



Dragonchip

DC6388FD ISP programming interface

AppNote205

Document Revision 1.1

January, 2020

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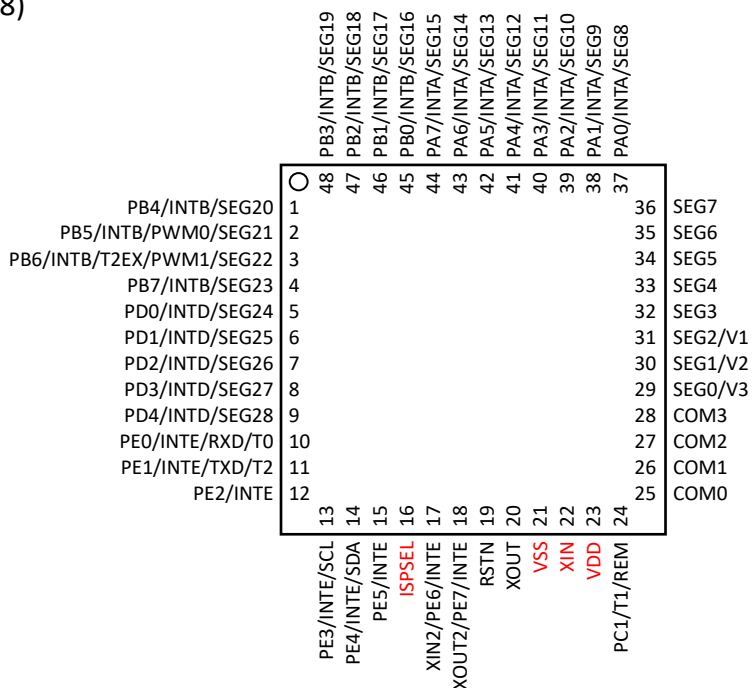
1 Introduction

This document describes how to do programming for DC6388FD.

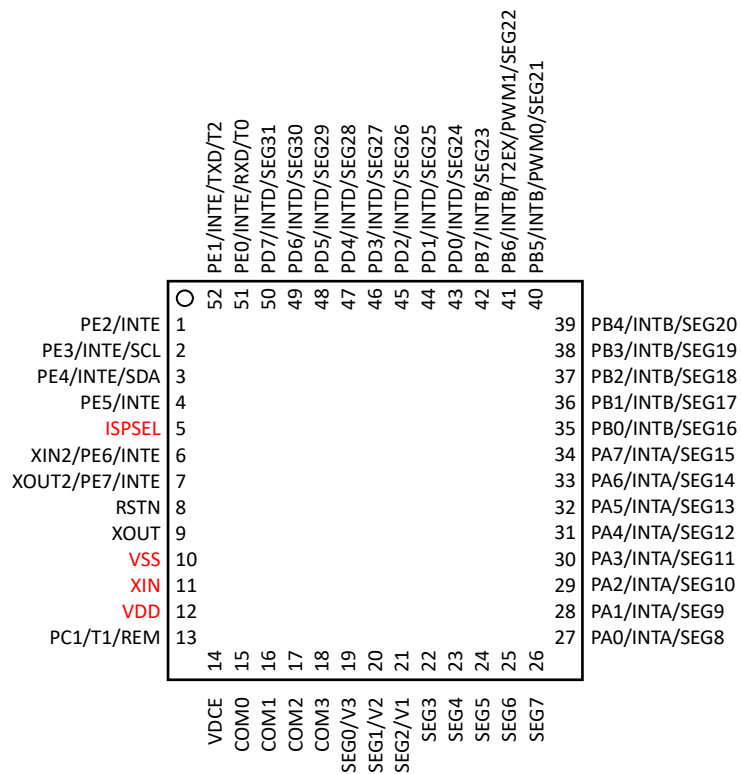
2 Hardware

To do programming, 3 or 4 pads are required on PCB to complete this process, and the pins are highlighted in red.

