Ross Video Limited

Technical Training Guide

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ROSS
Cool Practical Technology™

SYNERGY SD • Technical Training Guide

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Technical Training Guide

Introduction

Welcome to the Synergy SD Technical Training Guide. This Technical Training Guide is designed to be used as a reference by Ross Trainers (that's you) during Customer Technical Training, whether training occurs at a customer's site or at a Ross Video facility. Think of it as a lesson plan for you to use while training. The guide provides a training framework that is to be followed during training as well as a checklist of items to cover that will also help you monitor the progress of the training.

The guide outlines the modules and discussion points to be covered during a typical customer training session. It is not designed as a student handout (although if the student would like a copy for their use during training, please feel free to copy and distribute it).

The guide provides a suggested order for training based on years of training experience. Having said that, Technical training must be tailored to the needs of the specific student. Therefore, ultimately, you may have to modify the training based on the knowledge and experience level of the student.

Modules

Training has been divided into modules, each covering a specific topic. A learning goal is stated at the beginning of each module. General goals are outlined to assist you with introducing the module to your student in order that they know what they are expected to learn. From this, the student will be able to compare the learning goals with their current knowledge of the topic and then aim for a higher level of understanding expressed by the goals.

Length of Time for Training

Technical training is purchased by the customer in two day blocks. In most instances, the modules and points for discussion in this guide can be covered in a two day period of comprehensive training. However, the student's experience, or other considerations, may extend or reduce the suggested time frames. Listen to the student and use your own judgment.

During Training

Training should consist of a carefully balanced mix of the trainer explaining the various points to the student, "hands-on" experience, as well as many problem solving exercises as necessary for the student to understand each module. It is important to allow the student the time for practice on the material that has just been taught. With adult learners, 90 percent of people retain what they are taught when they "see, hear, say and do"[1] the material.

At the start of the training session, it is a good idea to go through some basic housekeeping issues. These can include items such as how long training will last each day, when coffee and/or lunch breaks will occur, and what you expect of them. For example, you will expect them to ask questions, return from breaks on time, assist each other, participate, and keep on task. In return, you should offer a list of what they can expect from your (listening carefully to questions and taking the time to respond, speaking in a voice, pace, volume, and vocabulary, that your students will understand).

By the end of Synergy Technical training, students should be comfortable with the following areas:

- System Architecture and Video Flow
- Installation and Removal of System Boards
- Switcher Installation and Personality Setups
- Interfacing to Peripheral Equipment
- Routine Maintenance of the switcher

If the student feels more training is required, strongly suggest that they schedule some additional days of training with you. They can contact their local Ross Video dealer to set this up.

Final Thoughts

This guide is for you, our Ross Video Trainer. Use it to enhance the quality of your training and to ensure we have confident and educated customers using our products. Please send any comments or suggestions to the Manager of Technical Communication.

Good Luck with the training! Enjoy sharing the beauty and elegance of the Synergy Series of switchers with our customers.

[1] Knowles, M. (1990). *The Adult Learner: A neglected species (4th ed.)*. Houston, TX: Gulf Publishing Company.

Agenda for Training

The list below is an agenda that should be followed during training. Each day has been divided into modules that that can usually be covered in a single day, including hands-on practice time.

Day 1

- Welcome and Introduction
- Video Signal Flow
- Circuit Board Overview
- System Timing Requirements
- Basic Operation
- Software Upgrading
- Switcher Installation and Configuration
- Peripheral Interfacing
- Closing and Review of Day 1

Day 2

- Welcome, Review of Day 1
- Overview of Day 2
- Software Option Installation and Upgrading
- Hardware Option Installation and Upgrading
- Jumpers and Indicators
- Routine Maintenance
- Troubleshooting Tips
- Closing and Review of Day 2

Day 1

Video Signal Flow

Goal: To understand the flow of video through the system boards.

- ❑ Walk-through of the Synergy Block Diagram (diagram can be found in the Synergy Series Maintenance manual)

Circuit Board Overview

Goal: To understand, at a basic level, the function of each board in a Synergy Switcher.

- ❑ Input board
- ❑ Input crosspoint
- ❑ Input carrier:
    - ❑ Ultimatte
    - ❑ Aspectizer
- ❑ MLE carrier:
    - ❑ MLE board
    - ❑ Squeeze & Tease 2D
    - ❑ Squeeze & Tease 3D / WARP
    - ❑ Border generator
    - ❑ Serializer
    - ❑ Deserializer
- ❑ CPU
- ❑ Power supply
- ❑ Panel CPU
- ❑ Mnemonics modules and controller
- ❑ Panel switch boards
- ❑ Pattern switch board

System Timing Requirements

Goal: To understand Synergy system timing.

- ❑ Input signals
- ❑ Output signals
- ❑ Effect of adjusting the reference delay in the switcher
- ❑ Panel non-sync indicators

Basic Operation

Goal: To give you enough of an understanding of how to operate a Synergy switcher in order to be able to verify that the switcher is set-up correctly.

- ❑ Overview of the menu system and navigation
- ❑ Switch crosspoints
- ❑ Re-entries
- ❑ Bring keys on and off air
- ❑ Basic DSK operation
- ❑ Storing and recalling settings in the Disk Menu

Software Upgrading

Goal: To be able to upgrade all system software within the Synergy system.

