S.Simplex

UL, ULC, CSFM Listed; FM Approved;
*MEA (NYC) Acceptance ***

2120 BMUX (CPU) Upgrade Equipment,
Transponder Interface Module 4100-6065

Features

Upgrade an existing Simplex® 2120 BMUX (also identified as the CPU) head end control panel to the features of the 4100ES fire alarm control panel with minimal system disruption:

- Module 4100-6065 allows a 4100ES control panel to directly communicate with 2120 SCCs (Status Command Centers) and installed transponders for both voice and non-voice systems, *using existing wiring*

- Existing 2120 transponders can be upgraded in a phased migration process as system needs allow

- Allows convenient system expansion by networking the 4100ES BMUX replacement with additional 4100ES and 4100U control panels

- Retrofit kits are available to mount the new 4100ES panel directly into installed 2120 Style backboxes

- UL listed to Standard 864

4100-6065 Provides communications to the following system components and control panels connected to 2120 communications (DC comm):

- Status Command Center (SCC), Basic Transponder (BT), Fire Alarm Basic Transponder (FABT), Dual Channel Audio Basic Transponder (DABT), and Voice/Phone Basic Transponder (VPBT)

- Expanded Transponder (ET) and Universal Transponder (UT)

- Communicating Device Transponder (CDT II and TrueAlarm® (Analog) CDT only); refer to applications note on page 4

- Simplex fire alarm control panel model Series 4002, 4020, 4100, 4100U and 4100ES

- 2120 Communications converters (repeaters, DC comm to RS-232, FSK modems)

- Up to two may be mounted in a 4100ES control panel

2120 to 4100ES system software conversion:

- Existing 2120 system software is factory converted to 4100ES format

Description

System upgrading. As fire alarm system requirements expand and additional equipment and support are needed, older installed fire alarm control equipment often needs to be updated to newer designs. The Simplex 2120 product line has successfully provided fire alarm system control for many years, however, the Simplex 4100ES product family benefits from newer technology and enhanced capabilities. With the 4100-6065 BMUX transponder interface module, an easy, phased replacement of an existing 2120 CPU can be accomplished. (Note, the 2120 CPU was also known as the 2120 BMUX, for basic multiplex panel.)

2120 Terminology. 2120 communications were often described as "DC comm" due to their unique communications format.
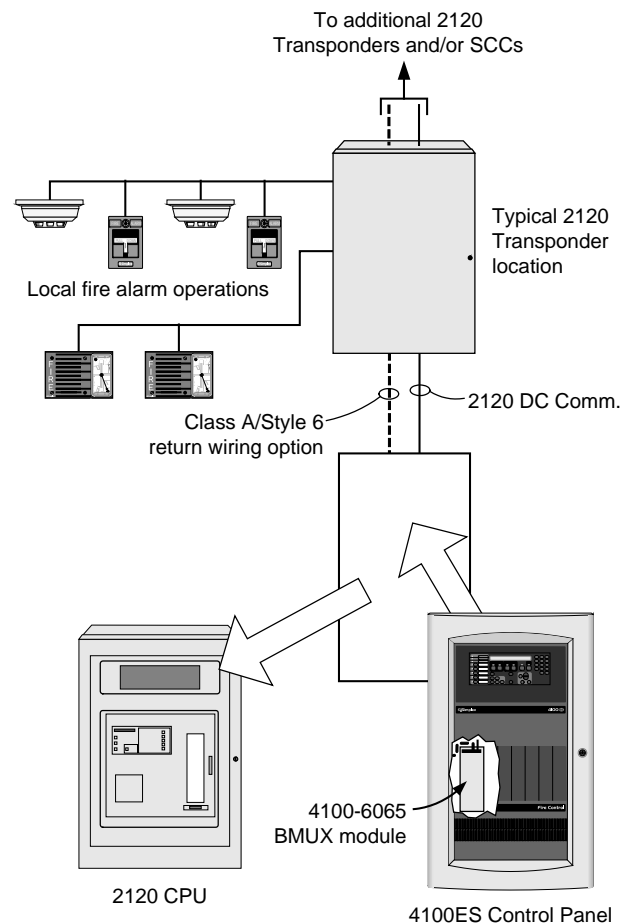
2120 CPU Replaced with 4100ES Control Panel

Upgrade Considerations

Review system requirements. The installed 2120 System and the facility fire alarm requirements must be reviewed and understood to determine the 4100ES product series replacement equipment. For some fire alarm system tasks, the 4100ES solution is different and a literal update is not always possible due to changes in technology and the evolution of fire alarm system solutions.

