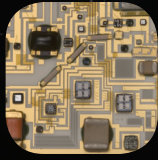
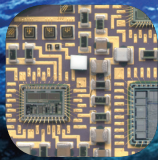
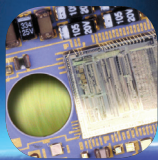
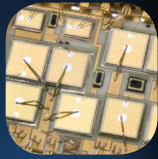
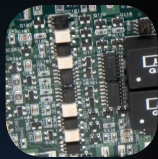




# Microelectronics in Space



**TELEDYNE**  
MICROELECTRONIC TECHNOLOGIES  
Everywhereyoulook™

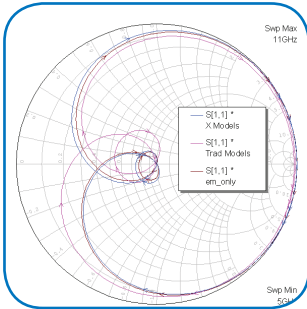


**LEADER IN THE  
SCIENCE OF HI-REL  
SPACE MICROELECTRONICS**

# LEADER IN THE SCIENCE OF HI-REL SPACE MICROELECTRONICS

In this world of rapidly changing technologies, one constant is the need for continually increasing the density of electronic circuits to meet the size and weight constraints of ever more complex systems.

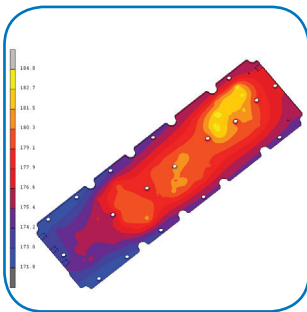
For 50 years, Teledyne Microelectronics has met the challenge with creative packaging solutions for today's most demanding applications.



## Optimize SWAP: Size, Weight, Power and Performance

Our dedicated team of scientists and engineers work with you to optimize your size, weight and performance requirements through:

- Circuit layout design
- Mechanical analysis
- Materials selection
- Thermal and power management analysis
- Power Integrity (PI) and Signal Integrity (SI) analysis



## Services

At any phase of your design, we work with you to provide a cost effective, innovative packaging solution. Reliability and producibility are designed into every circuit, achieving a state-of-the-art quality product.

## Advanced Technologies

We utilize a full array of advanced technologies to achieve optimal packaging for your circuit:

- WLP - Wafer Level Packaging
- CSP - Chip Scale Packaging
- SIP - System in Package
- MCM - Multichip Module
- MCA - Microwave Assembly
- Flip Chip/Flip Chip on Flex
- BGA/CGA - Ball/Column Grid Array
- Stud Bumping
- COB - Chip on Board
- SMT - Surface Mount Technology



## Quality

Every employee is committed to producing the highest quality product. We are a DoD DMEA Microelectronics Trusted Source, accredited for Microelectronics Packaging, Assembly and Test Services and maintain the highest level industry certifications:

- AS9100
- ISO 9001:2008
- MIL-PRF-38534, Class H and K



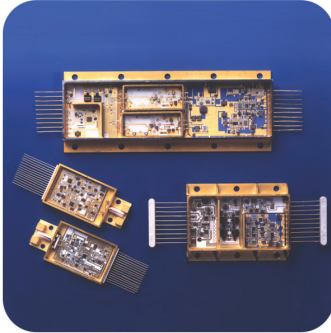
Contact our team to find out how we can help solve your toughest technology challenges.

# Class K Microelectronics in Space

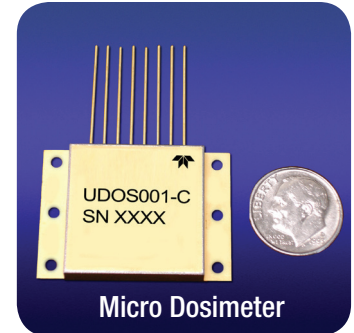
We are certified by Defense Supply Center, Columbus (DSCC) to manufacture microelectronics and multichip modules to MIL-PRF-38534 Class K for space applications. From the Voyager launched in 1977 to the James Webb Space Telescope (JWST) to be launched in 2018, Teledyne Microelectronics has a rich heritage in providing high-reliability space level modules.

With 50 years of experience in extended environments, Teledyne Microelectronics is well established as the premier space level supplier.

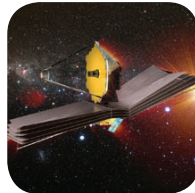
## Space-Rated MCMs



- Analog, Digital, Microwave and Optoelectronics
- Inertial Navigation
- Power Management and Control
- Video, Audio and Data Communications
- Thruster and Stepper Motor Control & Stabilization
- Heater Control
- Imaging, Camera Pointing and Control
- Processor and Memory
- Total Dose Radiation Measurement



## Pioneers in Space



### Spacecraft

- ISSA
- Hubble
- Susei
- MESUR
- Sakigake
- Clementine
- GLAST
- JWST
- Voyager
- Mars Obsv
- Magellan
- Ulysses
- Cassini
- Mars Global Surveyor
- Hubble Space Telescope
- Mars Science Laboratory
- Viking
- Galileo
- Giotto
- Spacelab
- Huygens

### Satellites

- Tiros
- INTELSAT
- ERS
- SBS
- OAO
- Globalstar
- Satcom4000/5000
- DOT
- Galaxy
- Westar
- GOES
- Landsat
- HS601/701
- ANIK
- Palapa
- Brazilsat
- DRIRU
- Solarmax
- Spaceway

### Launch & Rentry Vehicles

- Titan
- Centaur
- Shuttle
- Minuteman
- Delta
- Atlas
- Scout
- Trident
- IUS
- MK12A
- MX
- D5

### Military Spacecraft

- DSCS
- GPS
- TDRSS
- SDI
- PMALS
- DMS
- PRISM
- Crosslink
- Milstar
- PMS
- Zodiaque
- Classified



# Teledyne Sales Contacts

## NORTH AMERICA

### Western

Harry Kellzi  
Tel: 310.990.9178  
Email: [harry.kellzi@teledyne.com](mailto:harry.kellzi@teledyne.com)

### Central

Shannon Princiotta  
Tel: 310.869.6543  
Email: [shannon.princiotta@teledyne.com](mailto:shannon.princiotta@teledyne.com)

### Eastern

Jim Murray  
Tel: 931.842.0018  
Email: [jim.murray@teledyne.com](mailto:jim.murray@teledyne.com)

## EUROPE

Olivier Dilun  
Tel: 33 (0) 1 6405 8118  
Email: [olivier.dilun@teledyne.com](mailto:olivier.dilun@teledyne.com)

## ASIA

Harry Kellzi  
Tel: 310.990.9178  
Email: [harry.kellzi@teledyne.com](mailto:harry.kellzi@teledyne.com)



**TELEDYNE**  
MICROELECTRONIC TECHNOLOGIES  
Everywhereyoulook™

1425 Higgs Road, Lewisburg, Tennessee 37091 USA  
931.359.4531 | [microelectronics@teledyne.com](mailto:microelectronics@teledyne.com) | [www.teledynemicro.com](http://www.teledynemicro.com)