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NANO SATELLITE SENSOR ARRAY AND ON-SCREEN VIDEO TELEMETRY SYSTEM

Abstract

The NEE-01 PEGASUS Ecuadorian nanosatellite uses a unique telemetry transmission system based on on-screen video display that allows an immediate read out of the reported parameters from the sensor matrix to the OSD processor and then back to the video transceiver.

This sensor matrix allows for 6 independent inputs, 4 of them varying from 0 to 5 VDC and 2 of them varying from 0 to 14 VDC, this sensor inputs are processed in real time for character generation and then injected into the video signal wave to be transmitted back to ground control were they decoded by the video processor of the station and displayed in a video screen.

This is a novel way to present telemetry to human operators that allows immediate cognition in real time space operation situations; we are currently testing this kind of systems on board the NEE-01 PEGASUS looking forward to future developments in real time spacecraft operation and control.