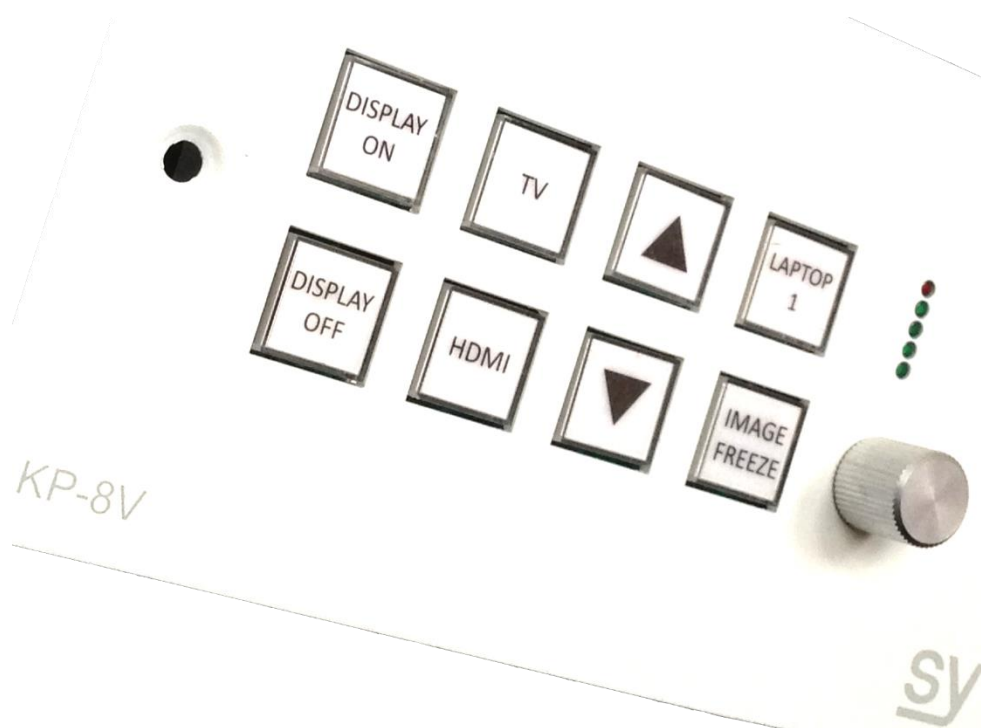


# SY DEVICE SUITE INSTRUCTION MANUAL



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## Introduction

SY Device Suite is the software used to configure the SY range of Keypad Controller and peripheral control products. This manual is designed as an aid to help configure the devices correctly and according to best practice. No programming knowledge is required however and an understanding of RS232, Infra-red and IP control and networking will be beneficial to a successful implementation.

## Operating System Requirements

The minimum system requirements for running Device Suite are:

Intel® Pentium® 4, 1 GHz or AMD Athlon™ processor or above

Microsoft® Windows 7 and higher

Microsoft .Net Framework 4 or above

512 MB of RAM

100 MB of available hard disk space

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## Overview

Device Suite provides for the following functions:

### Drivers

The Drivers contain the Actions of a RS232, Infra-Red or IP device and are managed through the Driver Manager accessed via the Drivers / Update Driver Files menu selection. When an internet connection is available these can be updated through the Driver Manager. Drivers can be edited or created from within Device Suite by selecting Driver / Open Driver Library. See Appendix 1 for more Driver formatting information.

### Tools

Tools are available to aid the testing and creation of drivers. The Tools / Code Test Utility allows testing of a driver's Actions when the device to be controlled is either connected directly or via a Keypad Controller to the computer. Also available are the Data Converter for Hex to ASCII and ASCII to Hex conversion, Checksum Calculator and IR Code Generator. Tools / Options also contains the Default location for the Driver and Project folders.

### Project Files

Selecting a Keypad from the File / New menu opens the Keypad Project window which enables the Keypad Controller Setup, Scripts and Actions to be created or edited from an existing Project File. This Project File can be saved to create a new or amended version.

