

DisplayLink Embedded Evaluation R&D Package

d.SCREEN Hybrid

(R&D Package requires NDA)

USB
WUSB
10/100 Mbit
1Gigabit

1 General Description

The DisplayLink Embedded evaluation package enables the developer to test DisplayLink USB-Graphics technology in different environments. It provides reference design modules for input connectivity like USB, WUSB and Ethernet as well as for direct connected Full HD LCD TFT displays including backlight.

There are two different R&D-Packages for evaluation available. Both kits are based on the d.screen-HYBRID board and come with complete peripherals, documentation and driver support. Therefore the packages are only available with the according NDAs.

2 Available Packages

- Package_01: Based on d-screen-Hybrid BO1-HB-01-002
- Package_02: Based on d-screen-Hybrid BO1-HB-03-002

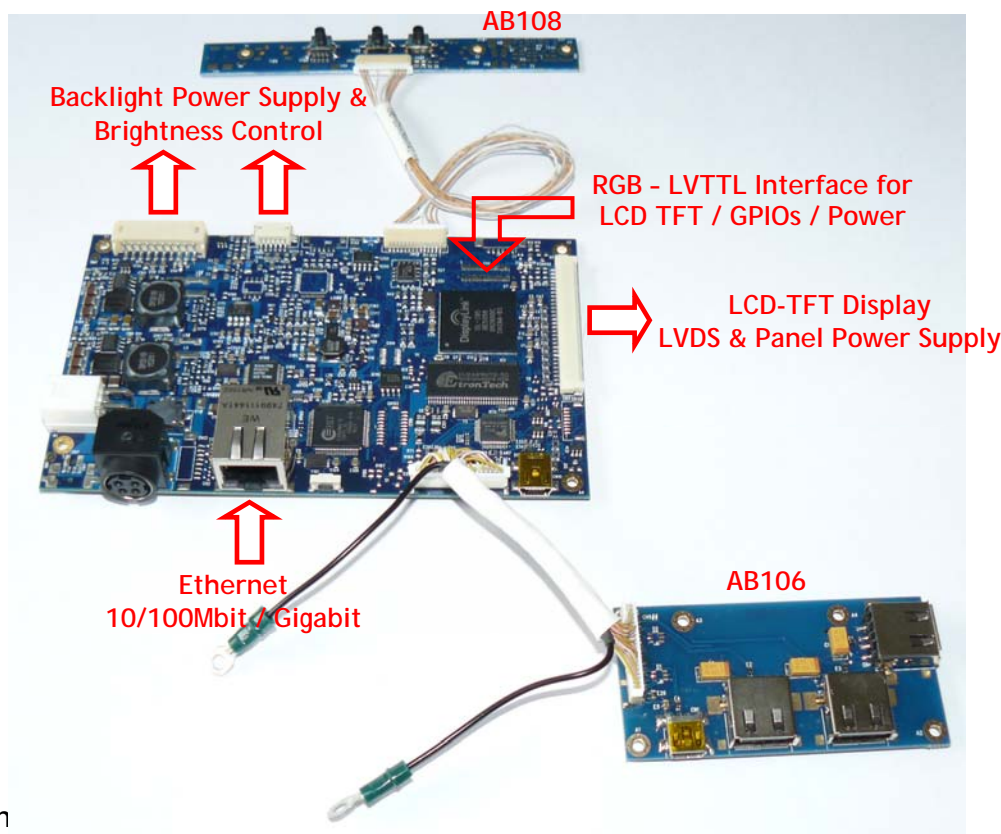
2.1 Board Features

BO1-HB-	01-002	03-002
DisplayLink ASIC	DL195	DL165
Display Support up to 1920x1080 / 1600x1200		X
Display Support up to 2048x1152 / 1920x1200	X	
USB Interface	X	X
10/100 Mbit Ethernet	X	
Gigabit Ethernet	X	
Available USB-Ports	3	2
WUSB Interface		X
4-/ 5-Wire Touch		X
Analog Backlight Control	X	X
PWM Backlight Control	X	X

For more detailed information about the boards please see the d.screen-Hybrid manual.

