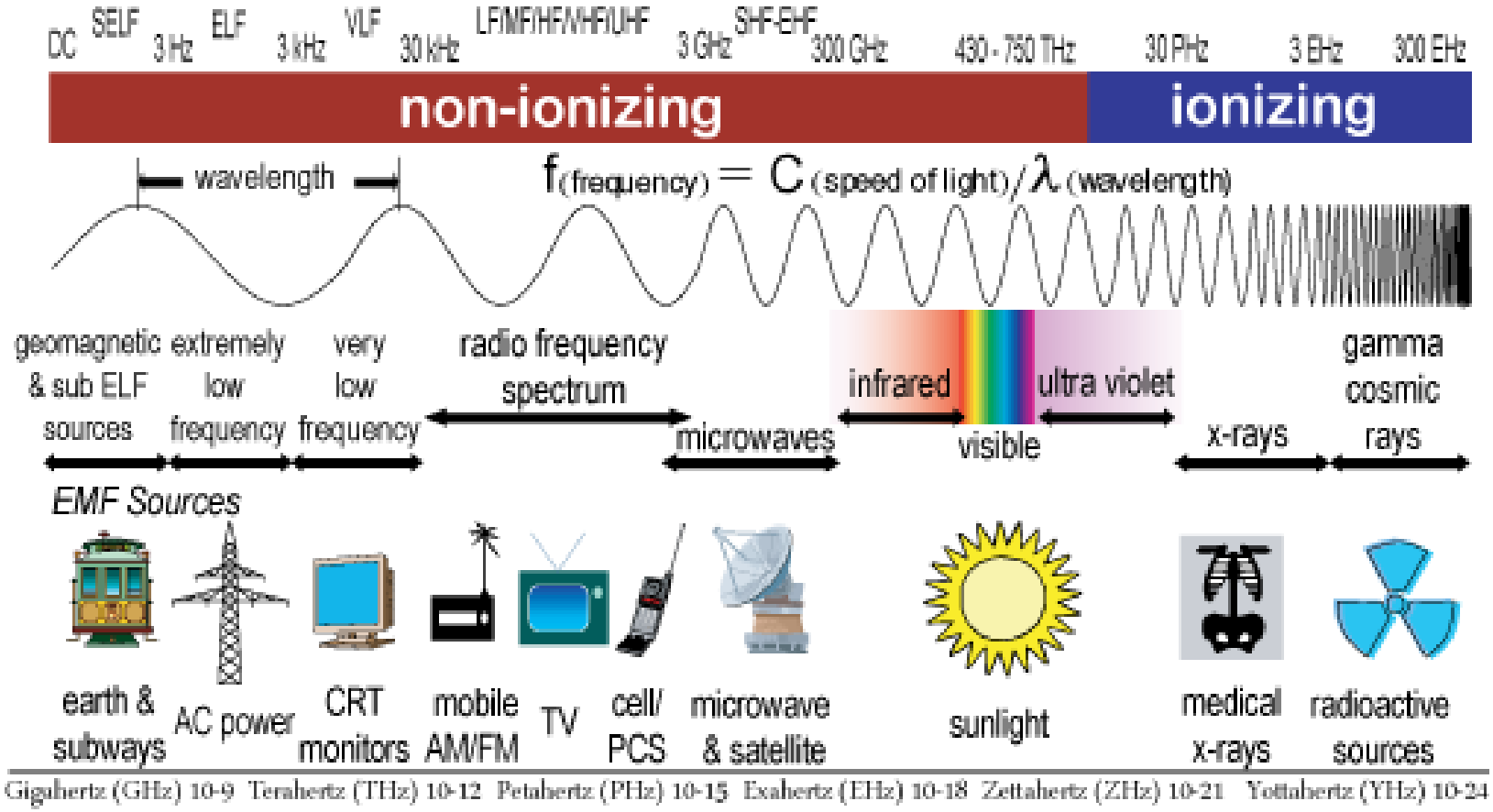
Advance Shielding Technology

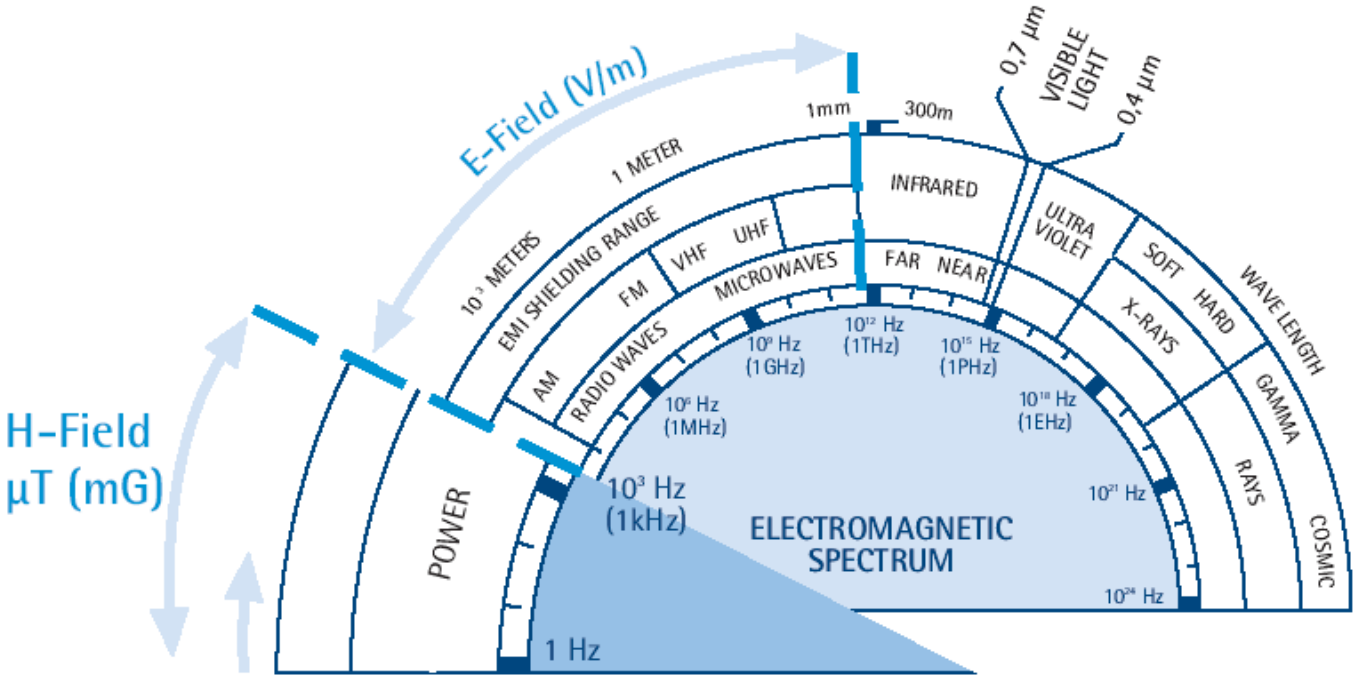
"Professional in EMC Measurement & Consultancy, EMC Shielding"

THE ELECTROMAGNETIC SPECTRUM



ElectroMagnetic Shielding

Spectrum – Low Frequency



Electric Field: E
- f (Voltage)
- High Freq.: above 30 KHz up to 1 THz

Magnetic Field: H
- f (Amperage)
- Low Freq.: above 0Hz up to 1-30 KHz

ElectroMagnetic Shielding

EMF Sources

Low Frequency Magnetic Fields

- Transformers
- Low voltage electric cabinets
- Low voltage power lines
- High voltage power lines
- Train lines
- Subway lines
- UPSs
- etc.

High Frequency Electric Fields

- Radars
- Radio transmitters
- Cell phone relay antenna
- Radio and TV relay antennas
- Wifi
- etc.



ElectroMagnetic Shielding

EMF Consulting
Consultancy service regarding electro magnetic protection. Protect your equipment and people!

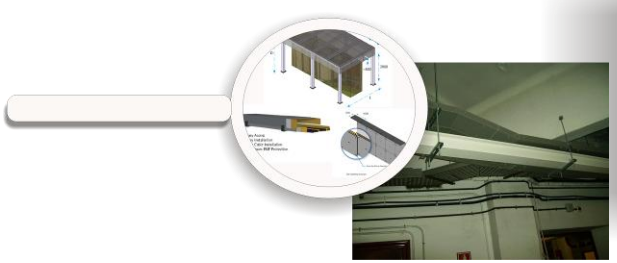
Tem/Sem
Protect your equipment for wrong measure readings.



