DuraCOR Rugged Central Units

DIGITAL TECHNOLOGIES FOR A BETTER WORLD
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Typical DuraCOR™ User Profiles

- Defence and national security
- Public safety: Police, frontier guard, customs fire & rescue, first responders and paramedics
- Community infrastructure: Energy, waste management, communication, traffic control
- Mass transit operators: Trains, buses, metros
- Industrial plants: Oil and gas, mining, agriculture
- Communication: Post, courier services

Typical DuraCOR™ System Applications

- Security, surveillance and alarm systems
- Digital video and audio recording systems
- Mobile computing and data processing
- Information systems – PIS controllers
- Harsh environment data acquisition and control
- Vehicle networking and management
- Fleet and asset management

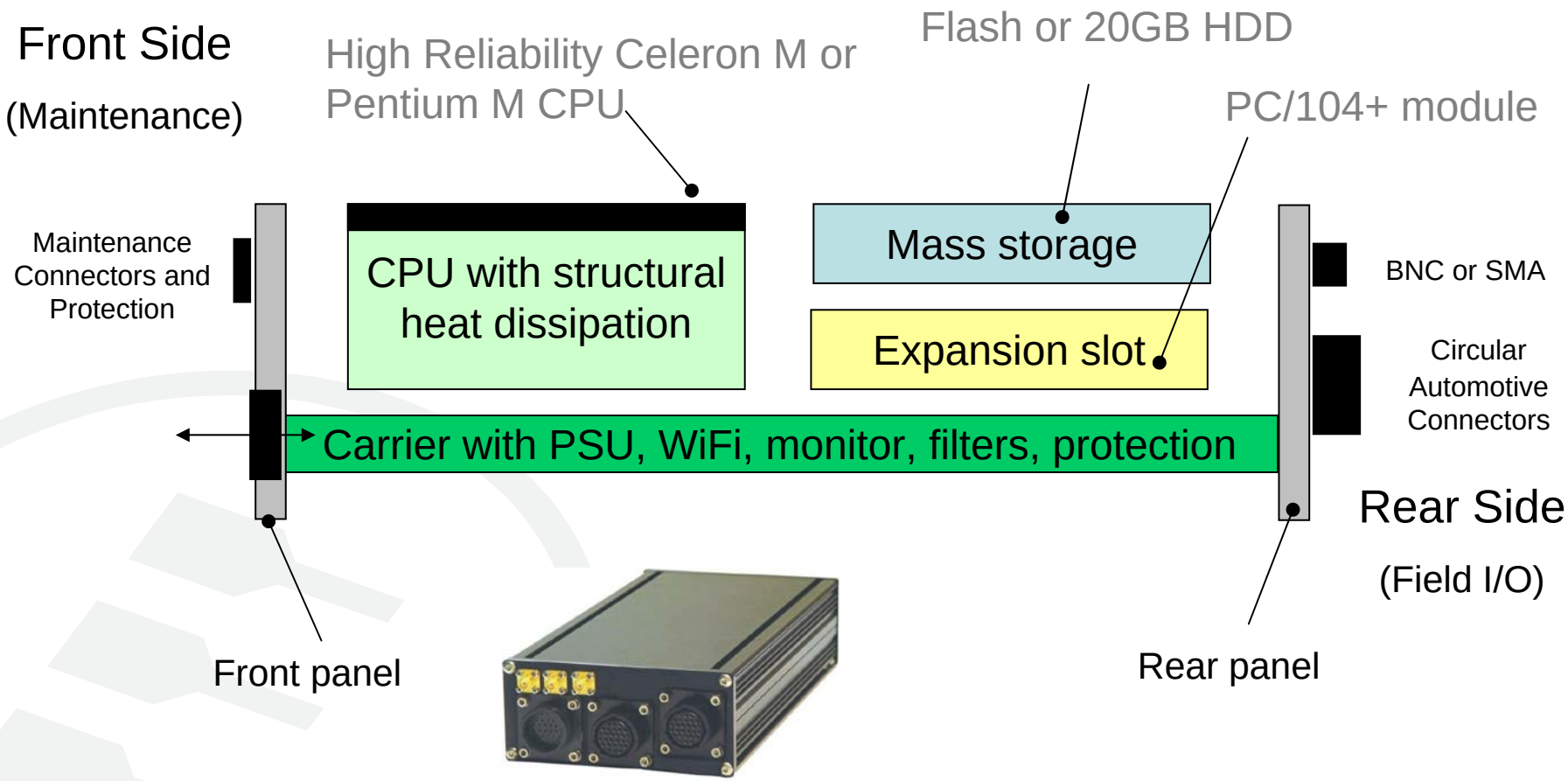
Versatile Platform - Examples

- **Standard DuraCOR**
  - Rugged X86 central units
- **Train MVB gateway**
  - Celeron 400MHz, MVB, VxWorks
- **Vehicle controller for public buses**
  - GX2 333MHz, CAN, Serial, GPS, GPRS
- **Military vehicle server**
  - GX2 333MHz CPU, Vehicle I/O

