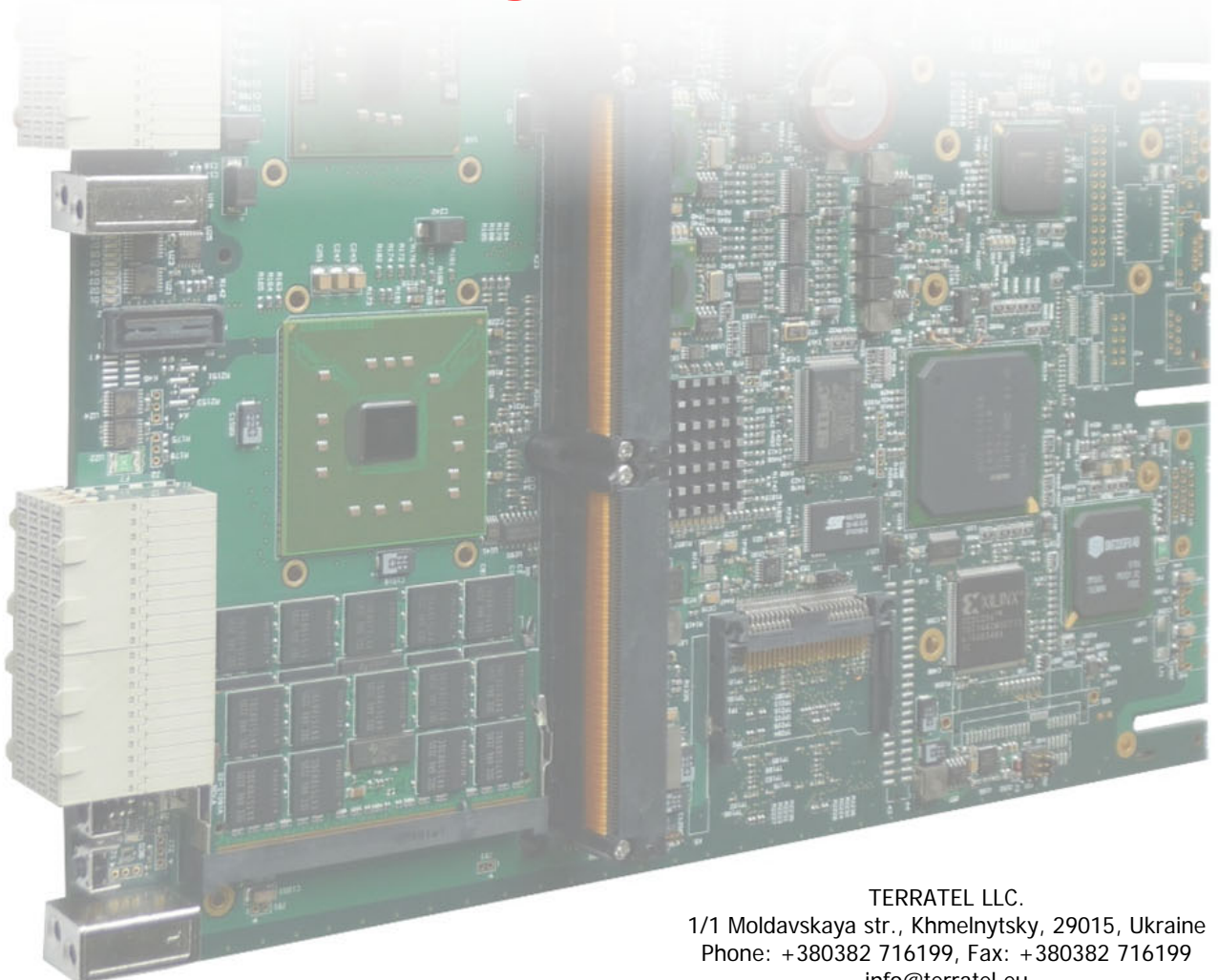


Electronic equipment design service



About company

TERRATEL is a private company formed in 2003 and based in Khmelnytsky, Ukraine. The Company was formed for the purpose of offering software and hardware development services to the high technology industry. We provide hardware and software custom design services for the communications, networking, high-end embedded computing systems on a very cost-effective basis. TERRATEL has established a reputation as a full-service, dependable resource for a full range of embedded systems design services. Managing multi-phase, multi-year programs demonstrates our ability to successfully manage not only short-fuse projects, but also comprehensive, long-term engagements. The company is remarkable for its agility and use of innovative technologies. Our customers benefit from a wide experience of our engineers that allows us to invent, design and deliver critical embedded computing systems.

Our technical staff comprises highly talented, results-oriented and empowered professional engineers with a history of successful product development and innovative design experience. Our team is composed of diverse professional engineers who hold degrees in either Electrical Engineering or Computer Science. Our senior engineers average 10 years in their fields of expertise, and the majority of our staff holds advanced degrees in technical fields. Together, our hardware and software teams work side by side in building solutions and making the critical tradeoffs that can save clients valuable time and money.

Our mission is to help our client companies bring technology to market sooner, with less overall expense, and with an assured level of quality control by understanding their needs. We hope to count you among our many satisfied clients.

Our Achievements and Capabilities

TERRATEL is focused on the rapid development of innovative product solutions for advanced communications, networking, embedded computing and media processing applications. These designs can be as simple as adding or removing features to one of existing standard platforms, or they may be a state of the art system pushing the technological envelope of