

This document will inform you about **supported Displays** for the 886LCD-M family of boards, about **cable kits**, about how to **setup BIOS** and possible limitations to the **Intel® Extreme Graphic Driver**.

The document is valid for BIOS version 886LCD31 having Display module V1.08 or above.

In the document you will find:

1. Introduction
2. Supported displays table
3. Add-On Interface Board table
4. Table 2, Cable Kits, some available and some is awaiting large order quantity (500+).
5. Table 3, Wiring tables etc.
6. Display Panel setup in BIOS
7. Windows XP and 2000 Intel® Extreme Graphic Driver

1. Introduction:

When you look into this document the reason is either:

A. You want to know if the **886LCD-M board supports the display** from manufacture X with the type code Y?

1. In the "Supported Displays table" (below) try to find the Manufacture and Display Type no. (red zone). If you find it then the display is supported for sure.
2. If you don't find it, then check up if a newer version of this document (KTD-00584-F) is available. (Can be found on <http://www.kontron-emea.com>).
3. If you still can't find it then you can email Display Datasheet to KT Support (martin.larsen@kontron.com) and specify your question(s).

B. or you want to know if a **cable kit is already available** for the display manufactured by X with the type code Y?

1. Check up the pricelist.
2. Check up the latest version of this document, if you find the display in the "Supported Displays table" (red zone) then you might find details about cable kit (yellow zone) including reference to an Add-On board required to support the display. The different Add-On Boards are described in "Add-On Interface Board table".
3. or take a look in the "Cable Kit table".

C. or you want some help in order to **design a (prototype) cable kit**

1. Check up the latest version of this document, if you find the actual display or similar display in the "Supported Displays table" (red zone) then you might find documents about cable kit (blue zone).
2. or you might find it in the "Display Interface table".
3. In the "Cable Kit table" you will also find "Open-End LVDS Cable" to be used for prototype or low volume projects. If you already have a cable part (open-end cable kit) that fits the display and another one that fits the Inverter (if used), then you can solder it together with the "Open-End LVDS Cable" to make a complete prototype cable kit.
4. or you want Kontron Technology to make a prototype cable kit, see "Display Adaptation Service".

D. or you want support to **setup the BIOS and Intel Extreme Graphic Driver**.

1. For BIOS setup, take a look in the chapter "Display Panel Setup in BIOS" and make sure of the BIOS selection (green zone) in the "Supported Displays table".
2. For Windows Graphic Driver use take a look in the chapter "Windows XP and 2000 Intel® Extreme Graphic Driver".

