

*MetaliCom General Presentation for  
Defense & Military Embedded Systems*

[www.MetaliCom.com](http://www.MetaliCom.com)

Designer, manufacturer and supplier  
of embedded system solutions

Value added Reseller  
of COTS industry leading embedded  
Modules and hardware.



over 20 years of  
proven experience.

Renowned reputation  
in quality and customer  
satisfaction.

## Defense and military customers

- Israeli Aerospace Industries.
- Elbit group.
- Rafael group.
- Tadiran group.
- Elisra group.



## Fields of activity

Design and production of systems for industrial and rugged environments.



Sales and distribution of embedded hardware.



# Systems Group

Systems designed and  
built-to-spec

Experience with wide

Variety of technologies :

- Industrial and embedded computing.
- Communications hardware and protocols :  
Ethernet, USB, RS422, RS485, RS323, Switching & routing .
- Audio and Video.
- Control and Management.



# Systems Group



## Hardware and board design

Carrier boards for COM-Express & MCPUs

High speed digital circuits

Analogue, audio, control and power supply circuits

Backplane design – standard bus topologies or custom.



## Software

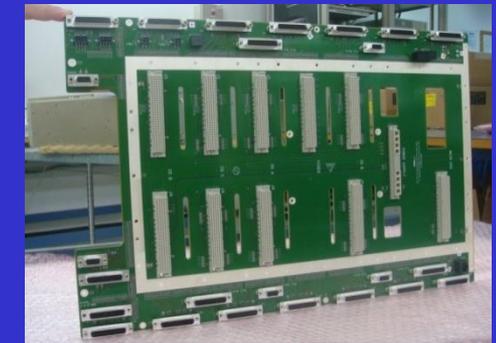
BSP for Windows & Linux

Real time applications for various CPUs & MCUs

## Automated testers

Custom testing adapters

Comprehensive testing and database management



## Mechanical design

Indoor and outdoor housing

Rugged systems for Industrial, Mobile, Airborne and

Marine applications



## Examples of realized projects:

- Airborne systems.
- Mil grade ruggedized & conduction cooled systems.
- Systems for naval environment.
- Cabinets, Command stations, Shelter design.
- Customized computer systems.
- Upgrade of industrial products to Mil grade.
- Industrial standard systems.
- Proprietary test systems.



# Airborne systems



- Rugged enclosure, ATR Type
- Internal conduction cooling, External fan.
- Custom Active Backplane CPCI bus
- Proprietary digital module
- Intel ATOM based CPCI computer board

## Airborne Computer



# Field mission computer



# Mil grade ruggedized systems for naval/ship-borne.



Multiple processing  
Hi availability



Controlled backup unit (hardware & software)  
Extensive bit

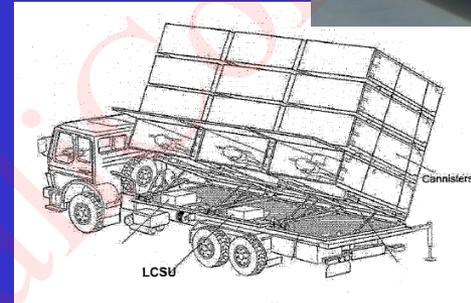


# Rugged VOIP intelligent terminal for naval/ship-borne applications.



- Touch screen LCD display.
- Conduction cooling.
- State of the art COM-Express processing module (Intel ATOM Z530).
- Custom carrier developed by us supporting audio, handsets, backlight control, touch control & power.

# High current switching and control unit for military ground B9 applications LCSU

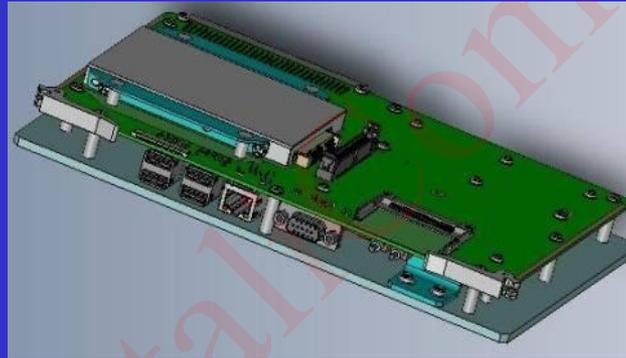


- System design.
- Hardware development of 9 boards.
- Custom Software development .
- Enclosure with conduction cooling .
- Full reliability analysis.
- QTP laboratory testing.
- Supports 12 users
- Hundreds of control and sensing ports
- Unique switch and relay modules

