

Chelton Telecom & Microwave trading as Cobham Microwave is a French designer/manufacturer and a commercial entity with various facilities dedicated to RF and Microwave components and subsystems for Space applications.






Facilities

- **Villebon-sur-Yvette** in charge of:
 - Design and manufacture RF passive components such as ferrite circulators/isolators under different technologies (coaxial, drop-in, SMD and waveguide),
 - Silicon PIN diodes: under die, standard or specific packages dedicated to Space and Defense applications (ESCC qualified PIN diodes and MOS capacitors),
 - RF hybrids such as attenuators, limiters, switches, mixers,
 - Coaxial power dividers, couplers,
 - Design and manufacture of Space & Defense systems and subsystems including ground test benches and MCO activities.
- **Gradignan**, where RF filters and duplexers under various technologies are designed and manufactured.
- **Les Clayes sous Bois** and **Chichester (UK)**, where waveguide components and equipment are designed and manufactured.

For space applications, these activities have clean rooms (10 000 and 100 000 class), vacuum thermal chambers and RF power amplifiers to test internally components and sub-systems. Skilled teams dedicated to Space activities operate for more than 30 years of expertise and create a strong space heritage.

ESCC Activities



	EPPL Part 2	Evaluation	Qualification
Low Power Coaxial Isolators/Circulators X to Ka-bands 7.9 – 21.5 GHz, BW: 10% Typ. / 10 W-CW forward, 2 W-CW reverse Insertion loss: 0.4 dB / Isolation: 21 dB / Return Loss: 21 dB T10 package (14.7 x 19.1 x 16.81 mm) / SMA connectors	 2012		
Investigation of Failure Mechanisms of Low Power Drop-in Isolators/Circulators / (ESCC3202) ESCC evaluation: FMEA, finite element analysis, step stresses (Power, Temperature, Cycling, Vibration, Shock, Failure Analysis)		 2013	
Evaluation & Qualification of Low Power Ka-Band Coaxial Isolators 18 to 32 GHz, BW: 10% Typ. / 2 W-CW forward, 1 W-CW reverse Insertion loss: 0.5 dB / Isolation: 20 dB / Return Loss: 20 dB Glitch Free / RF Leakage: -80dBc / SMA connectors			 2014 2015
Evaluation & Qualification of High Power Coaxial Isolators S- & C-Bands) S-Band: BW: 4% Typ./150 W-CW forward, 120 W-CW full reflection C-Band: BW: 12% Typ./120 W-CW forward, 120 W-CW full reflection			 2015 2016
High Power L-Band Isolator (1550-1600 MHz) BW: 3% Typ./233 W-CW forward, 233 W-CW full reflection Insertion loss: 0.25 dB / Isolation: 20 dB / Return Loss: 20 dB TNC connectors		 2014	

Other ESCC or ECSS Qualified Products



	EPPL Part 2	QPL
PIN Diodes <ul style="list-style-type: none"> MOS capacitors: QPL since 2008 PIN Diodes: QPL since 1995 Varactors: QPL since 2003 		 VOQ every 2 Years
Double Balanced Mixers Hermetic Metal Flatpack <ul style="list-style-type: none"> MXF-01 <ul style="list-style-type: none"> RF & LO ports: 0.5 to 500 MHz IF port: DC to 500 MHz MXF-02 <ul style="list-style-type: none"> RF & LO ports: 10 to 1500 MHz IF port: DC to 1500 MHz 	 Since 2010	
2 to 18 GHz Triple Balanced Mixers (ESCC-Q-ST-60-05 Annex B) Insensitive to external mismatches <ul style="list-style-type: none"> LO port: 2 to 18 GHz/15 dBm RF port: 2 to 18 GHz/23 dBm IF port: 0.5 to 8 GHz 	 Planned 2013	
Hybrid Termination Insensitive Mixer (ESCC-Q-ST-60-05 Annex B) Hermetic Metal Flatpack <ul style="list-style-type: none"> MXF-03 <ul style="list-style-type: none"> RF & LO ports: 0.001 to 3.5 GHz IF port: 5 to 1500 MHz 	 Since 2010	
Image Reject Mixers – MRF-01 (ESCC-Q-ST-60-05 Annex B) Hermetic Ceramic Flatpack Version 1: RF>LO/Version 2 : RF<LO <ul style="list-style-type: none"> RF & LO ports: 1500 MHz to 1650 MHz IF port: 90 to 190 MHz Isolations: LO to RF > 28 dB/LO to IF > 35 dB 	 Since 2010	
Cascadable Amplifiers - AGT-01 (TO8-case) (ESCC-Q-ST-60-05 Annex B) <ul style="list-style-type: none"> Frequency range: 2-500 MHz Gain: 32 dB Typ. /Output Level: 8 dBm Typ. Supply range: +8 to 15 V 	 Since 2010	