### Programming

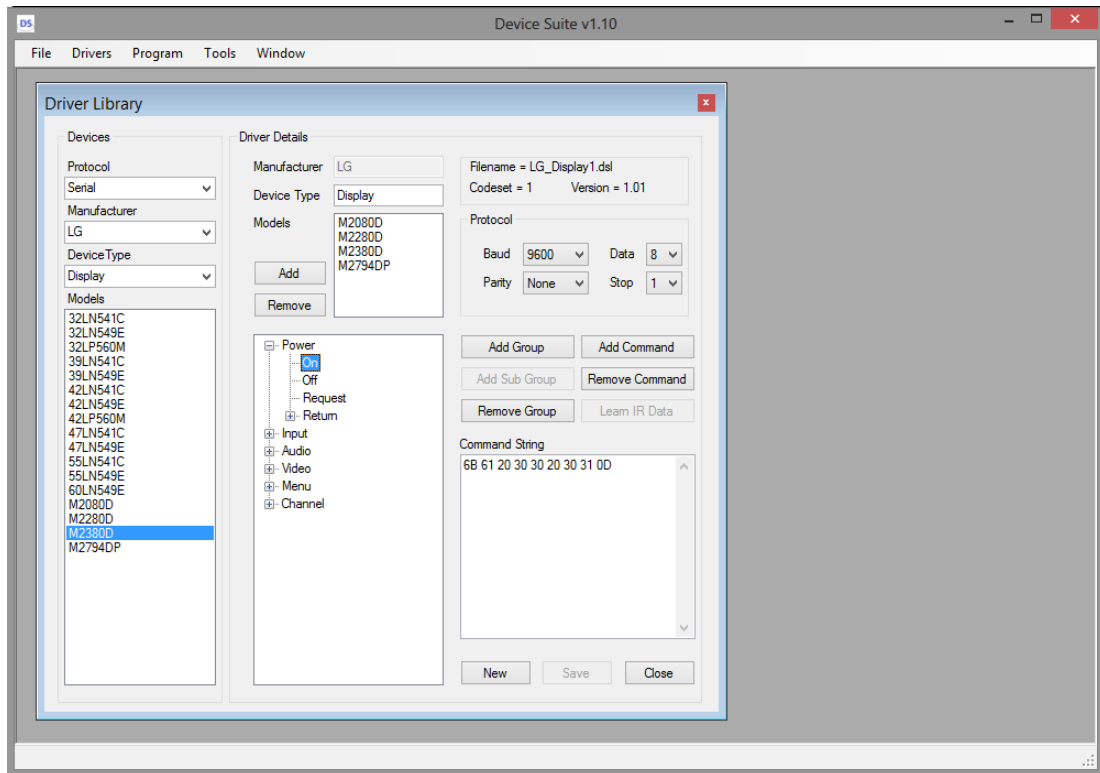
The Program / Open Programmer selection opens the Keypad Controller programming window where Device Firmware can be updated, a Device Name given to a Keypad, File to Program accesses all Projects at the default location, and files can be Uploaded from the Keypad Controller to the computer or Program downloads the current or selected file from the computer to the Keypad Controller.

Note: When an internet connection is available the latest Keypad Controller firmware version is always downloaded and saved in the Documents / Device Suite / Firmware folder. Also any Device Suite version software update will be indicated and can manually be selected and installed.

## Getting Started

### Drivers

#### Select Driver / Open Driver Library



### Creating a New Serial Driver

Select New and enter the manufacturer's name, click OK

Enter the Device Type (Display, Projector, Switcher etc.)

Select Add to Add a New Model and click OK

Select the Protocol type Serial

Set the Protocol settings for Baud Rate, Data, Parity and Stop Bits

Select Add Group to create a new group for Power, Input or other actions

If required select Add Group for Return or other Grouped actions

Select Add Command

Enter the Hex string for the action in the Command Sting box and select Save

Add Groups, Sub Groups and Commands as required to complete the actions required and select Save

### To Edit an existing Driver

Select the Manufacturer, Device Type and Model required.

Using the Command String box new Groups, Groups or Commands can be added or commands edited by amending the Hex String shown.

Select Save

### Creating a New Infra-red Driver

Plug the SY IRL Infra-red learner device into a spare USB port on the computer. The LED indicator will pulse to indicate a connection

Select the Protocol type IR

Select New and enter the manufacturer's name, click OK

Enter the Device Type (Display, Projector, Switcher etc.)

Select Add to Add a New Model and click OK

Select Add Group and enter the name of the new Group, click OK

Select Add Command and enter the name of the new Command, click OK

Select Learn IR Data and the IRL's LED will light to show it is ready to learn. Hold the IR Handset over the IR receiver on the learner. Press the function required on the handset. Click Save.

