

Richardson Electronics, Ltd.

Corporate Overview

2015-2016



Facts and Figures

Founded in 1947, Richardson Electronics, Ltd. has a rich and unique history of engineering, manufacturing and distributing power grid and microwave tubes and related consumables, and customized display solutions.

- **Founded in 1947**
- **Headquarters:** La Fox, Illinois (near Chicago)
- **NASDAQ:** RELL
- **Web Site:** www.rell.com
- **FY2015 Sales:** \$137 million
 - EDG: \$105.7 million
 - Canvys: \$24.6 million
 - Healthcare: \$6.6 million
- **Strong Balance Sheet:** \$98.2 million in cash and investments
- **Employees:** 340+; more than half in sales, engineering and product management
- **Customer base:** 20,000 customers



- **ISO 9001:2008 certified**
- **ISO13485 certified**
- **Locations:** Global network of 40+ sales offices and stocking locations with legal entities in 24 countries

Strategic Direction

"Our highest return on investment will be achieved by leveraging the power of our global infrastructure and capitalizing on the strength of our customer relationships." - Edward J. Richardson, Chairman, CEO

Our goal is to add \$100 to \$200 million of incremental profitable, high growth sales volume within a three to five year period.

- Maximize use of current infrastructure critical for maintaining current high margin businesses
- Reposition REL as a leader in power management and healthcare solutions
 - Organic Growth
 - Expansion of distribution agreements
 - Product line expansion
 - Leverage relationships with 20,000 customers globally
 - Expansion of manufacturing resources/ capabilities
 - Formation of New Partnerships
 - Acquisitions
- Provide a superior return on investment to our shareholders



Our Businesses



- **Power and Microwave Technologies (PMT)**
 - Includes Electron Device Group (EDG)
 - Leading distributor of power grid and microwave tubes and related consumable parts
 - Global provider of Engineered Solutions specializing in industrial tube manufacturing, microwave generators, power supplies and customer specific parts and assemblies
 - Technical service for medical, military, satellite communication and scientific markets
 - Niche distributor specializing in demand creation for power conversion products
 - Solutions for Alternative Energy, Broadcast/ Communication, Industrial Equipment, Marine/Avionics, Medical and Semiconductor.

Our Businesses

- **Richardson Healthcare**

- Manufacturer and distributor of PACS displays and operating room solutions (formerly part of Canvys)
- Manufacturer and distributor of replacement parts for diagnostic imaging equipment including CT Tubes and other high value components
- Repair service for MRI Amplifiers
- Repair and service training
- Focus is on providing the highest quality, fully tested replacement parts



- **Canvys**

- Manufacturer of custom displays for medical and industrial applications



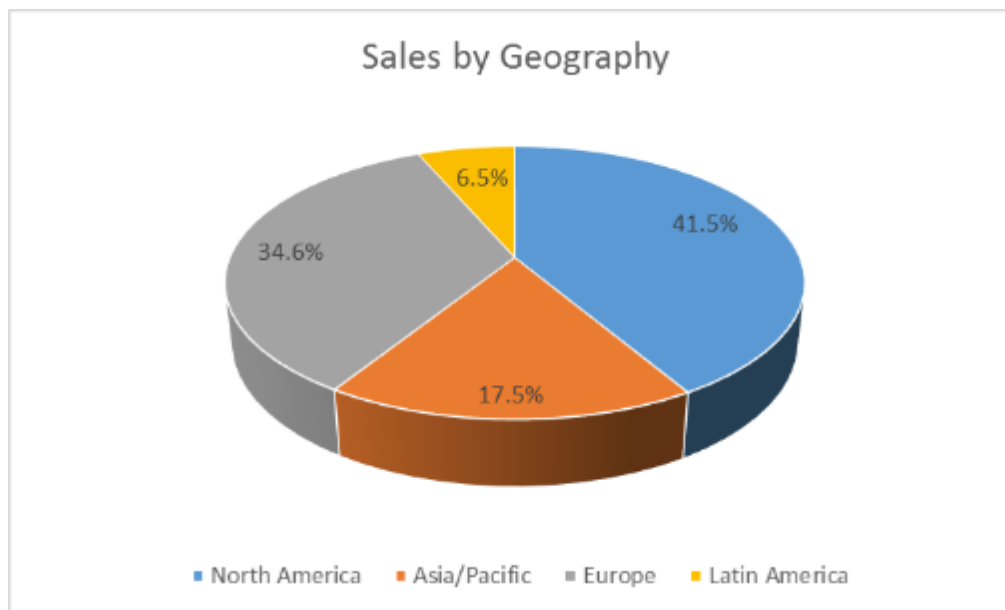
Our Value Propositions

- **Peace of Mind**
 - We manufacture and distribute the highest quality products in the markets we serve
 - We are a global, publicly traded company with nearly 70 years of history
- **Hassle Free Experience**
 - Our employees are dedicated to customer service; we are publicly traded yet maintain a family owned culture
 - Global distribution
 - Local languages, local currencies, local people
- **Affordability**
 - We enable the lowest possible cost of ownership by providing an alternative to the OEM
 - We identify ways to keep your equipment operating longer

We are Global

We employ local field sales engineers throughout the world who work side-by-side with customers, and we maintain strong strategic partnerships with the leading manufacturers .