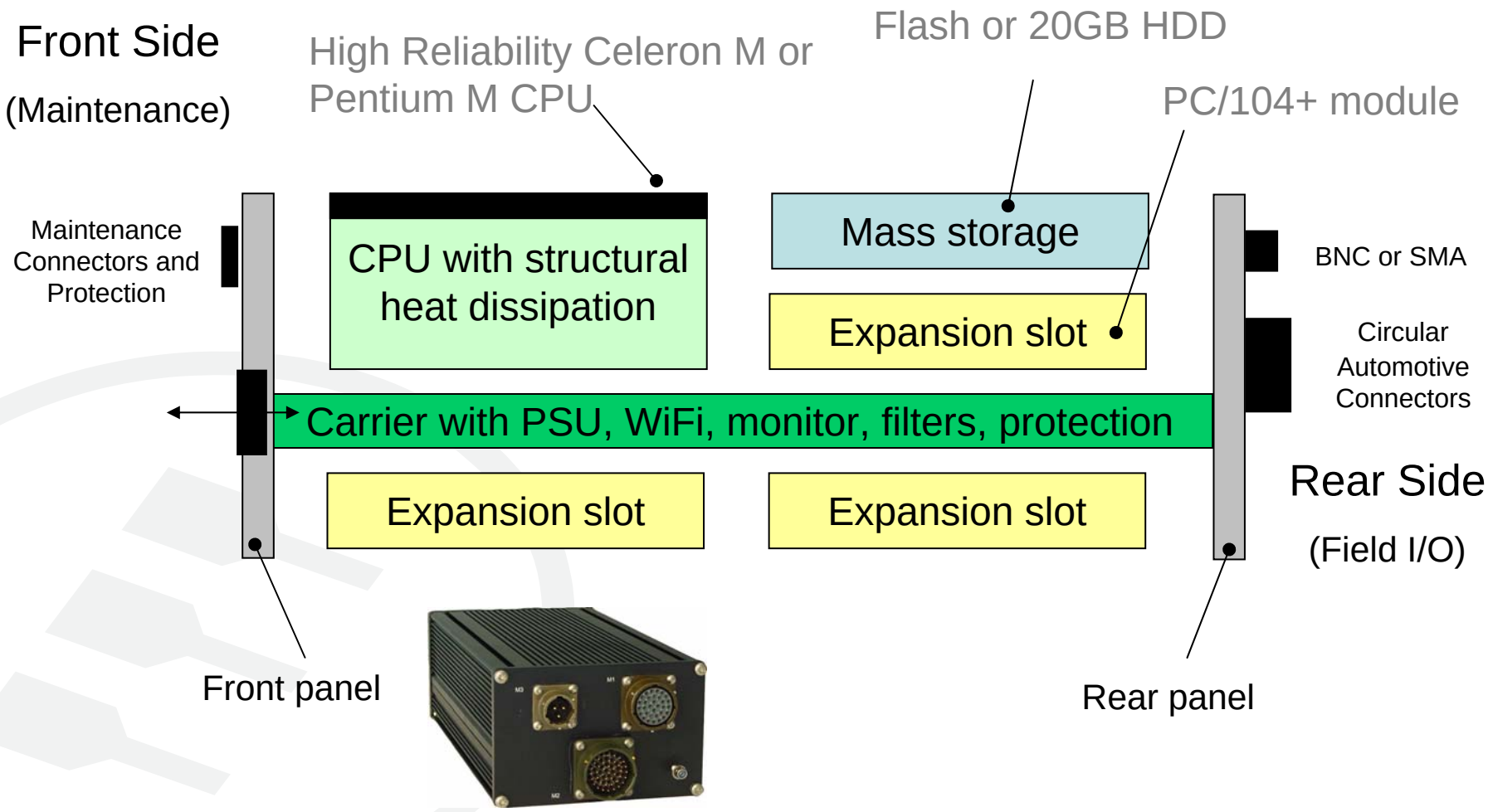
DuraCOR™ System Philosophy

- Ready off-the-shelf system for rugged computing applications
- Linux, WinCE or eXP operating systems (VxWORKS selectively)
- Modular structure adapts to project specific requirements
- Design and production supporting long product lifetime
- Rugged sealed I/O connectors
- Structural heat dissipation for CPU and power supply
- Wide operating temperature: -20 to +70C or -40 to +80/85C
- Compliance with EN50155 , EN50121
- Power supply options 9-36VDc or isolated 110VDc nominal
- HSDPA, CDMA, GPRS, GSM-R, WiFi and GPS integrated inside
- TETRA and WiMAX using external terminals
- High peripheral integration, versatile interfaces
- Extensive vehicle class EMI filtering and protection
- uC - based diagnostic monitoring system “Guardian”