Retrofit Considerations. *Please note* that changes in fire alarm control panel design architecture may result in some customized programming functions performed by a 2120 BMUX not being directly available with the 4100ES control panel. Consult with your Simplex product representative concerning alternate methods to implement those functions.

For additional information, refer to Installation Instructions 579-805 and Migration Guide 579-824.

Product Selection

Model	Description
4100-6065	2120 BMUX Transponder Interface Module, two maximum per 4100ES Fire Alarm Control Panel
4100-0852	2120 BMUX to 4100ES Job Conversion, Detailed Factory Programming; specific operation details are factory programmed; one required per 2120 system whether one or two Transponder Interface Modules

Product Reference for 2120 Equipment to Replacement 4100U Equipment

Master Control Functions (refer to data sheet list on page 3 for additional equipment detail reference)

2120 CPU Hardware	4100ES Replacement	Comments
Backbox	Use existing box with conversion kit or replace with 4100ES box	Refer to data sheet S4100-0044 for retrofit kit selection
BMUX: CPU Card, PRAM boards, keyboard, display, power supply, and battery charger	4100ES Master controller standard components; expand system using a networked 4100ES control panel	RUI **is available** for up to 31 LCD and LED annunciators including RCU/SCU **The following features are not available from the 4100ES panel when it is equipped with the 4100-6065 BMUX card:** WALKTEST™ system testing, IDNet and MAPNET II communications (SPS IDNet communications are disabled), and MINIPLEX® Transponders on RUI
DC Transmission Board	4100-6065 BMUX Card	New module for the 4100ES

Audio/Voice Hardware (refer to data sheet list on page 3 for additional equipment detail reference)

2120 CPU Hardware	4100ES Replacement	Comments
Microphone, message player, pre-amplifier, tone generator, and audio control switches	Standard 4100ES Analog or Digital audio system (Master Microphone, Audio Controller, Audio User Interface)	Refer to data sheet S4100-0034 for 4100ES audio/voice equipment
Power Preamplifiers (located in adjacent SCC)	Flex-35, 25 VRMS amplifier(s) configured as riser amplifiers	Power-preamps must be changed out, even if SCC remains
Master Phone and Phone Power Supply	4100ES Master Phone System	2120 Master Phone usually located in the adjacent SCC
25 VRMS Riser	Use a Flex-35 Amplifier to generate a 25 VRMS Riser NAC	The standard 4100ES, 10 VRMS riser would not be used
Audio Riser Connections and Supervision	Refer to details in Installation Instructions 579-805	Connections are different from standard 4100ES audio
Local BT I/O Programmed Audio Control Functions	Standard 4100ES Audio Control Switches and Operation	Refer to additional details in Installation Instructions 579-805

2120 Optional Hardware (refer to data sheet list on page 3 for additional equipment detail reference)

| 2120 Hardware	4100ES Replacement	Comments
Local BT and Local BT I/O Board	For external connection use 4100-5005, 8 Zone Module Class B, and 4100-3204 Relay Module (4 points, 2 A) (refer to data sheet S4100-0031 for other zone and relay module options)	Review external devices connected to the local BT (monitor and control) to ensure compatibility with the 4100ES replacement
Local BT City board	City Board option on 4100ES SPS	none
Local Printer and control board	RS-232 Port and 4100-0451 Panel Mounted Printer	For external printers, the options are the 2190-9039 DC printer or the 4190-9013 AC printer
RS-232 Board (2120 allowed a maximum of 5 bi-directional ports and a printer port)	RS-232 Board; maximum of 6 ports, only 2 of 6 support bi-directional communications such as the PC Annunciator which replaced the CRT/keyboard and printer/keyboard products	Consider the following products for upgrade of the CRT/keyboard: Remote InfoAlarm™ Command Centers on RUI communications (up to 10 per 4100ES are allowed); SafeLINC Internet Interface; or PC Annunciators
Existing CRT/Keyboards	See comments for alternatives	
4190 Series Historical Reporting Terminal (HRT)	Update to Network connected 4190 IMS (Information Management System)	4190 HRT equipment was connected to the 2120 via RS-232 and is not supported by the 4100ES
Tape Backup	Not required with 4100ES	Use for initial conversion, not needed with 4100ES
RCU/SCU controlled from 4002 or CDT via MAPNET	Contact your local Simplex product supplier to review options if a 4002 or CDT requires replacement	No changes are required if the 4002 or CDT is not being replaced
BCD (Celestra) time output	Not supported by 4100ES	Use a Simplex model 6351 or 6400 master clock
Color Graphics Equipment (CGU)	Upgrade to network connected TrueSite Workstation; refer to data sheet S4190-0016 for details	CGU equipment was connected to 2120 via RS-232 port and is not supported by 4100ES

