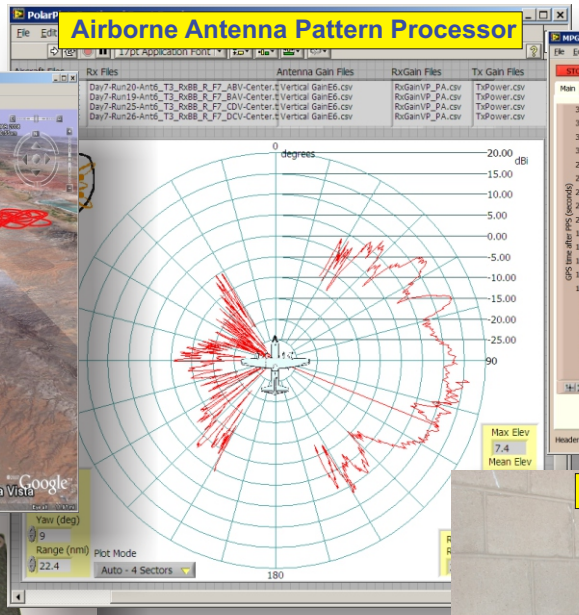
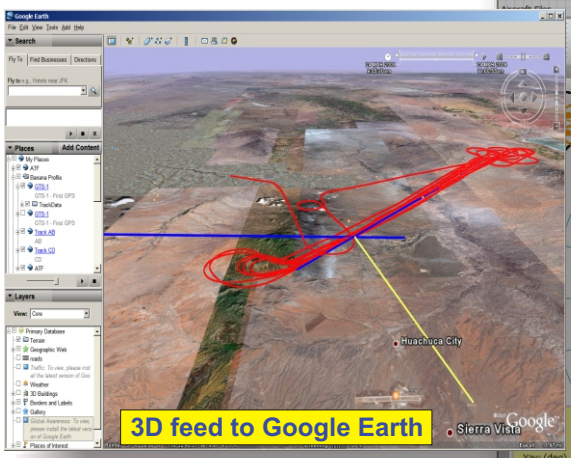
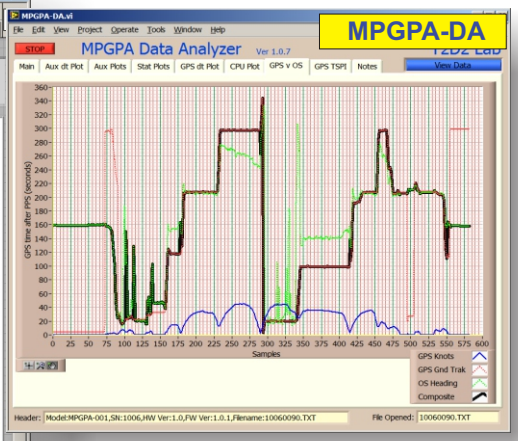
Electronic Proving Ground

T2D2 Lab

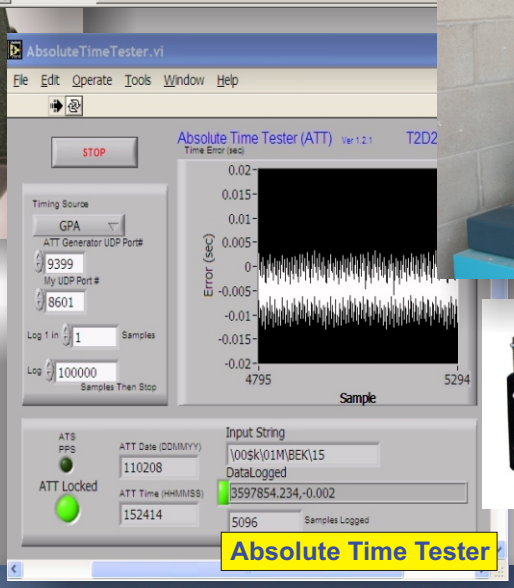
Test Technology Design and Development Laboratory





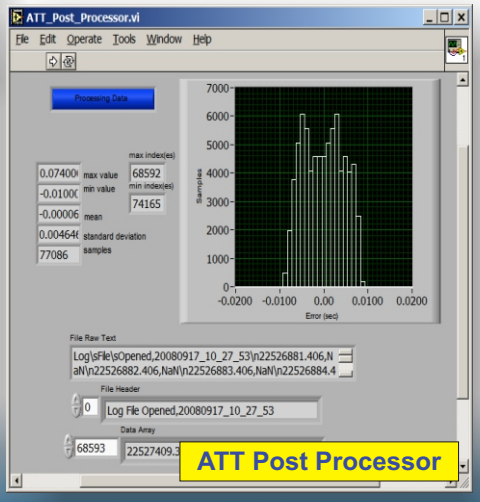


PRO USB GPA



Absolute Time Tester

QD4 Linker System



ATT Post Processor

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Version Control Number T2D-E-DS-002-120229

T2D2
ELECTRONIC PROVING GROUND

Overview

EPG's Test Technology Design & Development (T2D2) Laboratory (Lab) provides an advanced technologies development capability. The Lab enhances the effectiveness of EPG's test capabilities by synthesizing technologies not available to meet the demanding needs of the Test Officer; the Test Officer is required to test cutting edge Command, Control, Communication, Computers, and Intelligence (C4I) systems which are dispersed geographically and exposed to severe environmental conditions.

