

Pulse Worldwide Profile . . .

Pulse, a worldwide leader in electronic component and subassembly design and manufacturing, has a wide array of components from its classic magnetics business that covers power and signal products used in computing, networking and communications, power conversion, defense, aerospace, automotive, and consumer electronics to diplexers, splitters, filters, for xDSL, home networking, portable electronics that includes antennas for wireless applications such as hand-held mobile devices, automobile systems, and security equipment.

Late 2006, Pulse acquired Radiall/Larsen assets, namely its antenna business, a leading producer of antennas for automobiles. And, the company increased ownership of FRE (known as Pulse's Connector Division) to 75%. This has positioned Pulse as one of the largest resources for catalog and custom components and subassembly design and manufacturing for electronic OEMs, contract manufacturers, and ODMs.

Pulse's classic passive components and modules are typically mounted on a printed circuit board near integrated circuits or within connector modules. These components manage and regulate electronic signals and power by filtering out electro-magnetic interference (EMI) and ensuring proper current and voltage. Without them, today's computers, networks, wireless phones, automobiles, TVs, and other electronic devices simply would not operate. These products include inductors, transformers, chokes, splitters, and filters. Other electronic products include antennas, connectors, couplers, delay lines, power transformers and inductors for automobiles and value-added custom assemblies.

Other component configurations support a variety of technical applications and platforms such as IPTV, Ethernet, PoE, VoIP, DSL/HPN/Cable, RF, Wireless, MIL-STD-1553, AC/DC and DC/DC Power Conversion, Fibre Channel, T1, T3, ISDN, and mobile TV.

Pulse supports an international customer base with customer service and design centers in North America, Europe and Asia. These centers enable Pulse's design engineering, marketing and sales teams to better understand and more readily serve customers. Pulse markets products through component distributors, regional sales representatives and direct sales managers. Working closely with worldwide third-party manufacturers, ensures the quality and technology of all Pulse products. Focus on the design and manufacturing of innovative products, in collaboration with customers, ensures products are delivered on time and on budget.

Pulse actively participates in industry standards groups such as IEEE, ATIS, ETSI, HDMI, the DSL Forum, CommNexus, and MoCA. Through ongoing research and development, Pulse continues to receive patents for products and unique manufacturing processes.

INTELLIGENT SOLUTIONS

With an extensive line of state-of-the-art electronic solutions, Pulse is a leader in the design and manufacturing of electronic components in data networking, connectivity and digital telecommunications including wireless systems, broadband/Internet, cable modems, and most forms of power conversion. Pulse also designs and manufactures end-user products such as DSL and alarm filters (Excelsus® products), as well as components used in consumer products such as personal computers, cable modems, TVs, DVDs, PDAs, digital cameras, telephones and set-top boxes, unfiltered connectors for LAN and Telecom infrastructure, automobile magnetics for monitoring and controls, and antennas for various wireless and hand-held devices.



Pulse Corporate Headquarters, San Diego, California, USA



PRODUCTS

LAN CONNECTIVITY (Data Networking)

Magnetic interface modules, filtered connectors for 10BASE-T, 10/100BASE-TX, ATM, 10/100/1000BASE-T (Gigabit) and VoIP, and PoE applications.

BROADBAND: RF AND WIRELESS

RF magnetic components for use in RF and wireless applications (consumer, industrial and medical), including cable television, and RF, HFC equipment, set-top box and cable modem; Fibre Channel; IEEE 1394.

TELECOMMUNICATIONS

Telecom transformers and integrated transformer modules and chokes support T1/E1/CEPT/ISDN-Pri, T3/DS3/E3/STS-1, Echelon and Digital Audio, ISDN S- and ISDN U-Interface, telecom infrastructure equipment, CPE, VoIP, and audio interface.

BROADBAND: INTERNET ACCESS

Transformers, inductors, chokes, POTS splitters and filters for ADSL, G.Lite, HDSL, HDSL2, SDSL, VDSL; filter modules for SDV and Home Phoneline Networking (HPN) 1M8 & 10M8 broadband applications, including Excelsus® brand DSL filters, splitters and accessories for CPE, CO and MTU applications worldwide; also featuring the new Pulse brand, SmartER™ series of xDSL, low pass, filter modules for CO and CPE.

ANTENNAS

Single- and dual-band wireless access point used for WAN, compatible with IEEE.802.11a/b/g/n, Bluetooth®, ZigBee™ and other devices that use ISM frequency bands; cellular and non-cellular antennas—internal and external and integrated modules for mobile handsets; ceramic chip antennas for narrowband communications; plus Larsen® Antennas for automotive applications and GPS.