2. Supported Displays table

Display									Cable Kit			BIOS selection	Documents	
Manufac.	Type no.	Technology	Size "	Resolution	LVDS	Color bits	Cd/m ²	Vcc	conn.	Item #	Display mating connector	Resolution, Manufacture, Type no.	Cable Specific.	Display Interface
(standard)	Normal	TFT Color	-	800x600	-	-	-	-	-	-	-	800x600, (standard), Normal	-	-
(standard)	CRT 1366x768	CRT	-	1366x768	-	-	-	-	CRT	-	-	1366x768, (standard), CRT 1366x768	-	-
(standard)	CRT 1360x768	CRT	-	1360x768	-	-	-	-	CRT	-	-	Custom, (standard), CRT 1360x768	-	-
(special)	LVDS-XGA-CRT-DA	-	-	1024x768	SPWG	24	-	-	LVDS	-	-	1024x768, (special), LVDS-XGA-CRT-DA	-	-
AUO	G084SN05	TFT Color	8,4	800x600	Yes	18	350	3.3	LVDS	NA	HRS DF19G-20S-1C	800x600, AUO, (NA)		
AUO	G104SN03	TFT Color	10,4	800x600	Yes	18	180	3.3	LVDS	NA	HRS DF19G-20S-1C	800x600, AUO, (NA)		
AUO	G121SN01	TFT Color	12,1	800x600	Yes	18	400	3.3	LVDS	821518	JAE FI-S20S	800x600, AUO, G121SN01	KTD-00614	
AUO	M150XN07	TFT Color	15.0	1024x768	Yes	18	250	3.3	LVDS	821520	HRS DF14H-20S-1.25C	1024x768, AUO, M150XN07	KTD-00609	
AUO	M170EG01	TFT Color	17.0	1280x1024	SPWG	2*24	260	5	LVDS	820971	JAE FI-X30C2L	1280x1024, AUO, M170EG01 *	KTD-00694	-
AUO	M190EG01	TFT Color	19.0	1280x1024	SPWG	2*24	300	5	LVDS	820971	JAE FI-X30HL	1280x1024, AUO, M190EG02 **	KTD-00694	-
AUO	M190EG02	TFT Color	19.0	1280x1024	SPWG	2*24	300	5	LVDS	820971	JAE FI-X30HL	1280x1024, AUO, M190EG02 **	KTD-00694	-
Boe Hydis	HT150X02-100	TFT Color	15.0	1024x768	SPWG	24	250	3.3	LVDS	821520	HRS DF14H-20S-1.25C	1024x768, Samsung, HT150X02-100		KTD-00437
Boe Hydis	HT17E12-200	TFT Color	17.0	1280x1024	SPWG	2*24	250	5	LVDS	820971	JAE FI-X30H	1280x1024, Boe Hydis, HT17E12-2001 *	KTD-00694	-
Chi Mei	G121X1-L01	TFT Color	12.1	1024x768	Yes	18	450	3.3	LVDS	NA	JAE FI-S20S	1024x768, Chi Mei, G121X1-L01	KTD-00652	
Chi Mei	G150X1-L01	TFT Color	15.0	1024x768	SPWG	24	450	3.3	LVDS	821520	HRS DF14H-20S-1.25C	1024x768, Chi Mei, G150X1-L01		KTD-00437
Fujitsu	FLC48SXC8V-11AA	TFT Color	19.0	1280x1024	SPWG	2*24	300	5	LVDS	820971	JAE FI-X30HL	1280x1024, Fujitsu, NA **	KTD-00694	-
IBM	ITSV53C1	TFT Color	12,1	800x600	No	18	150	3.3	LVDS	NA	LVDS Rec. not available			
LG.Philips	LB121S1	TFT Color	12,1	800x600	No	18	100	3.3	LVDS	NA	LVDS Rec. not available	800x600, LG.Philips, LB121S1	KTD-00616	
LG.Philips	LM150X08	TFT Color	15.0	1024x768	SPWG	24	250	3.3	LVDS	821520	HRS DF14H-20S-1.25C	1024x768, LG.Philips, (NA)		
LG.Philips	LM170E01	TFT Color	17.0	1280x1024	SPWG	2*24	250	5	LVDS	820971	JAE FI-X30H	1280x1024, LG.Philips, LM170E01 **	KTD-00694	-
LG.Philips	LM181E06	TFT Color	18.1	1280x1024	SPWG	2*24	250	12	LVDS	NA	Molex 51146-3000	1280x1024, LG.Philips, LM181E06		KTD-00477
LG.Philips	LM201U03	TFT Color	20.1	1600x1200	SPWG	2*24	250	18	LVDS	820971	JAE FI-X30H	1600x1200, LG.Philips, LM201U03	KTD-00694	-
LG.Philips	LM201U04	TFT Color	20.1	1600x1200	SPWG	2*24	250	18	LVDS	820971	JAE FI-X30H	1600x1200, LG.Philips, LM201U03	KTD-00694	-
LG.Philips	LP104S5	TFT Color	10,4	800x600	Yes	18	220	3.3	LVDS	NA	HRS DF19G-20S-1C	800x600, LG.Philips, LP104S5	KTD-00645	
Mitsubishi	AA121SG01	TFT Color	12,1	800x600	Yes	24	400	3.3	LVDS	NA	JAE FI-S20S	800x600, Mitsubishi, AA121SG01	KTD-00621 KTD-00652	
Mitsubishi	AA121SL03	TFT Color	12,1	800x600	SPWG	24	350	3.3	LVDS	NA	JAE FI-S20S	800x600, Mitsubishi, AA121SL03	KTD-00621 KTD-00652	