# LCSU – Cont.

## State of the art processing unit :

- Carrier board for COM-Express with Intel Core 2 duo CPU
- 10 Ports Ethernet switch
- 8 Serial RS 422 ports



## Very high density Isolated IO boards :

- 32 LS Outputs with up to 1A current sink
- 32 LS Inputs
- 20 HS Inputs
- 40 A2D Inputs
- 16 Serial RS422/RS232 Ports



# Conduction cooled Rugged systems.

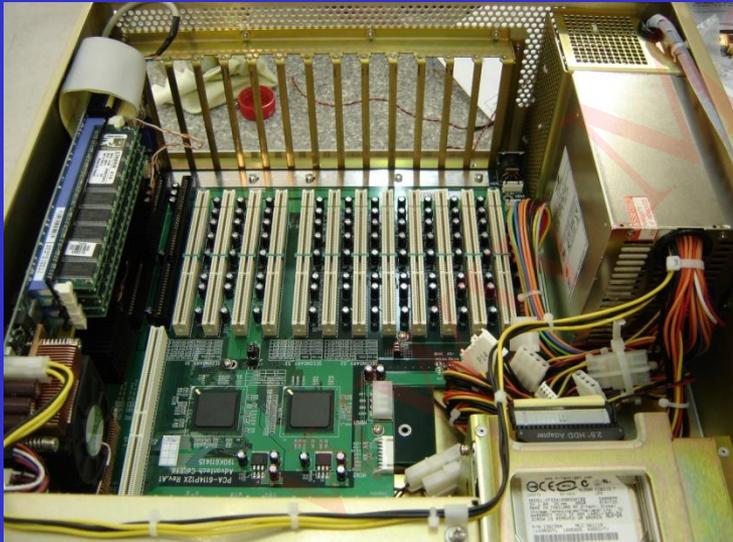
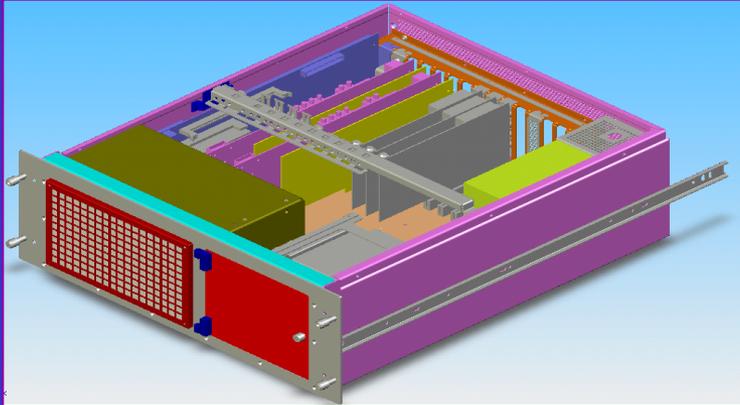


- Conduction cooled 6U CPCI  
Power supply – 1275 filtered.  
Conduction cooled CPCI  
computer boards.

High speed active backplane  
CPCI bus.  
Proprietary I/O.

