eKey Crestron Integration + Demo App

Manufacturer: eKey

Model: FSX UP 2.1 RFiD

Device Type: Finger Scanner

Developer: info@avitdev.com

GENERAL INFORMATION

SIMPLWINDOWS NAME:	EkeyV1.0
CATEGORY:	Security
VERSION:	V1.0
SUMMARY:	Controls eKey Finger Scanner
GENERAL NOTES:	Requires licenses. Operates for 1 hour after each program loading/compilation, for development purposes.
CRESTRON HARDWARE REQUIRED:	3-Series with RS485 Com port
SETUP OF CRESTRON HARDWARE:	RS485: Baud: 115200 Parity: None Data Bits: 8 Stop Bits: 1
VENDOR FIRMWARE:	6.15.10.16
CABLE DIAGRAM:	As follows. Last FS should have termination button "on", all others "off"

CONTROL:

RS485_rx$	S	Connected to RS485 COM.
Poll	D	Poll devices, normally 1.
TripleEnrollOff	D	Turn off triple enroll, normally 0.
CancelAll	D	Cancel all pending actions. Used for not saving user/finger modifications.
Debug	D	Verbose console output, normally 0.
RefreshData	D	Refresh User & Device outputs, reset selections. Not used normally, as it is automatically called by the respective actions.
DEVICE GROUP:		
SelectDevice	A	Select current device, according to DeviceSer_mux sequence.
SetScanDevice	A	Select device for enrolling finger/RFiD
ResetDevice	D	Erase device Database, reboot and sync device.
SaveDevice	D	Save device modifications for name/serial/license.
DeleteDevice	D	Delete current device.
NewDevice	D	Create a new device and set it as current in order to input name/serial/license.
CDeviceSetIx	A	Set 1 based sequence of current device. This sequence effects the device listing and function events.
DeviceName_edit	S	Modify name of current/new device. Should pulse SaveDevice for saving changes. Will only accept unique values.
DeviceSerial_edit	S	Modify serial number of current/new device. Should pulse SaveDevice for saving changes. Will only accept unique values.
DeviceLicense_edit	S	Modify license of current/new device. Should pulse SaveDevice for saving changes.
USER GROUP:		

SelectUser	A	Select current user, according to User_mux sequence.
SaveUser	D	Save user modifications.
DeleteUser	D	Delete current user.
UserName_edit	S	Edit current user name.
CUDevices_set	A	Current User authorized devices. To be set using Analog To Digital Symbol. Bit 1 is device 1 authorization, Bit 2 is device 2 etc.
CUDevices_tog	A	Current User authorized devices toggle. Toggle authorization of respective device.
CUDays_set	A	Current User Day Authorization. To be set using Analog To Digital Symbol. Bit 1 is user is authorized on Sundays, bit 2 for Mondays, etc.
CUDays_tog	A	Current User Day Authorization toggle. Toggles the respective day authorization, 1 is for Sunday, 2 for Monday etc
CUAllDay_set	D	Current User all day authorization set. On rising edge, user is authorized for all day access.
CUAllDay_reset	D	Current User all day authorization set. On rising edge, user is authorized according to Schedule Time settings.
CUAllDay_tog	D	Current User all day authorization toggle. On rising edge, toggles all day access / Schedule Time access.
SchFHHMM	A	Current User Access From Time in form HHMM. Eg access from 13:45 is 1345.
SchTHHMM	A	Current User Access To Time in form HHMM. Eg access until 19:21 is 1921. If it is less than SchFHHMM, then next day is implied.
FINGER GROUP:		
SelectEnrollFinger	A	Select finger/RFiD to enroll of Current User. 1 is Left Little, 2 Left Ring… 10 Right Little, 11 RFiD.
EnrollFinger	D	Starts Enrolling process on rising edge for current user, for selected enroll finger on SetScanDevice. The User has to perform 3 successful scans within 30 seconds. When successful, the new finger is registered and authorized for door access to each device authorized for the user.
SaveFinger	D	Saves Function parameters for Current Finger.
DeleteFinger	D	Removes Current Finger.
SelectFinger	A	Selects Current Finger. 1 is Left Little, 2 Left Ring… 10 Right Little, 11 RFiD.
FunctionUnique_mask	A	Specifies which of 15 functions will be triggered by a unique finger for the user. To be set with Digital To Analog Symbol. Bit 1 is function 1, bit 2 function 2 etc. If Function 2 is masked as unique, then when a user authorizes function 2 for a specific finger, it is automatically removed from any other fingers of the user.
Functions_tog	A	Toggles function authorization of Current Finger.
Functions_set	A	Sets function authorization of Current Finger. To be set with Digital to Analog Symbol. Bit 1 is function 1, bit 2 function 2 etc.
RELAYS GROUP:		
Device_*_Relay_fb	D	Feedback of Relay usage for device 1-10. It will set the green leds of device to blinking, for as long as the signal is 1. It is meant to provide a visual que eg. for the user to push the door once the relay is activated by any means (finger scan, door override button etc.).
LOG GROUP:		
LogFirst	D	Positions to first record of the log.
LogPrev	D	Positions to previous record of the log.
LogNext	D	Positions to next record of the log.
LogLast	D	Positions to last (most current) record of the log.