4100ES Enhanced Annunciation Products.

4100ES systems are compatible with: the InfoAlarm Command Center, either panel or remote mount; SafeLINC Fire panel Internet Interface (FPII); Information Management Systems (IMS) Network connected graphical interface; and PC Annunciator system reporting.

InfoAlarm Command Centers provide an expanded content, multi-line LCD interface that requires minimal key presses to access detailed information. It is system-powered and its detailed information is provided without requiring separate supplementary equipment. The expanded display content allows it to be considered for applications presently served by existing CRT/keyboard terminal products.
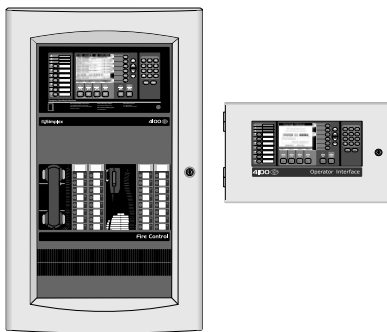

InfoAlarm Command Center/Operator Interface is Available Panel Mount and Remote Cabinet Mount

SafeLINC® Internet Interface allows a secure, password controlled investigation of fire alarm control panel status using the familiar interface of an Internet browser.
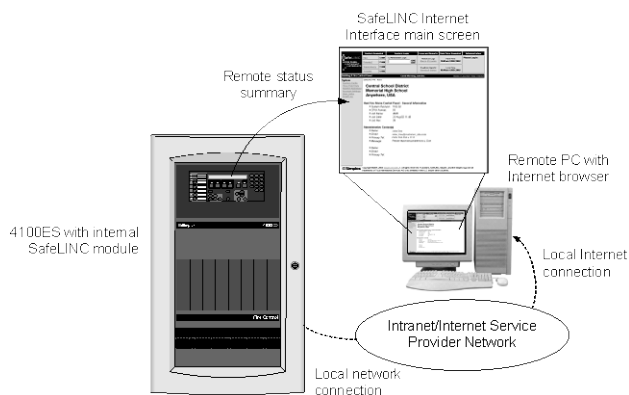

TrueSite™ Workstations and PC Annunciator

products provide extensive user features using UL 864 listed, PC based systems with LCD monitors. The TrueSite Workstation is a fire alarm Network product that provides a color graph user interface for extensive annunciation and control with touchscreen option. The PC Annunciator connects to an individual panel, gathers system information, displays on color coded screens, allows detailed review and reporting, and provides limited system control functions.
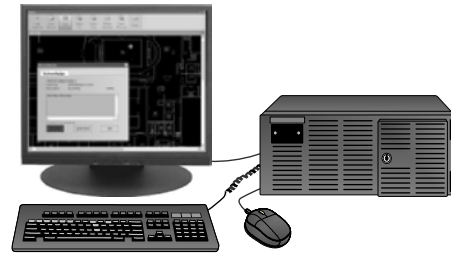
TrueSite Workstation Main Menu Screen shown with Desktop LCD Monitor and PC

