Microwave Products
For radar and electronic warfare, industrial, medical, communications and scientific applications

Electron Device Business
150 Sohier Road • Beverly, MA USA 01915
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Radar & Electronic Warfare
CPI products are found in military radar systems around the world.

Airborne Radar, ECM and Missile Seeker
- Navigation
- Terrain following
- Ground mapping
- Air and ground surveillance
- Weapons control
- Anti-ship missiles
- Cruise missiles
- Air defense systems
- Missile defense systems

Naval Radar
- Naval surveillance
- Navigation
- Fire control
- Shipboard defense systems
- Air traffic control
- Aircraft landing systems
- Shipboard defense systems
- Airborne surveillance

Ground-based Radar:
- Air defense radars
- Missile control
- Radar simulators
- Air surveillance and tracking
- Range tracking
- Satellite tracking systems
- Ground and sea surveillance
- Artillery locating systems

Proven technology...
Commercial & Industrial
CPI is a major supplier of microwave and millimeter-wave components and subsystems generating and controlling RF power in radar systems and radar-based sensors.

Air Traffic Control Radar
- Air Surveillance Radar
- Air Route Surveillance Radar
- Surface Movement Radar
- Terminal Doppler Weather Radar (TDWR)
- Precision Approach Control and Landing Systems

Medical/Industrial
- Image-guided radiosurgery
- MRI
- IMRT
- Cargo screening
- EMI/EMC Testing

Scientific
- High energy particle accelerators
- Superconductors

Communications
- Direct broadcast satellite
- Satellite uplink market
- Satellite transmissions and terrestrial broadcasting
- Tactical communications sets
- High-frequency communications networks

...in new designs, legacy sustainment, and upgrades
Solid State Power Amplifiers

- High gain & high efficiency
- Excellent pulse fidelity
- Outstanding spectral performance

- Gallium Nitride transistor technology
- Air- or liquid-cooled
- Pulsed up to 10% duty
- Designed for demanding applications
- Frequencies from 1 GHz to 10 GHz
- Power levels from 1 kW to 50 kW

Transmitters and Power Supplies

- Fully integrated systems
- 19-Inch rack mount versions
- Airborne, naval & ground applications
- Wide RF bandwidth
- Commercial & EW applications

- Magnetron transmitters
- Klystron transmitters
- Helix & CCTWT amplifiers
- IOT transmitters
- Gyrotron transmitters
- High-voltage power supplies
- Frequencies from 1 GHz to 40 GHz
- Power levels from 100 W to 2 MW
Integrated Microwave Assemblies (IMAs)
- High-power handling
- Low-noise figure
- Calibrated couplers
- Variable attenuation

Integrated assemblies
- Receivers
- Upconverters
- Pulse compressors
- Voltage-controlled oscillators
- Low-noise amplifiers
- Switches
- Multifunction components
- Frequencies from 100 MHz to 40 GHz

Receiver Protectors Control Components
- Fast switching time
- High peak power
- Superior broadband isolation
- Very fast recovery times
- Low output leakage

- Active and passive receiver protectors
- Solid state, plasma, ferrite limiters
- Multipactors
- High-power solid state switches
- Duplexers
- Digital or analog attenuators
  - Waveguide, coax, or microstrip
- Pressure windows
- Frequencies from 100 MHz to 40 GHz
- Power levels from milliwatts to megawatts
**TWTs**
Coupled Cavity, Helix and Ring Loop

Coupled-cavity TWTs:
- Frequencies from 175 MHz to 3.9 GHz
- Power levels from 5 kW to 1 MW

Helix TWTs:
- Frequencies from S-band to Ka-band
- Air- and conduction-cooled
- Power levels from 25 W to 2500 W
- CW & Pulsed

Ring loop TWTs:
- Frequencies from 1 GHz to 6 GHz
- Power levels from 1 kW to 15 MW

**Klystrons and Gyrotrons**

Klystrons:
- CW power up to 1.2 MW
- Pulsed power up to 50 MW
- Frequency range: 300 MHz to 35 GHz

Gyrotrons:
- Power levels up to 1.5 MW CW
- Frequencies up to 600 GHz
**Magnetrons**

- High-power handling
- Long life
- Exceptional frequency stability

- Coaxial magnetrons
- Frequency agile magnetrons
- Beacon magnetrons
- Injection locked magnetrons
- Frequencies from 1 GHz to 35 GHz
- Power levels from 100 W to 35 MW

**Power Couplers**

- Proven designs
- Full class 10 (ISO-4) cleaning & assembly
- Vast expertise building an array of power couplers and electron devices

- Power couplers for:
  - Superconducting accelerators
  - Free electron lasers
  - Spallation neutron sources
  - Energy recovery LINACs
  - Third harmonic cavities
- Frequencies from 175 MHz to 3.9 GHz
- Power levels from 5 kW to 1 MW
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