Display									Cable Kit			BIOS selection	Documents	
Manufac.	Type no.	Technology	Size "	Resolution	LVDS	Color bits	Cd/m ²	Vcc	conn.	Item #	Display mating connector	Resolution, Manufacture, Type no.	Cable Specific.	Display Interface
NEC	NL8060BC21-02	TFT Color	8,4	800x600	Yes	24	400	3.3	LVDS	821514	JAE FI-S20S	800x600, NEC, NL8060BC21-02		
NEC	NL8060BC31-28D	TFT Color	12,1	800x600	Yes	18	350	3.3	LVDS	821514	JAE FI-S20S	800x600, NEC, NL8060BC31-28D		
NEC	NL10276BC24-13	TFT Color	12,1	1024x768	OpenLDI	24	350	3.3	LVDS	NA	JAE FI-S20S	1024x768, NEC, NL10276BC24-13		
NEC	NL8060BC31-28D	TFT Color	12,1	800x600	Yes	18	350	3.3	LVDS	821514	JAE FI-S20S	800x600, NEC, NL8060BC31-28D		
NEC	NL10276BC24-13	TFT Color	12,1	1024x768	OpenLDI	24	350	3.3	LVDS	NA	JAE FI-S20S	1024x768, NEC, NL10276BC24-13		
NEC	NL10276BC30-10	TFT Color	15,0	1024x768	OpenLDI	24	250	3.3	LVDS	NA	HRS DF14H-20S-1.25C	1024x768, NEC, NL10276BC24-13 o		
NEC	NL10276BC30-10	TFT Color	15,0	1024x768	SPWG	24	250	3.3	LVDS	NA	HRS DF14H-20S-1.25C	1024x768, NEC, NL10276BC24-13 s		
Optrex	T-51750	TFT Color	10,4	640x480	No	18	400	3.3 or 5	LVDS	NA	LVDS Receiver IF-302-XX (N1)	640x480, Optrex, T-51750		KTD-00599
Optrex	T-51863D150	TFT Color	15,0	1024x768	SPWG	24	450	3.3	LVDS	NA	HRS DF14H-20S-1.25C	1024x768, Optrex, T-51863D150		
Optrex	T-51866D121J-FW	TFT Color	12,1	800x600	Yes	24	350	3.3	LVDS	NA	JAE FI-S20S	800x600, Optrex, T-51866D121J-FW	KTD-00621 KTD-00652	
Optrex	T-51944D104J-FW	TFT Color	10,4	800x600	Yes	24	400	3.3	LVDS	NA	JAE FI-S20S	800x600, Optrex, T-51944D104J-FW	KTD-00621 KTD-00652	
Samsung	LT104V3-102	TFT Color	10,4	640x480	No	18	70	5	LVDS	NA	LVDS Rec. not available	640x480, Samsung, LT104V3-102		
Samsung	LT121SU-121	TFT Color	12,1	800x600	No	18	150	3.3	LVDS	NA	LVDS Rec. not available			
Samsung	LT121SS-105	TFT Color	12,1	800x600	No	18	200	3.3	LVDS	NA	LVDS Rec. not available			
Samsung	LTM121SI-T01	TFT Color	12,1	800x600	No	18	300	3.3	LVDS	NA	LVDS Rec. not available	800x600, Samsung, LTM121SI-T01		
Samsung	LTM121S1-T01	TFT Color	12,1	800x600	No	18	300	3.3	LVDS	NA	LVDS Rec. not available			
Samsung	LTM150XH-L06	TFT Color	15,0	1024x768	SPWG	24	450	3.3	LVDS	NA	HRS DF14H-20S-1.25C	1024x768, Samsung, LTM150XH-L06		KTD-00437
Samsung	LTM150XO-L01	TFT Color	15,0	1024x768	SPWG	24	250	3.3	LVDS	NA	HRS DF14H-20S-1.25C	1024x768, Samsung, LTM150XH-L06 *		KTD-00437
Samsung	LTM170E5-L03	TFT Color	17,0	1280x1024	SPWG	2*24	250	5	LVDS	820971	JAE FI-X30H	1280x1024, Samsung, LTM170E5-L03	KTD-00694	-
Samsung	LTM170E6-L02	TFT Color	17,0	1280x1024	SPWG	2*24	250	5	LVDS	820971	JAE FI-X30H	1280x1024, Samsung, LTM170E6-L02 **	KTD-00694	-
Samsung	LTM170E6-L04	TFT Color	17,0	1280x1024	SPWG	2*24	250	5	LVDS	NA	?	1280x1024, Samsung, LTM170E6-L04 **		KTD-00586
Samsung	LTM170E8-L02	TFT Color	17,0	1280x1024	SPWG	2*24	250	5	LVDS	NA	?	1280x1024, Samsung, LTM170E8-L02 **	KTD-00653	KTD-00586
Samsung	LTM170EH-L01	TFT Color	17,0	1280x1024	SPWG	2*24	?	5	LVDS	820971	JAE FI-X30HL	1280x1024, Samsung, LTM170EH-L01 **	KTD-00694	-
Samsung	LTM170EU-L21	TFT Color	17,0	1280x1024	SPWG	2*24	300	5	LVDS	820971	JAE FI-X30HL	1280x1024, Samsung, NA **	KTD-00694	-
Samsung	LTM181E4-L01	TFT Color	18,1	1280x1024	SPWG	2*24	250	5	LVDS	820971	JAE FI-X30HL	1280x1024, Samsung, NA **	KTD-00694	-
Samsung	LTM190E4-L02	TFT Color	19,0	1280x1024	SPWG	2*24	250	5	LVDS	NA	?	1280x1024, Samsung, LTM190E4-L02 **		KTD-00586
Samsung	LTM201U1-L01	TFT Color	20,1	1600x1200	SPWG	2*24	300	5	LVDS	820971	JAE FI-X30H	1600x1200, Samsung, LTM201U1-L01	KTD-00694	-
Samsung	LTA230W1-L02	TFT Color	23,0	1366x768	SPWG	24	500	5	LVDS	820971	JAE FI-E30H	1366x768, Samsung, LTA230W1-L02	KTD-00694	-
Samsung	LTA230W2-L01	TFT Color	23,0	1366x768	SPWG	24	500	5	LVDS	820971	JAE FI-E30H	1366x768, Samsung, LTA230W1-L02	KTD-00694	-