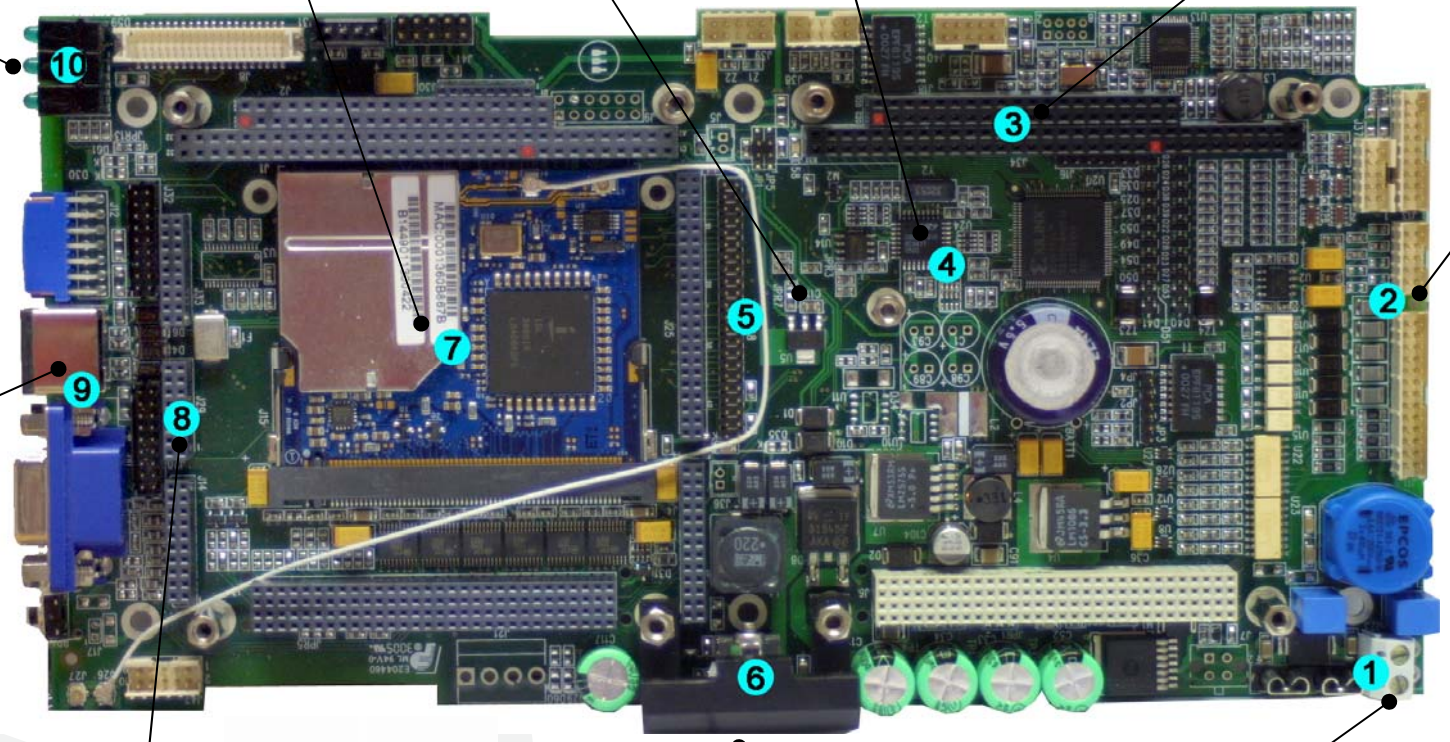
DuraCOR™ Minimal System Construction



DuraCOR™ Extended System Construction



DuraCOR™ Carrier Features



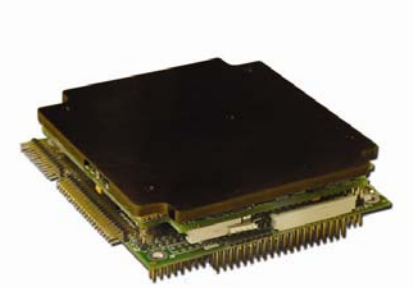
LEAD FREE RoHS COMPLIANT

DuraCOR™ High Reliability CPUs

General features:

- 333MHz GX2, 1GHz Celeron or 1.4GHz Pentium M processor
- Onboard soldered **DRAM – up to 512MB**
- 10/100 Mbit or Gbit Ethernet, CRT, LVDS, USB 1.0/2.0, serial ports, parallel port, EIDE, keyboard, PS/2, WDT, speaker, RTC, AC97 audio interface, non volatile storage, Flash disk
- Heat spreader, optimal for structural heat dissipation
- Extended temperature range, up to -40 to +85C

- **CPU-1433** - PC/104+ Low power GX2, USB 2.0, STD ports
- **CPU-1474** - PC/104+ 1GHz Celeron, Gigabit & 10/100Mbit Ethernet
- **CPU-1472** - PC/104+ 1GHz Celeron, 4 USB 2.0 ports, LVDS



DuraCOR™ Mass Storage

Solid State Disk

- **512MB to 4GB storage capacity**
- **Storage of OS image and application software**
- **Solid state FLASH disk technology**
- **Identified as ”Fixed Disk” – improved compatibility with OS**
- **Mechanically fixed on system carrier**
- Extended operating temperature range -40 ..+85C

Main Data Storage Disk (Optional)

- **20/50GB storage capacity**
- **Enhanced mechanical construction – shock and vibration protected**
- Wide operating temperature range -20 ..+85C
- 2,5” form factor, heat dissipated to enclosure
- **Power consumption 2-5W typical**

Eurotech DuraCOR™ Systems

- DuraCOR 1100 — Vehicle Logic unit
- DuraCOR 1210/1310 — Reliable general purpose central unit
- DuraCOR 1220/1320 — Rugged mobile PC central unit
- DuraCOR 1230 — Mobile PC video processing unit
- DuraCOR 1340 — MPEG-4 digital video processing unit
- DuraCOR 1910 — Rugged PC communication server

