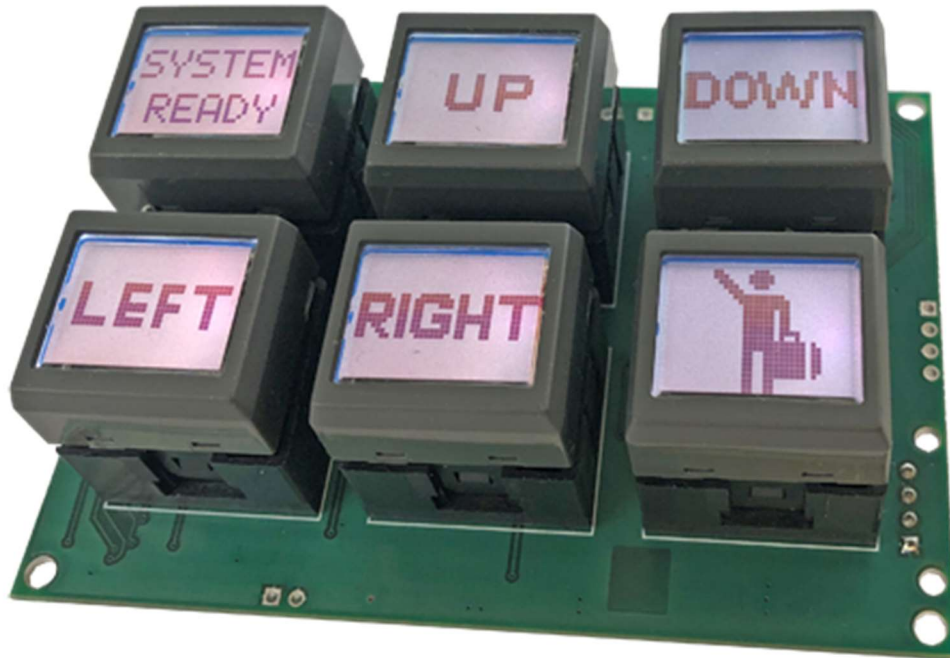

IS-70052 User Manual

Revision C



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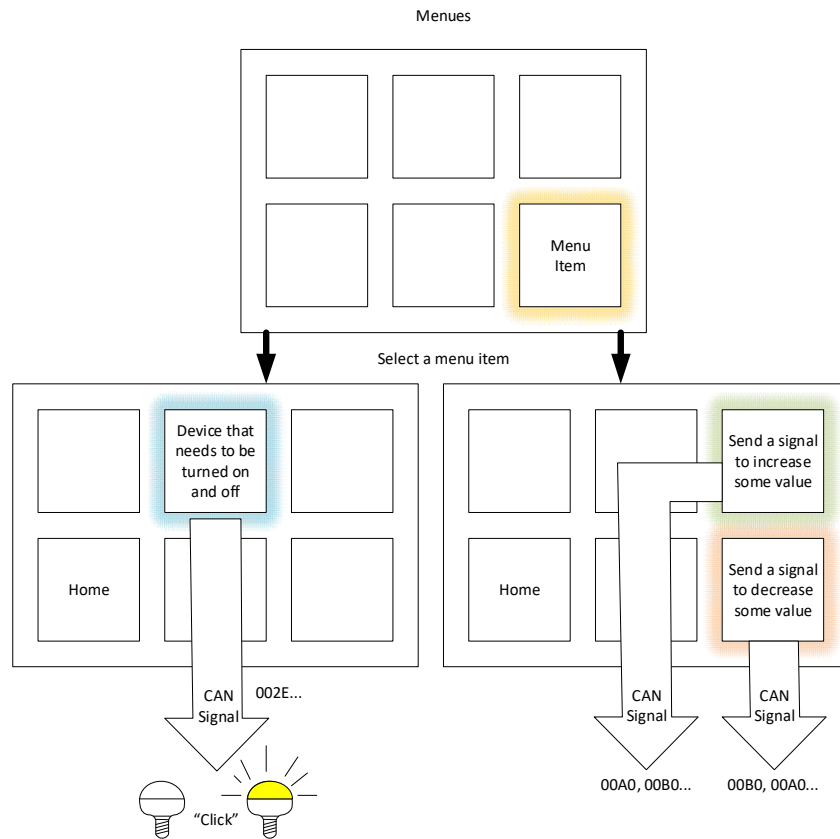
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1. Capabilities of the IS-70052

Thank you for purchasing the IS-70052. The IS-70052 is a stand-alone input device designed to communicate over a CAN bus using the RV-C protocol. On-board are six pushbuttons that display their current functions. By pressing a button, the function is activated. These functions could be used to move to a new set of functions or to send a signal out through CAN/USB to control a device. It is designed so that it only takes a maximum of three switch presses to activate any one of thirty functions (five functions distributed evenly among six menus with one button push to choose a menu, one to activate function, one to exit back to the Home menu).



