

Crestron **SMARTOUCH™ STS**
Programming Kit

Operations Guide

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STS Programming Kit: ST-PK

Description

Kit Description

The ST-PK is the Crestron programming kit for the SmarTouch STS. The kit provides the necessary cables, adapters, and software to successfully design and upload unique touchpanel projects. Components of the kit are clearly listed, refer to “STS Equipment” on page 4. The ST-PK can be used time and time again to revise current touchpanel projects of the SmarTouch STS or to create new ones.

SmarTouch™ STS Description

The SmarTouch STS is a Crestron radio-frequency (RF) wireless control system that is designed for numerous applications ranging from the boardroom to complete home automation. Electronic devices or subsystems can be controlled from anywhere via the wireless user interface. Users are no longer tethered by a wired control panel or limited to infrared line-of-sight control, as with most ordinary wireless controllers.

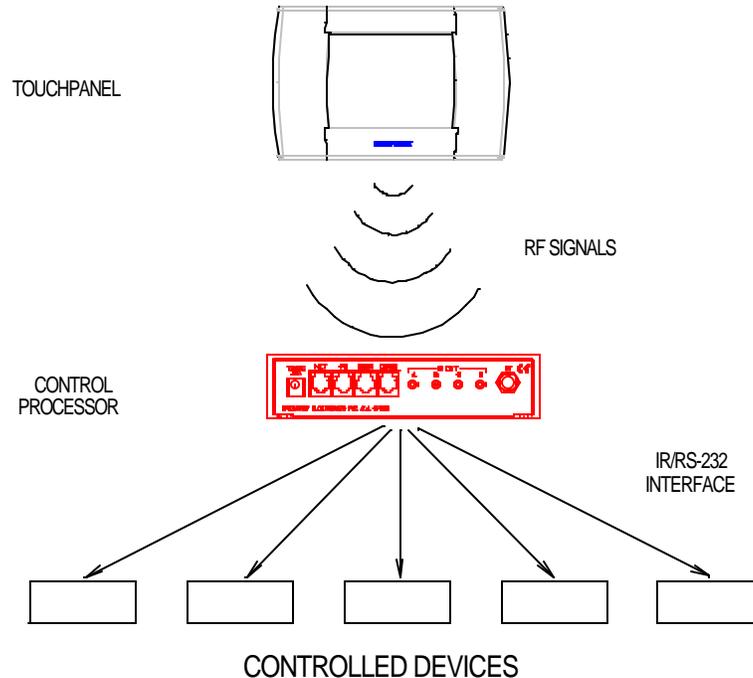
There are six SmarTouch STS configurations available. All configurations are functionally identical except for the touchpanel component which can be grayscale or color, the type of input power required which can be 120V or 220V, and the communication frequency. The table shown below provides a breakdown of SmarTouch STS configurations. For the purpose of this Operations Guide, the term “SmarTouch STS” is used to describe a SmarTouch configuration and its components.

Table of SmarTouch Configurations

SMARTOUCH STS CONFIGURATION	DISPLAY	POWER (VOLTAGE)	TRANSMISSION FREQUENCY
STS	Grayscale	120V AC	433.92 MHz
STS-C	Color	120V AC	433.92 MHz
STSI	Grayscale	220V AC	433.92 MHz
STSI-C	Color	220V AC	433.92 MHz
STSI/UK	Grayscale	220V AC	418 MHz
STSI-C/UK	Color	220V AC	418 MHz

This RF system is primarily comprised of two units, a touchpanel and the control processor. Refer to the system diagram shown below. The touchpanel is a LCD interface that communicates via RF signals to the control processor, which is discretely placed. The control processor interfaces with the controllable electronic equipment in the system to complete commands without delay.