Tempest
Protect your data against electro magnetic attacks, it can be easily robbed or destroyed.

Bugging protective chamber
Tempest plus acoustic protection. Protect your data against electro magnetic attacks, it can be easily robbed or destroyed.

Smart MRI Room
RF – MR Systems Generate RF Operating Frequency
Magnetic Shielding – MR's Are Superconducting Magnets
High Magnetic Fields Are Potentially Dangerous



Smart Shield
Protect people and equipment against electro magnetic fields.

ElectroMagnetic Shielding

EMF Effects on Human Beings

EMF Effects on Human Beings

-U.V. Radiations: skin problems (reduction of Langerhans cells) and eyes.
-Infrared Radiations: thermal effects
-Radiofrequency (R.F.): thermal effects and bioelectric interferences, genetic transmission problems, nervous and heart system.

Some relevant studies conducted to date:

-National Institute of Occupational Health (Magnetic Fields and Cancer: cellular study. Bo Holmberg): research on cancer tumors and EMF exposure.
-Division of Biomedical and Behavioral Sciences, National Institute for Occupational Safety and Health (OSHA) (Cincinnati) (Magnetic Field exposition in skin cells, J. Snawder, R. Edwards): research on tumor and magnetic fields of 100 µT over a 14 day period.
-Electric Power Research Institute (Palo Alto) (Magnetic Fields and Animal Cells, J. Mc.Cann, R. Kavet, C. Rafferrty): research on tumor and magnetic field.

Note: Although none of the studies conducted to date can absolutely correlate EMF and human health effects, AST strongly recommends to apply the ALARA (As Low As Reasonable Achievable) principle in accordance with NCRP recomendation.

ElectroMagnetic Shielding

Norms and Recommendations

Electronic Equipment

- ***Magnetic Field – Low Frequency***
  - ***EN/IEC 61000-6-1:*** "Inmunity for Electronic Equipment up to 3,75 µT"
  - ***EN 55024:*** "Inmunity for I.T. Equipment up to 1,25 µT"
  - ***Requeriments semicon manufacturers:*** "Magnetic Field up to 0,03 µT"
  - ***Requirements MRI (Magnetic Resonance) manufacturers:*** "Magnetic Field up to 1 µT"
- ***Others:***
  - ***Real wordwide experience cases:*** *"Computer screens flicker form* 0,4µT magnetic field"

Human beings

- ***Magnetic Field – Low Frequency***
  - ***ICNIRP:*** "Norm for people up to 100 µT"
  - ***ICNIRP / ACGIH:*** "Norm for heart problems up to 50 µT"
  - ***NCRP:*** "Max. Recommended level 1 µT"
  - ***AGNIR-HPA***: "Max. Recommended level 0,4 µT"
  - ***Others:*** "Countries like Switzerland, New Zeland and some states of USA up to 1 - 2 µT"
- ***Electric Field – Low Frequency***
  - ***ICNIRP / ACGIH:*** "Norm for people up to 5 kV/m"
  - ***ICNIRP / ACGIH:*** "Norm for heart problems people up to 1 kV/m"

ElectroMagnetic Shielding

SmartShield™

CABLE TRAYS

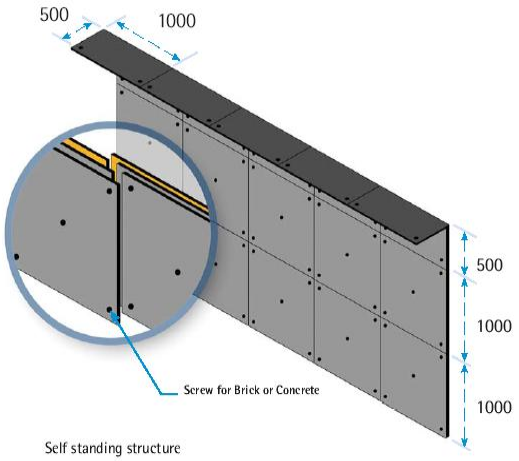


- Easy Access
- Easy Installation
- Safe Cable Installation
- Maximum EMF Protection
- Cooling