Display									Cable Kit			BIOS selection	Documents	
Manufac.	Type no.	Technology	Size "	Resolution	LVDS	Color bits	Cd/m ²	Vcc	conn.	Item #	Display mating connector	Resolution, Manufacture, Type no.	Cable Specific.	Display Interface
Samsung	LTB230W1-L01	TFT Color	23.0	1366x768	SPWG	24	500	5	LVDS	820971	JAE FI-E30H	1366x768, Samsung, LTB230W1-L01	KTD-00694	-
Samsung	LTM260W1-L02	TFT Color	26.0	1280x768	SPWG	24	450	5	LVDS	NA	HRS DF14H-20S-1.25C	1280x768, Samsung, LTM260W1-L02		
Samsung	LTA320W2-L01	TFT Color	32.0	1366x768	SPWG	24	450	5	LVDS	820971	JAE FI-E30H	1366x768, Samsung, LTA320W2-L01	KTD-00694	-
Samsung	LTA320W2-L03	TFT Color	32.0	1366x768	SPWG	24	500	5	LVDS	820971	JAE FI-E30H	1366x768, Samsung, LTA320W2-L03	KTD-00694	-
Samsung	LTA460H2-L02	TFT Color	46.0	1920x1080	SPWG	2*24	450	5	LVDS	820971	JAE FI-E30H	1920x1080, Samsung, LTA460H2-L02	KTD-00694	-
Samsung	LTA460W2-L01	TFT Color	46.0	1366x768	SPWG	24	450	5	LVDS	820971	JAE FI-E30H	1366x768, Samsung, LTA460W2-L01	KTD-00694	-
Samsung	LTI460WT-L13	TFT Color	46.0	1366x768	SPWG	24	700	5	LVDS	820971	JAE FI-E30H	1366x768, Samsung, NA	KTD-00694	-
Samsung	LTI460WT-L15	TFT Color	46.0	1366x768	SPWG	24	700	5	LVDS	820971	JAE FI-E30H	1366x768, Samsung, NA	KTD-00694	-
Samsung	LTI570HH-L01	TFT Color	57.0	1920x1080	SPWG	2*24	600	12	LVDS	NA	JAE FI-RE51HL	1920x1080, Samsung, LTI570HH-L01	KTD-00703	-
Sanyo	TM121SV-02L01	TFT Color	12,1	800x600	No	18		3.3	LVDS	NA	LVDS Rec. not available			
Sanyo	TM121SV-02L04	TFT Color	12,1	800x600	No	18		3.3	LVDS	NA	LVDS Rec. not available			
Sharp	LQ64D343	TFT Color	6,4	640x480	No	18	300	5	LVDS	NA	LVDS Rec. not available	640x480, Sharp, LQ10D343		
Sharp	LQ9D021	TFT Color	9.4	640x480	No	9x1	100	5	LVDS	NA	LVDS Rec. not available			
Sharp	LQ10D363	TFT Color	10,4	640x480	No	18	200	5	LVDS	NA	LVDS Rec. not available			
Sharp	LQ10D367	TFT Color	10,4	640x480	No	18	200	5	LVDS	NA	LVDS Rec. not available	640x480, Sharp, LQ10D367		
Sharp	LQ10D41	TFT Color	10,4	640x480	No	18	300	5	LVDS	NA	LVDS Rec. not available	640x480, Sharp, LQ10D41		
Sharp	LQ10D42	TFT Color	10,4	640x480	No	18	300	5	LVDS	NA	LVDS Rec. not available	640x480, Sharp, LQ10D42		
Sharp	LQ104S1DG21	TFT Color	10,4	800x600	No	18	350	3.3	LVDS	NA	LVDS Rec. not available	800x600, Sharp, LQ104S1DG21	KTD-00616	
Sharp	LQ104S1LG21	TFT Color	10,4	800x600	Yes	18	350	3.3	LVDS	821514	JAE FI-S20S	800x600, Sharp, LQ121S1LG41	KTD-00604	
Sharp	LQ121S1LG41	TFT Color	12,1	800x600	Yes	18	350	3.3	LVDS	821514	JAE FI-S20S	800x600, Sharp, LQ121S1LG41	KTD-00604	
Sharp	LQ150X1LGN2A	TFT Color	15,0	1024x768	OpenLDI	24	260	3.3	LVDS	NA	HRS DF14H-20S-1.25C	1024x768, Sharp, LQ150X1LGN2A	KTD-00609	
Sharp	LQ150X1LW71	TFT Color	15,0	1024x768	SPWG	24	250	3.3	LVDS	NA	HRS DF14H-20S-1.25C	1024x768, Sharp, LQ150X1LW71	KTD-00609	
Sharp	LQ170E1LG11	TFT Color	17.0	1280x1024	SPWG	2*24	300	5	LVDS	820971	JAE FI-X30HL	1280x1024, Sharp, LQ170E1LG11 **	KTD-00694	-
Sharp	LQ190E1LW01	TFT Color	19.0	1280x1024	SPWG	2*24	300	5	LVDS	820971	JAE FI-X30HL	1280x1024, Sharp, NA **	KTD-00694	-
Sharp	LQ201U1LW01	TFT Mono	20.1	1600x1200	SPWG	2*24	220	12	LVDS	820971	2x HRS DF19G-20S-1C	1600x1200, Sharp, LQ201U1LW01	KTD-00701	-
Sharp	LQ231U1LW01	TFT Color	23.1	1600x1200	OpenLDI	2*24	250	5	LVDS	NA	2x HRS DF19G-20S-1C	1600x1200, Sharp, LQ231U1LW01		-
Torisan	TM121SV-02L01	TFT Color	12,1	800x600	No	18	200	3.3	LVDS	NA	LVDS Rec. not available			
Toshiba	LTM08C351L	TFT Color	8,4	800x600	Yes	18	350	3.3	LVDS	NA	HRS DF19G-20S-1C	800x600, Toshiba, LTM08C351L	KTD-00654	
Toshiba	LTD121GA0S	TFT Color	12.1	1024x768	Yes	18	350	3.3	LVDS	NA	HRS DF19G-20S-1C	1024x768, Toshiba, LTD121GA0S	KTD-00611	

