

Amphenol-Invotec Tamworth
att. H Swarbrick
Hedging Lane
Tamworth
B77 5HH
United Kingdom

Our ref. ESA-TECMSP-LE-2024-002627

Noordwijk, 11/10/2024

VISA: T Rohr

Subject: Qualification renewal of rigid and rigid-flex polyimide PCBs from Invotec

Dear Mr Swarbrick,

Invotec submitted a sequential rigid polyimide PCB for qualification renewal to ESA in September 2023. The PCB showed non-conformances to ECSS-Q-ST-70-60, as reported in ESA-TECMSP-TR-2023-003125. Furthermore, similar non-conformances were observed in several project qualifications. Therefore, ESA requested corrective actions in letter ESA-TECMSP-LE-2023-003237. Invotec's responses, are reported in document ESA-QR-Rigid-050724. In addition, a third-party investigation was performed on an additional PCB sample, and the acceptable results are reported in "2416b Amphenol Invotec Gr. 6 349800 DC 2413 1AG".

Invotec submitted a sequential rigid-flex polyimide PCB for qualification renewal to ESA in March 2024. The results are reported in ESA-TECMSP-TR-2024-001570. The inspected board showed non-conformances, which were shared and reviewed with Invotec. The responses to the non-conformances are reported in Invotec document ESA-QR-Flex Rigid-050724.

For both qualification renewals, Invotec has successfully addressed the non-conformances, performed root cause analyses, and defined corrective actions that are considered adequate.

As a result, Amphenol Invotec is considered qualified in accordance with ECSS-Q-ST-70-60C for the manufacture of Printed Circuit Boards as follows:

- Rigid sequential polyimide PCBs as per PID SM18T.iss.04 until Oct 2026
- Rigid-flex sequential polyimide PCBs as per PID SM19T.iss.04 until Oct 2026

Best regards,

Jussi Hokka
Materials & Processes Section