processing performance, data throughput, or circuit density. The development cycle is optimized by our professional engineering staff, advanced design tools, efficient and repeatable design process. Our design expertise includes ultra high speed digital signal processing boards. We routinely and successfully design high performance products with 10 Gb interfaces and front-side buses over 1 GHz.

Our hardware experience:

- Extensive experience with AdvancedTCA, Advanced Mezzanine Card (AMC), CompactPCI, PCI Mezzanine Card (PMC).
- Expertise includes: 10 Gb Ethernet(XAUI), Gb Ethernet, SATA, SAS, USB, PCI, PCI-Express, PCI-X, AGTL+, DDR, DDR2, UTOPIA, T1/E1, ADSL.
- Processor expertise includes: Intel® Pentium® M, Dual-Core Intel® Xeon® ULV, Quad-Core Intel® Xeon® ULV, XScale network and I/O processors, Power QUICC.
- Chips expertise includes: Texas Instruments and Analog Devices DSPs, Texas Instruments and Atmel microcontrollers, Marvell, Zarlink, Legerity, Infineon and PMC Sierra communication circuits, Altera and Xilinx FPGAs and CPLDs, PLX Technologies PCI/PCI-e bridges etc.

- FPGA and CPLD design.
- PCBs design experience: High Speed Design up to 3.2GHz, Multilayer PCB designs to 16 Layers, Analog/Digital design, Mixed Technologies, High Density Design (HDI), single or dual sided assembly design, extreme high density placement, Advanced design rules, Impedance control, Stack-Up design, Matched line lengths and differential pairs routing, Microvia, Blind & Buried Vias, Fine pin pitch, high pin count ball grid array (BGA) routing, Design for manufacture, test and assembly.
- Extensive expertise of designing advanced power supplies.

Our software experience:

- Development and test board support packages (BSPs/LSPs) for Linux, VxWorks and Windows operating systems.
- Drivers development and integration.
- Development and customization of communication protocol stacks: SS7 (MTP2, MTP3, ISUP), ISDN PRI (EDSS1, QSIG), V 5.x, CAS (R1, R2D).

TERRATEL has experience of interacting with leading RTOS vendors. During projects implementation we made modern RTOS kernels adaptation, such as MontaVista Lynux, WindRiver VxWorks, PharLap for Intel XScale, Intel x86, Freescale PowerQUICC CPU's families.