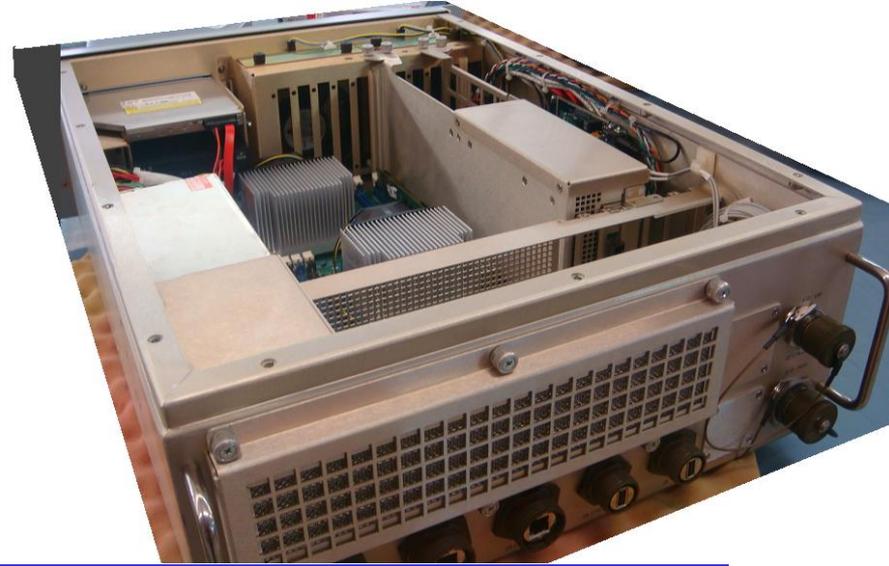


# Customized computer systems.



Semi rugged PC platform  
Complete qualification  
Testing

# Rugged Customized SERVER



Fully tested and certified  
for Naval Level  
under deck equipment

MIL-STD

810E

461

704

167/1A

Stanag 1008

1472



Special thermal design  
with heat pipes for sensitive  
application board



# Customized computer systems.

## Intelligent tracking system

### Two separate processing units :



- Front HMI unit supports intelligent human interface, Touch screen LCD display, Shaft encoders, & Custom Keyboard Atom Z270 processor board.



- Rear unit supports COM Express processing unit (Intel ATOM Z530 Vxworks OS) application boards, RS422 communication ports, and power.

# Customized computer systems.



Recording system  
For air traffic

Telemetry system



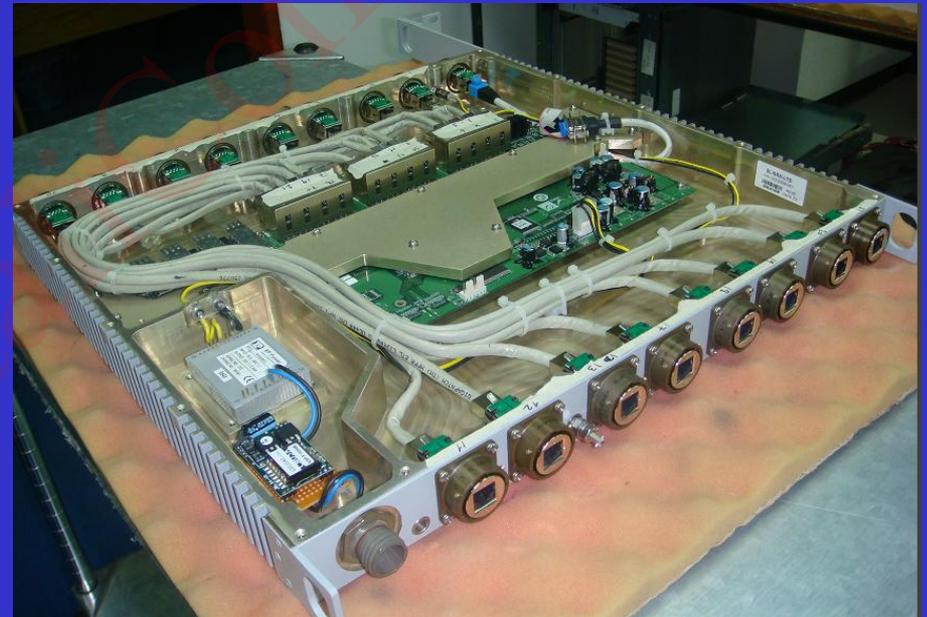
# Customized computer systems.

## Rugged 19" Triple PC

- Three Independent 3U PC Modules
- SBC with Core 2 Duo CPU , PSU, HD, and 2 Interface boards
- Interface board types:
  - 16 Serial Interface ports
  - 64 Isolated ports
- Convection Cooling with N+1 redundancy
- Front to back air flow