(LQFP48)



(LQFP52)



(LQFP64)

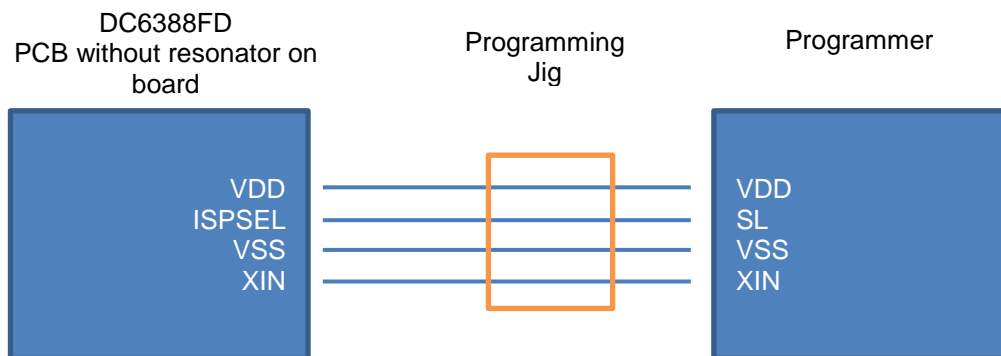
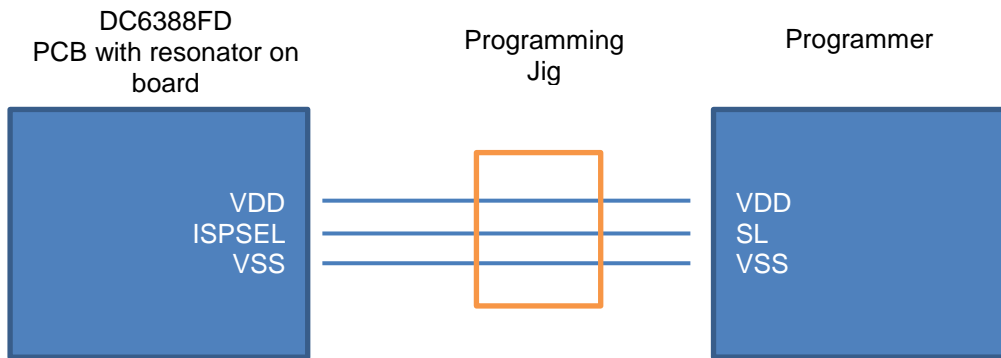
| Pin | Function | Pin | Function |
|-----|--------------------------|-----|----------------|
| 1 | PB5/INTB/PWM0/SEG29 | 17 | PE2/INTE |
| 2 | PB6/INTB/T2EX/PWM1/SEG30 | 18 | PE3/INTE/SCL |
| 3 | PB7/INTB/SEG31 | 19 | PE4/INTE/SDA |
| 4 | PD0/INTD/SEG32 | 20 | PE5/INTE |
| 5 | PD1/INTD/SEG33 | 21 | ISPSEL |
| 6 | PD2/INTD/SEG34 | 22 | XIN2/PE6/INTE |
| 7 | PD3/INTD/SEG35 | 23 | XOUT2/PE7/INTE |
| 8 | PD4/INTD/SEG36 | 24 | RSTN |
| 9 | PD5/INTD/SEG37 | 25 | XOUT |
| 10 | PD6/INTD/SEG38 | 26 | VSS |
| 11 | PD7/INTD/SEG39 | 27 | XIN |
| 12 | PC0/INTC | 28 | VDD |
| 13 | PC2/INTC | 29 | PC1/T1/REM |
| 14 | PC3/INTC | 30 | VDCE |
| 15 | PE0/INTE/RXD/T0 | 31 | COM0 |
| 16 | PE1/INTE/TXD/T2 | 32 | COM1 |
| 64 | PB4/INTB/SEG28 | 48 | SEG12 |
| 63 | PB3/INTB/SEG27 | 47 | SEG11 |
| 62 | PB2/INTB/SEG26 | 46 | SEG10 |
| 61 | PB1/INTB/SEG25 | 45 | SEG9 |
| 60 | PB0/INTB/SEG24 | 44 | SEG8 |
| 59 | PA7/INTA/SEG23 | 43 | SEG7 |
| 58 | PA6/INTA/SEG22 | 42 | SEG6/V1 |
| 57 | PA5/INTA/SEG21 | 41 | SEG5/V2 |
| 56 | PA4/INTA/SEG20 | 40 | SEG4/V3 |
| 55 | PA3/INTA/SEG19 | 39 | V4 |
| 54 | PA2/INTA/SEG18 | 38 | SEG3/COM7 |
| 53 | PA1/INTA/SEG17 | 37 | SEG2/COM6 |
| 52 | PA0/INTA/SEG16 | 36 | SEG1/COM5 |
| 51 | SEG15 | 35 | SEG0/COM4 |
| 50 | SEG14 | 34 | COM3 |
| 49 | SEG13 | 33 | COM2 |