DuraCOR™ Selection Chart

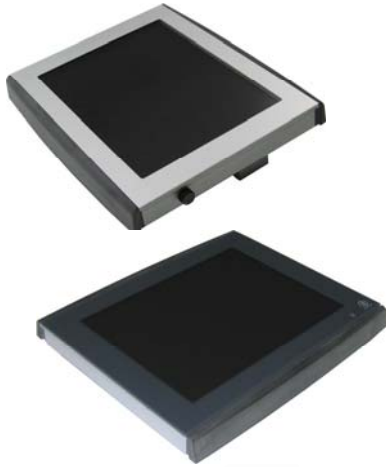
Model	CPU MHz	GPRS (HSDPA)	Serial	USB 1.1	Gbit Ethernet	10/100 Ethernet	CAN	STD video in	MPEG4 video in
DuraCOR 1100	400	Option	10	3		Yes	Yes		
DuraCOR 1210/1310	400 1000	Option	2	2		Yes			
DuraCOR 1220/1320	400 1000	Yes	2	2		Yes			
DuraCOR 1230	400	Option	2	2		Yes		Yes, 4 channels	
DuraCOR 1340	1000	Option	2	2		Yes			Yes, 4 channels
DuraCOR 1910	400	Yes	2	2	Yes	Yes, 4 ports			

Common features: 512MB flash disk, mass media slot, WiFi, GPS, isolated digital I/O, supervisor, audio I/O, display, keyboard and PS2 mouse, ignition key input.

DuraVIS™ - Rugged displays for DuraCOR systems

DuraVIS 1200 – 12,1” rugged displays

- Double buffered LVDS interface
- SVGA or XGA, 400cd brightness, 500:1 contrast
- Internal LVDS buffer, USB hub and control system
- External user USB port
- Optional USB touchscreen
- Wide backlight adjustment +5% to 100%
- 9-40Vdc supply voltage
- -20 to +70˚C operating temperature, IP65



DuraVIS 1500 – 15” rugged display

- Double buffered LVDS interface
- 1024 x 7680 XGA resolution 400cd brightness, 500:1 contrast
- Internal LVDS buffer, USB hub and control system
- External user USB port
- Wide backlight adjustment +5% to 100%
- 9-40Vdc supply voltage
- -20 to +70˚C operating temperature, IP65

DuraVIS available accesories and options

- Analogue CRT display interface units and cables
- High brightness LCDs 800-1000cd
- Custom control system firmware
- Custom sinkscreen printing – subject to NRE

Typical System Approvals

Subject	Standard followed	Restriction
Climatic restrictions		
Cololing	EN 50155 Section 2.1.2	(§ 10.2.3)
Dry heat	EN 50155 Section 2.1.2	(§ 10.2.4)
Storage temperature	EN 50155	(§ 10.2.14)
Mechanical restrictions		
Sinusoidal vibration	EN61373 (ed. 2000) Section 8	Category 1 Class B
Random vibration	EN61373 (ed. 2000) Section 9	Category 1 Class B
Shocks	EN61373 (ed. 2000) Section 10	Category 1 Class B
Electrical restrictions		
Power supply voltage interruption	EN 50155 Section 3.1.1.2	Class S2 : 0V for 10 ms
Power supply voltage switching	EN 50155 Section 3.1.3	Class C1 : 14,4V for 100 ms
Power supply over-voltage	EN 50155 Section 10.2.6.1	Voltage level 40V for 100ms
Sources	EN 50155 Section 10.2.6.2	Wave form A
Insulation resistance	EN 50155 Section 10.2.9	500Vac
EMC restrictions		
Immunity test		
Immunity	EN 50121-3-2 / EN 61000-4-2 ECE ONU reg.10	Electrostatic discharge immunity
Immunity	EN 50121-3-2 / EN 61000-4-3 ECE ONU reg.10	Radiated (electromagnetic field) immunity
Immunity	EN 50121-3-2 / EN 61000-4-4 ECE ONU reg.10	Fast transient/burst immunity
Immunity	EN 50121-3-2 / EN50155 ECE ONU reg.10	Surge immunity
Immunity	EN 61000-4-5 ECE ONU reg.10	Surge immunity
Immunity	EN 50121-3-2 / EN 61000-4-6 ECE ONU reg.10	Immunity to conducted disturbances
Emission test		
Emission	EN 50121-3-2 / EN 55011 ECE ONU reg.10	Conducted emission (Class A)
Emission	EN 50121-3-2 / EN 55011 ECE ONU reg.10	Radiated emission (Class A)
Safety characteristics		
Applicable specifications		
Safety	EN 60950	Essential constraints defined in the standard

Your expertise lies in THE APPLICATION

Reality:
70% of RYO embedded programs fail and never get to market

Eurotech is an outsourced,

“application-ready” embedded-computer company

that can be strategically deployed as your

“Virtual Design” Solutions House

ODM – Advantage Proposal
“It all adds up!”