The IS-70052 can be used in a variety of applications (especially in transportation) due to its CAN RV-C communication. The standard firmware commands devices but does not respond to any bus commands. Upon request, the firmware can be changed for nearly any usage scenario. The device can listen to the bus and display information, ignore the bus and send out button presses and commands, and anything in between. Please contact NKK with your system interface needs.

2.LCD 36x24 SmartDisplay Switch

The LCD 36x24 SmartDisplay switch is a graphic 36x24 LCD display mounted in the key cap of a momentary pushbutton. It has an RGB backlight with discrete control.

Please contact engineering@nkkswitches.com with your requirements for custom solutions.

NKK can supply subsystems with any configuration and number of LCD 36x24 switches with USB and Ethernet communication. SmartDisplay allows designers to dynamically change switch legends and images based on desired application functions. The system is ready to interface with a customer's application through CAN and USB. It can receive commands, send information, and update the SmartDisplay images.

SmartDisplay is ideal for use in applications with multiple, complex functions which would ordinarily require many dedicated switches and complex training. The dynamic nature of the system allows for instantaneous transitions from generalized lists of categories down to function specific actions. This reduces the need for complicated controls and shortens the time for training by only displaying relevant options and commands.

To help with development, NKK Switches provides free software, Engineering Kits Communicator, to save and erase images on the controller. Also, NKK Switches provides all the documentation necessary to get up and running quickly on our website: <https://www.nkkswitches.com/SmartDisplay-resources/>

3. General Features

This system is a CAN-controlled 6 programmable display-on-pushbutton system in a compact form factor. It comes with the following features:

Features:

- 6 36x24 LCD SmartDisplays with momentary pushbutton functionality.
- USB or CAN controlled.
- Power Specs: 5VDC USB, 0-30VDC CAN, Max 24 Watts. (with included power cord).
- The unit comes with a 6-foot USB 2.0 A to Mini-B cable (IS-USB1).
- On-board memory for 30,000 images
- 8 levels of brightness.
- Real-time control by host.
 - Save images to memory.
 - Show any saved image on any switch.
 - Reports switch activity to host.
 - Ability to send images directly to switches without saving to memory.
 - Write text on switches in two different font sizes
- Controller board firmware can be customized based on customer requirements.
- Firmware field upgradable via USB.
- Windows based software is available for communication.
 - Accepts bitmap files, extracts the images, and download them to the controller.
 - Allows typing of commands and downloading to the controller.
 - Messages to and from the controller are displayed in different colors.
- RV-C Communication protocol
- Please contact the factory about custom builds and firmware modifications.

4. Electrical Specifications

Power Specs: Max 3 Watts.
 USB +5 V
 CAN +30VDC max

5.USB Communication

The systems can communicate over USB and CAN. All commands and responses are detailed in the associated USB Command List. A non-inclusive list of commands is as follows:

- Acknowledge.
- Erase flash memory.
- Get/Set CAN settings.
- Reset system.
- Query version.
- Save image to flash memory.
- Send image directly to switch.
- Set image from flash memory on specific switch.

The system shows up as a generic USB COM port. This allows quick testing, loading of images, and integration with customer software. For testing, the NKK Engineering Kits Communicator, or a standard terminal program such as Putty can be used.

6. Images

Images can be created in any graphics software such as Paint, Photoshop, etc, or even user-created software. All images can be saved onto the system by using the free Engineering Kits Communicator, located on the NKK Website:

<https://www.nkkswitches.com/>

(Images can also be loaded onto the system with user-created software as long as the rules for the images and communications are followed.)

To use this software, images must be saved in the proper format:

LCD 36x24	Monochrome bitmap (.bmp) 36x24 pixels
-----------	---------------------------------------

Please note that the **flash memory must be erased before new images are loaded**, or images will not display properly. Erasing can take up to 2 minutes depending on the size of the flash memory. The command to erase all the flash memory is 21 55 AA 52 52 AA.

The Engineering Kits Communicator will auto-convert the monochrome .bmp file to the switch format and send the data. If writing custom software, be aware bitmap format specifies the bottom-left corner as the “top”. Therefore, to send images properly to the switches the data needs to be sent last row first, followed by next to last, etc.

The system expects LCD image pixels to be monochromatic. Pixels are on or off. Only the backlighting has color. Each bit corresponds to a pixel in the image.

When saving images to flash, the data needs to be converted to ASCII hex for 240 bytes of data.

Monochrome bitmap (.bmp) 36x24 pixels	1 byte per 8 pixels	120 bytes per image
---------------------------------------	---------------------	---------------------

*the last 4 bits of every byte are dummy bits and not used

7. CAN Operational Overview

The system is configured through a series of behaviors known as “attributes”. After creating an attribute file in excel, the attributes are sent via the engineering kits communicator. Each attribute has a set of behaviors associated with it, such as changing the brightness, sending DGNs and data over CAN, and changing other switch functionalities (attributes). All or none of these can be enabled for each switch. The user should configure the attribute file based on their usage scenario. Please see the attributes document for more information.

Upon power-up the system configures and turns on the switches. Attributes 1-6 from memory are loaded on switches 1-6 respectively. Depending on the current attribute, the switches either show images or text.

