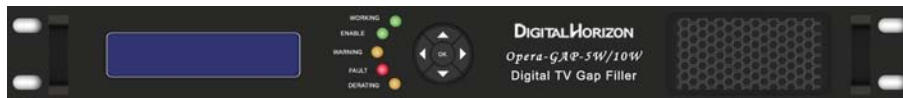


## Digital Terrestrial and Mobile TV Gap Filler

*Model: Opera-GAP-5W/10W*



### Main Feature:

- Support Major Digital Terrestrial and Mobile TV Standards:  
DVB-T/T2 , ISDB-T, ATSC, DTMB, DVB-H/SH, CMMB, DAB/T-DMB, FLO
- Channel Bandwidth: 6MHz or 8MHz
- RF Input: VHF or UHF with step of 1Hz
- RF Input Range: -72dBm to -10dBm
- Noise Figure < 10dB
- Input Level AGC Squelch
- Adjacent Channel Interference: > 35dB
- RF Output: VHF or UHF with step of 1Hz
- RF Output Level: 5W/10W
- Max MER : 34dB typical, MER loss < 2dB
- Spectrum Shoulder > 45dB
- Transit Delay: 5us
- Echo Cancellation Range: 1.5us to 448us □
- Echo Cancellation: < 40dB
- Gain Margin: -12dB max
- Powerful Linear and Non-linear Pre-correction
- Digital Shaping Filter Pre-correction
- IP Web Browser Control and Supervision, SNMP in Option
- Compliant with ATSC special Gap Filler Features





### Technical Specification:

#### Equipment Working Mode:

- ◆ Iso-Frequency Gap Filler
- ◆ Hetero-Frequency Transposer

#### RF Input:

- ◆ Frequency range:  
VHF frequency range: 170 MHz to 240 MHz  
or UHF frequency range: 470 MHz to 860 MHz
- ◆ Frequency step: 1Hz
- ◆ Channel bandwidth: 6MHz or 8MHz
- ◆ Input level range: - 72 dBm to -10 dBm
- ◆ Typical input level: - 55 dBm
- ◆ Max input level: 0 dBm
- ◆ AGC squelch: -75 to -10dBm, +/-3dB
- ◆ Noise figure:<8dB
- ◆ Doppler filter (max frequency):10Hz
- ◆ Adjacent channel interference (QEF):  
Analogue > 35 dB, Digital >35 dB
- ◆ Return loss:>13dB
- ◆ Input connector type: N female, 50ohm

#### RF Output:

- ◆ Central frequency:  
VHF frequency range: 170 MHz to 240 MHz  
or UHF frequency range: 470 MHz to 860 MHz
- ◆ Frequency step: 1Hz
- ◆ Output level : 5W/10W +/-2dB, step 0.1dB
- ◆ Signal stability: +/- 0.1dB/10degrees
- ◆ In band ripple: < 1dB, Echo Cancellation off
- ◆ In band ripple: < 1dB, Echo Cancellation off
- ◆ Maximum MER: 34dB typical
- ◆ Shoulder and out of band rejection: >45dB
- ◆ Spurious: 36dB relative to total power
- ◆ Return loss: >15dB
- ◆ Output connector type: N female, 50 Ohm

#### Gap Filler Performance:

- ◆ Digital filter shaping and tilt +/-2dB, step 0.2dB
- ◆ Minimum transit time <5us
- ◆ Echo cancellation range: 1.5us to 448us
- ◆ Gain margin: -12dB max
- ◆ Echo attenuation: >40 dB
- ◆ MER loss: < 2 dB
- ◆ Temperature management: RF mute or Power off at critical temperature

#### ATSC Gap Filler Special Features:

- ◆ Shaping filter delay: 5,6,7,9us
- ◆ Shoulder and out of band rejection: >54dB
- ◆ Maximum MER: 38dB typical
- ◆ Gain margin: -4dB @ MER=27.3dB
- ◆ Echo attenuation: >30dB
- ◆ Pilot carrier phase noise: < -93 dBc/Hz@ 20KHz

#### Build-in Test Mode:

- ◆ PRBS TS Sequence
- ◆ Central Carrier Cancelled mode for noise test
- ◆ Iso-frequency Antenna coupling test

#### Clock Reference:

- ◆ **Internal 10MHz**  
T° stability : +/-1ppm(typical)  
Time stability: +/- 1 ppm /year  
10MHz reference Output level: 0dBm +/- 3dB
- ◆ **External 10MHz**  
10MHz Input level: -15dBm to +15dBm  
Frequency: 10MHz+/-5ppm  
Input connector type: BNC female, 50 Ohm

#### Control Mode:

- ◆ Local control: 6 buttons, LCD screen, LED
- ◆ Remote control: WEB browser through IP Ethernet RJ-45, SNMP in option
- ◆ User friendly man machine interface

#### Pre-correction:

- ◆ Linear pre-correction: shaping filter
- ◆ Non linear pre-correction: AM-AM, AM-PM

#### Non linear Pre-correction:

Single shoulder and double shoulder.

Correction	Nb Point	Abscissa range	Ordinate Range	Step
AM/AM	16	-12 dB to +12dB	-6dB to +6dB	0.05dB
AM/PM	16	-12 dB to +12dB	-25° to +25°	0.05dB/0.2°

#### Physical Conditions:

- ◆ Power supply: AC 220V+/-15%
- ◆ Power Consumption: <85W for 5W Gap Filler  
<110W for 10W Gap Filler
- ◆ Operating temperature: 0-40°C
- ◆ Dimension: L=500mm,W=482mm,H=44.5mm(1RU)
- ◆ Weight: 9 kg