- ❑ Where to get software: www.rossvideo.com
- ❑ Storing switcher settings before upgrade
- ❑ The Upgrade jumper and the upgrade procedure
- ❑ Recalling switcher settings after upgrade
- ❑ Squeeze & Tease 3D/WARP upgrade
- ❑ Squeeze & Tease 3D WARP effects
    - ❑ Using a floppy disk
    - ❑ Using a USB key (if the option has been purchased)
- ❑ Aspectizer upgrade

Switcher Installation and Configuration

Goal: To prepare your switcher so it is ready to be used on air.

- ❑ Installation and setup menus
- ❑ Keyboard operation:
    - ❑ Control panel operation using the keyboard
    - ❑ Keyboard usage
- ❑ BNC and input mapping:
    - ❑ Naming inputs
    - ❑ Mapping keys
    - ❑ Setting up key types
    - ❑ Pushbutton mapping
    - ❑ Assigning tallies

Switcher Installation and Configuration continued

- ❑ Aux Bus setup:
    - ❑ Local panel setup
    - ❑ Remote panel setup
    - ❑ External device assignment
- ❑ Output setup
- ❑ Personality

Peripheral Interfacing

Goal: To explain how to connect and configure external peripheral devices to Synergy.


Discuss only those devices present in the facility and that will be connected to the Synergy system.

- ❑ Remote Port Expander (BSS4)
- ❑ VTRs
- ❑ Video Servers
- ❑ Audio Servers
- ❑ Remote Cameras
- ❑ Routers
- ❑ StillStores
- ❑ Character Generators
- ❑ Remote Audio Mixers
- ❑ Editors
- ❑ Monitor Walls
- ❑ External DVEs
- ❑ CDK111
- ❑ PIP II
- ❑ 360 Systems Still and Clip Server

Day 2

Software Option Installation and Upgrading

Goal: To understand how to install and upgrade software options.

- ❑ Overview of the Installed Options menu
- ❑ Installing software options
- ❑ Storing/recalling software options (using a disk or USB key)

Hardware Option Installation and Upgrading

Goal: To understand how to install and upgrade hardware options.


Some parts of this section are OPTIONAL. You only need to cover the particular device if it has been purchased or is planned to be added to the switcher in the near future.

- ❑ Squeeze & Tease 2D
- ❑ Squeeze & Tease 3D / WARP:
    - ❑ DataLink cables
    - ❑ Fan installation
    - ❑ Upgrading the software
    - ❑ Effect of upgrade from 2D to 3D
- ❑ Dual Border Generator
- ❑ Adding and removing an MLE
- ❑ Timed Aux Bus
- ❑ Clean Feed
- ❑ DVE Send
- ❑ Input Carrier Board
- ❑ Dual Aspectizer installation
- ❑ Dual Aspectizer upgrade
- ❑ Ultimatte Insider
- ❑ Redundant Power
- ❑ Remote Aux Panel
- ❑ Ganged Multiple Audio Mixers

Jumpers and Indicators

Goal: To understand the roles these play when changing option boards within the Synergy system.

- ❑ Jumpers and switches:
    - ❑ Jumper positions
    - ❑ Control panel jumpers and switches
    - ❑ Frame jumpers and switches
    - ❑ System reset
    - ❑ Power fail indicators
    - ❑ Power fail recovery

Routine Maintenance

Goal: To be able to maintain your Synergy system.

- ❑ Panel servicing:
    - ❑ Panel dissection – board by board
        - ❑ Jumpers
        - ❑ Indicators
    - ❑ Replace buttons and bulbs
    - ❑ Knobs
    - ❑ Encoders
    - ❑ Displays
    - ❑ Backlight
    - ❑ Fader
    - ❑ Power supply
    - ❑ Mnemonics
    - ❑ Serial port
- ❑ Panel calibration
- ❑ Frame servicing:
    - ❑ Installation of all boards
    - ❑ Power supply
    - ❑ How to replace the power supply
    - ❑ Fans
    - ❑ Cleaning of dust filter
- ❑ Spare Parts Kit
- ❑ Critical Spare Board Kit

Troubleshooting Tips

Goal: To understand how to verify Synergy and system operating settings.

- ❑ Check power
- ❑ Check cabling
- ❑ Menu diagnostics:
    - ❑ Panel diagnostics
        - ❑ Potentiometer test
        - ❑ Fader test
        - ❑ Button test
        - ❑ Lamp test
        - ❑ Memory test
        - ❑ Display test
        - ❑ Disk test
        - ❑ Joystick test
        - ❑ Tally test
        - ❑ Tx/Rx test
        - ❑ Dip/Jumper test
    - ❑ Frame diagnostics
        - ❑ Tx/Rx test
        - ❑ Dip/Jumper test
        - ❑ GPI test
        - ❑ Tally test
        - ❑ Installed options
            - Panel boards
            - Frame boards
            - Option boards
            - Software options
- ❑ Communication loss
- ❑ Frame Processor Board LED – Tx/Rx check
- ❑ Re-seat frame board/power supply
- ❑ Serializer swap to check bad output
- ❑ Output issues:
    - ❑ Serializers and Deserializers
    - ❑ Input Cards
    - ❑ Squeeze & Tease
    - ❑ Border Generators
    - ❑ MLE Effects Boards
- ❑ Squeeze & Tease issues:
    - ❑ Board swapping
    - ❑ Sequence replication
- ❑ Summary of interchangeable boards in the system

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Contact Us

Contact our friendly and professional support representatives for the following:

- Name and address of your local dealer
- Product information and pricing
- Technical support
- Upcoming trade show information

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