The system then waits for a switch press. The system takes no action until a switch press is received. When pressed, the switch attribute can have a variety of effects:

- Change some/all switch images & attributes
- Send a DGN/data over CAN RV-C
- Adjust all switch brightness
- Visually show a function as being on/off

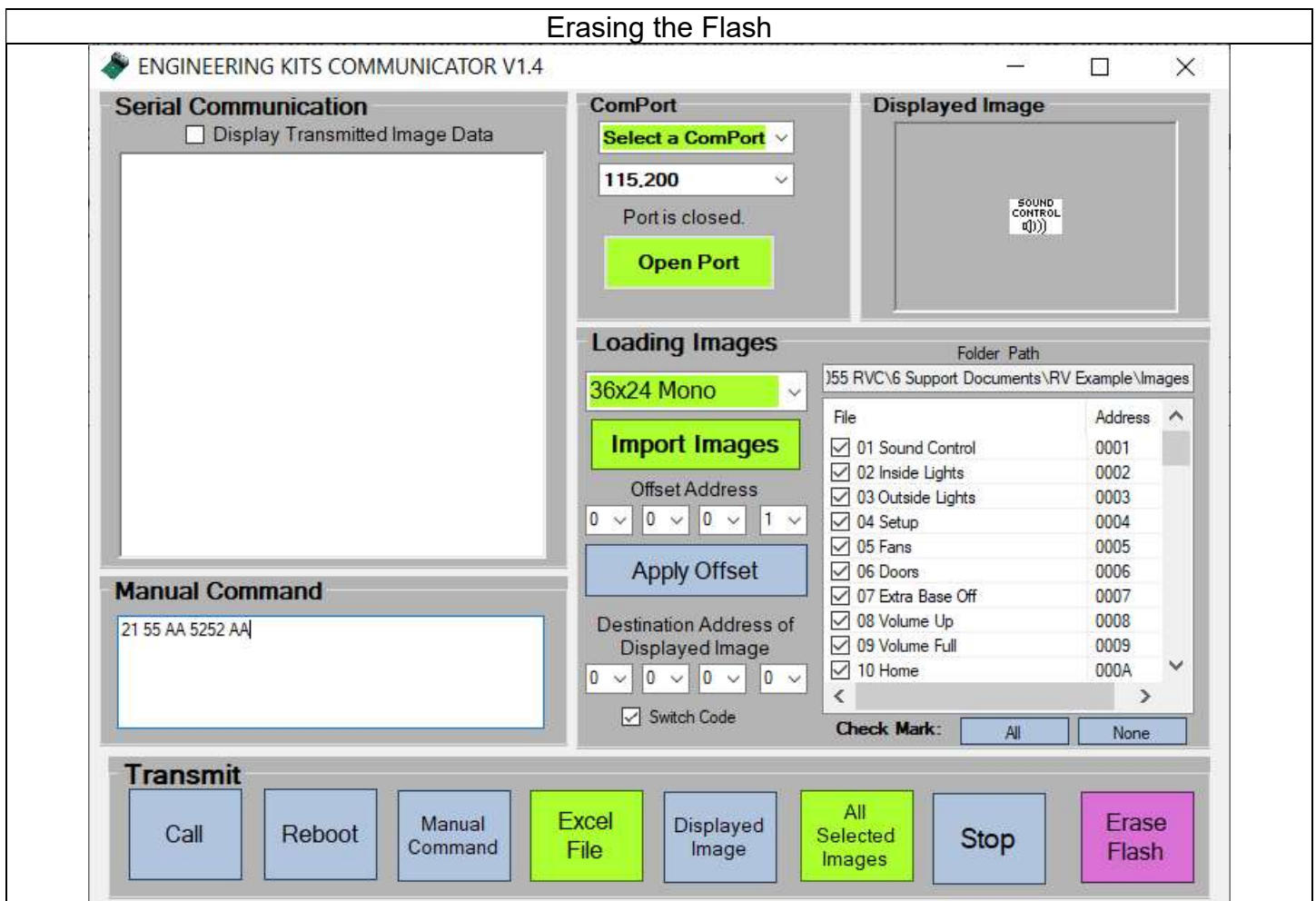
The system comes pre-loaded with example attribute functionality. For integration into a particular system, the user should edit the attribute file to attain their desired behavior.

8. How to Erase the Flash on the Demo

The IS-70052 comes preloaded with a simulated-use demo program. The device will automatically load the demo upon power-up. If different functionality is desired, the IS-70052 needs new images and attributes.

Before the IS-70052 can be used for a particular application the flash memory has to be erased and images and attributes installed. Erasing can take up to 2 minutes. Add the following command to the Manual Command section of the Engineering Kits Communicator and then press the Manual Command button. The erase will take up to 2 minutes to complete.

The command to erase all the flash memory is 21 55 AA 5252 AA. Push the Manual Command to send it (not the Erase Flash button).



