

NORTHWEST RESEARCH ENGINEERING, LLC

ITS10S COHERENT RECEIVER SYSTEM



The **ITS10S** was developed in 1994 by NorthWest Research Associates. The unique feature of this receiver is that it directly detects UHF and VHF amplitude and coherently detects the UHF – VHF phase difference. It was specifically designed to detect that phase difference and it resolves phase scintillations up to 25 Hz. The ITS10S Coherent Receiver System is used for ionospheric research and is designed to measure ionospheric effects on signal phase and intensity from satellite beacons operating at 150 and 400 MHz (nominal).

Frequency coverage is approximately from -220 to +110 ppm, allowing coverage of the NIMS (OSCAR) satellites on both Operational and Maintenance frequencies, and the Geodetic and CERTO beacons operating at +80 ppm. This range also covers two of the Russian NavSat frequencies, 0 and -200 ppm.

The ITS10S is no longer manufactured and has been replaced by the ITS23S, which has identical functionality and makes use of more modern (less likely to soon become obsolete) components, and the ITS33S which has the capability to receive on 3 bands (VHF, UHF and L-Band).

There are four ITS10S receivers currently operating as a Tomography chain along a line of magnetic longitude across Alaska, and another as a backup spare. There is another ITS10S operating in Indonesia as part of a chain operated by National Central University, Jhongli, Taiwan.

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