# Upgrade of industrial products to Military environmental conditions.



Field tactical LAN Switch  
16 ports + 2 Optical ports

# Industrial standart Hi-reliability systems

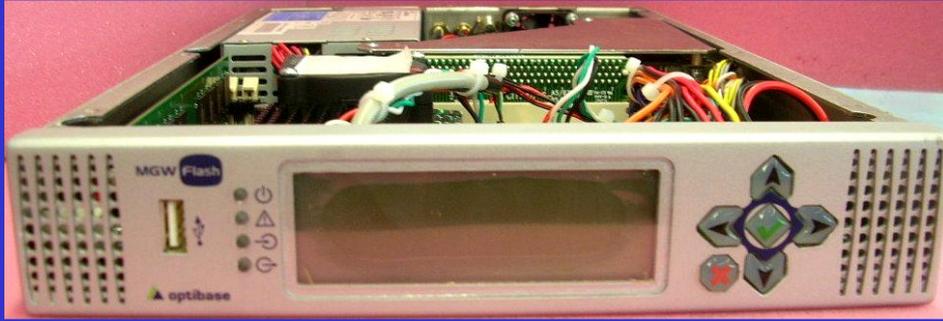


Semiconductors

Video streaming



# Industrial standard Hi-reliability systems



Video processing



Telecom



Semiconductor industry

# Proprietary test systems.

## • Test Bench system for innovative Soft Radio system

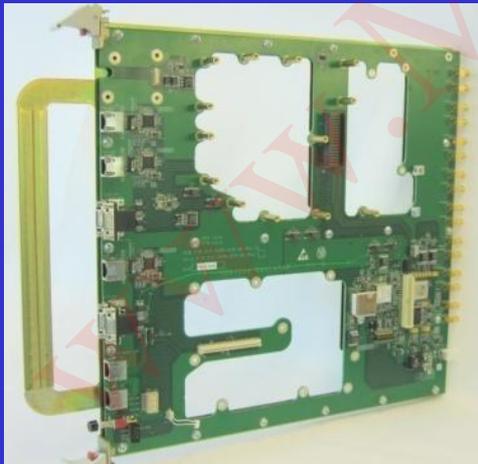


- To support switching of hundreds of high speed radio channels at baseband (Up to 2 GBps links).

- Custom carrier board for customers radio units.

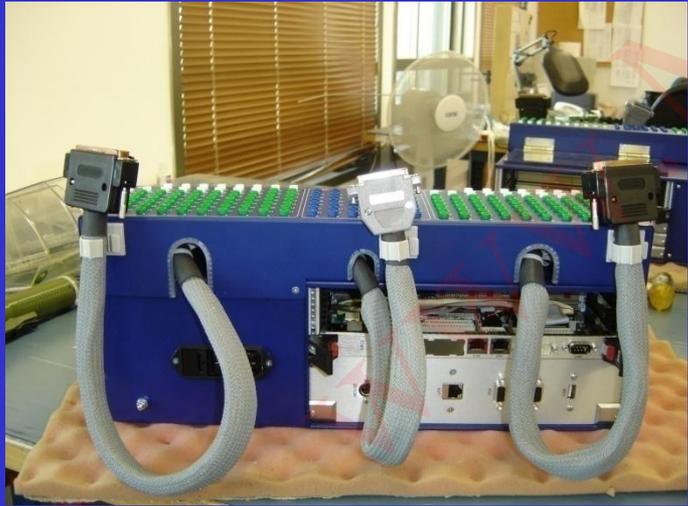
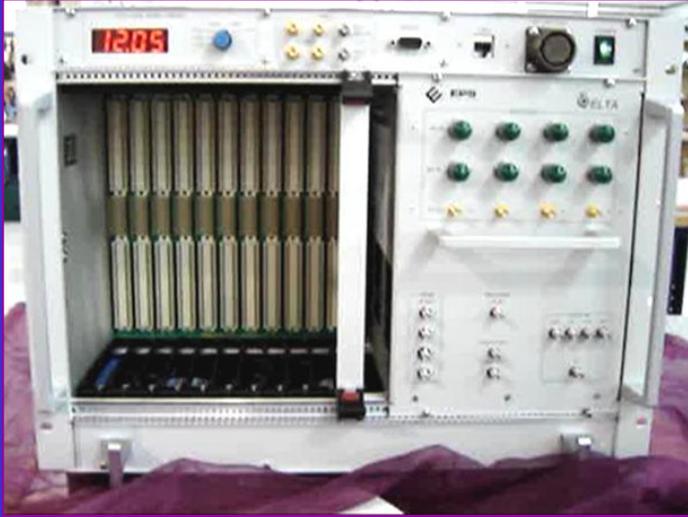
- The boards are equipped with Virtex 5 FPGA supporting high speed SERDES and switching functions.

- 19" shelf for up to 8 carrier boards.



Proprietary test systems.

Jigs and BIT software.

