

## MULTICHANNEL VS. COMMON-VIEW GPS FREQUENCY TRANSFER COMPARISON IN THE ASIA-PACIFIC REGION

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### *Abstract*

*Global Positioning System timing receivers have made it possible for time and frequency to be realized conveniently for almost any application, with an accuracy previously achievable only with (far more expensive) cesium standards. Multichannel GPS receivers, which calculate a position and time solution using signals from six or more GPS satellites simultaneously, are now available from a number of manufacturers at very reasonable cost. These receivers are an attractive solution for high accuracy inter-laboratory frequency and time transfer where the cost of the more conventional "classical" GPS common-view receivers is not warranted. This paper presents results of several ongoing frequency/time transfer links over baselines of up to 6000 km, in the Asia-Pacific region.*

### INTRODUCTION

The performance and sophistication of multichannel GPS (MGPS) receivers, which calculate a position and time solution using signals from six or more GPS satellites simultaneously, have developed markedly over the past few years. For time and frequency transfer purposes, the potential performance of MGPS receivers has been shown<sup>[1,2,3]</sup> to compare favorably with that of "classical" single channel common-view GPS time transfer units<sup>[4]</sup>, in some cases at significantly lower cost.

The work described in this paper is motivated primarily by the inconvenience and expense of shipping frequency standards belonging to Australian clients to the CSIRO National Measurement Laboratory (NML), located in Sydney, for calibration with respect to the Australian National Frequency Standard.

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