Richardson Electronics has a strong international presence with nearly 60% of revenue generated outside the US.



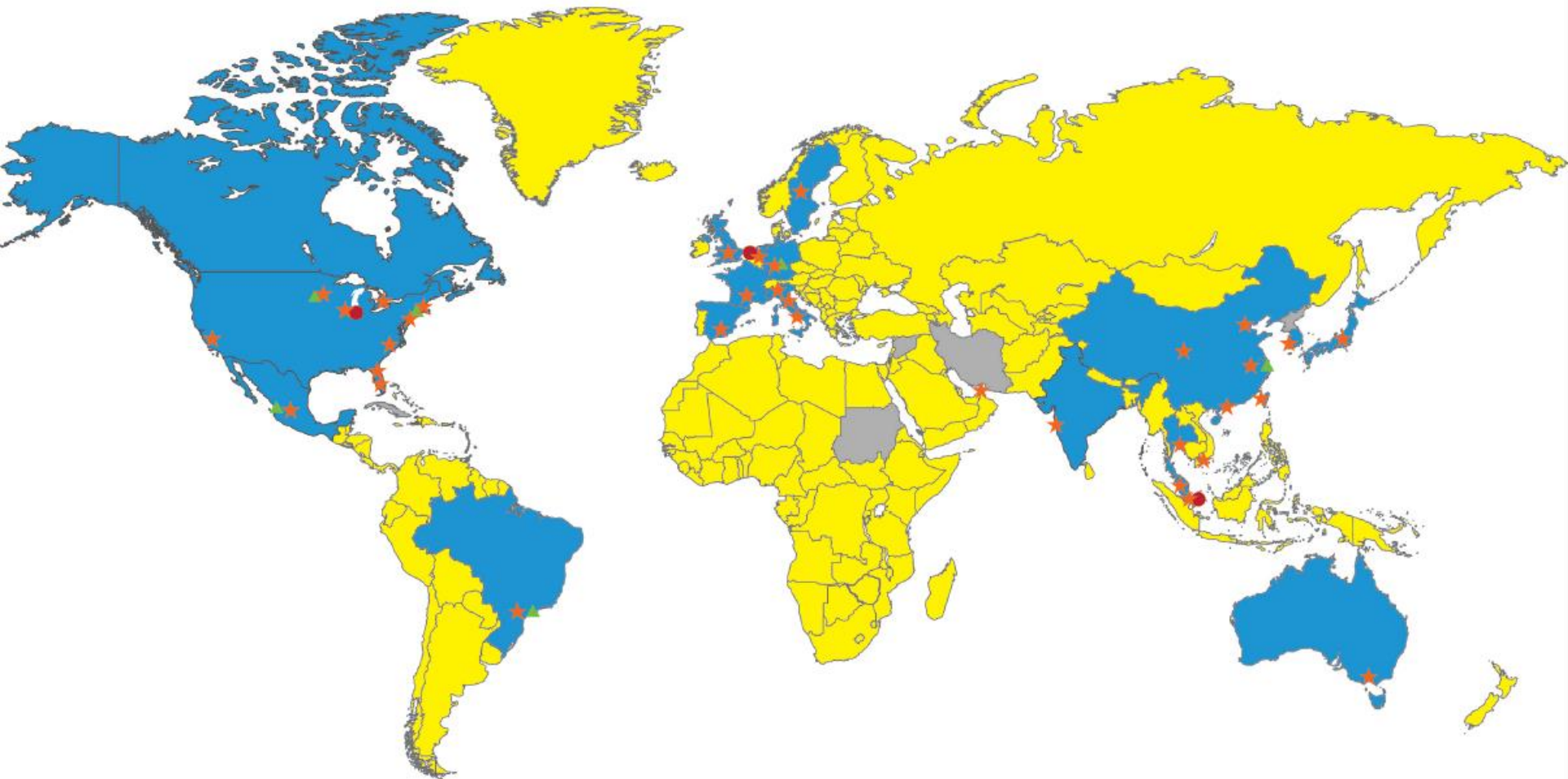
Global Engineered Solutions

- **Design and engineering capabilities to support customers' needs for design-in components and custom-engineered solutions**
- **Highly specialized, high-mix, low-volume manufacturer**
 - RF and microwave components and subsystems
 - Electron tubes
 - Vacuum devices
 - Power supplies
 - Custom displays
- **Technical specialist in building and testing components and subassemblies**
 - High power/high voltage
 - Linear accelerators
 - Thermal management
 - Microwave generators
- **Service and repair for traveling wave tube (TWT) amplifiers and related equipment for the Satellite Communications market, and CO₂ laser equipment.**
- **Service and repair for diagnostic imaging equipment high value replacement parts**

Global IT Infrastructure and Visibility

- **Global, real time system for managing customers from quote through orders**
- **Customer and product information includes**
 - Sales and quote history including won/lost, pricing, costs, quote comments
 - Call notes; quote and call follow up and prompting
 - Design tracking
 - Product availability; emergency stock in all locations with ability to see committed, reserved, available, on order
 - Pricing in local currencies converted against the dollar every day
 - Local stock shown in local currency
 - Data is easily exchanged in many ways to identify opportunities and facilitate design wins

Richardson Electronics ships worldwide with the exception of embargoed countries (North Korea, Iran, Sudan, and Syria). In addition, we conduct extra screening to scrutinized countries.



SHIP TO & LEGAL ENTITIES (BLUE)

SHIP TO ONLY (YELLOW)

NO COVERAGE ENTITIES (GRAY)

● DISTRIBUTION CENTER

★ SALES OFFICE

▲ SATELLITE WAREHOUSE

Global Supply Chain

- **Four international distribution hubs:**
 - North America (LaFox, Illinois)
 - Asia (Hong Kong, Singapore)
 - Europe (Amsterdam)
- **Two satellite stocking locations**
 - South America (Brazil)
 - China (Shanghai)
- **Emergency stock in all locations**
- **Shipment to any city worldwide in one to three business days**
- **Maximum flexibility including small quantity orders**
- **Freight carrier coordination**