9. How to Add the Attributes to the Demo

The purpose of the attributes is to tell the IS-70052 how to behave when the buttons are pressed. When using the Engineering Kits Communicator, the attributes can be stored in an Excel file on a computer. Once they are finalized the Engineering Kits Communicator can be used to extract the data from the Excel spreadsheet and sent to the IS-70052.

Part of the Demo Attributes

	A	B	C	D	E	F	G
1	RAW DATA						
2	CHARACTER						
3							
4	:	Setup					
			Speed can be: 0x0F = 125k 0x10 = 250k 0x11 = 500k 0x12 = 1M	00 - Passive (DGN column below ignored and 0xFFB8 is broadcast) 01 - Active (When pressed, the DGN and data are sent from the attributes)			
5	:	Setup ID is always 00					
6	:	ID	Speed	Input Type		All Erase Command	
7	*	0000	10	01		2155 AA 5252 AA	
8							
9	:	Attributes					
			1 byte Values can be: 00 - No change to switch brightness 01 - All switch brightness increased by 1 (to maximum of 8) FF - All switch brightness decreased by 1 (to minimum of 1)	2 bytes The image number to display if the function is off. If 0, Row1 text and Row2 text are used instead	The backlight to display if the function is off. Values are: 00 - Off 11 - Blue 22 - Green 33 - Teal 44 - Red 55 - Purple 66 - Yellow FF - White	2 bytes The image number to display if the function is on.	The backlight to display if the function is on. Values are: 00 - Off 11 - Blue 22 - Green 33 - Teal 44 - Red 55 - Purple 66 - Yellow FF - White
10	:	2 bytes ID must be unique for every line					
11	:	ID	Brightness Modi	Off Image #	Off Backlight	On Image #	On Backlight
12							
13	*	0001	00	0001	33	0000	11
14	*	0002	00	0002	22	0000	11
15	*	0003	00	0003	44	0000	11
16	*	0004	00	0004	FF	0000	11
17	*	0005	00	0005	55	0000	11
18	*	0006	00	0006	66	0000	11

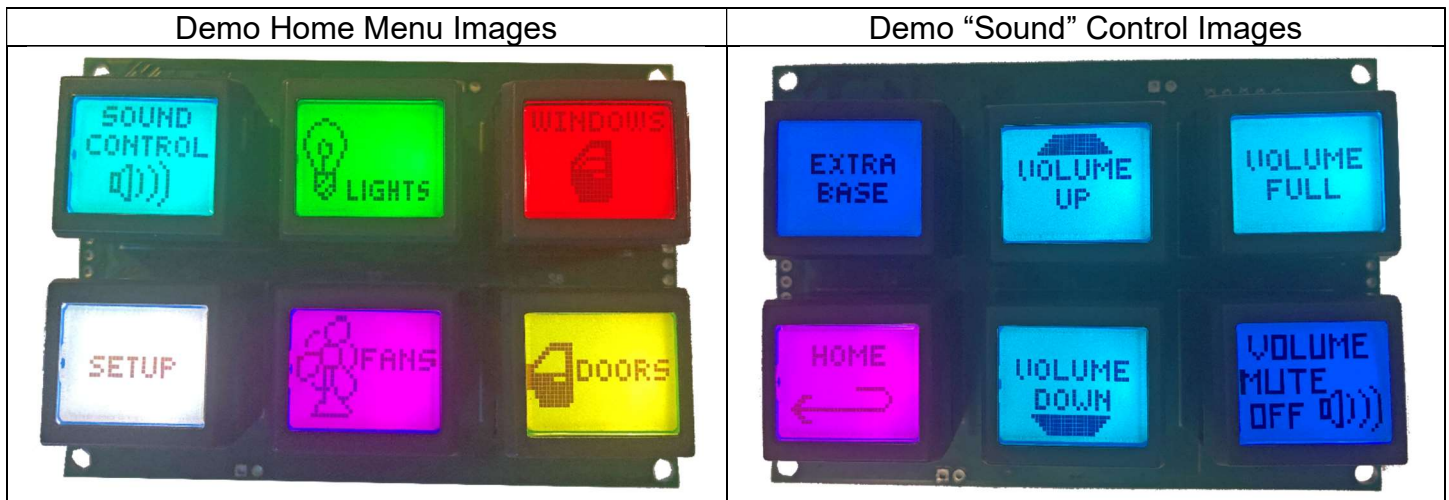
To download the attributes from the Excel file to the IS-70052 use the Excel File button on the Engineering Kits Communicator and select the file with the File Open Dialog. The file must be in the proper format for the software to accept it.

The 42 rows of the spreadsheet in the demo are set up to have six menus with five devices and a home button for each menu. For new attributes it is best to use the demo spreadsheet as a template to best assure that the attributes are in the proper format. Each row must have a 2-byte address in hexadecimal format.

The addresses are in two-byte hex format. For instance, the first address is 0001. The tenth address is 000A and the fifteenth is 000F. The last address for the demo that has attributes is 002A although images go all the way up to 0040. Those last 22 images are just for the ON state and don't need attributes.

