

# BRAVO COMMUNICATIONS, INC.

## SURE/FIRE® GROUND TRANSIENT FILTER BLOCK

### Description

Bravo's Sure/Fire Ground Transient Filter Block (GTFB) is a uniquely designed and patented electrical system 6 Amp rated "Ground Line" filtering module for appliances and systems of all types and applications. Unlike commonly available power conditioners, UPS systems and other power handling devices that cannot filter the AC Ground Safety Line (only hot and neutral), this Bravo GTFB module transparently inserts in series on the Appliance secondary ground line bond to the appliance's chassis/frame ground. The GTFB will act as a checkvalve so that no unwanted energy is allowed to flow in the reverse direction back up into the protected appliance (your equipment) preserving electrical system integrity and stopping damaging noise as well as any excess electrical energy or frequency security threat.

This UL/ETL and CSA approved Ground Filter Device/Component is essentially an in-series 6 Amp "blocking filter module" that has no active or solid state components to fail and is transparent on the ground line. The Bravo GTFB is recommended for all appliance devices and systems within a maximum rating of 1,250 watts. Ideal for fire and sprinkler alarm systems, I/O controllers, network servers, audio systems, RF antenna systems, security equipment, data acquisition sensory devices and more.

### Features

- ◆ Small profile and weatherproof to allow mounting inside or outside of appliances /systems such as UPS systems, fire alarm/security panels, POS systems, antenna systems, network servers, process control systems, and remote sensing equipment.
- ◆ Works with both 60Hz/120V and 50Hz/230V electrical system appliances. Fast response for both current and voltage rise.
- ◆ UL/ETL and CSA Approved Transparent In-Series Design.
- ◆ Attenuates undesirable wide frequency range above the normal and desired electrical system frequency.
- ◆ Ground Line Bullet Proof Protection.

### Benefits

- ◆ Unlimited Application.
- ◆ Install on the secondary safety/frame ground to equipment circuitry sensitive electronics.
- ◆ Dramatically improves AC electrical system performance and integrity stopping unwanted noise, lightning and all damaging electrical transients across the equipment ground.
- ◆ Has no degrading or wear out mechanism for repetitive performance.
- ◆ Security from outside intruders and electrical system injected security breaches and damaging energy waveforms.
- ◆ Stops system downtime, production losses, system errors and lockups, network problems, and blown equipment.

#### **BRAVO COMMUNICATIONS, INC.**

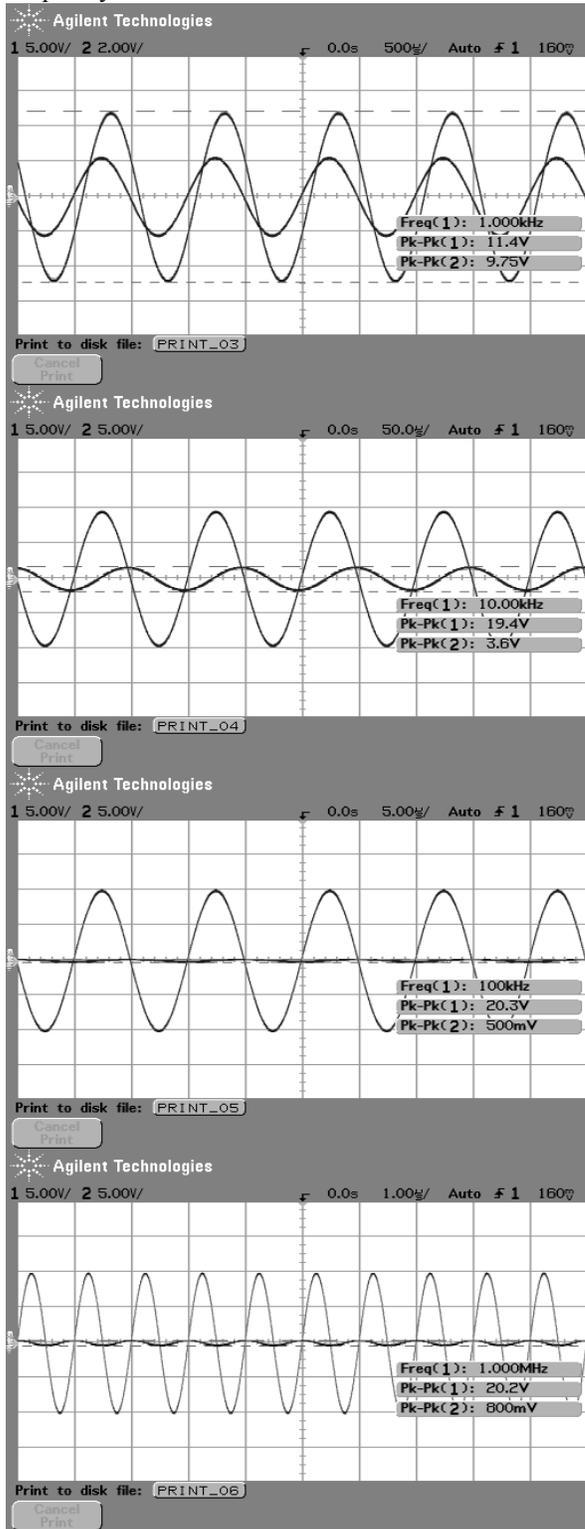
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*Cost-Effective Power & Networking Solutions*