Repeat the previous 2 or 3 steps as required

### Creating a New Ethernet Driver

Select New and enter the manufacturer's name, click OK

Enter the Device Type (Display, Projector, Switcher etc.)

Select Add to Add a New Model and click OK

Select the Protocol type Ethernet

Set the Protocol settings TCP or UDP

Select Add Group to create a new group for Power, Input or other actions

If required select Add Group for Return or other Grouped actions

Select Add Command

Enter the Hex string for the action in the Command String box and select Save

Add Groups, Sub Groups and Commands as required to complete the actions required and select Save

### Creating Drivers with Absolute Volume

Where the manufacturers instruction manual show this

[k][f][ ][Set ID][ ][Data][Cr]      Data Min : 00 to Max : 64

Device Suite requires the format as follows:



6B 66 20 30 30 20 "&h00>64" 0D

"0>100" inserts ASCII value from 0 to 100 no padding

"000>100" inserts ASCII value from 000 to 100 with padding

"&h00>3F" inserts ASCII based hex value from 00 to 3F

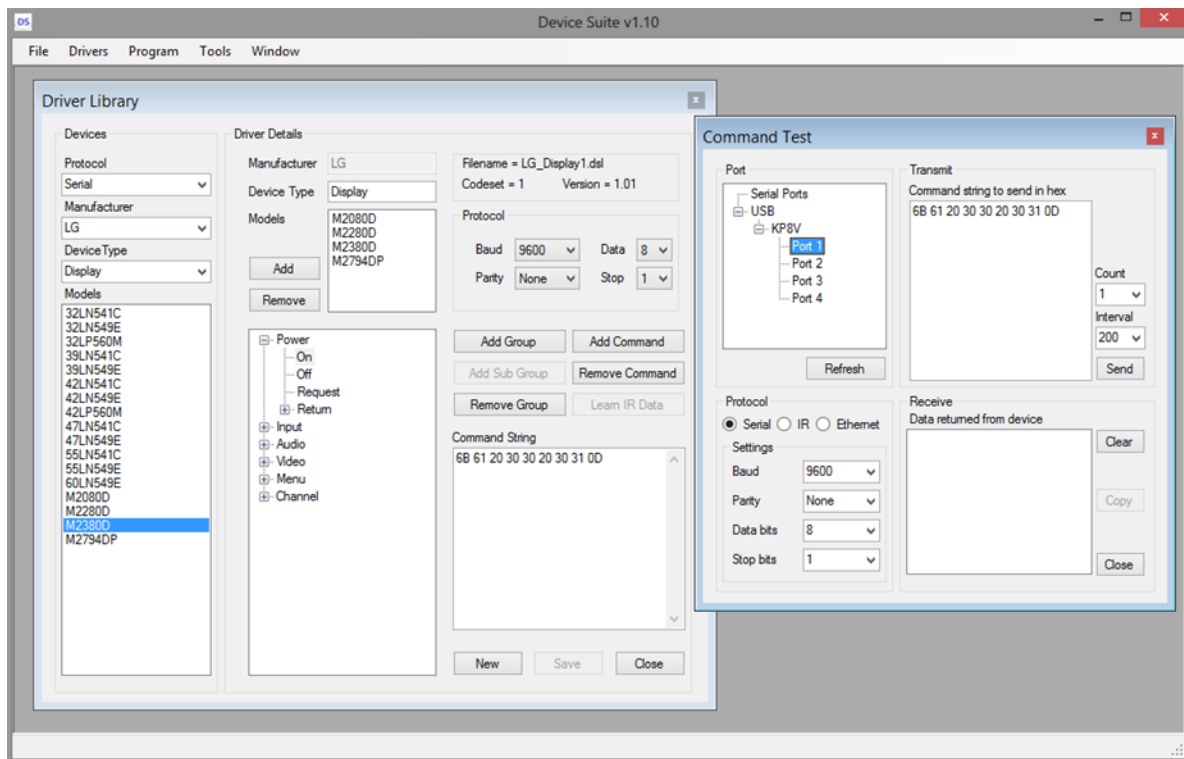
'0>100' inserts decimal value from 0 to 100

## Tools

### Code Test Utility

Select Tools / Code Test Utility to allow checking of Serial, Infra-red and Ethernet drivers with the devices being used. The devices can either be attached directly to the computer or to a Keypad Controller which is connected to the computer. With the Driver of the device being open any selected action is automatically populated in the Command Test / Transmit window, Hex strings can also be manually entered if the driver is not created yet. From the Port window select the port to transmit from and click Send.

