The Time-Frequency Domain Reflection Method for Aircraft Cable Defects Localization

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Abstract : This paper introduces an aircraft cable fault detection and location method in light of TFDR keeping in mind the end goal to recognize the intermittent faults adequately and to adapt to the serial and after-connector issues being hard to be distinguished in time domain reflection. In this strategy, the correlation function of reflected and reference signal is used to recognize and find the airplane fault as per the qualities of reflected and reference signal in time-frequency domain, so the hit rate of distinguishing and finding intermittent faults can be enhanced adequately. In the work process, the reflected signal is interfered by the noise and false caution happens frequently, so the threshold de-noising technique in light of wavelet decomposition is used to diminish the noise interference and lessen the shortcoming alert rate. At that point the time-frequency cross connection capacity of the reference signal and the reflected signal based on Wigner-Ville appropriation is figured so as to find the issue position. Finally, LabVIEW is connected to execute operation and control interface, the primary capacity of which is to connect and control MATLAB and LABSQL. Using the solid computing capacity and the bottomless capacity library of MATLAB, the signal processing turn to be effortlessly acknowledged, in addition LabVIEW help the framework to be more dependable and upgraded effectively.

Keywords : aircraft cable, fault location, TFDR, LabVIEW
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