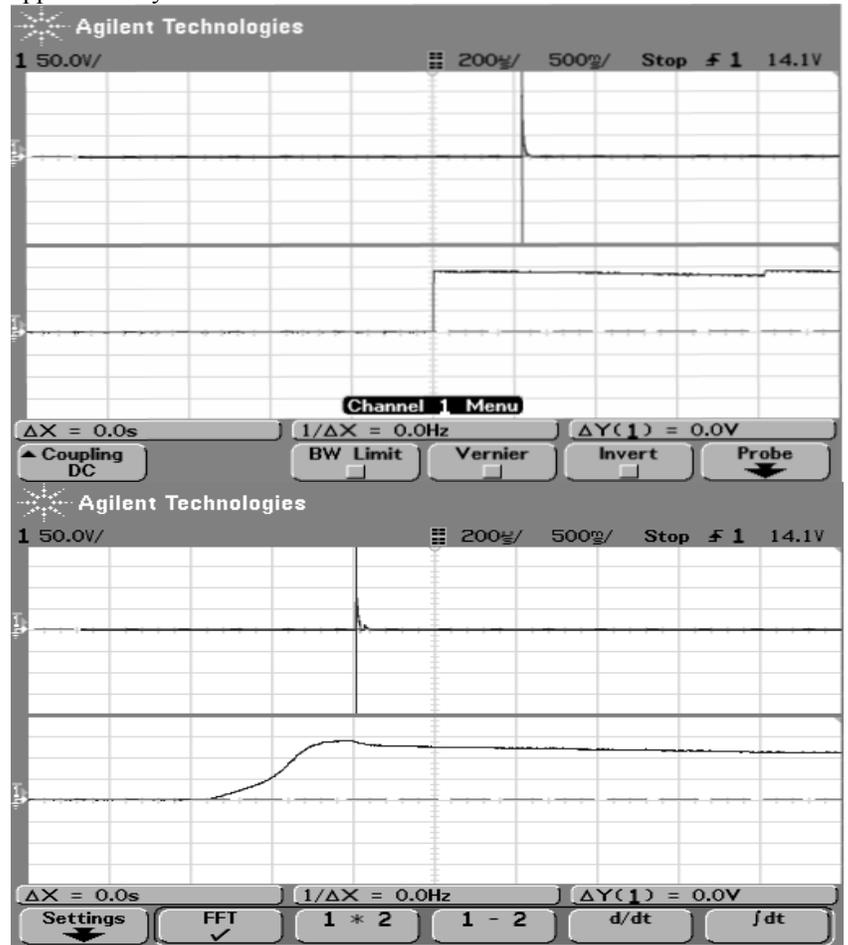
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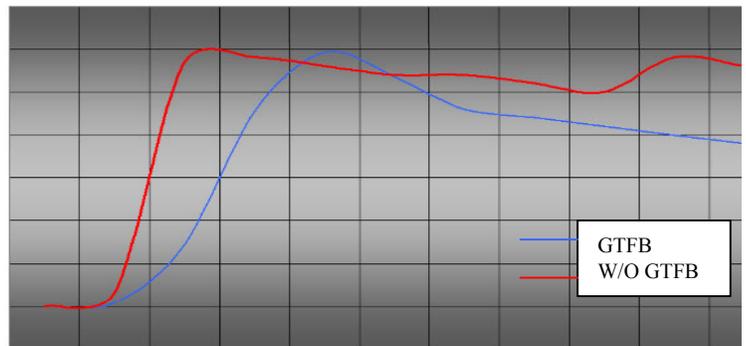
The following captures are from 1 kHz to 1MHz at decade intervals. The attenuation is apparent as the frequency is increased.



The following captures show the effective transient response time for the GTFB. The final graph detail the peak (x50). The test was conducted using a high-level transient signal, simulated using a 900uF capacitor bank charged to 165 volts DC and then switched onto a 7.5 ohm load. The duration of the pulse was nominally 20ms corresponding to a power transient of approximately 600W.



Comparative Transient Response



## TECHNICAL SPECIFICATIONS

Dimensions:	Length=2.55" (65mm) x Height=2.17" (55mm) x Width= 2.17" (55mm)
Weight:	12 ounces (340 grams)
Tested To:	IEC 1000-4-5, IEE C62.41 & UL Surge Specifications: Bi-Wave Test
Voltage Wave:	1.2us x 50us up to 6.0 kV (OCV – Open Circuit Voltage)
Current Wave:	8us x 2us at 3 kA (SCC – Short Circuit Current)
Frequency:	50 kHz to 2.0 GHz
Operating Temperature:	-40° F (-40° C) to +185° F (+85° C)
Storage Temperature:	-76° F (-55° C) to + 257° F (125° C)
Mounting:	Internal and External to Equipment with 4 mounting holes