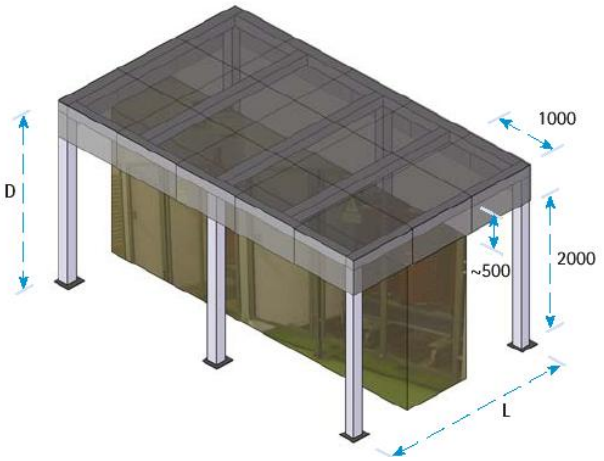


Ventilation

BACKPLANES



TRANSFORMER CAGES



AVAILABLE WITH FOUR LEVELS OF PROTECTION:

Standard Performance, High Performance, Ultra High Performance and Mu-ultra High Performance

ElectroMagnetic Shielding

SmartShield Products

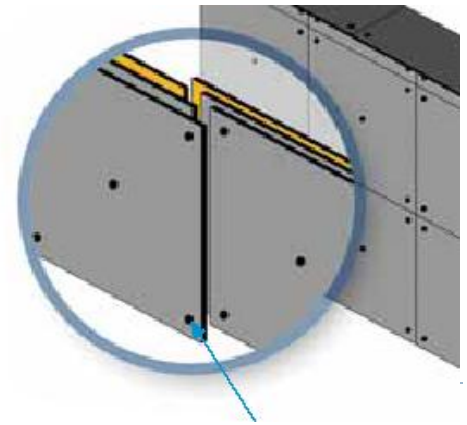




ElectroMagnetic Shielding

SMART SHIELD Products

- Standard Product
- TÜV Certificate
- Own Technology
- Very Easy Installation





TÜV

Subject: Shielded Trays and Backplanes Electro-Magnetic Fields Attenuation Test according to the levels required by the standard IEC/EN 61000-4-8 and NEBS.

This is to certify that the undersigned inspector of TÜV Internacional Cataluña, TÜV International Group Rheinland, S.L., has witnessed and inspected the test done by AST, S.L. according the test protocol "S-2004/05-STD" about the Shielding effectiveness of the products:

Shield Trays
and
Backplanes)

The results of the test has been favourable in the accomplishment of the attenuation levels demanded by both the standard IEC/EN 61000-4-8 and recommendations by NEBS.

