Comtest Engineering bv
Industrieweg 12
NL-2382NV Zoeterwoude
Phone: +31 71 5417531
Fax: +3171 5420375
Email: info@comtest.eu
WEB: www.comtest.eu

ING Nederland nr. 67.50.97.363
IBAN code: NL57INGB0675097363
Swift: INGBNL2A
K.v.K. Leiden nr. 28042416
BTW nr. NL0076.95.512.B01

SIDEREUS INVESTMENTS INC.
Ave. Manuel Espinosa Batista, Torre IBC,
Piso 4, Oficina 407, Panama
Republic of Panama

Zoeterwoude, 21 February 2013

Ref. : Offer of Small Shield-Room
PIC : U. Trucchi
Nr. Offer : **212347q-04**

Dear Sirs,
Please find enclosed our **final** proposal nr **212347q-04** for the supply of small a Comtest Shield-Room Model 1700-000.
The room shall be installed at:
Chlopickiego 14, 04-314 Warszawa, Poland

No.	PN/Description	Qty	Unit Price	Total Price
1.	**Comtest Small Shield Room 1700-000** As described in the scope-of-work (**SOW**) below **The Comtest-price includes:** • Design & engineering of the entire room • Materials as assigned below to Comtest • Installation (shielding only) & sniffer test by the local Polish company AM-Technologies **Sidereus shall provide:** • Shipping from Zoeterwoude, NL to the final Chlopickiego 14, 04-314 Warszawa, Poland **SE test:** • Comtest engineer (engineering fee, travelling & lodging) • 9 frequencies, 6 positions • Test report • Equipment provided by Customer	1 1 1	Euro 15.600,- (Materials) Euro 980,- (Installation) Euro 3.200,- (SE testing)	Euro 15.600,- (Materials) Euro 980,- (Installation) Euro 3.200,- (SE testing)
			Grand Total:	**Euro 19.780,-**

Our commercial conditions are:

Prices	:	Excl. VAT; 21% Dutch VAT will be applied
Incoterms	:	Packed EXW Zoeterwoude, NL
Invoices payable	:	50% upon order; 50% prior shipping
Delivery	:	Approx. 6-7 Weeks ARO
Quotation validity	:	30 days
Warranty	:	12 months on parts

Accepted:

Piotr Niżyński	Bas de Groot	Uliana Trucchi
Sidereus Investments Inc.	*Deputy Director*	*Technical Sales Manager*
	COMTEST Engineering BV	COMTEST Engineering BV

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212347 – SHIELDED ROOM

1. **Room Construction**

No.	Dimensions	2.100x2.100x2.325m(h)	Qty
1.1.	Shield system	Modular shielding panels Model **ZAM** are used. All flanges **inside**. Includes one HC-grill 18 GHz 300x300	1 Set
1.2.		Moisture protection sheet	1 Set

2. **Filtering**

2.1.	Power filter	Model **4801-032** 1-phase 230 V ac / 32 Amp / 50 Hz	1
2.2.		M8 grounding bolt, next to the filter	1

3. **Entrance Door**

3.1.	Swing door	Model **1766-090-MA** Manual swing door Size : 900 x 2.100 mm (h) Manual operation Includes metal handles (2)	1

4. **Accessories**

4.1.	Wave-Guide	Model **1781-100** 1"with external metal cap	1

Shielding Effectiveness as per EN 50147-1 (1996): In the main range of interest

SE	Frequency	Guaranteed Value
Plane-Wave	**1 GHz ≤ f ≤ 6 GHz**	**130 dB**

The Guarantee for the SE is given for a measurement performed in accordance to the EN 50147-1 (1996) Standard.

AM Technologies, upon completion of the shielding installation, will carry-out the sniffer test of all the joints.

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Test Plan for Comtest test:

- H-field 10 kHz, 100 kHz, 1 MHz and 10 MHz
- Plane wave 100 MHz and 1 GHz
- Microwave 5 GHz, 10 GHz and 18 GHz

Test positions: Door, power filter, waveguide, 2 panels joints, 1 ventilation panel: total 6 test points

SE	Frequency	Guaranteed Value
H-Field	**10 kHz** **100 kHz** **1 MHz** **10 MHz**	**80 dB** **100 dB min** **100 dB min** **100 dB min**
Plane-Wave	**100 MHz** **1 GHz** **5 GHz** **10 GHz** **18 GHz**	**100 dB min** **130 dB** **130 dB** **100 dB min** **100 dB min**

The test must be carried out taking into account the following mandatory conditions:

- The wave-guide shall be closed with the metal cap or filled with the steel-wool
- The door contacts shall be properly cleaned

In order to keep the SE in the future, the door contacts must be periodically cleaned with suitable cleaning agent and clothing, as recommended by COMTEST in the service & maintenance instructions.