- **ECCN items flagged for export control**



Global Value Added Services

- Bar code
- EDI capability
- On-line procurement services
- JIT (Just-In-Time) deliveries
- Materials management
- Special packaging (military or other)
- Private labeling
- Shipping
- Component sorting, testing and cross-referencing



Strategic Business Unit Overview



Power & Microwave Technologies (PMT)

Formerly EDG

Power & Microwave Technologies (formerly EDG)

Selected Products

- Power Grid Tubes
- Magnetrons
- Klystrons
- Hydrogen Thyratrons
- Traveling Wave Tubes
- High Voltage Capacitors
- CW/Pulsed Microwave Products
- Waveguides
- Microwave Generators
- Cathode Ray Tubes

Engineered Solutions

- High power, high frequency design services
- Custom microwave & RF electron devices
- Accessories, connectors & sockets

Services

- CW Microwave Assembly
- High Power/High Voltage Assembly
- Application Design Assistance
- CW Microwave Design & Engineering
- Air-Wound Inductors & RF Coil Testing
- CW Microwave Testing
- Electrical Testing
- High Power/High Voltage Testing
- Electron Tube Manufacturing
- Service for Traveling Wave Tube Amplifiers and Related Equipment, and CO₂ Laser Equipment



Power & Microwave Technologies

Manufacturing

Capabilities

- Assembly
- Contract Manufacturing
- Custom/Private Labeling
- Design & Engineering
- Development
- Sourcing
- Testing

Specialty Services

- Air-Wound Inductors and RF Coil Making
- Electromechanical Assembly
- Machining
- Solder Dipping
- Brazing, Welding and Joining
- High Voltage Assembly
- Plating, Chemical Processing and Finishing



Power & Microwave Technologies

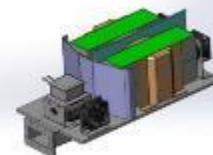
Service

- **Provide cost-effective installation and service of microwave tubes to communications, industrial, military and medical users**
- **Provide technical assistance to power grid tube customers that may not have the ability to service their own equipment today**
- **Locations in the UK and Dubai**
- **Areas of expertise include:**
 - High power amplifiers (TWT and Klystron)
 - CO₂ laser equipment
 - Solid state power amplifiers
 - Frequency converters
 - RF and microwave systems
 - Instrumentation amplifiers
 - High voltage power supplies
 - Associated RF equipment
 - Board level repair
- **Rental and used equipment available**