3 Packages

3.1 Package_01 - DL195 / USB / Gigabit-Ethernet



LCD-TFT In

LVDS Interface
(Board-to-Wire Connector, Hirose DF14)

LVTTTL Interface
(Board-to-Board Connector Hirose DF12)

Pin	Signal	Description
1	TXA3+	LVDS data 1st pixel
2	TXA3-	LVDS data 1st pixel
3	TXACL+	LVDS clock 1st pixel
4	TXACL-	LVDS clock 1st pixel
5	TXA2+	LVDS data 1st pixel
6	TXA2-	LVDS data 1st pixel
7	TXA1+	LVDS data 1st pixel
8	TXA1-	LVDS data 1st pixel
9	TXA0+	LVDS data 1st pixel
10	TXA0-	LVDS data 1st pixel
11	TXB3+	LVDS data 2nd pixel
12	TXB3-	LVDS data 2nd pixel
13	TXBCL+	LVDS clock 2nd pixel
14	TXBCL-	LVDS clock 2nd pixel
15	TXB2+	LVDS data 2nd pixel
16	TXB2-	LVDS data 2nd pixel
17	TXB1+	LVDS data 2nd pixel
18	TXB1-	LVDS data 2nd pixel
19	TXVB0+	LVDS data 2nd pixel
20	TXVB0-	LVDS data 2nd pixel
21		
22	SCD_1	Scan Direction
23		
24	GND	Ground
25		
26		
27		
28	SVCC	Switched panel power supply +3,3V/ +5V/ +12V (fused)
29		
30		

Pin	Signal	Description	Pin	Signal	Description
1	R0	Red bit 0 (LSB)	26	DE	Display enable signal
2	R1	Red bit 1	27	HS	Horizontal sync signal
3	R2	Red bit 2	28	VS	Vertical sync signal
4	R3	Red bit 3	29	DCLK	Data clock signal
5	R4	Red bit 4	30	GND	Ground
6	R5	Red bit 5	31	ENVCC	Enable Panel VCC
7	R6	Red bit 6	32	ENBKL	Enable Panel Backlight
8	R7	Red bit 7 (MSB)	33	PWM_BL	Backlight-Ctrl. Signal
9	B0	Blue bit 0 (LSB)	34	USB_VID_A	Signal for active video-link
10	B1	Blue bit 1	35	GPIO_12	General Purpose I/O
11	B2	Blue bit 2	36	GPIO_13	General Purpose I/O
12	B3	Blue bit 3	37	GND	Ground
13	B4	Blue bit 4	38	GND	Ground
14	B5	Blue bit 5	39	GND	Ground
15	B6	Blue bit 6	40	+5V	Power-Supply
16	B7	Blue bit 7 (MSB)	41	+5V	Power-Supply
17	G0	Green 0 bit (LSB)	42	+5V	Power-Supply
18	G1	Green 1 bit	43	+5V	Power-Supply
19	G2	Green 2 bit	44	GND	Ground
20	G3	Green 3 bit	45	SVCC	Panel power supply
21	G4	Green 4 bit	46	SVCC	Panel power supply
22	G5	Green 5 bit	47	SVCC	Panel power supply
23	G6	Green 6 bit	48	GND	Ground
24	G7	Green 7 bit (MSB)	49	GND	Ground
25	GND	Ground	50	GND	Ground

(The connector is not installed on the board)

Hardware

- d.screen-Hybrid pre-programmed with 1920x1080 firmware
BO1-HB-01-002
- LCD-TFT Display (1920x1080) / LED with integrated LED driver
xxxxxx
- Data-Cable
xxxxxxx
- LED-Diver cable
xxxxxxx
- USB-Adapter-Board 3-Port (AB106)
BOA-AB-06-002B0
- USB Adapter-Board cable
CAB-DS-DA-039
- Keypad brightness-control / backlight toggle (AB108)
BOA-AB-08-001B0
- Keypad cable
AB-DS-DA-041

Firmware Files

Resolution	LVDS-Output
1920x1080	2-Channel, 24-bit, VESA
1680x1050	2-Channel, 24-bit, VESA
1440x900	2-Channel, 24-bit, VESA
1280x1024	2-Channel, 24-bit, VESA
1024x768	1-Channel, 24-bit, VESA
1024x600	1-Channel, 24-bit, Open-LDI
800x600	1-Channel, 24-bit, Open-LDI
800x480	1-Channel, 24-bit, Open-LDI
800x600	LVTTTL, 24-bit
800x480	LVTTTL, 24-bit
600x480	LVTTTL, 24-bit

