Release Note
for DGW-521

Mar. 2014, Version 1.00

Congratulations!

Congratulations on purchasing the DGW-521 the most popular automation solution for remote monitoring and control applications. This Quick Start Guide will provide information needed to get started with the DGW-521. Please also consult the User Manual for detailed information on the setup and use of the DGW-521.

What's in the shipping box?

In addition to this guide, the shipping box includes the following items:
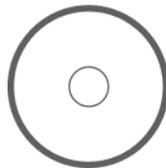
DGW-521　　　　　　　　**Software Utility CD**　　　　　　　　**Quick Start**

Technical Support

- **ICP DAS Website**
  http://www.icpdas.com/

1 Understanding the Hardware Specifications

Before installing the hardware, you should have a basic understanding of hardware specification and the wiring diagrams.

Specifications：

Interface		
DALI	Connector	2-pin Terminal Block
	Baud Rate (bps)	1200
	Isolation	1500 V_{DC}
	Build-in DALI power	DC 16 V_{DC} ± 5%, max. current 250 mA (Enabled/Disabled via a switch)
UART	COM Port	RS-485/RS-232
	Connector	3-pin Terminal Block (D+, D-, GND/TxD, RxD, GND), Jumper Selectable
	Transmission Distance (m)	Depends on Baud Rate
	Baud Rate (bps)	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
	Protocol	DCON, Modbus RTU
USB	Connector	USB Type B
	Transmission Speed	12M bps
	Specification	USB 1.1 and USB 2.0 standard compatible
	OS Support	Windows XP (32/64 bit), Windows 7 (32/64 bit)
	Protocol	DCON and Modbus RTU via Virtual COM port
LED Indicators		
System LED Indicators		PWR/RUN/ERR LED
EMS Protection		
ESD (IEC 61000-4-2)		±4 kV contact for Each Terminal, ±8 kV Air for Random Point
EFT (IEC 61000-4-4)		±4 kV for Power Line
Surge (IEC 61000-4-5)		±2 kV for Power Line
Power		
Power Supply		Unregulated +10 V_{DC} ~ +30 V_{DC}
Connector		3-pin Terminal Block
Protection		Power Reverse polarity protection, Overvoltage

	Brown-out Protection
Consumption	6 W.
Mechanical	
Casing	Plastic
Flammability	Fire-Retardant Materials (UL94-V0 Level)
Dimensions (L x W x H)	107 mm x 72 mm x 57 mm
Installation	DIN-Rail Mounting
Environment	
Operating Temperature	-25 ℃ ~ +75 ℃
Storage Temperature	-30 ~℃ +80 ℃
Humidity	10 %~ 95% RH, Non-condensing

Pin Assignment：
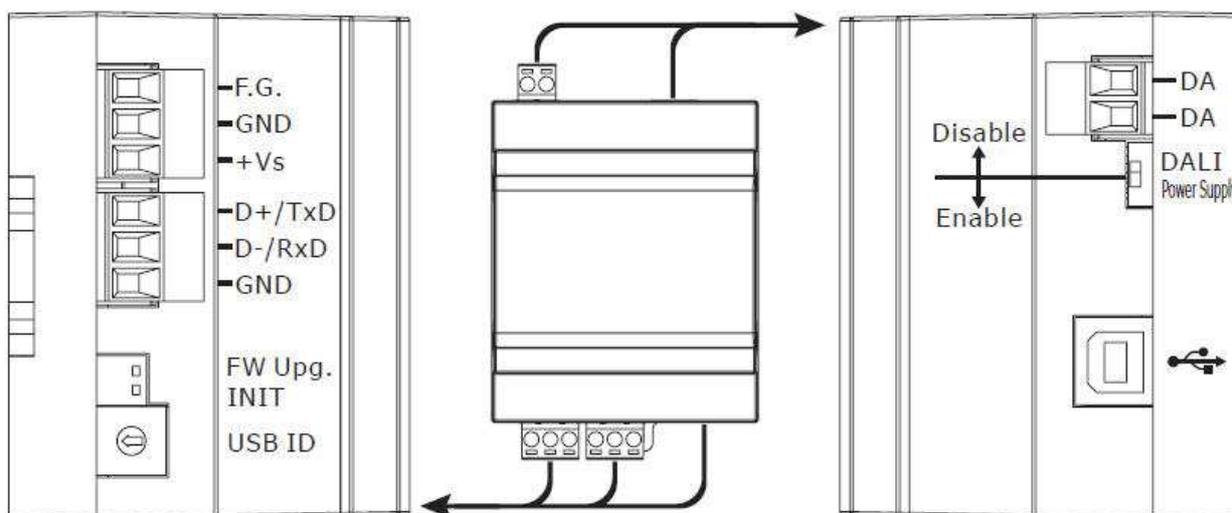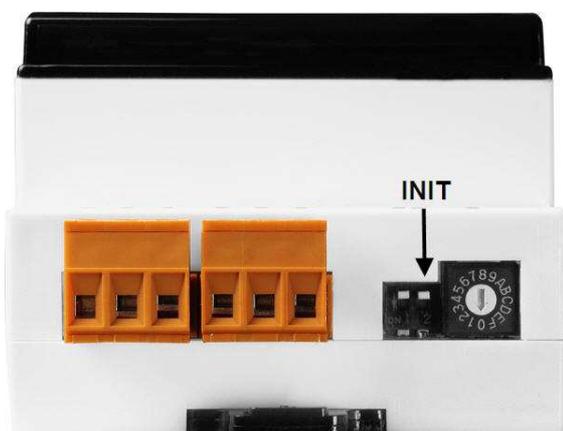
2 Booting the DGW-521 in Init Mode