10. How to Add Images to the Demo

The images are stored on the IS-70052 as monochromatic 36x24 data. The Engineering Kits Communicator can translate monochromatic 36x24 bitmap files and send the image data to the IS-70052. The example has images for both OFF and ON though they look identical except the ON images have a 2x2 pixel square.



11. Saving Images Using Engineering Kits Communicator (Detailed)

The Engineering Kits Communicator loads the images in alphanumeric order according to the image files names. It auto-assigns a sequential address to each image. Be sure to keep this in mind when naming images so that video images or animations are listed in the desired order. Avoid using symbols in the names as some symbols interfere with alphanumeric ordering. All images to be loaded should be saved in a single folder. The default starting address is 0001. This can be changed if needed.

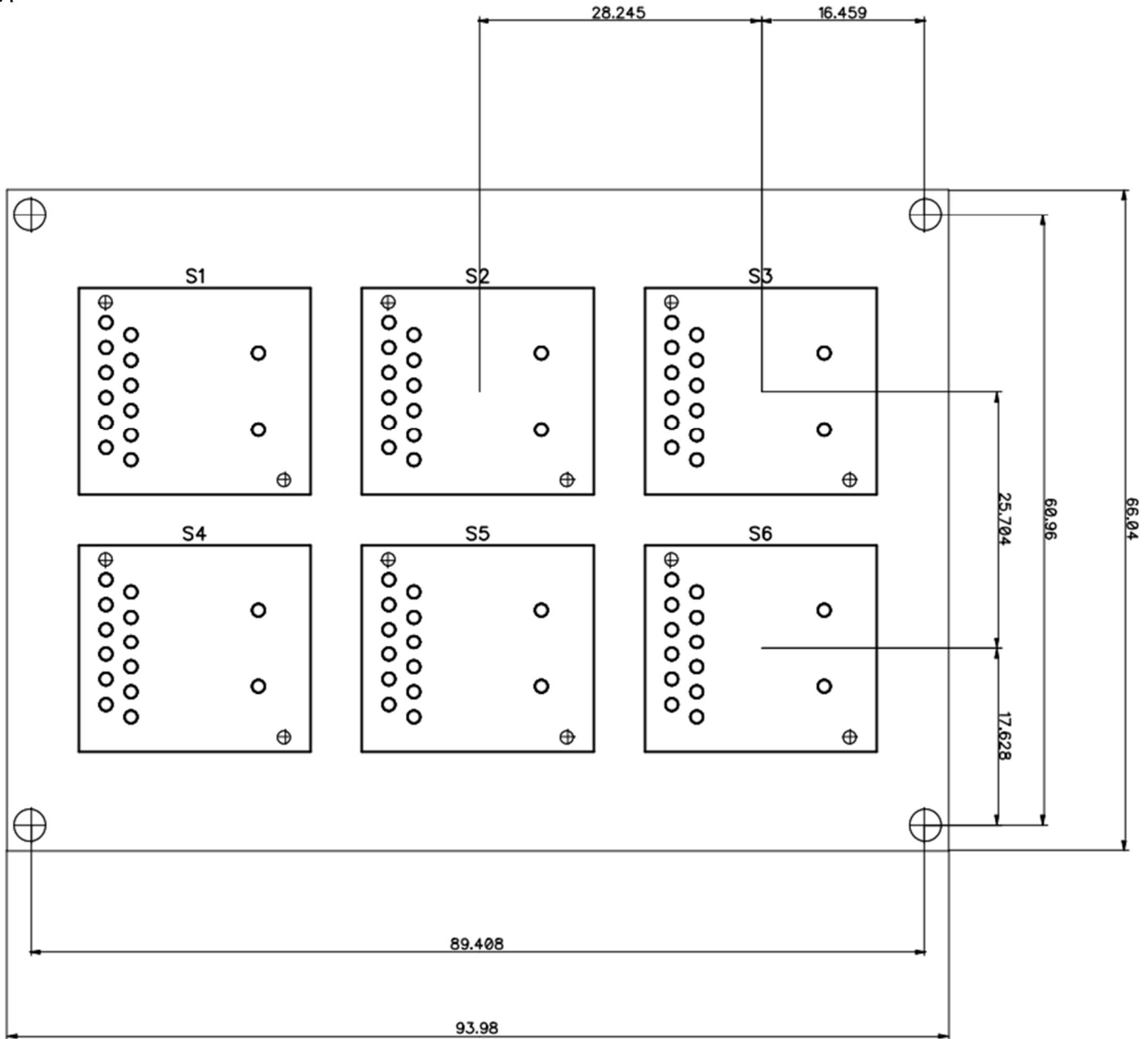
To save images to the system:

1. Open the Engineering Kits Communicator.
2. From the drop-down menu at the top, select the COM port of the system (usually the last one).
3. Click the 'Open Port' button.
4. Press the call button and verify the system responds with '61' in blue text in the left text box.
5. Select the image type from the drop-down in the 'Loading Images' section.
6. Click the 'Import Images' button.
7. Navigate to the directory with all the images and select one and click 'Open'.
8. Note that the images are loaded alphanumerically and automatically assigned addresses.
 - a. If some/all images do not show up in the image list after selecting the directory, it is because the image is not in the proper resolution or file type (.bmp). Double-check the image size is correct *before* downloading. If an image was skipped the images will load one address off and will have to be erased before reloading them.
9. If images were previously saved, click the 'Erase Flash' button.
 - a. Note that this operation can take up to **2 minutes**.
10. Click the 'All selected images' button at the bottom.
11. Wait for the 'Success' message. If the process fails, click the 'All selected images' button again.

