

GROUND CONTROL SYSTEM (GCS)
FIRMWARE DESIGN
UAS/Robotics

Project Management



Mechanical Engineering



Systems Engineering



Electrical Engineering



Overlay

RCA Aux Out

AC Adaptor Cable

PORT RTOS-BASED APPLICATION AND PERIPHERALS FOR UPDATED GCS

APPROACH

- Determine key product requirements by reviewing and exercising the legacy system
- Update existing real-time operating system (RTOS) based application to run on Linux
- Conduct Ethernet root cause investigation
- Re-implement MPEG-2 video pipeline

RESULTS

- Implemented drivers, interfaces, and hardware abstraction layer (HAL)
- Increased product longevity and resolved hardware end-of-life concerns
- Implemented eMMC flash process for production manufacturing
- Built automated system tests for access through external ports

KEY TOOLS & TECHNOLOGIES

- Yocto—Custom embedded Linux distribution
- Gstreamer—Pipeline-based multimedia framework
- Hardware-in-the-loop (HIL) testing
- NXP i.MX6 multicore processor with package on package (POP) Memory

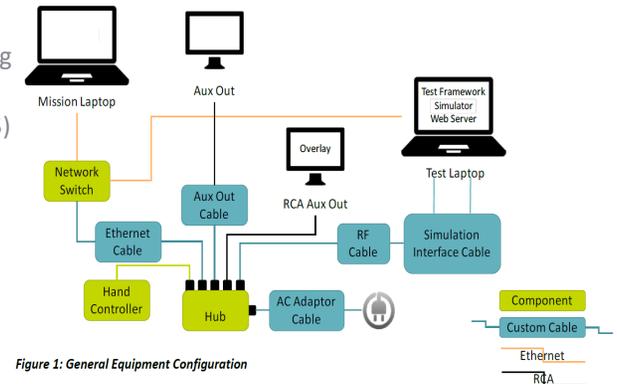


Figure 1: General Equipment Configuration