SmarTouch STS Diagram



Features of the SmarTouch STS wireless control system include:

- high-clarity LCD touchpanel displays choice of custom icons and graphics.
- touchpanel case is lightweight and contoured and easily held in one hand.
- advanced Crestron RF technology allows complete freedom of movement -up to 500 feet through walls, indoors or outside.
- touchpanel power options include rechargeable power pack or AC power supply.
- control processor includes Cresnet network port for expansion.
- exclusive Crestron/Windows® software gives you system programming options (use the included templates or create fully customized environments).

Software

NOTE: Use the provided software, VisionTools™ Pro to design user interface pages for the SmarTouch STS. The latest revision of the Crestron Database is available from the Software Downloads page (Cresdb Library) of the Crestron website (www.crestron.com).

VisionTools™ Pro (VT Pro) is a Crestron design and programming Windows®-based software for the SmarTouch STS. Unlimited control screen variations incorporating two and three-dimensional graphics and text are possible with VT Pro. A set of pages which make up a project can be designed for each STS application. Each touchpanel can be organized with the ideal, color-oriented control environment with custom control graphics: icons, two and three-dimensional buttons, and floor plans. The project is uploaded to the touchpanel and programmed into the flash PROM. The touchpanel uses the programmed project until another is uploaded from the PC. The PC may be disconnected from the control processor except during reprogramming.

Use Crestron’s STS Wizard to reduce to project development phase to just nine steps. This “drag-n-drop” Windows® software assures thorough system configuration. For a simple system, set up takes just a few minutes. Touchpanel templates may be modified for a more custom system.

For additional software information, refer to the help file provided with the software. A SmarTouch tutorial is provided as a guide for the novice programmer. Lotus® ScreenCam movies for the Wizard are also available from the latest version of the Crestron ControlCD. Let these movies demonstrate the simplicity of STS Wizard. Learn how to use and get the most from Crestron software.

Leading Specifications

The table below provides a summary of leading specifications for the SmarTouch STS and its primary components. Dimensions and weight are rounded to the nearest hundredth unit.

Leading Specifications of the SmarTouch STS

SPECIFICATION	DETAILS
Touchpanel Power Options	<p><i>ST-BTP</i>: Rechargeable NiCad power pack (Fully charged battery, 2800 mAh capacity, can last up to 10 days depending on touchpanel settings and usage.)</p> <p><i>AC (domestic)</i>: 12V DC, 1.0A, 120V Input (P/N PW-1210 or equivalent)</p> <p><i>AC (internat'l)</i>: 12V DC, 1.0A, 230V Input (P/N PWI-1210 or equivalent)</p> <p><i>ST-DS</i>: Docking Station provides power as long as it is receiving power from its external AC power pack.</p>
Control Processor Power Options	<p><i>AC (domestic)</i>: 12V DC, 0.5A, 120V Input (P/N PW-1205 or equivalent)</p> <p><i>AC (internat'l)</i>: 12V DC, 1.0A, 230V Input (P/N PWI-1210 or equivalent)</p>
VisionTools™ Pro	Version 1.1.3 or later
Crestron Database	Version 11.7.211 or later
Touchpanel Dimensions & Weight (without rechargeable power pack and AC power pack)	<p>Height: 5.70 in (14.48 cm)</p> <p>Width: 8.75 in (22.23 cm)</p> <p>Depth: 3.33 in (8.45 cm)</p> <p>Weight: 1.85 lb (0.84 kg)</p>
Control Processor Dimensions & Weight (without AC power pack)	<p>Height: 1.70 in (4.32 cm)</p> <p>Width: 7.07 in (17.95 cm)</p> <p>Depth: 6.32 in (16.06 cm)</p> <p>Weight: 1.90 lb (0.86 kg)</p>

As of the date of manufacture, the unit has been tested and found to comply with specifications for CE marking.



NOTE: Equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Setup

STS Equipment

The items required to program STS equipment, listed below, are provided as part of the programming kit (ST-PK). These kit items can be used time and time again to program or reprogram each system.