Make sure the INIT switch placed in the "ON" position.

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3 DALI Gateway Modbus Address Mapping

Address	Description	Attribute
00257	Protocol, 0: DCON, 1: Modbus	R/W
00259	Write 1 to find all DALI slaves. Response: 1-> busy in finding all DALI slaves, 0-> finished	R/W
00261	1: enable, 0: disable host watchdog	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R
30001	Status and response of DALI Command 1[1]	R
30002	Status and response of DALI Command 2[1]	R
30003	Status and response of DALI Command 3[1]	R
30004	Status and response of DALI Command 4[1]	R
30005	Status and response of DALI Command 5[1]	R
30006	Status and response of DALI Command 6[1]	R
30007	Status and response of DALI Command 7[1]	R
30008	Status and response of DALI Command 8[1]	R
40033	DALI command 1[2]	R/W
40034	DALI command 2[2]	R/W
40035	DALI command 3[2]	R/W
40036	DALI command 4[2]	R/W
Address	Description	Attribute
40037	DALI command 5[2]	R/W
40038	DALI command 6[2]	R/W
40039	DALI command 7[2]	R/W
40040	DALI command 8[2]	R/W
30257	Status of command execution, bit 0 for command 1, bit 1 for command 2, etc. When the bit is 1, it means the command execution is finished and new command can be input.	R
30289	Presence of DALI slaves 0 ~ 15, bit 0 for slave 0, bit 1 for slave 1, etc. When the bit is 1, it means the slave is present.	R

Address	Description	Attribute
30290	Presence of DALI slaves 16 ~ 31, bit 0 for slave 16, bit 1 for slave 17, etc.　When the bit is 1, it means the slave is present.	R
30291	Presence of DALI slaves 32~ 47, bit 0 for slave 32, bit 1 for slave 33, etc.　When the bit is 1, it means the slave is present.	R
30292	Presence of DALI slaves 48 ~ 63, bit 0 for slave 48, bit 1 for slave 49, etc.　When the bit is 1, it means the slave is present.	R
40321	Change or remove DALI slave address Low byte: old address High byte: 0 ~ 63, new address;　set to 255 to remove the address Response: 1: busy in changing slave address 0: finished	R/W
40322	DALI slave address allocation Low byte: 0x00: all slaves will be allocated (Address<<1)+1: slave with address 'Address' will be allocated 0xFF: slaves without address will be allocated High byte: Set to 1 to check the presence of all DALI slaves before allocating address Response: 1: busy in allocating address 0: finished	R/W

Address	Description	Attribute
40481	Firmware version (low word)	R
40482	Firmware version (high word)	R
40483	Module name (low word)	R
40484	Module name (high word)	R
40485	Module address, valid range: 1 ~ 247	R/W
40486	Bits 5:0 Baud rate, 0x03 ~ 0x0A	R/W

Code	0x03	0x04	0x05	0x06
Baud	1200	2400	4800	9600
Code	0x07	0x08	0x09	0x0A
Baud	19200	38400	57600	115200

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	Bits 7:6 00: no parity, 1 stop bit 01: no parity, 2 stop bits 10: even parity, 1 stop bit 11: odd parity, 1 stop bit	
40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W
40492	Host watchdog timeout count, write 0 to clear	R/W

Notes:

1. Format of the response and status word
   High byte: DALI response
   Low byte: status of command execution
   0: no command
   1: command to be executed
   2. command is being executed
   3. command execution is finished and DALI answer not available
   4: command execution is finished and nothing received
   5: command execution is finished and got DALI data
   6. command execution is finished and invalid DALI data
   7: command execution is finished and DALI answer too early

2. Format of the DALI command word
3. Low byte: command code
4. High byte: DALI address
5. Bit 0: 0-> the low byte is direct lamp power value, 1-> the low byte is command code
6. Bit 1 ~ 6: short address when bit 7 is 0
7. Bit 1 ~ 4: group address when bit 7 is 1
8. Bit 1 ~ 7: all set to 1 for broadcast command