FEEDBACK:

RS485_tx$	S	Connected to RS485 COM.
LastScan$	S	Message for last scan activity.

ScanIsSuccess_fb	D	1 if last scan activity was successful (finger recognized and authorized).
ScanIsCard_fb	D	1 if last scan was an RFiD card.
DEVICE GROUP:		
DoorItems_len	A	Number of registered devices.
Device_smux	A	Device selector to be used with Serial Demultiplexor type_0.
DeviceName_mux	S	Device name to be used with Serial Demultiplexor type_0 and Device_smux.
DeviceSer_mux	S	Device name to be used with Serial Demultiplexor type_0 and Device_smux.
CurDevice_fb	A	Feedback for Current Device (set with SelectDevice)
ScanDevice_fb	A	Feedback for ScanDevice (set with SetScanDevice, value is saved in database)
DeviceScan_fb$	S	Name of device selected with SetScanDevice.
Sync_fb	D	Sync in process, all inputs should be disabled.
CurDevOK	D	Current Device parameters are ok. (name is valid and unique, serial number is 14 digits). Can be used for enabling save of Current Device.
CurDevLicNOK	D	Current Device is not licensed.
LicOK_mask	A	Mask of devices with license. To be used with Analog To Digital Symbol. Bit 1 is device 1, bit 2 device 2 etc.
DeviceName_fb	S	Name of current device.
DeviceSerial_fb	S	Serial of current device.
DeviceLicense_fb	S	License code of current device.
USER GROUP:		
UserItems_len	A	Number of users.
User_smux	A	User selector to be used with Serial Demultiplexor type_0.
User_mux	S	User name to be used with Serial Demultiplexor type_0 and User_smux.
CurUser_fb	A	Current User (set with SelectUser).
CurUsrOK	D	Current User parameters OK. Can be used for enabling save of Current User.
UserName_fb	S	Current User name.
CUDevicesMask_fb	A	Current User authorized devices. To be used with Analog To Digital Symbol. Bit 1, user is authorized for device 1, Bit 2 for device 2 etc.
CUDays_fb	A	Current User authorized days. To be used with Analog To Digital Symbol. Bit 1 is Sunday, Bit 2 Monday etc.
CUAllDay_fb	D	Current User authorized for all day when 1, according to schedule otherwise.
SchFHHMM_fb	A	Current User authorization schedule from time in HHMM form. Eg from 19:30 is 1930.
SchTHHMM_fb	A	Current User authorization schedule to time as above.
FINGER GROUP:		
CUFingerSelect_init	A	Current User Finger Enroll initial position. Sets a Spinner Symbol to the middle of available fingers for enrollment.
CUFingersMaskR_fb	A	Current User Reverse finger mask. Indicates the available fingers for enrollment. To be used with Analog To Digital Symbol, bit 1 is Left Little, bit 10 Right Little, bit 11 RFiD.
FingerEnrolling_fb	D	Feedback that finger enrolling is in progress.
CardEnrolling_fb	D	Feedback that card enrolling is in progress.
CurFinger_fb	A	Current Finger feedback. To be set with SelectFinger.
FingerName_fb	S	Current Finger name
CUFingerOK	D	Current Finger parameters are valid. To be used for enabling Save.
Functions_set_fb	A	Feedback of Current Finger functions. To be used with Analog To Digital Symbol, bit 1 is function 1, bit 2 function 2 etc.
FingerItems_len	A	Length of registered fingers for Current User.
Finger_smux	A	Finger selector to be used with Serial Demultiplexor type_0.
Finger_mux	S	Finger name to be used with Serial Demultiplexor type_0 and Finger_smux.

RELAYS GROUP:		
Device_*_ScanMask	A	Indicates a scan event for the respective Device. 0 for unsuccessful/unauthorized scan, other values indicate the activated functions according to finger authorizations. To be used with Analog To Digital Symbol, bit 1 is function 1, bit 2 function 2 etc.
LOG GROUP:		
Log_smux	A	Log entry selector to be used with Serial Demultiplexor type_0.
Log_mux	S	Log entry to be used with Serial Demultiplexor type_0 and Log _smux.
LogHasPrev_fb	D	Feedback if log has previous records.
LogHasNext_fb	D	Feedback if log has next records.

