



# BE-TV™ GENESIS

## Compact TV Gap Filler or Translator



### Key Features & Benefits



**PTV Inside**

The BE-TV™ GENESIS Compact On Channel Digital Repeater (OCDR) or Gap Filler and translator (transposer) are specifically designed to meet the needs of TV Translators and LPTV stations, as well as full service stations wishing to fill gaps in their coverage. Power levels from 10W to 200W in a single 1 or 2 Rack Unit, as well as higher power levels with add-on amplifiers are available in any modulation standard; including ATSC1.0, ATSC3.0, DVB-T/T2 and ISDB-T.

The BE Compact range employs the latest components and technology to provide an extremely versatile and reliable solution for any low power situation. The transmitters are extremely compact, which makes them easy to install, deliver, carry and provide reliable service even in extreme climatic conditions.

Two different modulation standards can be loaded at the same time and are switchable locally and by remote, allowing to reconfigure the unit according to the actual or future needs.

The flexibility and exceptional performance is obtained by the **PTV Inside** module, which is exclusive to the BE product line.

- Available in power levels: 30W, 100W and 200W. (Higher power levels available upon request)
- Extremely easy installation and maintenance
- Fully broadband on UHF or VHF Band III
- All digital standards
- Both SFN and MFN network mode
- Advanced modulator with automatic /adaptive pre-correction (linear and nonlinear)
- ATSC, ATSC 3.0, ISDB-T and DVB-T/T2 operation without hardware change
- SFN gap-filler (hardware option) with echo cancellation, including new ATSC/ATSC3.0 Translator receiver technology
- Low power consumption
- High efficiency air cooling
- Latest LDMOS technology for RF stages
- Seamless switching between ASI/SMPTE and/or IP (with priority) when in SFN network mode
- GPS/GLONASS internal receiver (hardware option)
- Remote software/firmware upgrade



A Gapfiller is used to fill in “holes” in the coverage area that are shaded by natural or man made obstacles. They can be used in urban and rural areas to bolster coverage. They are now a vital part of SFN digital television networks. At the heart of the BE Gapfiller / Translator is a powerful and versatile **ProTelevision (PTV)** digital modulator board that is programmed to provide the ultimate performance in modulation and correction. The board also includes a high performance receiver for the RF input signal.

The PTV modulator includes a advanced **echo cancelation system**, which is a digital algorithm that decodes the desired input signal and ignores the Gapfiller output itself. The BE Gapfiller has been uniquely designed to meet the most demanding requirements in both gap filler and translator applications. Even in the most extreme conditions the sophisticated algorithms make possible reliable and effective performance. The incredible power of the PTV board is the key to unmatched specifications.

*Translator Graphical User Interface (GUI).*

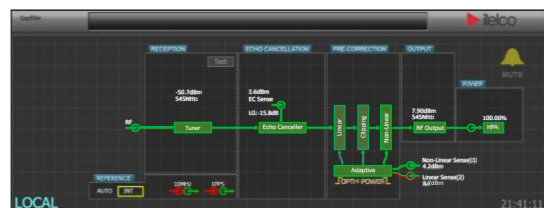


The gap filler/translator is exceptionally easy to set up, just set the frequency of the input and for the translator the output, and the system does the rest. The BE Gapfiller determines the required echo cancellation needed, and the maximum power is obtained.

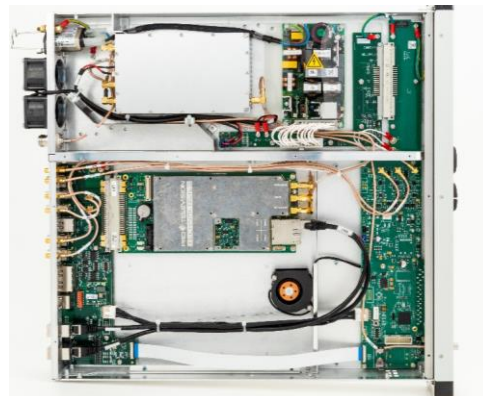
Other key features include the flexibility and resolution of the echo cancellation, the receiver noise figure, sensitivity and dynamic range which provide high cancellation of up to 50dB, with excellent stability.