Projects Designed



ATCA Base & Fabric HUB

The AdvancedTCA Base & Fabric HUB is fully PICMG 3.0/3.1 and AMC.0 R2.0-compatible. It is designed to handle the 14-slot Dual-Star ATCA platforms. It is based on the Marvell Prestera-DX Packet processors that support L2/L3 switching/routing. The board supports two AMC modules, which are the Full-size module designed to connect the telecom synchronization module and the Mid-size module to which two 10Gb (XAUI) Ethernet Uplinks are connected from the Base and Fabric Switches respectively. The front panel features connectors for connecting GbE Uplinks from the Base and Fabric Switches, the status indicators of the GbE ports and RS-232 from the control processor.



ADSL ATCA Board

The ATCA Board ADSL module includes the IP-based DSL (digital subscriber line) access multiplexer. A single module allows to provide ADSL2+ access over the existing telephone network for 64 subscribers. The subscriber line interface is implemented using three Telco 50 connectors mounted on the RTM.



ADSL RTM

The Rear Transition Module is an RTM for ATCA Board ADSL. The module features protection for each channel and connectors allowing to connect 64 subscribers. The subscriber line interface is implemented using three Telco 50 connectors mounted on the rear panel of the RTM.



DSP Advanced Mezzanine Card

The DSP Advanced Mezzanine Card is an AMC module designed to provide digital signal processing supported by 8x TMS320C6454 DSPs from Texas Instruments that are operated with frequency of 1 GHz. 128MB DDR2 SDRAM is connected to each DSP. Transportation of the processed data is provided through the GE Switch located on the module. Two options of configuring and controlling DSPs are possible: the stand-by mode using the PowerQUICC processor located on the module or configuring and controlling over the PCI-e interface of the AMC connector connected to the external HOST on the Carrier board.



Advanced Mezzanine Card

The hard disk drive module meets the PICMG AMC.0 R2.0 Middle Size standard. It is designed to be operated within the ATCA carrier. The module allows to accommodate SAS/SATA HDD 2.5".



RAID controller

The RAID controller is the mezzanine module that operates together with the ATCA Control Server Board. Up to 8 SAS-II/SATA-II disk drives can be connected to it. It also allows to organize RAID arrays of levels 0, 1, 5 and all their combinations. The controller is implemented on the Intel IOP-348 processor. It is connected to the HOST Carrier through the PCI-express interface.



Compact PCI HOST Controller

The HOST controller is a module of the Compact PCI 3U form factor. It is based on the Intel Celeron processor and MX440 chipset with 256 MB SDRAM. It can accommodate the 2.5" IDE HDD and Compacts Flash Disk and it features the following connectors on its front panel: RJ-45 (Fast Ethernet), 2x USB, VGA, PS/2, COM1, COM2, Audio in and Audio out. The power consumption of the module is about 7-10 W.



Master Controller Unit

The Master Controller Unit is designed to control and handle the subscriber unit cards or upgrade the electromechanical ATEs (automatic telephone exchanges). It allows to handle up to 128 subscriber units connected to the metropolitan network by using 4x E1 streams. The controller can be controlled and configured through the Ethernet port.



Subscriber Unit Module

The Subscriber Unit Module is designed to handle 8x or 16x subscriber lines. It can be applied for handling both the single subscriber lines and group subscriber lines (within the frames of upgrading the electromechanical ATEs).



Vehicle Tracking Unit

The unit is designed to determine the vehicle driving parameters (location, speed, driving direction, route), monitor the vehicle sensors and operation units, send the data to the base unit through the GSM path and store the collected data when connection is unavailable.



E1 Stream Multiplexer

The product is designed to switch the E1 streams and convert signaling. A single module is able of handling up to 16x E1 streams and up to 128x E1 streams when it is extended. Supported signaling types:

- 1-bit CAS;
- 2-bit CAS;
- EDSS-1;
- R2D;
- SS7.