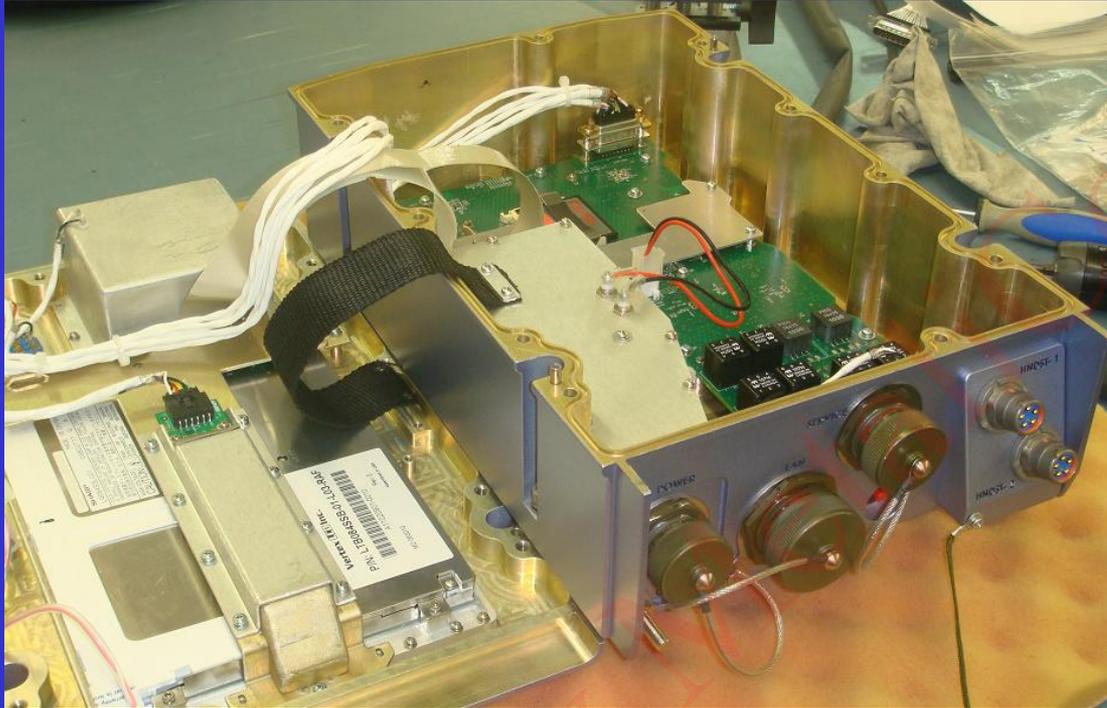


# Program Management & Operations



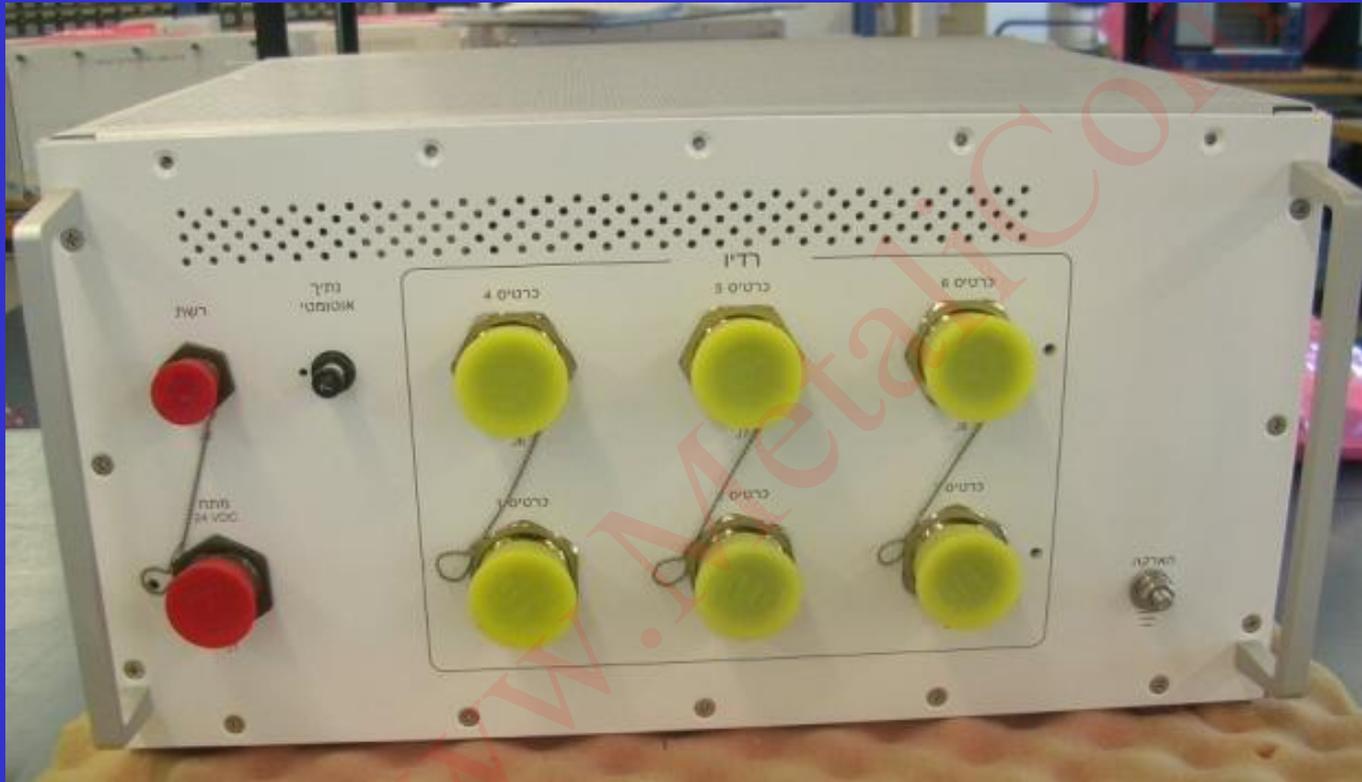
Added value sales process

Performed by highly technical and agile sales force.



Solutions that comply to technical, environmental, and reliability requirements – to be produced in minimum cost.

Expertise in combining industrial production technologies into military applications, complying to Military specifications.



Enables us to be competitive and cost effective.



# Certifications



- ISO 9001- certified.  
(Israeli standards institute).
  - Approved by IAI to develop and produce systems.
  - Approved by Rafael to develop and produce systems.
  - Approved by Israeli army test authority (NASA).
- Approved by all major Israeli industrial companies.

# QTP and ESS testing at certified test laboratories.





# Project management team (5 engineers)



# F&E team



## Skilled operations team

- Material management.
- Purchasing.
- Subcontractor management.