The programmer requires any one of below:

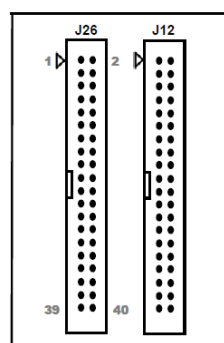
1. DC6688SLP-USB Rev3.1/3.2.
2. DCT-SLP Rev3.3

The programmer can be able to program up to 10 devices (Device 1 ~ 10).

3 DC6688SLP-USB Rev3.1



SLP Rev3.1

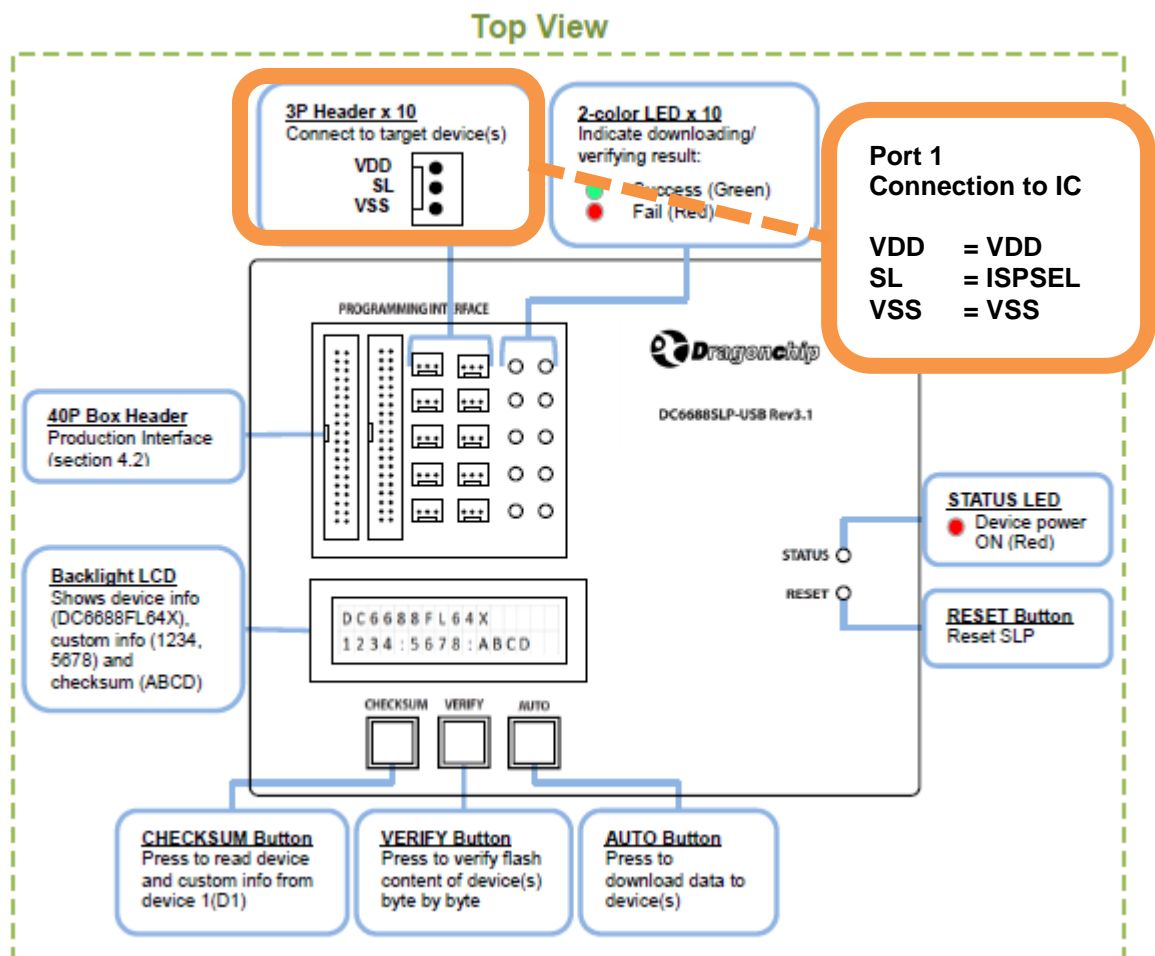


J26 Pin Assignment

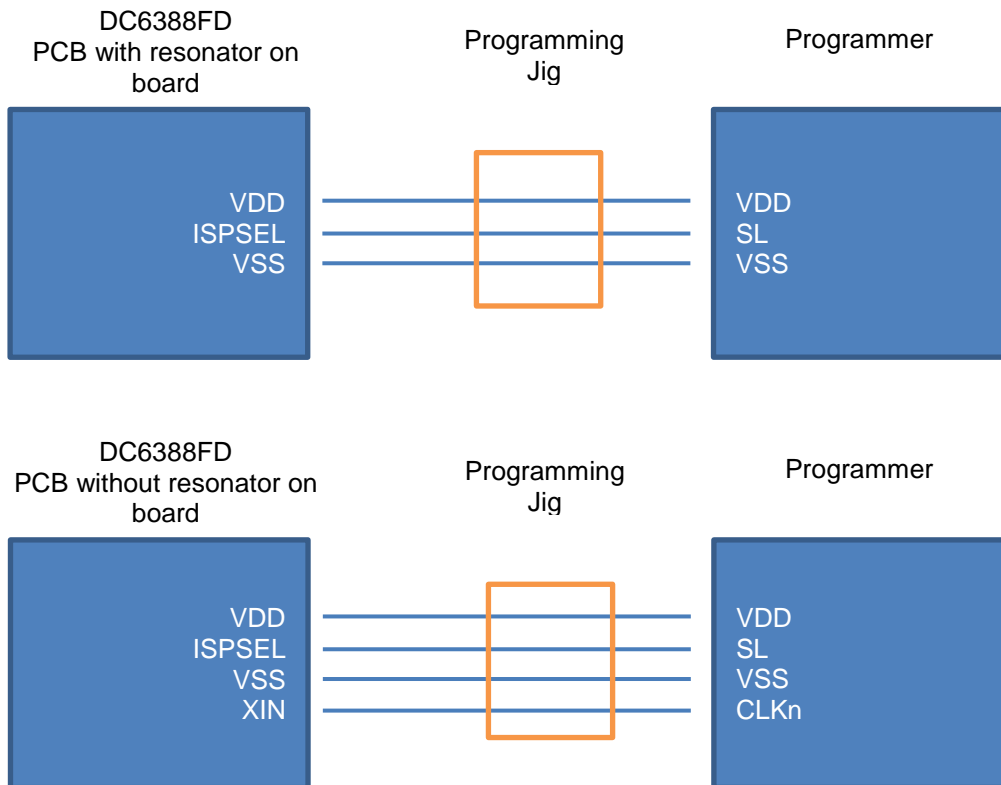
| Pin | Name | Connection | Pin | Name | Connection |
|-----|-------|--------------------|-----|------|------------|
| 1 | NC | - | 2 | GND | GND |
| 3 | NC | - | 4 | NC | - |
| 5 | NC | - | 6 | NC | - |
| 7 | NC | - | 8 | NC | - |
| 9 | NC | - | 10 | NC | - |
| 11 | NC | - | 12 | NC | - |
| 13 | NC | - | 14 | NC | - |
| 15 | NC | - | 16 | NC | - |
| 17 | NC | - | 18 | GND | GND |
| 19 | GND | GND | 20 | NC | - |
| 21 | XIN1 | D1 XIN / XIN2 pin | 22 | GND | GND |
| 23 | XIN2 | D2 XIN / XIN2 pin | 24 | GND | GND |
| 25 | XIN3 | D3 XIN / XIN2 pin | 26 | GND | GND |
| 27 | XIN4 | D4 XIN / XIN2 pin | 28 | GND | GND |
| 29 | XIN5 | D5 XIN / XIN2 pin | 30 | GND | GND |
| 31 | XIN6 | D6 XIN / XIN2 pin | 32 | GND | GND |
| 33 | XIN7 | D7 XIN / XIN2 pin | 34 | GND | GND |
| 35 | XIN8 | D8 XIN / XIN2 pin | 36 | GND | GND |
| 37 | XIN9 | D9 XIN / XIN2 pin | 38 | GND | GND |
| 39 | XIN10 | D10 XIN / XIN2 pin | 40 | GND | GND |