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Technical Annex

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COMTEST Engineering has a history of 27 years in the design of EMC test facilities.
It was founded in August 1985.

COMTEST Engineering is an ISO 9001 certified company and the quality control in production and on-site is one of our main goals.

QualityMasters

Stichting QualityMasters hereby declares that

Comtest Engineering b.v
ZOETERWOUDE

Has a management system that meets the requirements of the standard

NEN-EN-ISO 9001:2008

For the scope

The design, manufacturing, installation, maintenance and performance testing of Electro Magnetic shielded rooms.

Date of issue 19-02-2010
Valid until 19-02-2013
Certificate number NL 5037

On behalf of Stichting QualityMasters,

N.B. The failure to meet the conditions as set forth in the certification agreement, or non-compliance with the given standard and/or guidelines, may lead to the suspension or cancellation of the certificate.

This certificate remains the property of Stichting Quality Masters.

COMTEST Engineering doors, lights, etc are all CE marked.

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SHIELDING EFFECTIVENESS SPECIFICATIONS

The shielded-room is fully-compliant with the Standard EN 50147-1: March 1996.

SE	Frequency	Guaranteed Value
Plane-Wave	1 GHz ≤ f ≤ 6 GHz	130 dB

The Guarantee for the SE is given for a measurement performed in accordance to the EN 50147-1 (1996) Standard.

AM Technologies, upon completion of the shielding installation, will carry-out the sniffer test of all the joints.

The test as per EN 50147-1 (1996) in the frequency-range of interest from 1 GHz to 6 GHz is optional, either by Comtest or by the Independent Austrian Test Laboratory Seiberdorf.
The test must be carried out taking into account the following mandatory conditions:

- The wave-guide shall be closed with the metal cap or filled with the steel-wool
- The door contacts shall be properly cleaned

In order to keep the SE in the future, the door contacts must be periodically cleaned with suitable cleaning agent and clothing, as recommended by COMTEST in the service & maintenance instructions.

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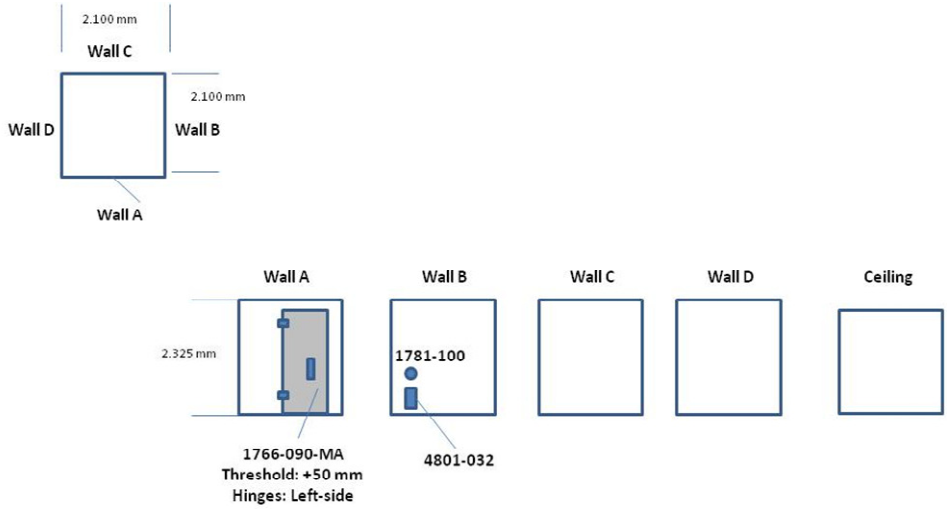
GENERAL DIMENSIONS & ARRANGEMENTS

The layout of the shielded room is shown below.

The test chamber is **2.100 mm** long, **2.100 mm** wide, **2.325 mm** high.