- Logistics and shipping.



- Production floor geared for assembly of electronic systems.
- Controlled production files and documentation.
- Fully equipped integration and final test department.
- Experienced and qualified employees.



## Quality assurance

- Incoming, In-process, and Final quality inspection.
- Conformance and test reports  
Internal and from Sub-contractors.



## RMA and upgrade department.



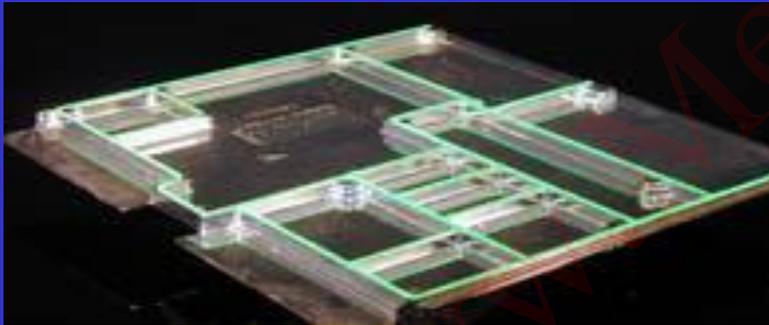
## In house workshop

- 2 CNC machining centers.
- Production of test and assembly jigs.
- Secondary mechanical assembly operations.



# EMI/RFI department

Automated dispensing of conductive elastomeric gaskets.



“Form in place” technology – unique EMI/RFI protection solutions.

Thank you  
By Ben Zehavi  
MetaliCom LLC

- MetaliCom LLC
- 1 Industrial Way West, Building-E, Suite-K Eatontown NJ 07724 USA
- Tel:732 918 8221      [www.MetaliCom.com](http://www.MetaliCom.com)      [Ben@MetaliCom.com](mailto:Ben@MetaliCom.com)