Each XIN pin for 1 IC's XIN

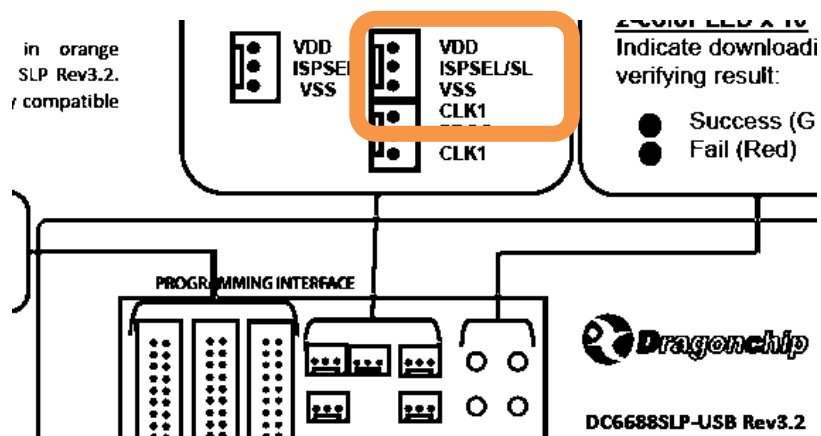
VDD / SL / VSS pins connection is shown below.