If writing custom software to save images, all data after the command must be sent in ASCII hex (See Sections [Images](#) and [ASCII Hex](#)).

12. Board Dimensions

Typical dimensions.



13. ASCII Hex

All USB data is sent as ASCII hex as a safety measure to avoid being interpreted as a command. ASCII hex is a normal data byte split into two halves and converted to their ASCII equivalent (see www.asciitable.com). Therefore, all data received will be in the 0x30-0x46 number range, and anything received outside that is invalid. For example:

Data to be sent is 0x3D.

Each nibble is assigned its own byte: 0x3 and 0xD.

Each of those bytes is converted to ASCII equivalent: 0x33 0x44 (0x33 is the ASCII number '3'. 0x44 is the ASCII letter 'D').

Receiving is the same process reversed:

Data received is 0x41 0x37.

Each byte converted from the ASCII equivalent is 0xA 0x7 (0x41 is the ASCII letter 'A', 0x37 is the ASCII number '7').

Combine the two bytes to get the data byte 0xA7.

14. Key Terms & Definitions

Host	Any computer, terminal, or other device that can communicate over the USB line.
Byte	An eight-bit hex value ranging from 00H to FFH (Decimal 0 to 255). The bit format of a byte is: (B7 B6 B5 B4 B3 B2 B1 B0) where B7 is most significant and bit B0 is least significant bit.
Nibble/Hex Digit	A four-bit value ranging from 0H to FH. A byte consists of two nibbles.
ASCII	A byte value representing a symbol.
Communication Format	<p>There are two formats to transmit a byte:</p> <ol style="list-style-type: none">1. Hex format - A hex byte is transmitted without any change to it. [xxH] will be used to denote this. All commands and some data are sent by using this format.2. ASCII HEX format - Each nibble of the byte is converted to ASCII code and sent as a byte. [xxAH] will be used to denote this. For example, the hex byte 5AH is transmitted in two bytes, 35H and 41H. The ASCII value for 5 is 35H and the ASCII value for A is 41H. All addresses and most data are sent using this format.
Address	A two-byte value ranging from 0001H to 03E8H representing the 1000 memory locations for images on the flash memory.

15. Warranty

NKK SWITCHES LIMITED WARRANTY AND LIMITATION OF LIABILITY

The following limits our liability. Please read.

NKK Switches hereby warrants this product against any and all manufacturing defects for a period of one year from the date of sale of this product to the original end user. NKK Switches' liability in the event of such defect is limited to repair or replacement of the defective products. NKK Switches disclaims any liability or warranty obligation with respect to any product that is misused, damaged by any user, or not used in conformity with all applicable product specifications.

NKK SWITCHES HEREBY DISCLAIMS ANY WARRANTY, EXPRESS OR IMPLIED, OTHER THAN THAT CONTAINED HEREIN. NKK SWITCHES EXPRESSLY DISCLAIMS THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND SHALL HAVE NO LIABILITY BASED ON OR ARISING FROM ANY CLAIM OF SUCH WARRANTY.

NKK Switches shall have no liability to any person for any incidental, consequential, special, punitive, or other damages of any kind whatsoever relating to any use of this product.

USE OF THIS PRODUCT IN CONNECTION WITH ANY LIFE CRITICAL APPLICATION IS NOT RECOMMENDED.

16. Commands to the Controller

See the Command List on the next page.

RAW DATA CHARACTER	
Setup	
Input type can be: 00 - Passive (DGN column below ignored and 0x1FFB8 is broadcast) 01 - Active (When pressed, the DGN and data are sent from the attributes below)	
Speed can be: 0x0F = 125k 0x10 = 250k 0x11 = 500k 0x12 = 1M	
Setup ID is always 0000	
ID	Input Type
0000	01

