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Our ref. ESA-TECMSP-LE-011329

Noordwijk, 11/10/2018

VISA: T Rohr (TEC-MSP)

Subject: Qualification status of PCBs with ENIPIG and Invar from TESAT

Dear Ms Leucht,

TESAT submitted a PCB with Invar and ENIPIG surface finish to ESA for qualification renewal on 15 Jun 2018. The previous qualification period for this technology expired on 1 April 2018 and from that date TESAT's qualification status indicated "not qualified".

The PCB is evaluated in ESA-TECMSP-RP-010873 and a disposition of the evaluation is provided in ESA-TECMSP-LE-011325. TESAT's qualification status on [ESCIES.org/pcb/](https://escies.org/pcb/) is indicated as "qualified". The comment "qualification renewal ongoing" is added to indicate the actions of points 4 and 5 from ESA-TECMSP-LE-011325.

The bare PCB qualification, in particular for the ENIPIG PCB with Invar, does not include assembly verification on this specific surface finish and PCB technology.

TESAT is considered qualified by ESA in accordance with ECSS-Q-ST-70-60C for the manufacture of rigid sequential epoxy PCBs in accordance with the following PIDs:

63.1500.570.41PID_NiPdAu PCB issue F until 1 Nov 2019, which includes ENIPIG finish, Invar layers and microvias

Best regards,

Stan Heltzel
Materials & Processes Section