TrueSite Workstation Screens Provide a Convenient Graphical User Interface and are Available with Touchscreen Monitors
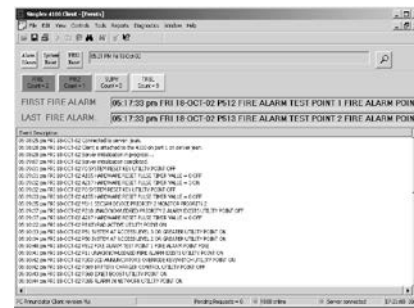
PC Annunciator Screens Provide Extensive 4100ES Panel Information Reporting

Additional 4100ES Product Reference

Subject	Data Sheet
4100ES Basic Panels with SPS Power Supplies	S4100-0031
NDU with SPS Power Supplies for 4120 Network	S4100-0036
InfoAlarm Command Center with SPS Power Supplies	S4100-0045
NDU with SPS Power Supplies for ES Net	S4100-0077
4100ES Basic Panels with EPS Power Supplies	S4100-0100
InfoAlarm Command Center with EPS Power Supplies	S4100-0101
NDU with EPS Power Supplies for 4120 Network	S4100-0102
NDU with EPS Power Supplies for ES Net	S4100-0104

Phase 1

Use site survey checklists to document the existing 2120 system equipment, equipment locations, and specific equipment functions. Determine which existing equipment may need to be upgraded or replaced (refer to equipment list on page 2 and to Migration Guide 579-824). Also determine whether existing CDT II transponders are to be upgraded from addressable detectors to the TrueAlarm addressable sensor technology available with the TrueAlarm CDT.

Replace the 2120 BMUX with a 4100ES panel equipped with 4100-6065 modules, maintaining the existing 2120 DC Loop Communications to 2120 Compatible Transponders.

Process	Benefit	Consideration
4100ES Head end panel communicates to 2120 transponders using 4100-6065 BMUX Card (up to two allowed per 4100ES)	Hardware replacement is minimized. 4100ES features are available (programming ease, software download, enhanced annunciation interface options, and more). System point expansion needs are handled from additional 4100ES control panels with Network connections.	Multiple 2120 to 4100ES migration choices are available. System needs and specific migration choices will vary per project depending on the schedule, budget, and future life safety system requirements.
If part of system migration plan, update CDT II Transponders to TrueAlarm (Analog) Transponders before converting system	Existing addressable smoke detection is updated to TrueAlarm analog sensing. Performing transponder type conversions before converting system to 4100ES based equipment simplifies the software conversion process significantly.	Model Number Reference: 2120-7041; CDT II 2120-7042; TrueAlarm CDT

Phase 2

Phase out 2120 Transponders with 4100ES Peer-to-Peer Networked Nodes or Master/Subordinate MINIPLEX Transponders (or a combination)

Process	Benefit	Consideration
Run new Network or MINIPLEX (RUI) circuit wiring to new 4100ES Network Nodes or MINIPLEX Transponders	System becomes a standard 4100ES MINIPLEX transponder configuration (master/subordinate) and/or fire alarm Network. Software download, Earth Fault Search, IDNet+ operation, enhanced TrueAlarm sensor capabilities, TrueAlert® Addressable Notification, Addressable Isolators, Digital Audio, Constant Supervision, Intelligent Power Supplies, and more.	MINIPLEX transponder wiring distance is limited to 2500 ft (762 m) to farthest transponder (10,000 ft, 3048 m total for Style 4). New loop wiring for Style 7 MINIPLEX transponders may be required. BMUX Communication Modules need to be Phased-Out to take advantage of all of the 4100ES features.

Phase 3

When all 2120 Transponders have been phased out, remove the 4100-6065 modules.

4100-6065 Module Specifications

Power Requirements	Voltage	24 VDC system voltage
	Current	220 mA maximum @ 24 VDC with fully loaded channel
Module Details	Modules per system	Up to 2 maximum
	On-board status LEDs	Individual LEDs for: Communications with 4100ES CPU; Earth fault trouble; and 2120 DC communications channel trouble
	Mounting	4" x 10" (102 mm x 254 mm) module requires two vertical expansion bay blocks; not for mounting in a master controller bay
	Output Wiring Connections	On-board terminal blocks for field wiring 18 to 12 AWG (0.82 mm^2 to 3.31 mm^2)
Environmental	Operating Temperature	32° F to 120° F (0° C to 49° C)
	Humidity	Up to 93% RH, non-condensing @ 90° F (32° C)