L-3 Electron Devices
HV Modulator Technology
Capabilities

- Modulator – Converts prime power into format required to drive a Microwave Source (Magnetron, TWT, Klystron)
- Traditional modulators: Line type (PFN) or hard tube type
- Solid State Switching
- Peak power levels from kW to tens of MW.
- Microwave Pulse Compression, high powers from lower power source.
Solid State Switching

- Solid State Switching
  - Combination of Switch and Pulse Transformer.
  - Can be MOSFET or IGBT based.
  - Lower primary voltages
  - Useful to tens of MW
Solid State Direct Switching

- Solid State Direct Switching
  - Controls energy delivered to the load from the storage device.
  - Can be MOSFET or IGBT based.
  - Pulse widths from 30ns
  - Voltages from 1 kV to 60 kV
  - MOSFET’s good for fast rise times
  - IGBT’s good for higher currents
Solid State Direct Switching

- X-band airborne weather radar
- 10kW Peak Power
- Direct Switching
  4 kV at 5 A
Solid State Direct Switching

- Ku band Airborne simulator
- 45 kW Peak Power
- Direct Switching at 20 kV, 20 A
Solid State Direct Switching

- Electron Gun Driver
- 150kW Peak Power
- Direct Switching
  30 kV, 5 A

- Extremely flat pulse
- Variable Voltage
- Variable Pulse width
- Integral Heater Supply
Solid State Direct Switching

- Laboratory Test Set
- 1.8 MW peak power
- Direct Switching 36 kV, 50 A
- Computer Control
- Variable Pulse Width
- Variable Voltage
- Integrated Heater Supply
Additional Capabilities

PFN Modulator

Hard Tube Modulator
This brochure consists of L-3 Communications Corporation general capabilities information that does not contain controlled technical data as defined within the International Traffic in Arms (ITAR) Part 120.10 or Export Administration Regulations (EAR) Part 734.7-11.