Any data received back from the device will be entered in the Receive window. The data can then be copied and entered into the Driver if required.



The Tools menu also provides:

- Hex to ASCII and ASCII to Hex Data Conversion

- Checksum Calculator

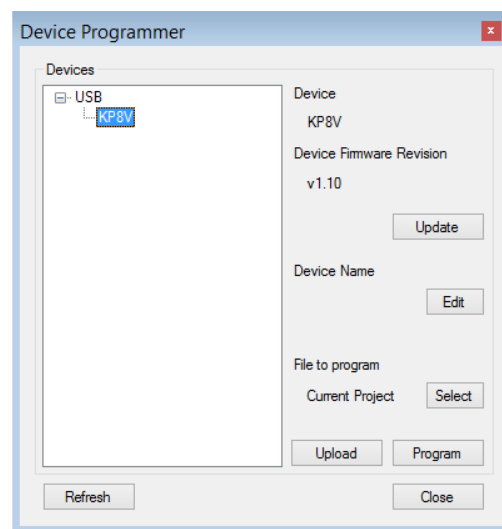
- IR Code Generator

- Options – to change the default storage location of Driver and Project file

## Programming via USB

Select Program / Open Programmer to allow Firmware Updates, Keypad Name, File to Program and Upload / Download a Program file.

**Device Firmware Revision** - Firmware updates will automatically be downloaded from the web and stored in the computers Documents / Device Suite / Firmware folder. When a Keypad is attached any new firmware will be shown and be updated.



**Device Name** - A Device Name can be given to a Keypad either for reference purposes or to be viewed through the Keypad Ethernet GUI.

**File to Program** - A file can be selected from the Project folder and Programmed directly.

**Upload/Program** - Upload will take the Program file from the Keypad and make it available within Device Suite either for editing or saving.

Program will allow a Program File from the Project folder or current open Project and download it to the Keypad.

All Keypads connected will appear in the Devices window. Select to action any of the above features.

## Creating and editing Project Files

### Creating a New project

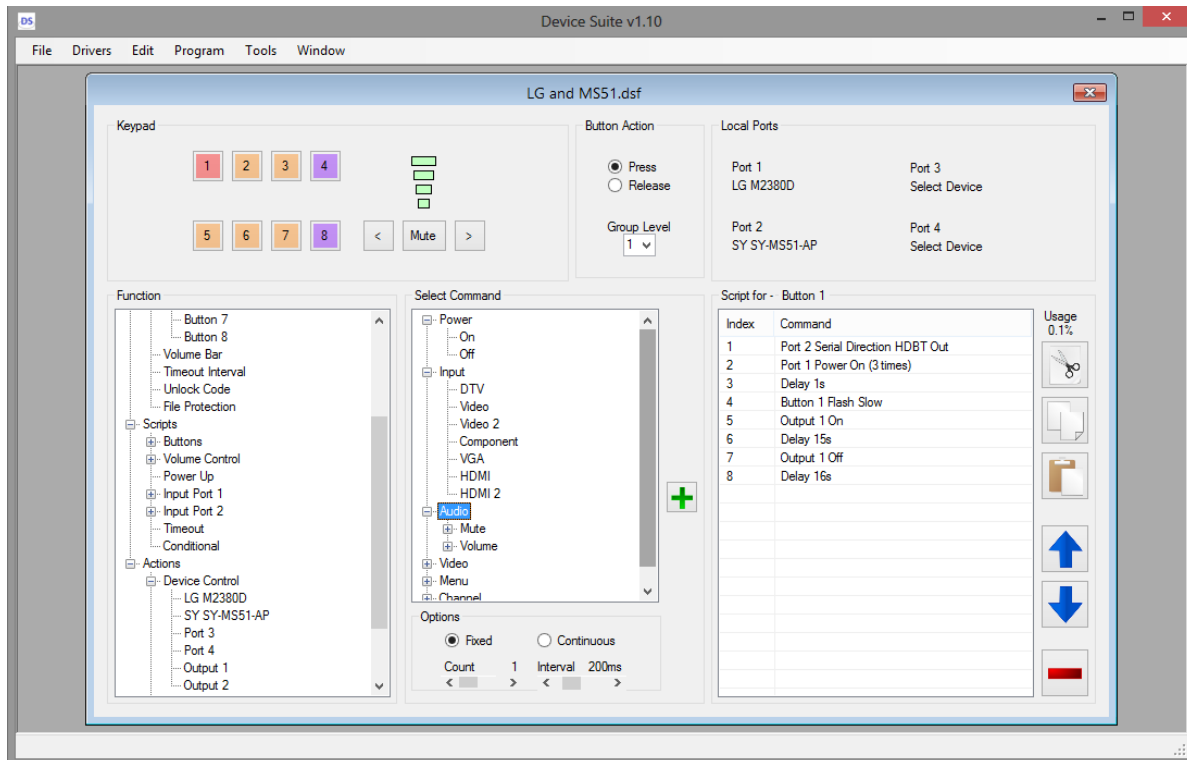
Select File / New to open a new Project window or File / Open to open an existing Project file window.

