XGR TECHNOLOGIES

INNOVATIVE BOARD-LEVEL SHIELDING

Acquired from W.L. Gore & Associates

SNAPSHOT®

EMI SHIELD

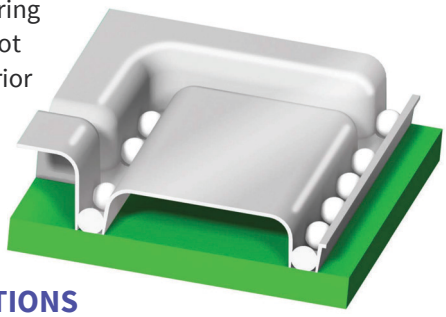
TECHNICAL SUMMARY

XGR Technologies SnapShot EMI Shields are revolutionary, multi-cavity shields that solve many of the problems associated with today's existing shielding technologies.

The shields consist of a lightweight, metallized plastic material that is thermoformed to virtually any design. The shields are attached to your PCB via a patented attachment mechanism utilizing individual BGA solder spheres. The shields are metallized with tin on the outside surface only, resulting in narrower ground traces, reduced space between components, and reduced shield heights when compared to existing shielding solutions(no air gap needed).

The product installs after the SMT reflow process, allowing for easy component inspection or rework, and is readily removed by hand without damaging the board or resoldering.

In addition to custom contoured design and manufacturing flexibility, XGR SnapShot EMI Shields have superior shielding performance when compared to perforated, soldered metal cans.



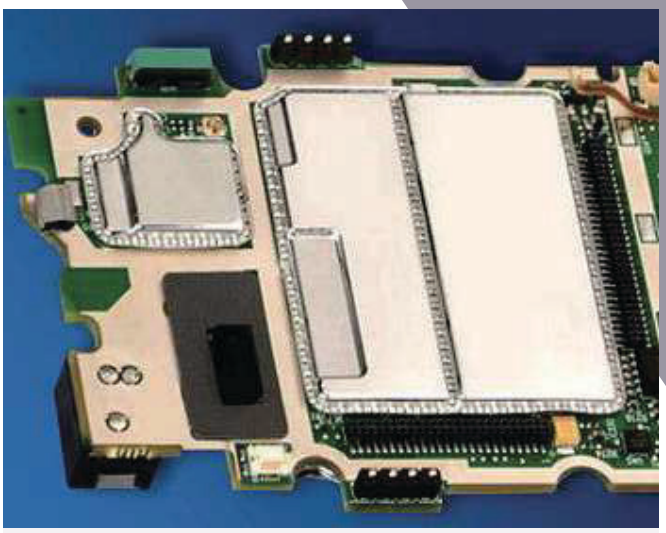
TYPICAL APPLICATIONS

- Broadband data center routers
- Commercial communication devices
- Military handheld radios
- Industrial barcode scanners
- Mobile consumer electronics

ROHS STATUS

RoHS Material*	Pass / Fail
Lead (Pb) Content	Pass
Cadmium (Cd) Content	Pass
Hexavalent Chromium (Cr6) Content	Pass
Mercury (Hg) Content	Pass
Bromine Compounds	Pass

* XGR Technologies declares that we do not intentionally add substances listed in EU Directive 2011/65/EU (RoHS Recast).



XGR SnapShot EMI Shields are multi-cavity, boardlevel EMI shielding solution.

FEATURES AND BENEFITS

- Superior shielding performance
- Lightweight, metallized plastic material
- Easy BGA attachment mechanism
- Installs after SMT reflow and inspection processes
- Complete design flexibility
- Easily removable by hand

SNAPSHOT EMI SHIELDS TYPICAL PROPERTIES[1]

Shield Material Property	Value	Method
Thickness	0.125 mm	–
Shielding Effectiveness Surface Resistivity	75 dB	ASTM D4935
Surface Resistivity	0.025 Ohms/ square	ASTM F390
Metallization Adhesion	5B	ASTM D3359
Metallization Thickness	5 microns	SEM
Dielectric Strength	80 kV/mm	ASTM D149
Vicat Softening Temp. B	215°C	ASTM D1525
Solder Sphere Property	**Value**	**Method**
Sphere Diameter	0.89 mm	–
Sphere-to-Sphere Spacing	~2.00 mm	–
Ground Pad Diameter	0.60 mm	–

[1] Values are for reference only and are not intended for specification purposes.

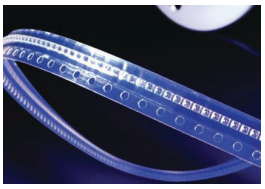
SNAPSHOT®

EMI SHIELD

SOLDER SPHERE INSTALLATION

There are different methods of installation currently available.

Solder spheres can be supplied in accordance with the current ANSI/ EIA-481 standard compliant tape-and-reel format to work seamlessly with existing SMT equipment.



An alternative to tape-and-reel is to use a bulk feeder with your SMT equipment. This solution is less expensive than tape-and-reel.

RELIABILITY TESTING

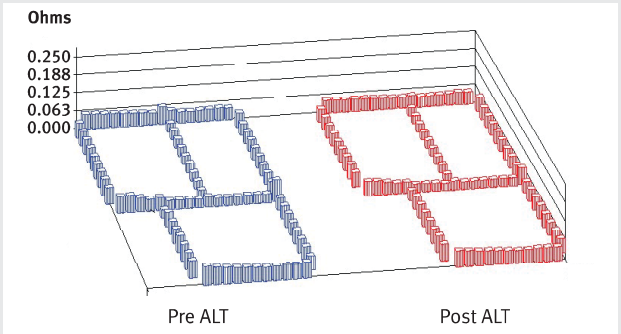
The DC resistance across each individual solder sphere joint has been extensively tested, meeting stringent XGR Technologies requirements across the following methods and standards:

- Mechanical Shock 0EDEC JESD 22-B104-B)
- Bump (IEC 60068-2-29)
- Vibration (IEC 60068-2-64)
- Thermal Shock (MIL-STD-883CA)
- Dry Heat Aging
- Moist Heat Aging

XGR™ Technologies SnapShot® EMI Shields are covered by US Patent No: 6,377,475 and 6,744,640. Corresponding foreign patents issued.

In November 2018 XGR Technologies acquired the SnapShot EMI Shielding business and assets from W.L. Gore & Associates. XGR manufactures SnapShot shields on the same equipment with the same people that made the SnapShot shields for W.L. Gore & Associates. XGR Technologies was founded and is run by one of the SnapShot patent holders.

DC RESISTANCE BETWEEN SOLDER SPHERE AND SHIELD PRE VS POST 5 DAY ALT AT 85°C, 85% RH



RELATIVE SHIELDING EFFECTIVENESS VS. METAL CANS

The shielding effectiveness of XGR™ SnapShot® EMI Shields have also been evaluated in side-by-side testing with soldered metal cans, with positive results.

At cellular and ultra high frequencies, testing shows that the performance of XGR™ SnapShot EMI Shields exceeds that of many commonly used cans with perforated holes or snap-on lids.

RELATIVE SHIELDING EFFECTIVENESS OF XGR SNAPSHOT EMI SHIELDS VERSUS TRADITIONAL METAL CANS (10 dB per Division)