STS Kit Equipment

EQUIPMENT	PART NUMBER	DESCRIPTION
Software	SAXD2535-1AY1	Software package for creating touch screen programs.
Programming Cable Assembly	15710	Provides connection between touchpanel and control processor. Used during programming only.
RJ11 Cable Assembly	15717	Provides connection between control processor and RJ11/DB9F adapter. Used during programming only.
RJ11 to DB9F Adapter	15556-1B	Provides connection between RJ11 cable assembly and a PC. Used during programming only.

Due to variations in installation requirements and overall application, not all possible peripheral pieces of equipment are supplied with the STS system. The next table in this section, shown below, provides a list of all equipment that is provided with the STS system. Except for the STIRP, all products listed in the part number column ship one item per system.

STS System

EQUIPMENT	PART NUMBER	SHIPPED WITH	DESCRIPTION
Touchpanel	ST-1550	STS or STSI	Provides user interface.
	ST-1550C	STS-C or STSI-C	
	ST-1550/UK	STSI/UK	
	ST-1550C/UK	STSI-C/UK	
Control Processor	ST-CP	STS, STS-C, STSI, or STSI-C	Provides commands to system A/V equipment.
	ST-CP/UK	STSI/UK or STSI-C/UK	
Rechargeable Power Pack	ST-BTP	All Systems	Possible power source for touchpanel.
Docking Station	ST-DS	All Systems	Provides fast or trickle charge to ST-BTP.
Infrared Probe	STIRP (2 per System)	All Systems	Delivers commands from control processor.
External AC Power Pack	PW-1205	STS or STS-C	Provides power to touchpanel and control processor.
	PWI-1210	STSI, STSI-C, STSI/UK or STSI-C/UK	
	PW-1215	STS or STS-C	Provides power to ST-DS.
	PWI-1215	STSI, STSI-C, STSI/UK or STSI-C/UK	

The next table in this section, shown below and on the next page, lists some peripheral equipment that can be purchased separately for the STS system. The part number for each item (except for the ST-RMK) is supplied with the appropriate domestic or international external AC power pack. Keep in mind that all the individual items of the system (listed in the STS System table, above) can be purchased separately as well.

STS Peripheral Equipment

EQUIPMENT	PART NUMBER	DESCRIPTION
Rack Mount	ST-RMK	Provides rack space for STS units.
Input/Output Expansion Module	ST-IO	Provides isolated relays/digital input.
Volume Control Module	ST-VC	Provides volume controls - 3 independent, professional quality VOLUME/TONE control, balanced or unbalanced I/O.
Current Sensor	ST-CS	Provides dual capacity for measuring the average current of each half cycle of an AC load.

STS Peripheral Equipment (Continued)

EQUIPMENT	PART NUMBER	DESCRIPTION
RS-232/422 COM Module	ST-COM	Provides two independent bidirectional serial ports that support RS-232/422-based communication.
Lutron Interface	ST-LT	Provides a direct interface to Lutron's GRAFIK EYE.
Power Control Module	ST-PC	Provides two switchable AC outlets.
Video Sensor	ST-VS	Detects the presence of a video signal coming out of the baseband video port for up to four independent sources.
IR/Serial Learner	CNXLIR	Creates driver files that can be added to the User Database of the SmarTouch software package.

Applying Power

The touchpanel can be powered via an external AC power pack, while resting in the ST-DS, or via the ST-BTP. Each of these supplied items have their own Operations Guides which details proper usage. Refer to the table below for the required document number. This table does not account for the latest revision letter of each document.

Devices that Power the SmarTouch STS Touchpanel

POWER OPTION	NOMENCLATURE	DOCUMENT NUMBER
Domestic External AC Power Pack	PW-1210	5762
International External AC Power Pack	PWI-1210	5763
Docking Station	ST-DS	5738
Battery Pack	ST-BTP	5746

The control processor can only be powered via the appropriate external AC power pack. Refer to the table below for power pack's document number. Again, the table does not account for the latest revision letter of each document.