To create a new Project select the Keypad Controller required.

## Setup

In the Function window select +Setup to open the options available.

Select +Port Devices to add the required devices to each port. Port 1 to 4 can be used for RS232 Serial or Infra-red. For RS232 Serial devices these can be wired for Transmit, Receive and Ground with the Transmit controlling the devices and the Receive being used to create Conditional based



scripting. Infra-red is connected to the Transmit and Ground connections on the Keypad Controller. Select the Protocol / Manufacturer /Device Type / Model from the Select Device box and click Select.

## Button Settings

Select +Button Settings to the Button Properties.

**Button Name** – Enter a name for future reference and to be pulled through to the Ethernet Keypad GUI.

**Button Group** – Enter a Group to enable Toggle Mode (default) or Group Level. Each button on a Keypad Controller can have up to 8 levels with different Actions available for each, either as a Toggle or Group Level. Button Group Levels can be controlled from the +Actions / +Button Properties / Set Group Level options.

**Feedback Group** – creates groups of buttons to allow their Feedback LED illumination behaviour to interact or work as a group. The Feedback with Groups can be set from +Action / +Button Properties / Set Feedback or +Action / +Button Properties / Change Colour.

**Button Colour** – sets a default backlight colour for the selected button.

**Brightness** – sets a default Brightness level for the selected button.

Select **Apply** for each button as Properties are set or amended.

**Volume Bar** (available with and Keypad V versions with Rotary Volume control)

Any devices supporting Absolute Volume control or Absolute Volume control with checksums within their Driver will be displayed in the Available Devices window. Only one device can be selected and minimum and maximum levels set within the Driver's parameters shown. The Step will adjust the number of steps sent for each turn of the Rotary Volume control. Click Select to confirm the desired settings.

**Timeout Interval** – can be set for periods of inactivity, when no presses are made for that period of time a script +Scripts / Timeout can be created. An Occupancy Sensor attached to an Input Port will also enable activity or inactivity to be detected.

**Unlock Code** – allows a simple 2 button press for a time period to Unlock the Keypad/Controller. A lock can be set from +Actions / Set Keypad Locks.

**File Protection** – enter a Password to remove the ability to allow Program Upload from within the Program / Open Programmer without the selected Password.

## Scripts

The +Scripts menu changes the Script window for the following

**Buttons** – +Actions menu options can be added to any Button Scripts.

**Volume Control** - +Actions menu options can be added to the Volume Up, Volume Down, or Mute Scripts.

**Power Up** – +Actions menu options can be added to the Power Up Script.

**Input Port** - +Actions menu options can be added to Input Port 1 and 2 High to Low and Low to High Scripts.

**Timeout** - +Actions menu options can be added to the Timeout Script after the period of inactivity set in +Setup / Timeout Interval.

**Conditional** - +Actions menu options can be added based on information received back from device into the Keypad Controller either by RS232 Serial or Ethernet. The Return commands are set from with the device Drivers. Within the Conditional Events window data Requests can also be set to be Active at Startup and the Poll Time adjusted. From +Action / Conditional Script Control data request can also be Started and Stopped.