Demo project operation

1. From setup page, add devices as required.

2. Add Users/Fingers.

3. Long press for edit a User or Finger.

4. Project is setup for RMC3, according to attached wiring diagram.

5. From Setup folder, the function number, names and unique flag, can be easily customized by a programmer.
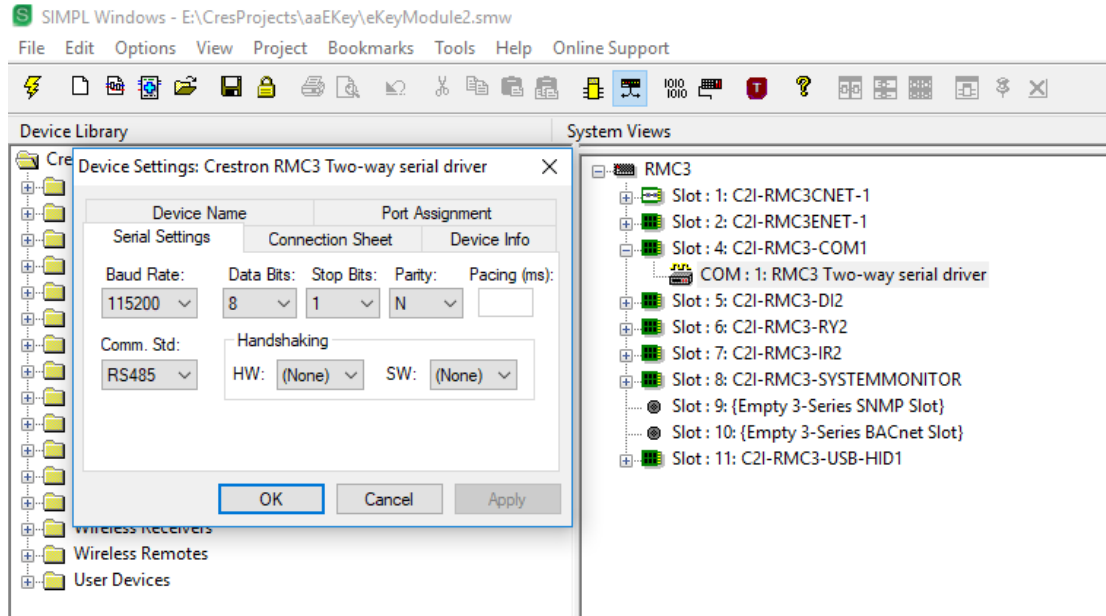
Releases

V1.0

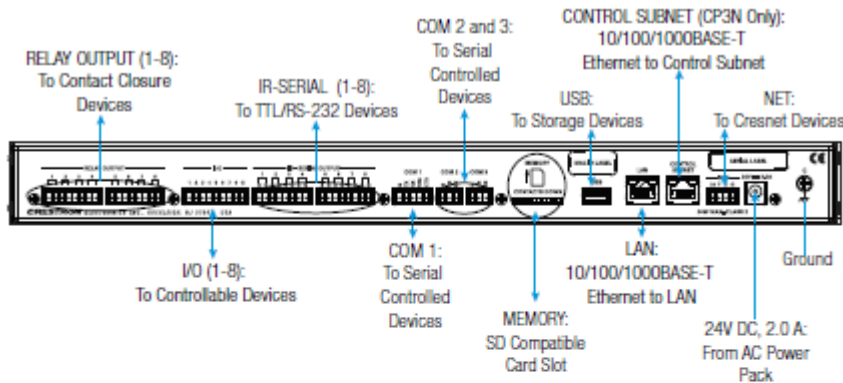- Official initial release

- Operation with up to 10FS.

RS485

Please use a suitable port, supporting RS485 (RMC3, Com1 of CP3 etc).

Settings: RS485, 115200, 8, 1, N.

Settings in Demo Project Configuration:

Attention: Wiring for RMC3, CP3 is TX and RTS as per DO GUIDE.

COM 1 Connections

PORT	RS-232	RS-422[1]	RS-485
G	GND	GND	GND
TX	TX (from CP3/CP3N)	TX- (from CP3/CP3N)	TX-/RX-
RX	RX (to CP3/CP3N)	RX+ (to CP3/CP3N)	Not Used
RTS	RTS (from CP3/CP3N)	TX+ (from CP3/CP3N)	TX+/RX+
CTS	CTS (to CP3/CP3N)	RX- (to CP3/CP3N)	Not Used

1. RS-422 transmit and receive are balanced signals requiring two lines plus a ground in each direction. RXD+ and TXD+ should idle high (going low at start of data transmission). RXD- and TXD- should idle low (going high at start of data transmission). If necessary, RXD+/RXD- and TXD+/TXD- may be swapped to maintain correct signal levels.

2. A ground terminal connection is recommended but not required.

A successful communication with the device is indicated with a steady blue led on the device.

A blinking orange led, indicates no communication. Please check wiring, FS serial numbers, port settings and reboot the controller in order to make sure that the latest files are read by the program.

It is strongly recommended to keep the default finger enrollment setting to Triple Scan.

Check FS firmware to be at least 6.15.10.16 (demo setup page).