Attributes		1 byte The backlight to display if the function is off.		1 byte The backlight to display if the function is on.		2 bytes Identifies functions that should be tracked for on/off capability. Each separate function should have a unique ID. 0000 means on/off is not tracked.		1 byte Identifies if when pressed the switch turns on, turns off, or toggles. Values are: 00 - Turn on 01 - Turn off 02 - Toggle Not used if the function number is 0000.		3 bytes When the switch is pressed, the data in the next column is sent to the DGN specified here. 0000 means nothing will be sent. Only valid if the input type is active (in settings above).		8 bytes When the switch is pressed, the data below is sent to the DGN specified in the previous column. Only valid if the input type is active (in settings above).		2 bytes When the switch with this attribute ID is pressed, SWITCH1 will change to this attribute ID. 0000 is no change.		2 bytes When the switch with this attribute ID is pressed, SWITCH2 will change to this attribute ID. 0000 is no change.		2 bytes When the switch with this attribute ID is pressed, SWITCH3 will change to this attribute ID. 0000 is no change.		2 bytes When the switch with this attribute ID is pressed, SWITCH4 will change to this attribute ID. 0000 is no change.		2 bytes When the switch with this attribute ID is pressed, SWITCH5 will change to this attribute ID. 0000 is no change.		2 bytes When the switch with this attribute ID is pressed, SWITCH6 will change to this attribute ID. 0000 is no change.		2 bytes When the switch with this attribute ID is pressed, SWITCH7 will change to this attribute ID. 0000 is no change.		6 bytes(character) if the off image number is 0000, this text is shown on row 1. This field must have exactly 6 characters and should be padded with spaces if not all are used.		6 bytes(character) if the off image number is 0000, this text is shown on row 2. This field must have exactly 6 characters and should be padded with spaces if not all are used.	
ID	Brightness Modifier	Off Image #	Off Backlight	On Image #	On Backlight	Function #	Off/On	DGN To Send	Data To Send	SW1 Jump Address	SW2 Jump Address	SW3 Jump Address	SW4 Jump Address	SW5 Jump Address	SW6 Jump Address	SW7 Jump Address	SW8 Jump Address	Row1 Text	Row2 Text												
0001	00	0000	FF	0001	FF	0000	00	001001	0000000000000001	0007	0008	0009	000A	000B	000C	0000	0000	MENU	1												
0002	00	0000	FF	0002	FF	0000	00	001002	0000000000000002	0000	000E	000F	0010	0011	0012	0000	0000	MENU	2												
0003	00	0000	FF	0003	FF	0000	00	001003	0000000000000003	0013	0014	0015	0016	0017	0018	0000	0000	MENU	3												
0004	00	0000	FF	0004	FF	0000	00	001004	0000000000000004	0019	001A	001B	001C	001D	001E	0000	0000	MENU	4												
0005	00	0000	FF	0005	FF	0000	00	001005	0000000000000005	001F	0020	0021	0022	0023	0024	0000	0000	MENU	5												
0006	00	0000	FF	0006	FF	0000	00	001006	0000000000000006	0025	0026	0027	0028	002A	0000	0000	MENU	6													
0007	00	0000	00	0000	00	0000	11	002001	0000000000000007	0000	0000	0000	0000	0000	0000	0000	0000	FAN	1												
0008	00	0000	00	0000	00	0000	22	002002	0000000000000008	0000	0000	0000	0000	0000	0000	0000	0000	FAN	2												
0009	00	0000	00	0000	00	0000	33	002003	0000000000000009	0000	0000	0000	0000	0000	0000	0000	0000	FAN	3												
000A	00	0000	00	0000	00	0000	44	002004	000000000000000A	0000	0000	0000	0000	0000	0000	0000	0000	FAN	4												
000B	00	0000	00	0000	00	0000	55	002005	000000000000000B	0000	0000	0000	0000	0000	0000	0000	0000	FAN	5												
000C	00	0000	00	0015	FF	0000	00	002006	000000000000000C	0001	0002	0003	0004	0005	0006	0000	0000	BACK													
000D	00	0000	00	0000	00	0000	66	003001	000000000000000D	0000	0000	0000	0000	0000	0000	0000	0000	ABCEDEF	GHIKLM												
000E	FF	0008	77	0008	77	0000	00	003002	000000000000000E	0000	0000	0000	0000	0000	0000	0000	0000	NPQRS	TUVWXY												
000F	00	0008	88	0008	88	0000	02	003003	000000000000000F	0000	0000	0000	0000	0000	0000	0000	0000	ZABCE	FGHIK												
0010	00	0010	99	0010	99	0000	00	003004	0000000000000010	0000	0000	0000	0000	0000	0000	0000	0000	LMNOPQ	RSTUVW												
0011	00	0011	AA	0011	AA	0000	00	003005	0000000000000011	0000	0000	0000	0000	0000	0000	0000	0000	XYZABC	DEFGHI												
0012	00	0000	00	0012	FF	0000	00	003006	0000000000000012	0001	0002	0003	0004	0005	0006	0000	0000	BACK													
0013	00	0013	BB	0013	BB	0000	00	004001	0000000000000013	0000	0000	0000	0000	0000	0000	0000	0000	ABCEDEF	GHIKLM												
0014	00	0014	CC	0014	CC	0000	00	004002	0000000000000014	0000	0000	0000	0000	0000	0000	0000	0000	NPQRS	TUVWXY												
0015	00	0015	DD	0015	DD	0000	00	004003	0000000000000015	0000	0000	0000	0000	0000	0000	0000	0000	ZABCDE	FGHIK												
0016	00	0016	EE	0016	EE	0000	00	004004	0000000000000016	0000	0000	0000	0000	0000	0000	0000	0000	LMNOPQ	RSTUVW												
0017	00	0017	FF	0017	FF	0000	00	004005	0000000000000017	0000	0000	0000	0000	0000	0000	0000	0000	XYZABC	DEFGHI												
0018	00	0000	00	0018	FF	0000	00	004006	0000000000000018	0001	0002	0003	0004	0005	0006	0000	0000	BACK													
0019	00	0019	00	0019	55	0000	00	005001	0000000000000019	0000	0000	0000	0000	0000	0000	0000	0000	ABCEDEF	GHIKLM												
001A	00	001A	00	001A	44	0000	00	005002	000000000000001A	0000	0000	0000	0000	0000	0000	0000	0000	NPQRS	TUVWXY												
001B	00	001B	00	001B	33	0000	00	005003	000000000000001B	0000	0000	0000	0000	0000	0000	0000	0000	ZABCDE	FGHIK												
001C	00	001C	00	001C	22	0000	00	005004	000000000000001C	0000	0000	0000	0000	0000	0000	0000	0000	LMNOPQ	RSTUVW												
001D	00	001D	00	001D	11	0000	00	005005	000000000000001D	0000	0000	0000	0000	0000	0000	0000	0000	XYZABC	DEFGHI												
001E	00	0000	00	001E	FF	0000	00	005006	000000000000001E	0001	0002	0003	0004	0005	0006	0000	0000	BACK													
001F	00	001F	00	001F	11	0000	00	006001	000000000000001F	0000	0000	0000	0000	0000	0000	0000	0000	ABCEDEF	GHIKLM												
0020	00	0020	00	0020	22	0000	00	006002	0000000000000020	0000	0000	0000	0000	0000	0000	0000	0000	NPQRS	TUVWXY												
0021	00	0021	00	0021	33	0000	00	006003	0000000000000021	0000	0000	0000	0000	0000	0000	0000	0000	ZABCDE	FGHIK												
0022	00	0022	00	0022	44	0000	00	006004	0000000000000022	0000	0000	0000	0000	0000	0000	0000	0000	LMNOPQ	RSTUVW												
0023	00	0023	00	0023	55	0000	00	006005	0000000000000023	0000	0000	0000	0000	0000	0000	0000	0000	XYZABC	DEFGHI												
0024	00	0000	00	0024	FF	0000	00	006006	0000000000000024	0001	0002	0003	0004	0005	0006	0000	0000	BACK													
0025	00	0025	00	0025	55	0021	01	007001	0000000000000025	0000	0000	0000	0000	0000	0000	0000	0000	ABCEDEF	GHIKLM												
0026	00	0026	00	0026	44	0021	00	007002	0000000000000026	0000	0000	0000	0000	0000	0000	0000	0000	NPQRS	TUVWXY												
0027	00	0027	00	0027	33	0022	01	007003	0000000000000027	0000	0000	0000	0000	0000	0000	0000	0000	ZABCDE	FGHIK												
0028	00	0028	00	0028	22	0022	00	007004	0000000000000028	0000	0000	0000	0000	0000	0000	0000	0000	LMNOPQ	RSTUVW												
0029	00	0029	00	0029	11	0023	01	007005	0000000000000029	0000	0000	0000	0000	0000	0000	0000	0000	XYZABC	DEFGHI												
002A	00	0000	00	002A	FF	0000	00	007006	000000000000002A	0001	0002	0003	0004	0005	0006	0000	0000	BACK													