Flanges all INSIDE

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SHIELDING SYSTEM

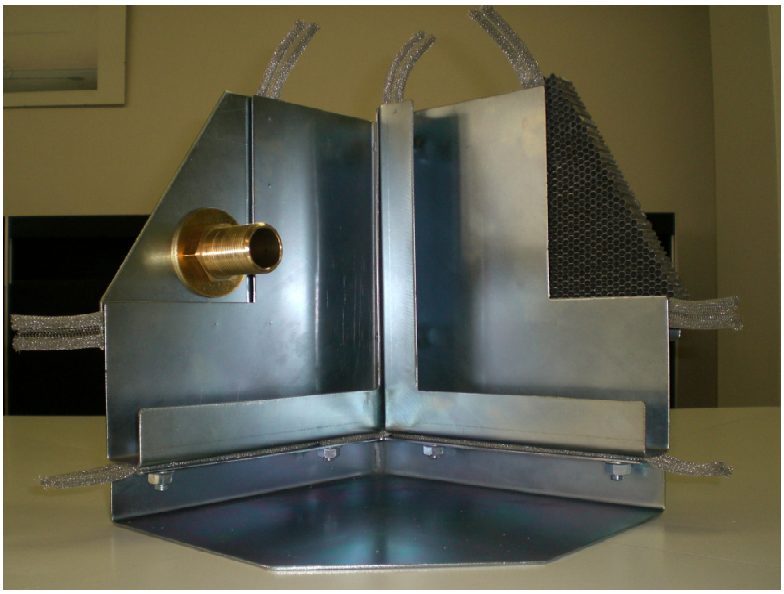
The shielding of the chamber Model **1710-100** is constructed using modular Comtest shield panels Model **1790-102 ZAM**.

These panels are single-skin hot-galvanized (both sides) steel panels of 2mm thickness.

They are equipped with punched flanges of 40 mm and are bolted together using a high performance EMC-gasket, which is precisely and uniformly compressed by applying a constant torque.

The panels are precision manufactured in Holland by a 100% automatic system to eliminate human errors and to ensure the highest accuracy.

The panels of the walls & the ceiling can be connected with the flanges outside or inside, depending on the Customer's preference, the building constraints, the construction clear space, and the design of the inner lining. The panels of the floor are always connected with the flanges inside.
In his specific case, we have chosen to have the flanges **inside** for all surfaces, to have more flexibility in the building.



Shielding system

The shielded floor panels will be laid on an anti-moisture mat, which prevents ingress of humidity and damage to the panels.

Example of completed shielding installation

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ZAM SHIELDING TECHNOLOGY

Innovation

As a result of our continuous effort to use only the very best components for our products and our dedication to innovation Comtest Engineering BV has decided to use a new and innovative galvanized sheet metal plate for making shielded panels. This new material is called ZMA-140 or Magi Zinc. It is a newly developed hot dip galvanizing coating on steel with improved corrosion protection properties.

Magi Zinc is a major breakthrough in corrosion protection with a zinc coating that incorporates a small fraction of magnesium and aluminum. Its corrosion resistance is significantly more effective as that of standard galvanized products. With all the benefits that this innovative product offers, it's clear that Magi Zinc will be the metallic coating of the future.

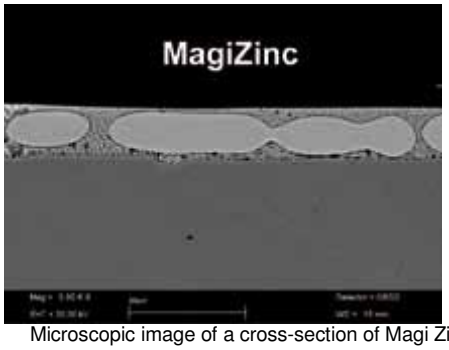
Official certification

The Technical University in Karlsruhe – an independent external standards authority – has confirmed that Magi Zinc provides Class 1 corrosion protection according to the EU criteria for internal roofing and ventilation systems. Their certificate confirms that the corrosion protection provided by Magi Zinc 140 is superior to that of Zinc 275.

Comparison of Z275 and ZMA140 after a nine month accelerated outdoor test.


Zink 275


ZMA-140



Microscopic image of a cross-section of Magi Zinc coated steel.

Benefits

The many benefits of ZMA-140 are:

1. Improved corrosion resistance (3 times better with 50% of the zinc layer compared to Zink 275)
2. Improved possibilities for coating and painting.
3. Improved welding possibilities.
4. Improved top layer for better resistance to scratches and wear.
5. Improved control of the outer dimensions when folding sheet metal plates.
6. Less harmful for the environment.
7. Less harmful for welding personnel.

Conclusion

There are many benefits for our products, our personnel and the environment. After serious tests and quality inspection it is our conclusion that the Shielding Effectiveness Characteristics of our chambers are the same or slightly improved by using ZMA-140 compared to Zink 275.
With immediate release Comtest will use the ZMA-140 material for producing their Shielded Panels. On special customer request shielded panels made of Zink 275 can be supplied but this will lead to increased pricing and delivery time.