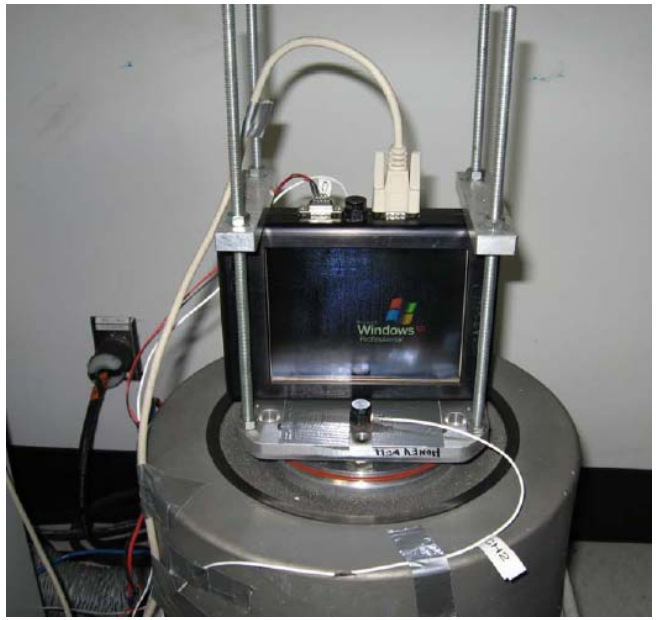
- Combine technologies from multiple sources
  - Eurotech system technology
  - Customers electronics or subsystem
- Reduced design and financial risk
- Accelerated project completion – increased focusing
- Possibility to increase integration and reduce size
- Overall cost optimization :
  - Development and certification
  - Production and quality
  - Service and maintenence
  - Lifecycle management
- Product differentiation strengthens competitiveness
- Higher availability and easier maintenence

ODM – Application Specific System Capabilities

- Custom board design and production
  - Communication and networking
  - Positioning, I/O and power supply design
  - Video and audio processing
- System integration
  - Electronics integration, cabling and connectors
  - Thermal, mechanical and enclosure design
- Adaptation of standard systems
  - Custom connector and I/O
  - Peripheral I/O functionality
  - System expansion
- Full sustom design and development
- Certification and approvals
- Service and maintenance planning

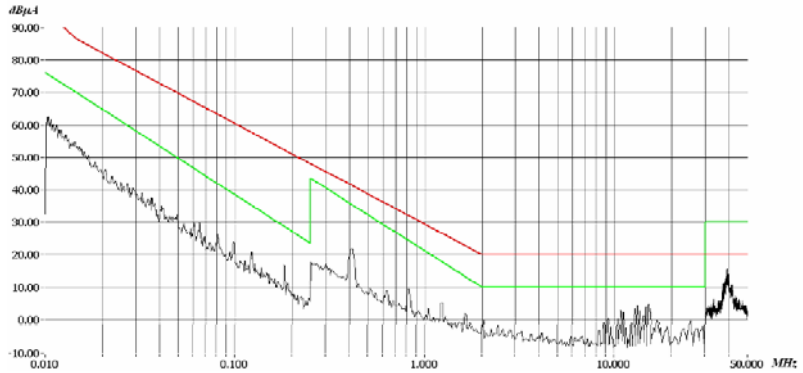
Certification and Compliance - Guarantee of Success

- **ISO 9000:2001** — **Quality program**
- **MIL-STD-810F** — **Environmental and Shock and Vibration**
- **MIL-STD-704** — **Avionics EMC**
- **MIL-STD-1275** — **Military vehicle EMC**
- **MIL-STD-461** — **Generic Military EMC Emissions , Immunity**