Display									Cable Kit			BIOS selection	Documents	
Manufac.	Type no.	Technology	Size "	Resolution	LVDS	Color bits	Cd/ m2	Vcc	conn.	Item #	Display mating connector	Resolution, Manufacture, Type no.	Cable Specific.	Display Interface
Toshiba	LTM12C275	TFT Color	12.1	800x600	No	18	250	5	LVDS	NA	LVDS Rec. not available			
Toshiba	LTM12C289	TFT Color	12.1	800x600	No	18	250	3.3	LVDS	NA	LVDS Rec. not available			
Unipac	UB084S01	TFT Color	8,4	800x600	Yes	18	120	3.3	LVDS	NA	HRS DF19G-20S-1C	800x600, Unipac, UB084S01	KTD-00645	
Unipac	UB104S01	TFT Color	10,4	800x600	Yes	18	150	3.3	LVDS	NA	HRS DF19G-20S-1C	800x600, Unipac, UB104S01	KTD-00645	

(N1): Not a Kontron Technology product.

* = Not verified.

** = two versions one is marked "75Hz" indicating that the driver generates 75Hz Frame Rate, the other driver is unmarked and generates 60Hz Frame Rate.

3. Add-on interface board table:

Interface	Item #	Description	Status
ADD-LVDS *	820935	LVDS Transmitter for AGP, 2 channels, OpenLDI/SPWG support. 34Pin IDC connector only.	Available
ADD-LVDS/CS1 *	820937	LVDS Transmitter for AGP, 2 channels, OpenLDI /SPWG support. 34Pin IDC angled connector only.	Available
ADD-DVI-CRT	820942	ADD-DVI-CRT	Available
ADD-CRT-Internal	820943	ADD-CRT-Internal	Available
ADD-CRT-Internal	820944	ADD-CRT-Internal + 821516 CRT Bracket	Available

* = Supported by project specific Embedded Driver. (Dual independent LVDS display configuration (identical displays)).

