



# 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](http://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



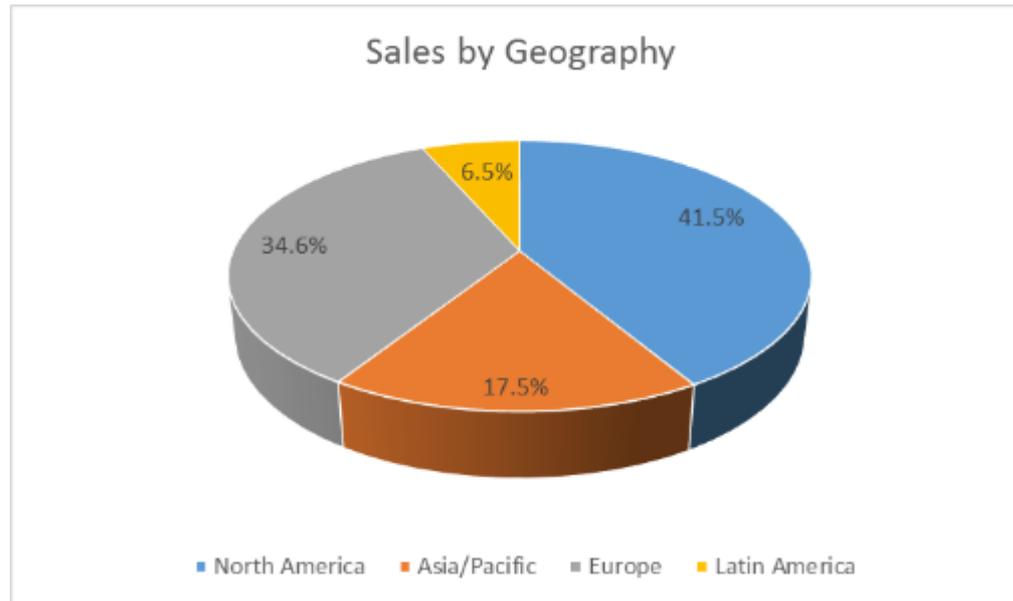
# Our Value Propositions

- **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.



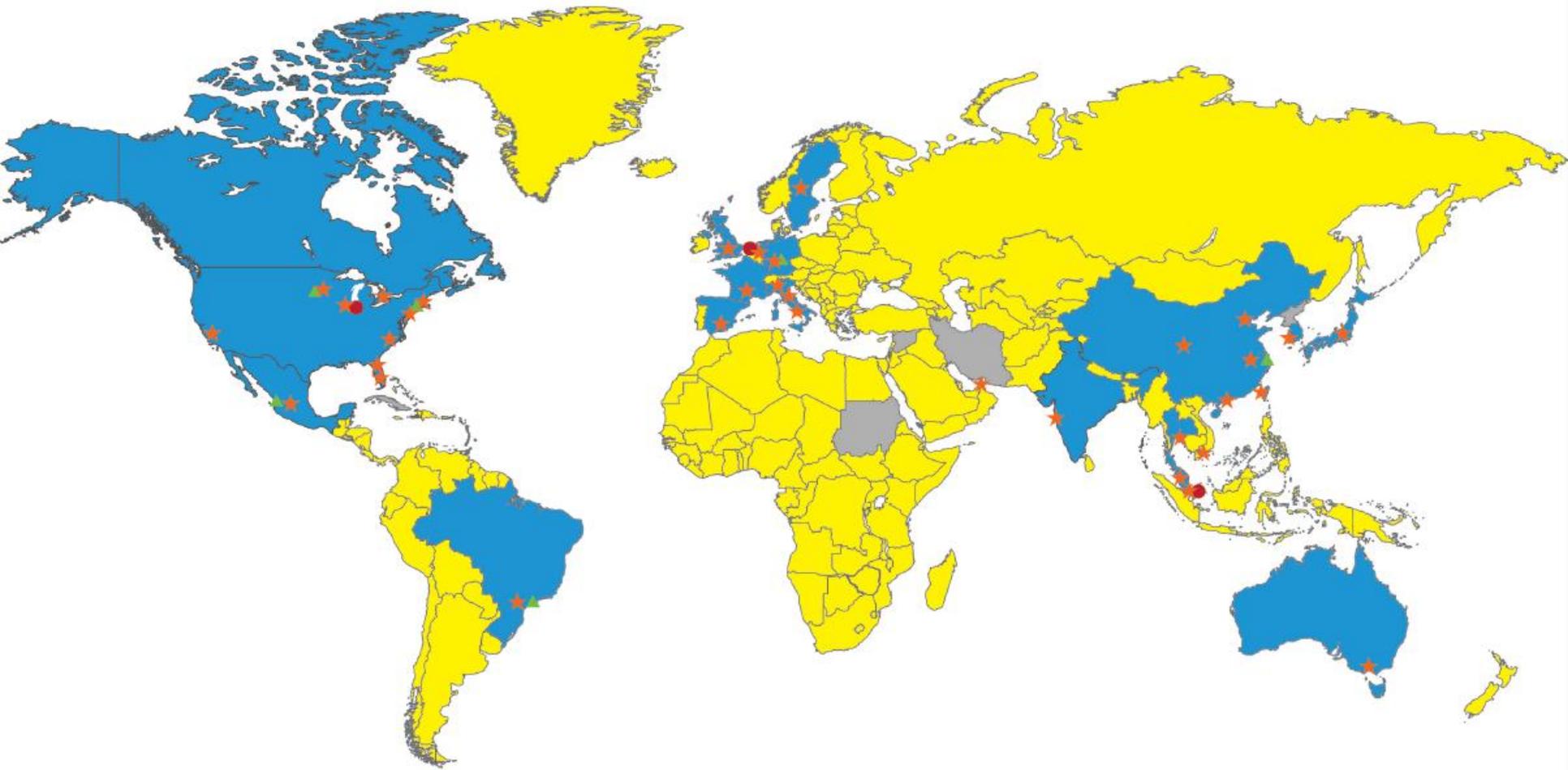
# Global Engineered Solutions

- **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 CO<sub>2</sub> 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 CO<sub>2</sub> 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

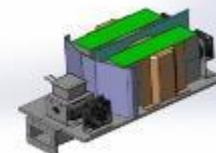
## Service

- **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)
  - CO<sub>2</sub> 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



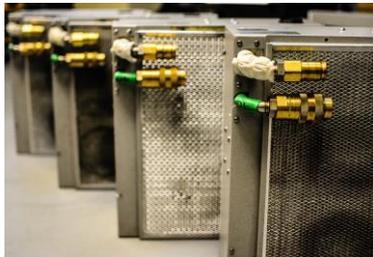
## Flat Panel Detectors & CR to DR Upgrade



## 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<sup>®</sup>  
an EADS North America Company



CARL ZEISS MEDITEC

Dräger



Richardson  
Electronics