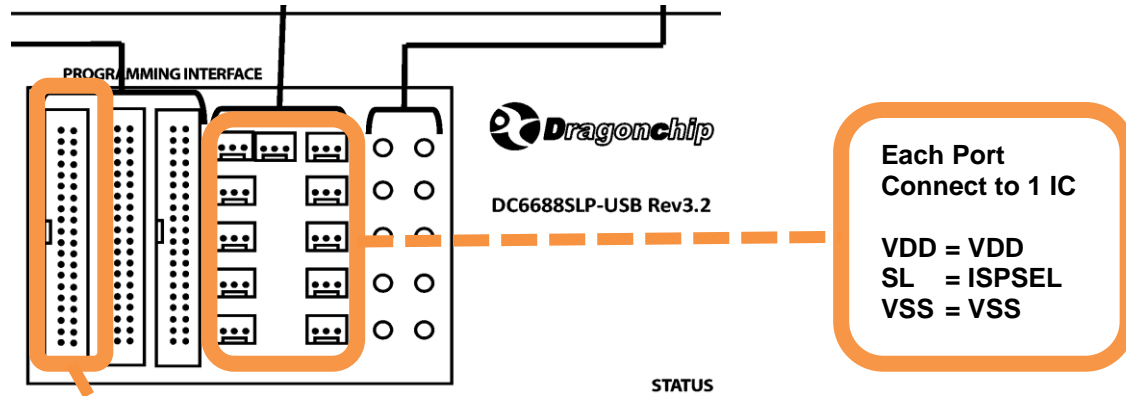
4 DC6688SLP-USB Rev3.2



4.1 Single Device Mode



4.2 Multiple Devices Mode

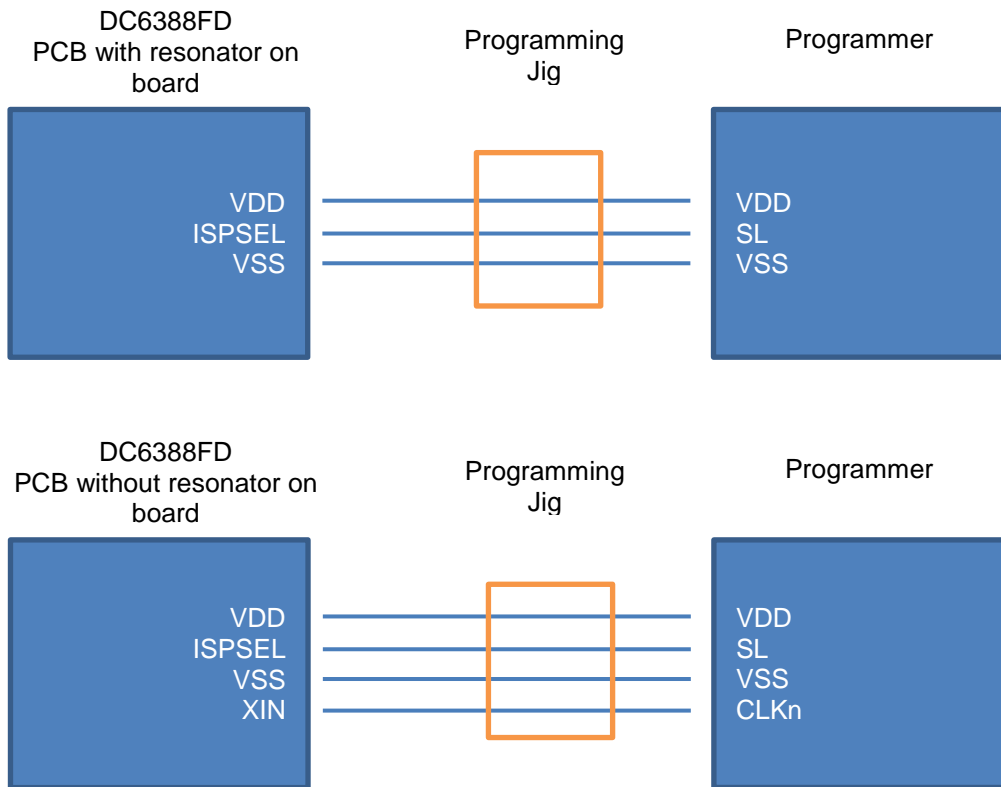


J26 Pin Assignment

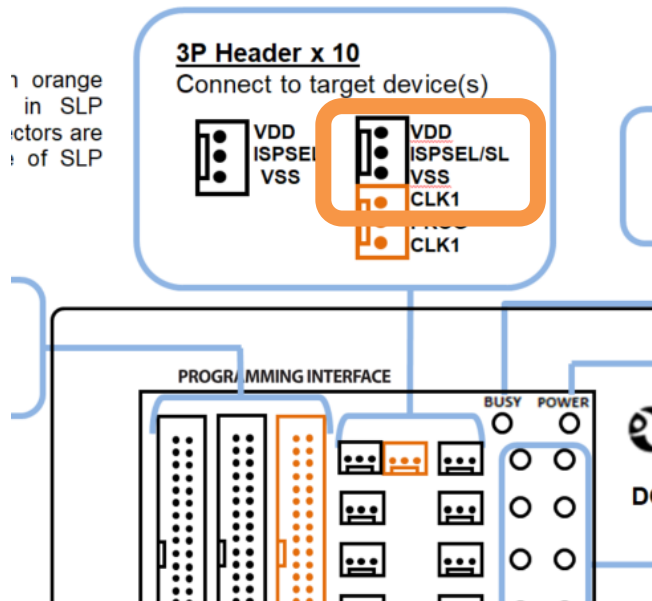
| Pin | Name | Connection | Pin | Name |
|-----|--------|------------------------|-----|---------|
| 1 | LCD_P9 | LCD module pin 9 (DB2) | 2 | GND |
| 3 | LCD_P8 | LCD module pin 8 (DB1) | 4 | LCD_P10 |
| 5 | LCD_P7 | LCD module pin 7 (DB0) | 6 | LCD_P11 |
| 7 | LCD_P6 | LCD module pin 6 (E) | 8 | LCD_P12 |
| 9 | LCD_P5 | LCD module pin 5 (R/W) | 10 | LCD_P13 |
| 11 | LCD_P4 | LCD module pin 4 (RS) | 12 | LCD_P14 |
| 13 | LCD_P3 | LCD module pin 3 (VEE) | 14 | LCD_P15 |
| 15 | LCD_P2 | LCD module pin 2 (VCC) | 16 | LCD_P16 |
| 17 | LCD_P1 | LCD module pin 1 (VSS) | 18 | GND |
| 19 | GND | GND | 20 | NC |
| 21 | CLK1 | D1 XIN/ ECLK pin | 22 | GND |
| 23 | CLK2 | D2 XIN/ ECLK pin | 24 | GND |
| 25 | CLK3 | D3 XIN/ ECLK pin | 26 | GND |
| 27 | CLK4 | D4 XIN/ ECLK pin | 28 | GND |
| 29 | CLK5 | D5 XIN/ ECLK pin | 30 | GND |
| 31 | CLK6 | D6 XIN/ ECLK pin | 32 | GND |
| 33 | CLK7 | D7 XIN/ ECLK pin | 34 | GND |
| 35 | CLK8 | D8 XIN/ ECLK pin | 36 | GND |
| 37 | CLK9 | D9 XIN/ ECLK pin | 38 | GND |
| 39 | CLK10 | D10 XIN/ ECLK pin | 40 | GND |

