Servicing the GE Advantx 1, Advantx E, Advantx Legacy, Compax 40 R/F System

Introduction
The GE Advantx RF Systems course is a skills development course designed to provide the experienced service professional with the skills necessary to fully service and calibrate this control.

Prerequisites
To attend this course, the service professional must have a good understanding of the principles gained through attending Phase II and Phase III or four years equivalent experience in servicing RF equipment. The service professional must also possess a good working knowledge of microprocessors and their associated support chips.

Objectives
At the conclusion of this course participants will be able to:
- Perform complete calibration of the GE Advantx X-ray control, image chain, and peripheral equipment
- Evaluate system performance
- Troubleshoot the majority of the system to component level
- Perform CDRH testing on the GE Advantx system

Course Outline
Day 1
- Introduction
  - Basic operation
    - Knobology

Day 2
- On-off circuits
- Power-up sequence
- kV control
  - kV control block diagram
    - Voltpac drive
    - Feedback circuitry
    - Limit circuitry
    - Compensation circuitry
  - Calibration
- Primary contacting
  - Force commutation
  - Pre-contacting control
- HT transformer

Lab Activities
- mA calibration
  - Baseline
  - Space charge
  - Feedback
  - Overdemand
  - Auto/manual
  - Waveform analysis

Day 3
- Filament control
  - Drive signals
  - Oscillator circuit
  - Chopper circuit
  - Metering
- Real mA feedback
  - Mid-secondary circuitry
  - mA stabilization
    - Filament drive correction
    - CPU update

Lab Activities
- mA calibration
  - Baseline
  - Space charge
  - Feedback
  - Overdemand
  - Auto/manual
  - Waveform analysis

Day 4
- Timer
  - Timing sequence
  - HV on detection
- Exposure Logic
  - Prep cycle
  - Exposure release logic requirements
  - Exposure stop
- Rotor controller
  - Power control
    - Initial turn on
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Hands-On Training Course
Course Length: 2 Weeks
CEU’s Awarded: 8 CEU’s
State of Ohio Registration No. 93-09-1377T

- Start to run
- Brake
- Inverter drive
- Frequency
- Modulation
- Microprocessor
- Communication
- Error LEDs

Lab Activities
- Timer calibration
- Tailing compensation
- Anticipation time
- Rotor controller
- Waveform analysis
- Calibration

Day 5
- MPPU X-Ray control
- High frequency concepts
- DC supply
- Double "H" bridge
- Test points
- Monitoring circuits

Lab Activities
- X-ray control troubleshooting
- Week 1 lab review

Day 6
- Automatic exposure control
- Ion chamber select
- Master density
- Screen compensation
- Photo cell calibration
- Fluoroscopic control
- Standard fluoro
- Digital fluoro
- Photospot control
- Cine control

Lab Activities
- AEC calibration
- Master density
- Screen speed
- Fine density tweak
- Anticipator calibration
- Photo cell calibration
- Waveform analysis

Day 7
- VIC module part 1
- I2 control
  - Grid drives
  - Drive feedback
  - Anti "S-ing" control
  - Photo cathode current
- High voltage supply
- Image gate
- Neutral density filter

Lab Activities
- Beam evaluation
- Electronic I2 focus
- Mechanical focus
- Image tube evaluation
  - Contrast ratio
  - Resolution

Day 8
- VIC module part II
- Camera head
  - Camera controls
  - Camera tube voltages
    - Grid drives
    - Grid voltage feedback
- Iris control
  - TV rotator
  - Video processor

Lab Activities
- Calibration
  - Camera
  - Electronic focus
  - Mechanical focus
  - Target voltage
  - Pre-amp
- Iris
  - Video processor
  - Peak video
  - Extended dynamic range
  - Waveform analysis

Day 9
- Control console
  - Plasma screen
  - Power supplies
  - Console µP
- Spot filmer 8835
  - Interface
  - Control
  - Collimator
    - Interface
    - Control
  - System variations
    - Positioner
      - Rad
      - Rad/fluoro
      - Vascular
    - Collimators
    - "C" Arms
    - Tables

Lab Activities
- Spotfilmer calibration
  - Collimator calibration
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• System wide troubleshooting

Day 10
• System review
• Final exam
• Course evaluation