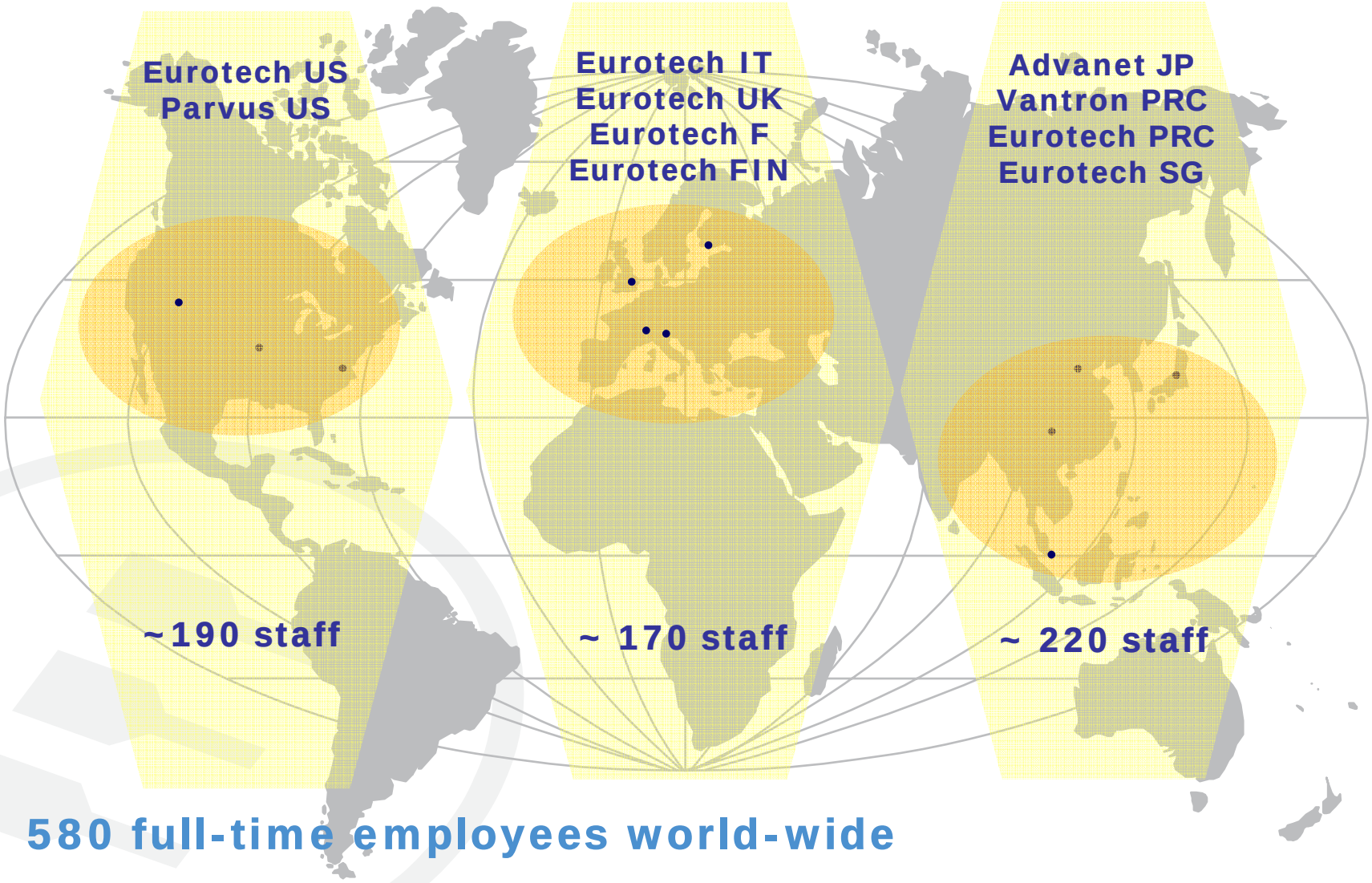


Eurotech path to compliance

- Experience in electronic and mechanical design
- Optimal EMI implementation
- Internal pre-compliance testing
- Accredited compliance certification
- Production quality control procedures



Our Global Footprint



580 full-time employees world-wide

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