POWER MAGNETICS

A broad range of THT and SMT power transformers and inductors used in AC/DC switching power supplies and DC/DC converters, discrete and embedded; power inductors, high- and low-frequency power transformers; gate drive transformers; current sense magnetics; switchmode transformers for power supplies in TVs and magnetics for LCD TV and Plasma TV power supplies, and inverters; and, common mode chokes.

MILITARY/AEROSPACE

Fibre Channel, SONET/SDH/E4/STM-1, Firewire (IEEE1394), MIL STD 1553 data bus couplers and QPL/non-QPL; transformers, delay lines; ruggedized OTS Gigabit Ethernet, power inductors and transformers.

AUTOMOTIVE POWER MAGNETICS

Ignition transformers, ignition coils, ABS coils, valve coils, stepper motor coils, coils for immobilizer systems, coils for tank ventilation, shock absorber sensor coils, subassemblies, that use Pulse's plastics technology.

CONNECTORS FOR NETWORKING AND TELECOMMUNICATIONS INFRASTRUCTURE

Filtered and unfiltered connectors for networking and telecom equipment, wireless systems and consumer electronics: RJ45, RJ11, USB, keystone jack CAT5e/6, single and multiple port connectors, terminal blocks; used in PCs, cable modems, TVs, DVDs, PDAs, digital cameras, set-top boxes.

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PULSE CORPORATE QUALITY POLICY

- The corporate goal is to achieve the highest level of customer satisfaction through continuous improvements in quality, delivery, and service.
- Pulse is committed to and expects quality performance from every employee.
- The company standard is defect-free products and services.

Committed to bringing the highest possible level of compliance to international standards, all sites are registered to ISO 9001:2000 and employ world-class manufacturing practices such as Kaizen, Lean and Six Sigma.

HIGHLIGHTS

- 1947 Technitrol (NYSE:TNL) founded
- 1956 Pulse Engineering founded
- 1994 Fil-Mag purchased by Technitrol
- 1995 Technitrol purchases Pulse Engineering that merges with Fil-Mag and becomes Pulse
- 1997 Pulse purchase of Nortel Magnetics Division
- 1998 Fery Electronics in Orgelet France acquired
- 1998 Valor Electronics acquired and merged into Pulse
- 2001 Grupo ECM acquired and merged into Pulse
- 2001 Excelsus Technologies acquired and merged into Pulse
- 2003 Eldor (Italy) acquired, becomes Consumer Products Division
- 2005 Pulse acquires 51% of FRE which becomes Pulse's Connector Division
- 2005 LK Products is acquired by Pulse and becomes the Antenna Division
- 2006 ERA acquired by Pulse and becomes the Automotive Division
- 2006 Larsen® Antennas acquired as part of the Antenna Division

KEY EXECUTIVES

- John Kowalski, President and CEO
- Alan Benjamin, COO (Chief Operating Officer)
- John Houston, Sr. VP, Signal Products Group
- Mike Gilmartin, VP, General Manager, Telecom Division
- Mike McAuliffe, Senior VP, Power Products Group
- Roger Shahnazarian, Sr. VP, Production Operations
- Jouni Anttila, VP, General Manager, Antenna Products Division
- Gregg Burnett, VP, Corporate Quality
- Bill Fister, VP, Logistics
- Jason Huang - VP, General Manager, Connector Division
- Dan Jackson, VP, Worldwide Sales
- Steve Mentas, VP, Information Technology
- KC Ng - Vice President, Lean
- Joe Ocampo, VP, General Manager, LAN Division
- Bruce Hamilton, VP, Power Products
- Coleman Tso, VP, China Operations
- Tom Dale, VP, Human Resources

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MANUFACTURING

Pulse has worldwide production operations located in the People's Republic of China, Europe and North Africa.

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SALES & SUPPORT

THE AMERICAS

Pulse-authorized Distributor and Representative offices are located in the contiguous 48 states in the USA, plus Puerto Rico, Canada, Mexico and Brazil.

ASIA

18+ Distributor and Representative locations throughout China, that includes Japan, Australia, India and New Zealand.

EUROPE

67+ Distributor and Representative locations, plus offices in Israel.

WORLDWIDE

Find all Pulse Sales Locations and Pulse-authorized Distributor and Representative offices on the Pulse web site:

<http://www.pulseeng.com/about/offices.aspx>