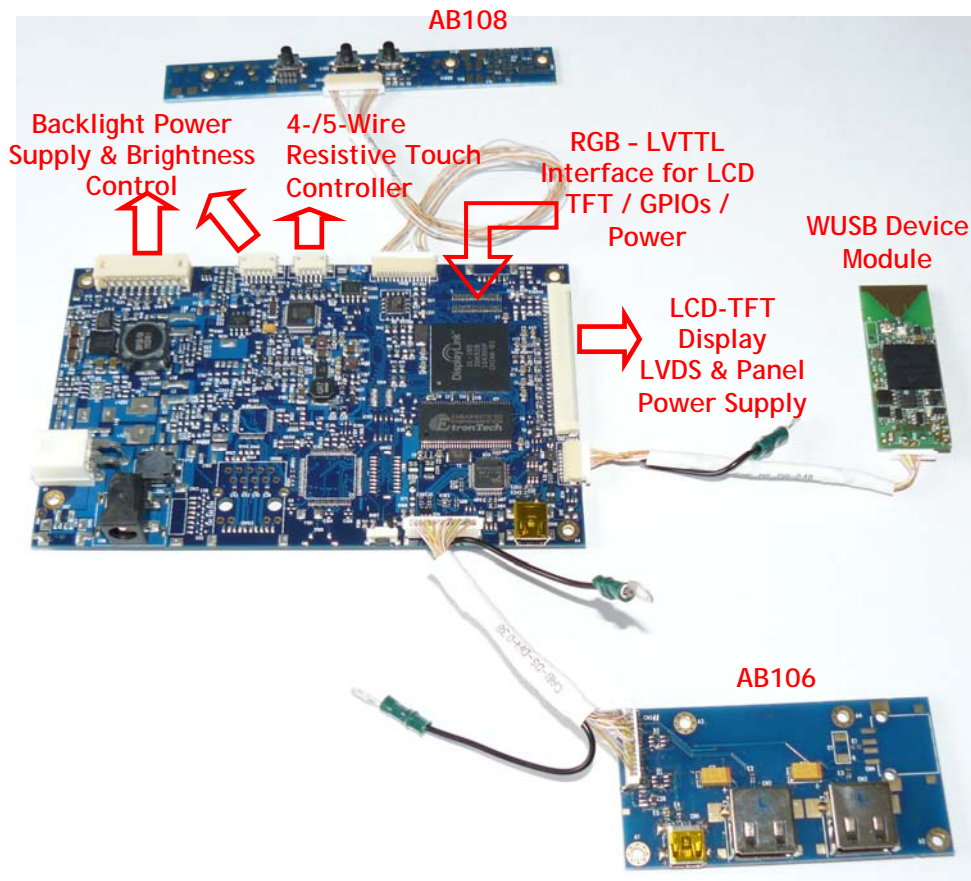
Driver

- DisplayLink (Win2K / WinXP / Vista / Win7 / 32-bit & 64-bit)
- USB-Server (Win2K / WinXP / Vista / Win7 / 32-bit & 64-bit)

Documentation

- DisplayLink Installation Manual
- USB-Server Installation Manual
- d.screen-Hybrid Manual
- d.screen-Hybrid Schematics
 - w/o USB-Server (Ethernet Module)
 - w/o Touch Controller ModuleThese two modules requires additional NDAs. Please contact Display Solution AG for further details.
- Layout Files
- BOM (Contains all possible components)

3.2 Package_02 - DL165 / USB / WUSB / Touch



LCD-TFT Interface

LVDS Interface
(Board-to-Wire Connector, Hirose DF14)

Pin	Signal	Description
1	TXA3+	LVDS data 1st pixel
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3	TXACL+	LVDS clock 1st pixel
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22	SCD_1	Scan Direction
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28	SVCC	Switched panel power supply +3,3V/ +5V/ +12V (fused)
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LVTTTL Interface
(Board-to-Board Connector Hirose DF12)

Pin	Signal	Description	Pin	Signal	Description
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2	R1	Red bit 1	27	HS	Horizontal sync signal
3	R2	Red bit 2	28	VS	Vertical sync signal
4	R3	Red bit 3	29	DCLK	Data clock signal
5	R4	Red bit 4	30	GND	Ground
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25	GND	Ground	50	GND	Ground

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- Data-Cable
xxxxxxx
- LED-Driver cable
xxxxxxx
- USB-Adapter-Board 2-Port (AB106)
BOA-AB-06-001B0
- USB Adapter-Board cable
CAB-DS-DA-038
- Keypad brightness-control / backlight toggle (AB108)
BOA-AB-08-001B0
- Keypad cable
AB-DS-DA-041
- WUSB-Kit
 - WUSB Host dongle
ITA-DS-NN-010
 - WUSB Device module
ITA-DS-NN-014
 - Adapter cable for WUSB Device module
CAB-S-DA-040

DisplayLink Firmware Files

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800x600	1-Channel, 24-bit, Open-LDI
800x480	1-Channel, 24-bit, Open-LDI
800x600	LVTTTL, 24-bit
800x480	LVTTTL, 24-bit
600x480	LVTTTL, 24-bit

Driver

- DisplayLink (Win2K / WinXP / Vista / Win7 / 32-bit & 64-bit)
- WUSB-Driver (Win2K / WinXP / Vista / Win7 / 32-bit & 64-bit)
- Touch-Controller Driverver (Win2K / WinXP / Vista / Win7 / 32-bit & 64-bit)

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