## Actions

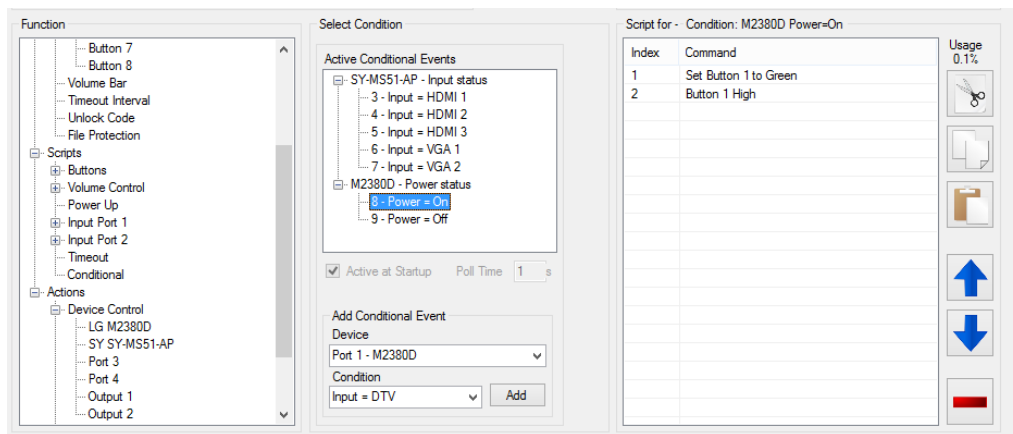
Actions are the commands to be added to a script. For Device Control, adding Button Properties, adding Time Delays, setting Keypad Locks, setting Conditional Script Control and setting Set Volume.

**Device Control** - select the Port Device to be controlled. Available command from within the Drive are displayed in the Select Command window. Select the command and the button and click Add or drag and drop into the Script window or onto the button.

**Button Properties** – Set Feedback, Change Colour, Change Brightness, Set Group Level commands shown can be added to the Script.

**Time Delay** – Set Delay required and add to the Script.

**Set Keypad Lock** – Select Lock allows Panel Lock and Unlock, Volume Lock and Unlock (for V versions with Rotary Volume Control and individual Button Lock and Unlock).



**Conditional Script Control** – select Start or Stop to add to a Script to enable and disable devices Status Requests.

**Set Volume** – sets the Absolute Volume at any point in time.

## Appendix 1

**Driver Format**- Device Suite can create and edit Drivers, however, the format allows these to be created or edited in Windows Notepad. The Format of the Driver example is as follows:

```

MANUFACTURER=LG
TYPE=SERIAL
VERISON=1.01
CODESET=1
PROTOCOL=9600,n,8,1
DEVICETYPE=Display
MODELS=M2080D,M2280D,M2380D,M2794DP
Power/On=6B612030302030310D
Power/Off=6B612030302030300D
Power/Request=6B612030302046460D
Power/Return/On=61203031204F4B303178
Power/Return/Off=61203030204F4B303078
Input/DTV=78622030302030300D
Input/Video=78622030302032300D
Input/Video 2=78622030302032310D
Input/Component=78622030302034300D
Input/VGA=78622030302036300D
Input/HDMI=78622030302039300D
Input/HDMI 2=78622030302039310D
Input/Request=78622030302046460D
Input/Return/DTV=62203031204F4B303078
Input/Return/Video=62203031204F4B323078
Input/Return/Video 2=62203031204F4B323178
Input/Return/Component=62203031204F4B343078
Input/Return/RGB=62203031204F4B363078
Input/Return/HDMI=62203031204F4B393078
Input/Return/HDMI 2=62203031204F4B393178
Audio/Mute/On=6B652030302030300D
Audio/Mute/Off=6B652030302030310D
Audio/Volume/Up=6D632030302030320D
Audio/Volume/Down=6D632030302030330D
Audio/Volume/Absolute=6B6620303020"&h00>64"0D
Video/Mute/On=6B642030302030310D
Video/Mute/Off=6B642030302030300D
Menu/Menu=6D632030302034330D
Menu/Guide=6D632030302041420D
Menu/Up=6D632030302034300D
Menu/Down=6D632030302034310D
Menu/Left=6D632030302030370D
Menu/Right=6D632030302030360D
Menu/Select=6D632030302034340D
Menu/Return=6D632030302032380D
Channel/Up=6D632030302030300D
Channel/Down=6D632030302030310D
ENDCODESET

```

Note: Group/Command and Group/Sub Group/Command are compatible with DS Driver Library.  
Appendix 2