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SHIELDED DOOR

Door	Comtest P/N	Type	Clear W	Clear H	Operation	Qty	Specials
D1	**1766-090-MA**	Single-leaf swing door	900 mm	2.100 mm	Manual	**1**	Safely lock included

The swing door, series **1766-000**, which equip the chamber, is used for EUT and personal entrance to the room. The extended performance doors (double-knife), series **1766-000** are equipped with a 4-point latching and parallel closing system via a double-pivoting hinge design ensuring longer lifetime of the door components.

The door is delivered in manual operation.

For service purposes the door mechanics can be reached by removing the outside cover of the door. Since this in not an essential part of the shielding, it facilitates all maintenance work without affecting the shielding performance of the facility.

The door's threshold is defined during the Design & Engineering phase of the project.

The door cover is painted in a RAL color 9006 (Light Grey).

Example of swing door, with contact and latching details.

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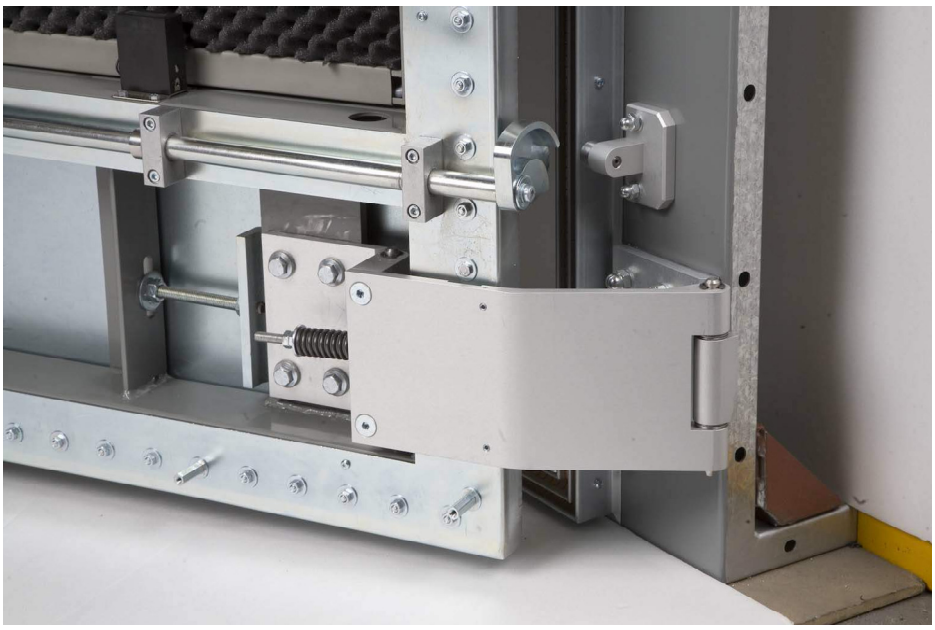

Double pivoting hinges (parallel closing), key to long-life of the door's contacts.

Low threshold for ease of move in and out of the chamber

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FILTERING

Comtest P/N	Voltage	Current Rate	Qty	Frequency
4801-032	230 V ac	32 A	**1**	50-60 Hz

Comtest power-line filters Model 4800-Series

The 4800-Series filters attenuate interference in the form of conducted emissions. They will also limit the radiated emissions in a properly shielded system.
The filters are bi-directional and designed to reduce equipment generated EMI from emanating into the environment as well as protecting the integrity of the installation against hostile incident EMI.
Typical applications include screened rooms, enclosures, cabinets and industrial power & equipment applications.
The filters are designed to comply with the appropriate safety requirements of EN 60950, while the components are produced from listed materials to flammability class UL 94V-0.

They are enclosed in a stainless steel box and they feature enclosed terminals for maximum safety.

The filters have a built-in transient protection circuit with a bleeder resistor.

The attenuation of the filters is >= 100 dB from 14 kHz to 18 GHz, measured as per MIL-STD-220A and compliant to MIL-F-15233.

An M8 grounding-bolt is supplied and installed on the shielding next to the filter to minimize the RF-noise.

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COMTEST DESIGN & ENGINEERING

Comtest design-team has the in-house capability to:

- Design the optimized layout of any test facility
- Interface the building & advise the architects
- Design the shielding and steel support
- Design or integrate the absorber layout
- Design the ventilation system
- Design the electrical system
- Design or integrate the fire detection system

Comtest Design & Engineering department

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COMTEST PRODUCTION

Assembly of shielded doors

Production-line of shielded panels