SmarTouch STS Control Processor External AC Power Packs

POWER OPTION	NOMENCLATURE	DOCUMENT NUMBER
Domestic External AC Power Pack	PW-1205	5759
International External AC Power Pack	PWI-1210	5763

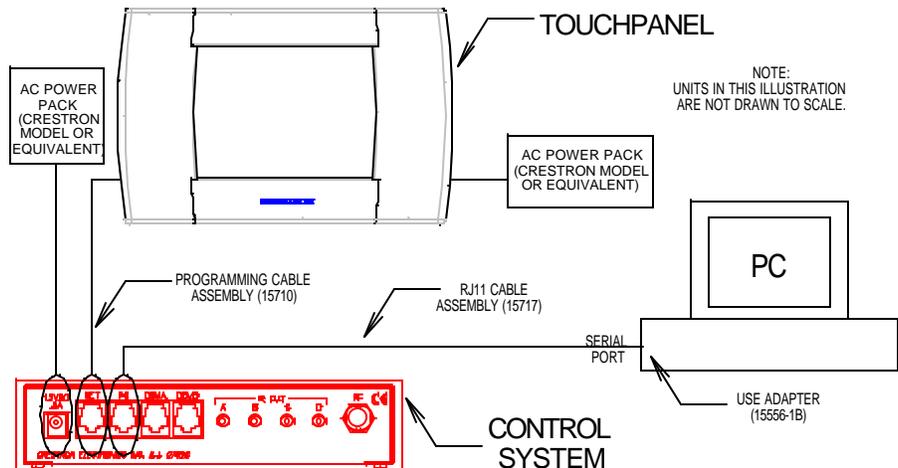
Identity Code

All Crestron expansion modules and touchpanels within the Cresnet system require a unique identity code (NET ID). These codes are recognized by a two-digit hexadecimal number from 03 to FE. Matching NET IDs between the expansion modules and touchpanels with the program is required if data is to be successfully transferred or new touchpanel screens are to be loaded.

Preparing the System for Programming

When programming, refer to figure shown below for typical connection diagram for the SmarTouch STS. Complete the following steps in the order provided to ensure proper connection of the system.

Typical Connection Diagram when Programming the SmarTouch STS Touchpanel



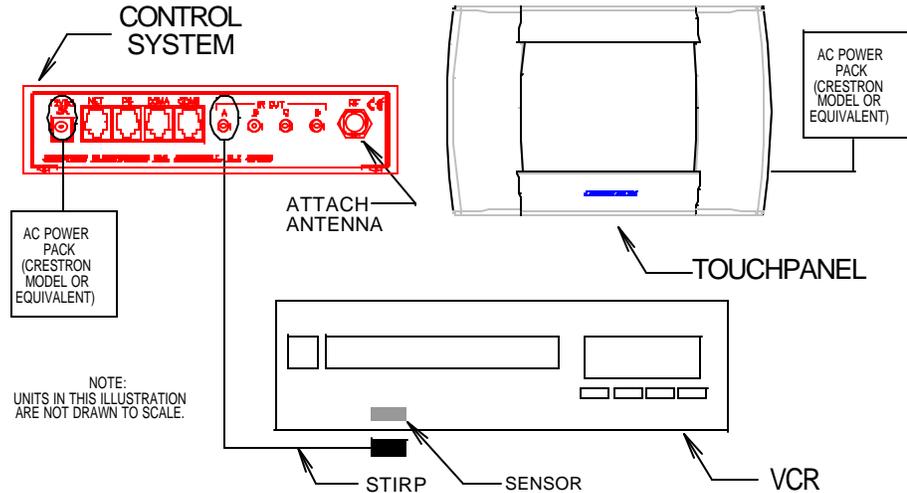
NOTE: The PC to control processor and touchpanel to control processor cables only need to be attached when programming.