One more unique feature of the BE modulator is it's ability to work with all digital television standards, including DVB-T / T2, ISDBT as well as ATSC and 3.0. The Gapfiller will automatically replicate the frequency and the bandwidth of the input signal. Whether DVB-T2 at 8MHz bandwidth or ATSC 3.0 at 6MHz bandwidth, the system maintains the highest output MER with virtually no signal degradation.

*OCDR Graphical User Interface (GUI).*



*Below is the inside of the 30W translator / OCDR system showing PSU, Exciter and amplifier*



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## Gap Filler/Translator

### GENERAL

Frequency Range	30 - 860 MHz (1Hz resolution)
Digital Modulation Standards	ATSC 1.0; ATSC 3.0; DVB-T/T2; ISDB-Tb
Channel Bandwidth	DVB-T/H:5, 6, 7, or 8 MHz; DVB-T2: 1.7/5/6/7/8 MHz
VSWR	Protection against open or short circuit, all phase angles.
Network mode	SFN and MFN; relative timestamp), MISO/SISO

### RF INPUTS

GPS antenna	SMA female, 50 Ohms, (+5 V DC @ 100 mA max output for active antenna)
1 pps pulse	BNC female, 50 Ohms
10 MHz reference frequency	BNC female, 50 Ohms
F female, 75 Ohms	F female, 75 Ohms

### RF OUTPUT

RF Output Power Levels	10W, 30W, 100W and 200W 30W = 1 RU, 100W and 200W = 2 RU High Power levels available upon request
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RF power setting	-7 to +0dB with reference to nominal power
RF Output power stability	< +/- 0.25dB
Amplitude flatness	< +/- 0.25dB
Harmonic Emission	< -60dBc (< -70 dBc with filter)
Spurious Emission	< -60dBc (< -70 dBc with filter)
10 MHz reference frequency	BNC female, 50 Ohms, 1Vpp+/-0.2Vpp, rise-time 3-10ns

### DIGITAL MODULATION INPUTS

TS over IP/EDI	10/100/1000bT
ASI/SMPTE-310/T2MI/ETI	2; BNC female/75 ohms, DVB ASI, TS 188/204 packets, continuous and burst mode
Maximum bit rate	50 Mbps

### USER INTERFACE/ REMOTE CONTROL

CAN Bus	For transmitter control system
Ethernet	HTTP, NTP, SNMP, SSL

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## Gap Filler/Translator

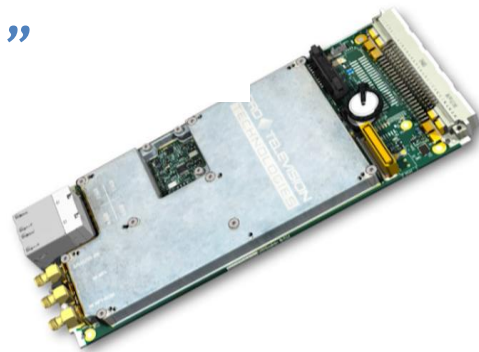
### AC POWER

AC Input	90 to 264V - 90 to 253V for EC countries
Power Factor	> 0.98
Frequency	50 or 60 Hz

### ENVIRONMENTAL

Operational Temperature Range	0° to +55°C (32° to 113°F)
Storage Temperature Range	-55 to +70°C
Relative Humidity	0% to 90%, non-condensing @ 45°C
Altitude	Up to 3000 m above sea level
Ambient Air Pressure	65kPa to 105kPa
Safety	EN 60215 / EN 60950
Dimension s (H x W x D)(mm)	483 x 43.5 x 565

*“PTV Inside”*



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Taking the next step is easy with Broadcast Electronics. Contact your sales representative today to discuss solutions that will work for you and your station(s).

To contact your BE sales representative, simply visit our website at [bdcast.com](http://bdcast.com) or call 217.224.9600 and learn more about what BE has to offer.

BE manufactures complete RF systems for radio and TV. Our products encompass program generation, audio and data management, interfacility transport and analog and digital (*HD Radio and DRM transmission*).

They are used daily in more than 40,000 installations in nearly 100 countries. For over sixty years, BE pioneering developments have set industry standards for innovation and reliability, while providing broadcasters with new options for operational productivity and income generation. BE is headquartered in Quincy, Illinois, USA, and is represented worldwide by a network of local representatives.

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