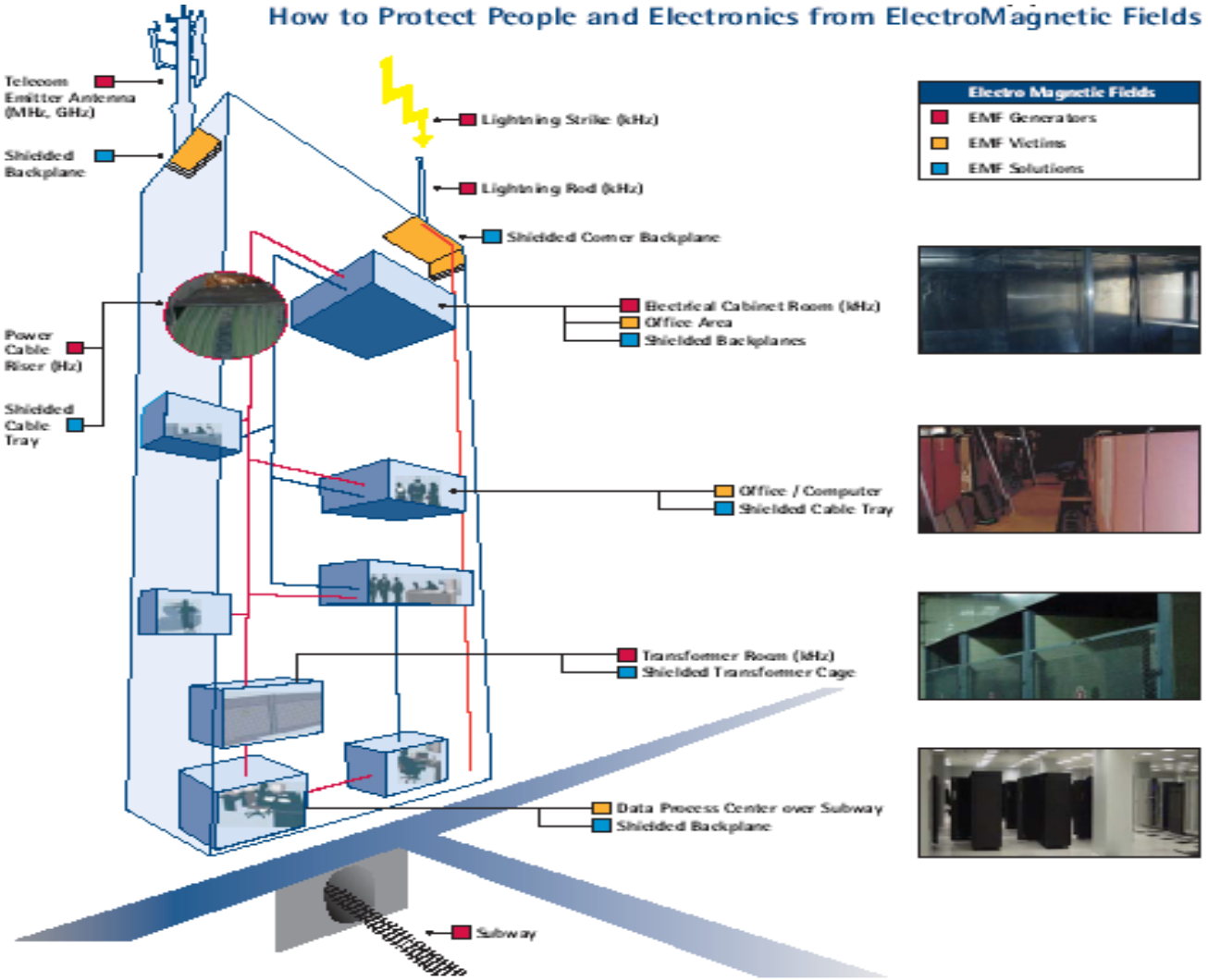
The present statement letter is signed in Barcelona, 05th May, 2006.

TÜV

* For more details see the Complete Result Test Report 15/709529/05

ElectroMagnetic Shielding

Practical Applications



Project References

NO.	JOB REFERENCE	SCOPE OF WORK
1 .	NTU Techno Plaza	EMF Shielding work
2 .	Advance Mirco Device	EMF Measurement & Analysis
3 .	XILINX New Plant	EMF Consultancy & Analysis
4 .	Seagate 2 @ Woodland Loop	EMF Measurement
5 .	Reuters Singapore (Data Center)	EMF Analysis for Busbar
6 .	Global Switch Data Center	EMF Measurement
7 .	NTU Teaching & Laboratory Facility	EMF Shielding
8 .	Equinix Data Center	EMF Measurement & Study
9 .	UOB Plaza II	EMF Measurement & Calculation
10 .	Singtel Com-centre II	EMF Measurement
11 .	Global Switch Level 2 @ Tai Seng	EMF Measurement
12 .	Fusionopolis Level 4, 37 Riser	EMF Calculation & Study
13 .	NTU School of Physical 2 Mathematical Sciences	EMF Shielding
14 .	Visa Center @ Singpost	EMF Measurement & Calculation
15 .	Asia Square Tower 1	EMF Consultancy & Analysis
16 .	Siltronic Singapore	EMF Measurement

Project References

NO.	JOB REFERENCE	SCOPE OF WORK
17 .	SEAGATE Crystal Room @ Woodlands	EMF Consultancy & Measurement
18 .	Overseas Union House	EMF Shielding
19 .	NUS Computing Department	EMF Consultancy & Measurement
20 .	NTU New Lab	EMF Measurement
21 .	BHP Billiton @ MBFC2	EMF Consultancy
22 .	Fort Building Data Center	EMF Shielding
23 .	Clean Tech	EMF Shielding

ElectroMagnetic Shielding

Main customers

