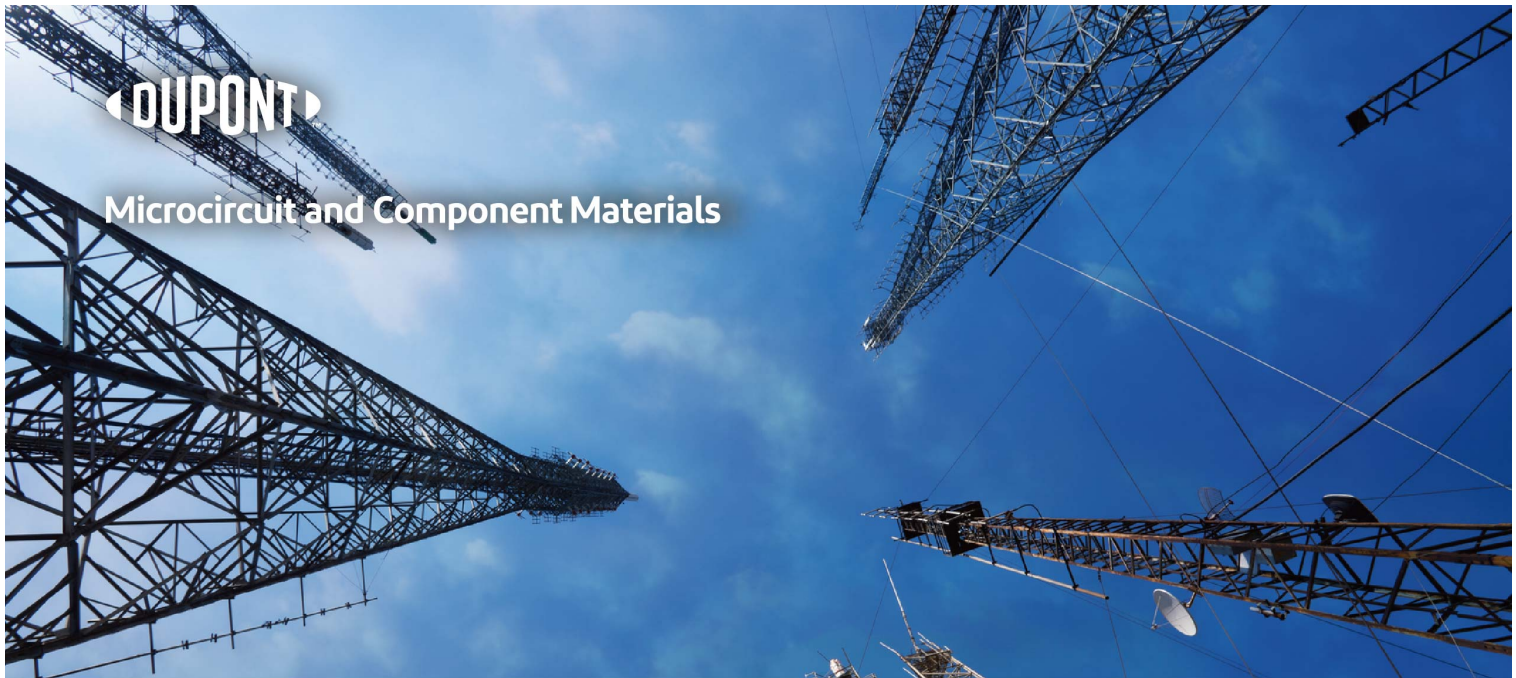




Microcircuit and Component Materials



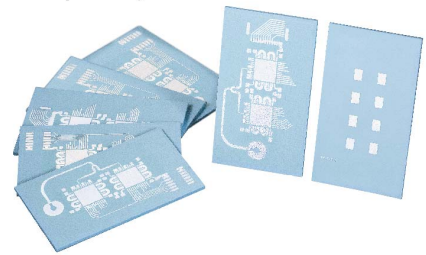
DuPont™ Low Temperature Co-Fired Ceramic (LTCC) Material Systems

DuPont™ LTCC material systems combine the benefits of multi-layer ceramic and thick film technologies to meet the increasing demand for electronics functioning in extreme temperatures and other harsh environments. LTCC's excellent thermal conductivity & consistent low loss characteristics under different frequencies make it an ideal choice for high frequency applications and enable more efficient circuits.

High Frequency RF & MM Wave Applications

DuPont™ GreenTape™ LTCC Material System for Multi-Chip Modules is designed to deliver the best reliability/performance vs. system level cost in multiple ways

- Integrated antenna array
- Outstanding heat dissipation performance
- Stable Dk/Df performance under different frequencies in mm-Wave
- Reduced interconnect/package size
- Flexible die attach (flip-chip/wire-bonding)
- Coefficient of thermal expansion (CTE) match to bare die
- Embedded passives
- 5 to 80 typical layer count
- Compatible with laser patterning (ablation/structuring)
- Pure silver system with gold plating compatibility to achieve lower cost of ownership with high reliability
- Flexible design (can be mounted as surface mount technology [SMT] component into organic substrates or be the substrate itself)



High reliability for DuPont™ GreenTape™ is ensured by means of:

- Outstanding heat dissipation performance
- Stable Dk/Df performance under different frequencies in mm-Wave
- Stable Dk/Df performance under different temperature environments
- Coefficient of thermal expansion (CTE) match to bare die
- Excellent moisture resistance

Telecom Applications:

- RFFE Packaging and AiP solution for small cell under mm-Wave
- mm-Wave Antenna for base station and hand set
- mmWave RF components