1. Using the RJ11 cable assembly (15717) and RJ11 to DB9F adapter (15556-1B) connect the SmarTouch control processor to the RS-232 port on the PC.
2. Using the programming cable assembly (15710) connect the touchpanel to the SmarTouch control processor port, labeled NET.
3. Attach the appropriate external AC power pack to the SmarTouch control processor and insert plug into outlet.
4. Apply power to the touchpanel. Consult the appropriate document listed in “Applying Power” on page 6.
 - If the external AC power pack is used, attach it to the touchpanel and plug into outlet.
 - If the ST-DS is used, rest touchpanel in station and plug into outlet.
 - If the ST-BTP is used, insert battery pack into battery compartment.

Preparing the System for Operation

When operating the SmarTouch STS refer to the figure shown below for a typical connection diagram. Complete the following steps in the order provided to ensure proper connection of the system. It is assumed that the SmarTouch STS is currently connected for programming.

Typical Connection Diagram During Normal Operation



1. Completely disconnect the programming cable assembly (15710).
2. Completely disconnect the RJ11 cable assembly (15717).
3. Attach supplied antenna to BNC connector labeled RF on the back of the SmarTouch control processor.
4. Insert the mono mini plug of the STIRP into one of the four IR OUT ports of the SmarTouch control processor. Identifying the correct IR OUT port depends on the designations made when programming. In this illustration, it is assumed that the VCR is assigned to PORT A. Refer to the latest revision of the STIRP Installation Instructions (Doc. 5674) for details to attach the STIRP to IR sensor windows.
5. Repeat previous step, as necessary.
6. To begin using your SmarTouch STS, simply touch the screen to wake up your the touchpanel.

Problem Solving

Troubleshooting

The table below and on the next page provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron technical support representative.

SmarTouch STS Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Project can not be uploaded to the touchpanel.	NET ID on touchpanel is improperly set.	Verify that NET ID match. Refer to "Configuring the Touchpanel" in the latest revision of the SmarTouch STS Touchpanels Operations Guide (Doc. 5803).
	Touchpanel has powered down.	Touch screen to wake it up. NOTE: It may be necessary to increase POWER DOWN TIMEOUTS during development sessions. Refer to "Configuring the Touchpanel" in the latest revision of the User's Operations Guide (Doc. 5804).
		Verify that power is properly applied. Refer to "Applying Power" in this Operations Guide.
Wrong screens appear on touchpanel.	Screens were not uploaded.	Down load screens as described in the help files found in VT Pro.
System does not function (LEDs on ST-CP do not illuminate).	No system power.	Confirm power is supplied to the system.
	Touchpanel is incorrectly calibrated.	Calibrate the touchpanel. Refer to "Configuring the Touchpanel" in the latest revision of the User's Operations Guide (Doc. 5804).
Touchpanel display is dark.	Backlight timeout has elapsed.	Touch screen to reactivate.
	Power is not applied to the touchpanel.	Verify that power is properly applied. Refer to "Applying Power" in this Operations Guide.
Touchpanel display is dark or too light.	Screen brightness or contrast is improperly set.	Hold finger to the touchscreen for more than 10 seconds as power is applied. The display sets the brightness and contrast to a safe value.
Unexpected response from touchpanel.	Touchpanel is incorrectly calibrated.	Calibrate the touchpanel. Refer to "Configuring the Touchpanel" in the latest revision of the User's Operations Guide (Doc. 5804).
Touchpanel exhibits slow operation.	Compressed graphics take time to decompress.	If there are no memory problems, decompressed graphics decrease the drawing time of panel pages.

