

# **DMA-Aero Technical Note**

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## **Radio Altimeter Ground Proximity Warning Computer testing.**

DMA-Aero offer on their MPS air data testers the ability to test the GPWC in the aircraft.

The onboard aircraft computer monitors the signal from the radio altimeter and at the critical distances from ground or approaching terrain gives two levels of warning:

1. Loud message to “Pull Up” and introduce stick shake to the column.
2. Take over control from the pilot forcing the Pull Up.

The GPWC compares two signals, one the pneumatic signal from the barometric altimeter / ADC, and the second from the Radio Altimeter. These two signals are required and must be synchronized in terms of rate and providing the same altitude value.

By integrating this test requirement into the one instrument the necessary communication synchronization is guaranteed whereas, attempts to achieve this via PC hook up of several instruments historically gives timing problems.

DMA-Aero has achieved the desired results with internal hardware and computer software within their MPS testers. The MPS generates the appropriate pneumatic pressure and a dc voltage replicating exactly the radio altimeter signal that is fed to the GPWC over the range 0 to 2,500 ft. following three typical laws, ARINC, 2 SEG LNR, and LNR customer specified law.

By inserting this dc signal into the GPWC in place of the radio altimeter normal output, the general aircraft line maintenance procedure can be carried out on the GPWC using a Rockwell Collins ALT-4000 ALT-50A/50B Radio altimeter Receiver-Transmitter. Alternative arrangements, signals and equipment can also be satisfied, please discuss individual requirements with DMA

The DMA software enables control / operation from either the MPS keyboard or from a PC. The software is configured to follow the typical MODES test profile as defined for the GPWC tests