Power & Microwave Technologies

New Product Development



- **Investment in people and capital expense in Q2 FY14**
- **Focusing on**
 - RF Sources and Distribution Networks
 - RF Components
 - HV Power Supplies
 - Microwave Generators
- **Increase LaFox, IL Manufacturing skills**
 - Magnetics Winding
 - Thru-Hole PCB Assembly
 - Vacuum Potting
- **Provide engineering support to Manufacturing, Sales, third party engineering companies**
- **Maintain present Engineered Solutions revenue stream while adding new products for growth**

Power & Microwave Technologies

Markets Served

- RF & Microwave Heating
- Semiconductor
- Plasma
- Scientific
- Marine & Avionics
- Laser
- Radar
- Radio & TV Broadcast (FM, UHF, VHF and Shortwave)
- Medical
- Automotive

KEY PARTNERS & SUPPLIERS



Power & Microwave Technologies

Key Customers



- Novellus
- Nordson
- MKS
- Axcellis
- Flextronics
- Stalam/Deyi
- Garmin
- Danaher
- Honeywell
- Leco
- Lam Research



A partner for **life**

THALES



Power & Microwave Technologies

Powerlink

Our clients include:



Service agent for:



Richardson Healthcare Overview



Richardson Healthcare helps lower the cost of healthcare delivery with high value parts, upgrades and training solutions for hospitals and third party service providers.

- **Peace of mind:** We focus on the products so our customers can focus on the outcome.
- **Great Value:** We enable customers to lower the cost of healthcare delivery
- **Hassle-free customer experience:** We provide outstanding technical support, any time and every time.

International Medical Equipment and Service (IMES)



**International
Medical**
EQUIPMENT & SERVICE
A Division of Richardson Healthcare

- Richardson acquired IMES – June 2015
- Located in Fort Mill, SC (right outside Charlotte, NC)
- IMES provides OEM quality replacement CT parts and training to support in-house clinical engineering and third party equipment maintenance companies.
- Full Toshiba CT parts availability through Aquilion 64
- Experienced engineers who provide 24/7 technical support
- 24,000 sq. ft. of climate-controlled space with interactive training center and on-site test bays



Richardson Healthcare: Quality diagnostic displays and workstations, portable DR systems, and now, a full line of CT parts for Toshiba and other major brands, training for service providers.



Healthcare

Products

- Radiology/PACS Displays & Solutions
 - Diagnostic & Clinical Displays
 - Computer Workstations & Calibration S/W
 - Ergonomic Radiology Furniture
- Surgical Displays & Solutions
- Replacement Parts for Diagnostic Imaging
 - CT Tubes and replacement parts
 - Flat Panel Detectors
 - Power Grid Tubes for MRI Amplifiers
- Digital Radiography Solutions
 - System Retrofits
 - CR → DR Transition Upgrades



Services



- Training
- Technical Support
- Certified Pre-owned Testing
- Onsite Demonstrations
- Solution Audits
- QC/QA

Engineered Solutions

- Replacement Part Validation
- Depot Repair and Refurbishment
- Retrofits and Upgrades
- Integration

Healthcare

Diagnostic/Clinical Displays & Solutions



Flat Panel Detectors & CR to DR Upgrade



Replacement Parts & Training



**International
Medical**
EQUIPMENT & SERVICE
A Division of Richardson Healthcare



CT & MRI Replacement Tubes



 **Richardson
Electronics**

Healthcare

Key Segments Served

- Radiology & Diagnostic Imaging
- Surgical/OR Imaging
- Clinical Engineering

KEY PARTNERS - SUPPLIERS - BRANDS



Healthcare

Key Customers—Healthcare Providers



Key Customers—Service Providers



Canvys—Visual Technology Solutions

Selected Products

- Customized Displays
- Monitors and Integrated Systems
- Touchscreen and Privacy Technology
- Computing Platforms and Mounting Solutions
- Installation and Calibration Services
- Solution Consulting and Custom Engineering



Engineered Solutions

- Consultation
- Custom Display Engineering
- Prototype Design
- Display Manufacturing Integration Facilities

Canvys

Medical Grade



Fully Embedded Custom Designs



Rack Mount and Chassis Designs



True Flat Series



Canvys

Markets Served

- Medical OEM
- Automation and Industrial OEM
- Marine Radar
- Aviation
- Military Defense and Aerospace
- Retail/POS
- Financial/Stock Exchanges
- Transportation

SELECT CUSTOMERS



Carestream

VARiAN
medical systems

A partner for life

PLANT CML
an EADS North America Company



CARL ZEISS MEDITEC

Dräger



**Richardson
Electronics**