SmarTouch STS Troubleshooting (Continued)

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
RF LED on ST-CP illuminates, but COM or IR LEDs do not illuminate.	Touchpanel RF ID is not set to match the RF ID assigned in the SmarTouch system program.	Verify that RF ID match. Refer to "Configuring the Touchpanel" in the latest revision of the SmarTouch STS Touchpanels Operations Guide (Doc. 5803).
RF LED on ST-CP does not illuminate when trying to control A/V equipment.	Button on screen only has internal functions (i.e., join number equals 'NONE' or is greater than or equal to 1000).	Reopen project and verify that button join number is between 1 and 999. NOTE: Can not assign join numbers to a border.
	ST-CP is not receiving power.	Verify that the proper external AC power pack is attached to ST-CP.
	RF antenna is not securely attached to ST-CP RF port.	Verify that ST-CP RF antenna is properly attached.
	RF antenna is not properly located (i.e., inside a metal rack).	Remotely locate RF antenna. Mount the antenna outside of the rack by using a bulkhead type BNC barrel and a BNC to BNC 50 ohm cable.
	RF transmitter in SmarTouch is faulty.	Contact a Crestron technical support representative.
A/V device does not respond.	STIRP or serial port not placed properly.	Verify placement of STIRP (Hold phosphor card under STIRP while pressing button) and tightness of serial cable.
	Used wrong IR or serial port.	Verify proper IR or serial port is defined.
	Wrong manufacturer or model number listed in SmarTouch system.	Open the project in software and verify device definition.
	Incorrect program is in control system.	Verify program is uploaded to control system with Performance Viewport from the software.
	Incorrect panel screens are in touchpanel.	Use the software to open the project and verify that each button that is suppose to control the device has a join number and the command associated with it lists "SEND<device name> <function name>" (e.g., SEND LIV_RM_VCR PLAY). Download the touchpanel screens again.
A/V device does not respond and wrong LEDs on ST-CP for device's IR or serial port illuminate.	SmarTouch system calls out wrong port or no port for device.	Open SmarTouch system via software and change the port.

Further Inquiries

If after reviewing this Operations Guide, you can not locate specific information, please take advantage of Crestron's award winning technical support team in your area. Dial one of the following numbers.

- In the US and Canada, call Crestron's corporate headquarters at 1-888-CRESTRON [1-888-273-7876] or 1-201-767-3400.
- In Europe, call Crestron International at +32-15-50-99-50.
- In Asia, call Crestron Asia at +852-2341-2016.
- In Latin America, call Crestron Latin America at +525-574-15-90.

For local support from exclusive Crestron factory-trained personnel call:

- In Australia, call Soundcorp at +613-941-61066.
- In New Zealand, call Amber Technologies at +649-410-8382.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange, or service without prior authorization from CRESTRON. To obtain warranty service for CRESTRON products, contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number, and return address.
2. Products may be returned for credit, exchange, or service with a CRESTRON Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to CRESTRON, Cresskill, N.J., or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. CRESTRON reserves the right in its sole and absolute discretion to charge a 15% restocking fee, plus shipping costs, on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by CRESTRON, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

CRESTRON Limited Warranty

CRESTRON ELECTRONICS, Inc. warrants its Cresnet products, denoted by a "CN" prefix model number, to be free from manufacturing defects in materials and workmanship for a period of three (3) years from the date of shipment to purchaser. Disk drives and any other moving or rotating mechanical parts are covered for a period of one (1) year. CRESTRON warrants all its other products for a period of one year from the defects mentioned above, excluding touchscreen display components which are covered for 90 days. Incandescent lamps are completely excluded from Crestron's Limited Warranty. CRESTRON shall, at its option, repair or replace any product found defective without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

CRESTRON shall not be liable to honor warranty terms if the product has been used in any application other than that for which it was intended, or if it has been subjected to misuse, accidental damage, modification, or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced, or removed.

This warranty shall be the sole and exclusive remedy to the purchaser. In no event shall CRESTRON be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. CRESTRON makes no other warranties nor authorizes any other party to offer any warranty, expressed or implied, including warranties of merchantability for this product. This warranty statement supersedes all previous warranties.

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