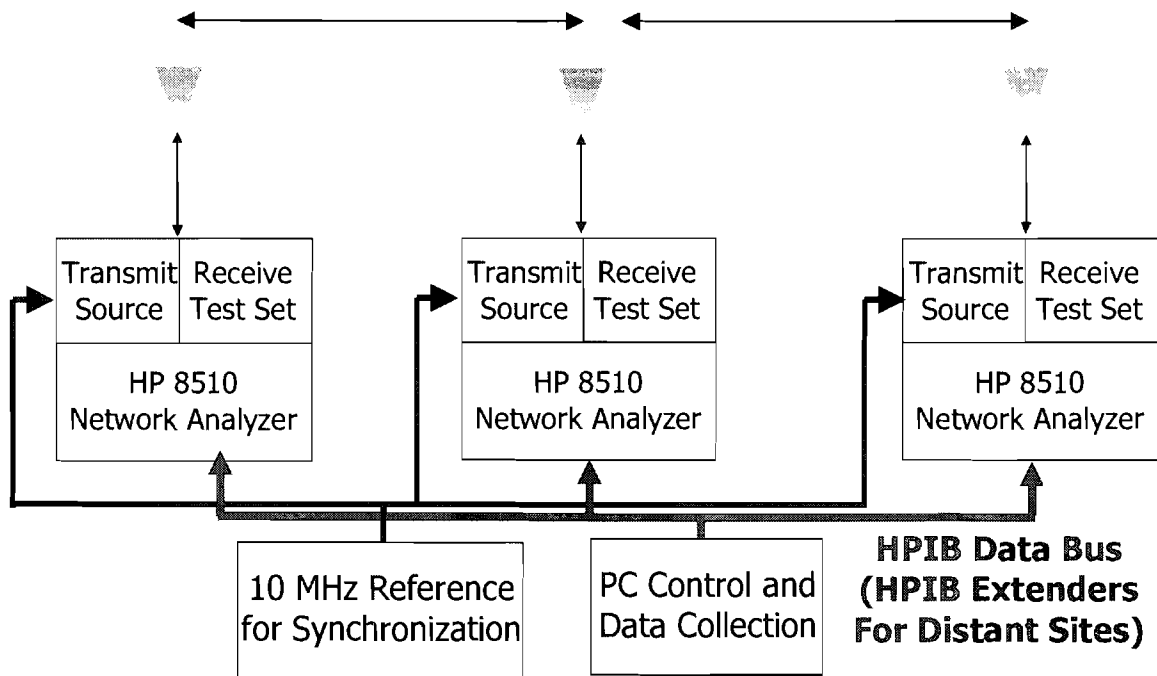


PURPOSE OF OPERATIONS

Coherent Distributed Apertures (CDA's) significantly increase the effective aperture extent by coherently combining the signals from two or more radars. These apertures would be distributed over a very wide baseline. CDA's can also be exploited to cancel the mainbeam jammer using innovative Space Time Adaptive Processing (STAP) algorithms, and GTRI will collect experimental data at CCRF to demonstrate that assertion. Network Analyzers transmitting at less than 10 dBW will be used as the coherent distributed aperture. The mainbeam noise jammer will have to transmit at approximately 35 dBW to cancel the target. A 20 dBW TWT amplifier and a 15 dBi antenna will be used to transmit approximately 35 dBW. The test setup and block diagram are shown below.





The objective of the testing is to utilize equipment at GTRI/CCRF and coherence algorithms developed on previous research to demonstrate mainbeam jammer cancellation with a coherent distributed aperture. Specifically, the test will show enhanced mainbeam jammer suppression and improved target tracking performance for arbitrarily small target/jammer separations in angle.

From previous research, GTRI has shown improved enhanced angle accuracy with coherent distributed apertures for improved target tracking and impact point prediction. By exploiting differences in the multistatic responses of the target/ jammer and using previously developed space-time processing algorithms, a coherent distributed aperture will be tested to show enhanced mainbeam jammer suppression for improved target tracking performance