Each CLK pin for 1 IC's XIN

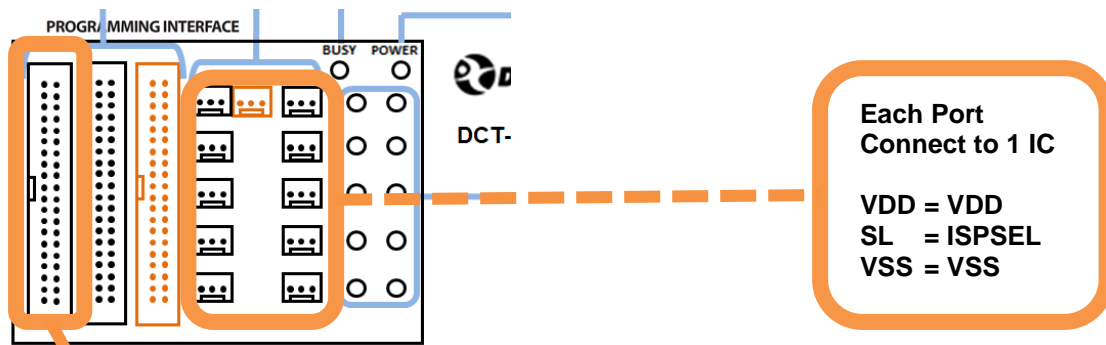
5 DCT-SLP Rev3.3



5.1 Single Device Mode



5.2 Multiple Device Mode



J26 Pin Assignment

| Pin | Name | Connection | Pin | Name |
|-----|--------|------------------------|-----|---------|
| 1 | LCD_P9 | LCD module pin 9 (DB2) | 2 | GND |
| 3 | LCD_P8 | LCD module pin 8 (DB1) | 4 | LCD_P10 |
| 5 | LCD_P7 | LCD module pin 7 (DB0) | 6 | LCD_P11 |
| 7 | LCD_P6 | LCD module pin 6 (E) | 8 | LCD_P12 |
| 9 | LCD_P5 | LCD module pin 5 (R/W) | 10 | LCD_P13 |
| 11 | LCD_P4 | LCD module pin 4 (RS) | 12 | LCD_P14 |
| 13 | LCD_P3 | LCD module pin 3 (VEE) | 14 | LCD_P15 |
| 15 | LCD_P2 | LCD module pin 2 (VCC) | 16 | LCD_P16 |
| 17 | LCD_P1 | LCD module pin 1 (VSS) | 18 | GND |
| 19 | GND | GND | 20 | NC |
| 21 | CLK1 | D1 XIN/ ECLK pin | 22 | GND |
| 23 | CLK2 | D2 XIN/ ECLK pin | 24 | GND |
| 25 | CLK3 | D3 XIN/ ECLK pin | 26 | GND |
| 27 | CLK4 | D4 XIN/ ECLK pin | 28 | GND |
| 29 | CLK5 | D5 XIN/ ECLK pin | 30 | GND |
| 31 | CLK6 | D6 XIN/ ECLK pin | 32 | GND |
| 33 | CLK7 | D7 XIN/ ECLK pin | 34 | GND |
| 35 | CLK8 | D8 XIN/ ECLK pin | 36 | GND |
| 37 | CLK9 | D9 XIN/ ECLK pin | 38 | GND |
| 39 | CLK10 | D10 XIN/ ECLK pin | 40 | GND |

Each CLK pin for 1 IC's XIN

Revision History

| Document Rev. No. | Issued Date | Section | Page | Description | Edited By | Reviewed By |
|-------------------|-------------|---------|------|----------------------|-----------|-------------|
| 1.0 | Aug, 2018 | | | First release | Danny Ho | Patrick Li |
| 1.1 | Jan, 2020 | 5 | | Added DCT-SLP Rev3.3 | Danny Ho | Patrick Li |
| | | | | | | |

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