

# ESA Capability Approved Hybrid and MCM Manufacturers

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| Manufacturer                                              | Technology                                                                                                                                                 | PID reference                                              | Certificate Validity | Contact Point                                                                                                                                                                                                                      | Plant Address                                                          |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>3D Plus</b><br>Buc<br>France                           | 3D Stacking Technology<br>MCM-V                                                                                                                            | 3300-0546 Rev 7<br>12-01-2011                              | Jan 2013             | Mr. P. Maurice<br><a href="mailto:pmaurice@3d-plus.com">pmaurice@3d-plus.com</a>                                                                                                                                                   | 641, rue Helene Boucher<br>78532 Buc<br>France                         |
| <b>EADS Astrium – France</b><br>Velizy<br>France          | Thick Film, Low Power, Low Frequency, Chip and Wire, Kovar Package (Dual-in-Line, Plug-In, Flat Pack)                                                      | GM.HYBR.NT.220.<br>V.MMS<br>Ed. 15 Rev 01,<br>25-01-2010   | Jan 2012             | Mr. D. Mahasoro<br><a href="mailto:dominique.mahasoro@astrium.eads.net">dominique.mahasoro@astrium.eads.net</a>                                                                                                                    | 1 Boulevard Jean Moulin<br>CS 30503 78997 Elancourt<br>Cedex<br>France |
| <b>EADS Astrium – France</b><br>Velizy<br>France          | Smart HTCC Multi Chip Modules, Aluminum Nitride ISP (Integrated Substrate Package), single and double cavity                                               | GM.HYBR.NT.879.<br>V.ASTR Ed. 04<br>Rev. 01,<br>25-01-2010 | Jan 2012             | Mr. D. Mahasoro<br><a href="mailto:dominique.mahasoro@astrium.eads.net">dominique.mahasoro@astrium.eads.net</a>                                                                                                                    | 1 Boulevard Jean Moulin<br>CS 30503 78997 Elancourt<br>Cedex<br>France |
| <b>Rhe Microsystems</b><br>Radeberg<br>Germany            | Thick Film, Low and Medium Power, Chip and Wire Hybrids Kovar Packages                                                                                     | L7.103<br>Issue 5<br>31-07-2009                            | Dec 2012             | Mr. A. Schwarz<br><a href="mailto:andreas.schwarz@rhe.de">andreas.schwarz@rhe.de</a>                                                                                                                                               | Heidestrasse 70<br>01454 Radeberg<br>Germany                           |
| <b>Sagem</b><br>Valence<br>France                         | Thick Film Low and Medium Power, Chip and Wire, Kovar Package, Double Cavity Ceramic Package                                                               | AQA 511<br>Rev. V<br>06-02-2009                            | Dec 2012             | Mr. M. Raou<br><a href="mailto:michel.raou@sagem.com">michel.raou@sagem.com</a>                                                                                                                                                    | 95, route de Montelier-BP234<br>26002 Valence<br>France                |
| <b>TESAT Spacecom</b><br>Backnang<br>Germany              | Thin Film Microwave Hybrids based on MMIC and Metal Packages with Ceramic Feed-Thru                                                                        | 63.0200.005.00PID<br>Rev. E<br>19-04-2010                  | Jan 2012             | Ms. Renate Küster<br><a href="mailto:Renate.Kuester@tesat.de">Renate.Kuester@tesat.de</a><br><br>Eberhard.Moess<br><a href="mailto:eberhard.moess@tesat.de">eberhard.moess@tesat.de</a>                                            | Gerberstrasse 49<br>71522 Backnang<br>Germany                          |
| <b>Thales Alenia Space – ETCA</b><br>Charleroi<br>Belgium | LLKO, LLCE (Thick Film, Low Power, Low Frequency, Kovar or Ceramic Package)<br>HPMO (High Power Molybdenum Package), MCPH (Multi Cavity, Aluminum Package) | 9100.0683<br>Issue 4.5<br>10-09-2010                       | Nov 2012             | Mr B. Goffin<br><a href="mailto:benoit.goffin@thalesalieniaspace.com">benoit.goffin@thalesalieniaspace.com</a><br><br>Mr. P. Szeto<br><a href="mailto:philip.szeto@thalesalieniaspace.com">philip.szeto@thalesalieniaspace.com</a> | Rue Chapelle Beaussart 101<br>6100 Mont sur Marchienne<br>Belgium      |

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| <b>Thales Alenia Space - France</b><br>Toulouse<br>France | Thin Film, Microwave Hybrid (micropackages, Macropackages, MCM-C/HTCC)            | 39 731 284/924<br>Ed. 05, Rev.-<br>30-10-2009 | Jan 2011<br>Recertification is ongoing                               | Mr. D. Dandurand<br><a href="mailto:didier.dandurand@thalesaleniaspace.com">didier.dandurand@thalesaleniaspace.com</a>                                                                                                                                                  | 26, Av.J.F. Champollion<br>31037 Toulouse<br>France    |
| <b>Thales Alenia Space – Italy</b><br>L' Aquila<br>Italy  | Thick Film, Low Power, Low Frequency, Chip and Wire, Kovar and Ceramic Package    | PCP-14-40-001<br>Rev. J<br>23-09-2008         | Oct 2009<br>Temporary relocation completed.<br>Renewal to be started | Mr. U. Di Marcantonio<br><a href="mailto:ulisse.dimarcantonio@thalesaleniaspace.com">ulisse.dimarcantonio@thalesaleniaspace.com</a><br><br>Mr. M. Valente<br><a href="mailto:Massimiliano.Valente@thalesaleniaspace.com">Massimiliano.Valente@thalesaleniaspace.com</a> | SS 17<br>Località Boschetto<br>67100 L'Aquila<br>Italy |
| <b>Thales Alenia Space -Italy</b><br>L' Aquila<br>Italy   | Thin Film, Low Power, Low Frequency, Chip and Wire, Kovar Package                 | PCP-14-30-001<br>Rev. M 05/07/2010            | Jan 2013                                                             | Mr. U. Di Marcantonio<br><a href="mailto:ulisse.dimarcantonio@thalesaleniaspace.com">ulisse.dimarcantonio@thalesaleniaspace.com</a><br><br>Mr. M. Valente<br><a href="mailto:Massimiliano.Valente@thalesaleniaspace.com">Massimiliano.Valente@thalesaleniaspace.com</a> | SS 17<br>Località Boschetto 67100<br>L'Aquila<br>Italy |
| <b>Thales Alenia Space -Italy</b><br>L' Aquila<br>Italy   | Thin Film, and LTCC Microwave Hybrid (Kovar Package, Aluminum Package, LTCC ISP ) | PCP-14-60-013<br>Rev. A<br>20-02-2008         | Mar 2010<br>Temporary relocation completed<br>Renewal ongoing        | Mr. U. Di Marcantonio<br><a href="mailto:ulisse.dimarcantonio@thalesaleniaspace.com">ulisse.dimarcantonio@thalesaleniaspace.com</a><br><br>Mr. M. Valente<br><a href="mailto:Massimiliano.Valente@thalesaleniaspace.com">Massimiliano.Valente@thalesaleniaspace.com</a> | SS 17<br>Località Boschetto 67100<br>L'Aquila<br>Italy |

\*Capability Approval based on PID (PSS-01-6XX not applicable).