RVC Example codes

DGN + Address	Data	Function
19FE969F	03 FF FF FF FF FF FF FF	All water heater circulation pumps on
19FE969F	00 FF FF FF FF FF FF FF	All water heater circulation pumps off
19FEBC9F	01 FF FF FF FF FF FF FF	Hydraulic pump forward on
19FEBC9F	03 FF FF FF FF FF FF FF	Hydraulic pump reverse on
19FEBC9F	00 FF FF FF FF FF FF FF	Hydraulic pump off
19FFB99F	01 64 64 64 64 00 FF FF	Dimmer light 1 on full brightness
19FFB99F	01 32 64 64 64 00 FF FF	Dimmer light 1 on half brightness
19FFB99F	01 00 00 00 00 00 FF FF	Dimmer light 1 on half brightness
19FFB99F	02 64 64 64 64 00 FF FF	Dimmer light 2 on full brightness
19FFB99F	02 32 64 64 64 00 FF FF	Dimmer light 2 on half brightness
19FFB99F	02 00 00 00 00 00 FF FF	Dimmer light 2 on half brightness
19FFB29F	01 FF FC FF FC FF FF FF	Water pump on at 950 PSI for both pump and regulator
19FFB29F	00 FF FC FF FC FF FF FF	Water pump off at 950 PSI for both pump and regulator
19FEE49F	00 01 FF FF FF FF FF FF	All doors locked
19FEE49F	00 00 FF FF FF FF FF FF	All doors unlocked
19FEE29F	00 00 FF C8 FF FF FF FF	All windows unlocked and open
19FEE29F	00 00 FF 00 FF FF FF FF	All windows unlocked and closed