

GE R&F Imaging (Advantx) Spotfilmer, TV Camera, and Table Maintenance Course

Course length: 1 Week
CEU's Awarded: 4

COURSE INTRODUCTION

The GE R&F Imaging (Advantx) course is designed to teach the service professional those skills necessary to fully service the imaging chain. This includes all calibration procedures, functional checks, and troubleshooting techniques. The course includes integrated lectures, labs, and documentation which complement each other ensuring the maximum learning environment.

COURSE OBJECTIVES

At the conclusion of this course, attendees will be able to:

- Troubleshoot to the component or board level.
- Calibrate all circuitry to the manufacturer's specification.
- Perform all related CDRH compliance testing.
- Perform image evaluation.
- Verify the system performance.

PREREQUISITES FOR ADMISSION

Attendees must possess the knowledge acquired through attendance at our Advanced Concepts of Fluoroscopic Imaging Maintenance-Level III or the equivalent electronics and service experience. A strong microprocessor background is recommended.

DAY 1

- I. Introduction
- II. System basic operation
 - A. Front panel controls
 - B. System specifications
- III. Spotfilmer mechanical operation
- IV. Basic electrical block diagram operation
- V. Detailed electrical operation
 - A. Longitudinal carriage drive
 - B. Lateral carriage drive

LAB ACTIVITIES

- I. System operation
- II. Component location
- III. Carriage drive calibration

DAY 2

- I. Spotfilmer detailed electrical operation
 - A. Mask drive
 - B. Grid and cone drive
 - C. UT shutter drive
- II. TV camera block diagram operation
 - A. Circuit layout and operation
 - B. Camera specifications

LAB ACTIVITIES

- I. UT shutter calibration
 - A. Spotfilm
 - B. Fluoro shutter limits

- II. TV camera
 - A. Component location
 - B. TV camera tube replacement
 1. Target voltage
 2. Grid voltages
 3. Alignment
 - C. Focus adjustment
 1. Optical
 2. Electromagnetic

DAY 3

- I. TV camera detailed electrical operation
 - A. Timing generation
 - B. Sweeps
 1. Horizontal
 2. Vertical
 - C. Camera tube element supplies
 - D. Video preamp
 1. Aperture opening
 2. Gain
 - E. Video processor
 1. Composite video
 2. Sync
 3. Blanking
 4. Setup

LAB ACTIVITIES

- I. Sweep calibration
- II. Preamp level adjustment
- III. Video level adjustment
- IV. Waveform analysis

DAY 4

- I. TV camera detailed electrical operation
 - A. Circular blanking
 - B. Antivignetting
- II. Automatic Brightness Stabilization block diagram operation
- III. Automatic Brightness Stabilization detailed operation
 - A. Video brightness stabilizer
 - B. Video sample window
 - C. Fluoro mA control
 - D. Fluoro KV control

LAB ACTIVITIES

- I. Circular blanking calibration
- II. Antivignetting calibration
- III. Patient entrance exposure rate adjustment
- IV. ABS adjustment
- V. System evaluation

DAY 5

- I. Table block diagram operation
- II. Table detailed operation
 - A. Tilt drive
 - B. Power assist drive
 - C. Table top drive
- III. System review
- IV. Final exam and course critique
- V. Parts sourcing