Capabilities

The T2D2 Lab maintains expertise in electronics and mechanical design, fabrication, and software engineering enabling quick development projects ranging from miniature sensors to large scale jamming systems.

Some specific capabilities include:

- Radio Frequency (RF) design
- Microwave design
- Design using embedded processors
- Digital design including programmable logic and Field-Programmable Gate Arrays (FPGA)
- Printed Circuit (PC) Board design, layout, and assembly including SMT technology
- Microscopic board inspection
- Rapid development of test system software using LabView
- Ruggedized and environmentally sound enclosure design

EPG Patents

EPG currently holds 9 patents developed in the T2D2 Lab:

- Power Monitor-Glitch Trap System (PM-GT) (Pat.# 7,180,301)- a tactical power system monitor
- Modular Covert Remote Electronic Warfare Simulator (MCREWS) (Pat.# 6,748,351)- a modularized synthetic jammer that provides realistic jamming without radiation;
- Apparatus for Providing GPS Positioning Information to a Plurality of Computers from Only One GPS Receiver (Pat.# 6,674,400)- a GPS multiport unit
- GPS Tracker (Pat.# 6,628,232)- autonomous GPS tracking of multiple platforms
- System for Detecting Gunshots (Pat.# 6,185,153)- a miniature gunshot detection system
- System and Method for Performing Jamming Testing on Communication Networks (Pat.# 5,886,626)- Advanced Distributed Electronic Warfare System (ADEWS)- a virtual jammer
- Communications Electronic Warfare Trainer (Pat.# 5,583,509)- an efficient method for remote control of jamming
- Frequency Analyzer for Sub-Microsecond Testing (Pat.# 5,485,101)- a high speed modulation domain (frequency agility) testing device
- Covert Remote Electronic Warfare Simulator (Pat.# 5,341,146)- a synthetic jammer that provides realistic jamming without radiation

System Development

Systems developed in the T2D2 Lab include the following:

- Ground Truth Monitor (GTM)
- Portable Miniature Global Positioning System (GPS) Tracker-Tactical (PMGTT)

Figure 1: PMGTT

- Multiport GPS Pulse-Per-Second Adapter (MPGPA)

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- QD4 Linker System
- Test Event Synchronizer (TES)

Figure 3: TES

- Portable Rugged Obtected (PRO) Universal Serial Bus (USB)Tap
- Blue Keyer

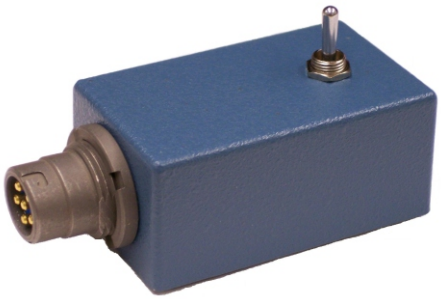

Figure 4: Blue Keyer

- Ground-Based (GB) GPS Receiver Application Module (GRAM) 8-way Reprogramming Station

Figure 5: GB-GRAM 8-way Reprogramming Station

- GPS Pulse Per Second Adapter (GPA)

Figure 6: GPA

- PRO USB Tap

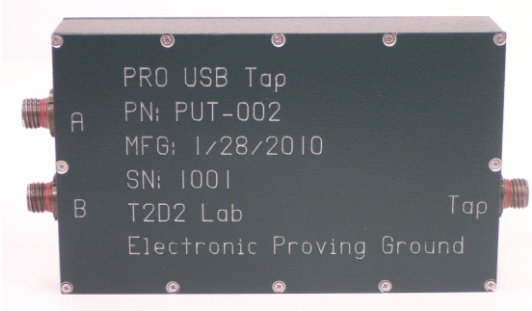

Figure 7: PRO USB Tap

- GPS Extender
- System Verification and Analysis Tool (SVAT)

Figure 8: SVAT

- PRO USB GPS Pulse-Per-Second Adapter (PRO USB GPA)

Figure 9: PRO USB GPA

- GPS Time on Video (GTOV)
- GPS Multiport Unit (GMU)
- GPS Tracker Server (GTS)
- PRO GPS/Serial Logger

Figure 10: PRO GPS/Serial Logger

- PRO Orientation Sensor
- Absolute Time Server (ATS)

Figure 11: ATS

- Absolute Time Tester (ATT)
- eStender
- Airborne Antenna Pattern Application

Figure12: T2P2-PCI

- PRO USB Orientation Sensor (OS)
- Persistent Timekeeper (PTK)
- PRO Temperature/Humidity Sensor
- Tactical Radio Enclosure (TRE)

Figure 13: TRE

- Tenacious Timekeeper Position Plus (T2P2-PCI)
- Power Monitor- Glitch Trap (PM-GT)

Figure 14: PM-GT

- GB GRAM Reprogramming Fixture

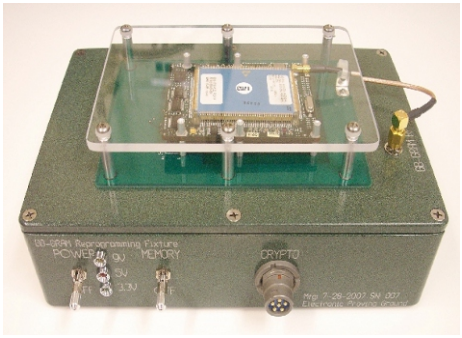

Figure 15: GB-GRAM Reprogramming Fixture

For more information and to browse the T2D2 catalog, please visit:
http://www.epg.army.mil/Test_Instrumentation.htm

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