4. Cable Kits table:

Item no.	Fit	Document #	Description (all available kit are RoHS compliant)
821513	ADD-LVDS, ADD-LVDS-OEM	KTD-00593	LVDS Cable 600 mm ADD-LVDS to Hirose DF19-20S-1C.
821514	886LCD-M LVDS Connector	KTD-00604	Cable for Sharp LQ121S1LG41.
821515	886LCD-M LVDS Connector	KTD-00605	Open End LVDS Cable 540 mm (for prototyping or as a part of customer assembled cable kit).
821516	ADD-DVI-CRT, ADD-CRT-Internal (pin row)	KTD-00606	CRT Bracket
821517	886LCD-M LVDS Connector	KTD-00608	LVDS Cable 2x40p conn 405 mm (can be used as interface to customer designed PCB).
821518	886LCD-M LVDS Connector	KTD-00614	Cable for AUO G121SN01
821520 *	886LCD-M LVDS Connector		Cable for LG.Philips LM150X08
*	886LCD-M LVDS Connector	KTD-00609	Cable for Sharp LQ150X1LGN2A
*	886LCD-M LVDS Connector	KTD-00611	Cable for Toshiba LTD121GA0S
*	886LCD-M LVDS Connector	KTD-00613	Cable for Samsung LTM170EH-L01
**	886LCD-M LVDS Connector	KTD-00616	Cable for Sharp LQ104S1DG21
*	886LCD-M LVDS Connector	KTD-00621	Cable for Mitsubishi AA121SL03
*	886LCD-M LVDS Connector	KTD-00645	Cable for LG.Philips LP104S5
*	886LCD-M LVDS Connector	KTD-00652	Cable for Mitsubishi AA121SG01
*	886LCD-M LVDS Connector	KTD-00653	Cable for Samsung LTM170E8-L02
*	886LCD-M LVDS Connector	KTD-00654	Cable for Toshiba LTM08C351L
*	886LCD-M LVDS Connector	KTD-00674	Cable for Sharp LQ170E1LG11
820975	-		LDI Module (Large Display Interface Module)
820971	886LCD-M LVDS Connector	KTD-00694	LDI Evaluation kit, based on 820975 + 821517+ 821521
820972	886LCD-M LVDS Connector + 820935 ADD-LVDS	KTD-00697	Cable kit Dual Samsung LTM201U1-L01, based on 820975 + 821517 + 2x 821522
820973	886LCD-M LVDS Connector + 820935 ADD-LVDS	KTD-00701	Cable Kit Dual Sharp LQ201U1LW01, based on 820975 + 821517 + 2x 821523
821521	820935 ADD-LVDS, 820975 LDI Module		Evaluation Cable
821522	820935 ADD-LVDS, 820975 LDI Module		Cable Samsung LTM201U1-L01
821523	820935 ADD-LVDS, 820975 LDI Module		Cable Sharp LQ201U1LW01
*	886LCD-M LVDS Connector	KTD-00698	Cable kit Samsung LTB230W1-L01, based on 820975 + 821517 + 82xxxx

Notes: There might be MOQ on some cable kits.* Awaiting order. ** Not optimized cable kit (only for prototyping).

The following RoHS compliant connectors for use in display cable kits, can be ordered at Kontron.

P/N: 910000004, 40-pin SMT Box header (same as the one used on MB) type Don Connex P/N: C44-40BSB1-G

P/N: 910000005, Half pitch IDC 40-pole (used in all the display cable kits), type Don Connex P/N: A32-40-C-G-B-1

5. Display Interface tables etc.

Made for	Document #	Description
886LCD-M LVDS Connector	KTD-00437	Samsung LTM150XH-L06 Display Interface
886LCD-M LVDS Connector	KTD-00472	LGPhilips LM201U0x to ADD-LVDS & 886LCD-M
886LCD-M LVDS Connector	KTD-00477	LGPhilips LM181E06 to 886LCD-M family
886LCD-M LVDS Connector	KTD-00478	LGPhilips LM190E01 to 886LCD-M family
886LCD-M LVDS Connector	KTD-00586	Samsung LTM170E5-L03 to 886LCD-M family
886LCD-M LVDS Connector	KTD-00598	LGPhilips LM170E01 to 886LCD-M family
886LCD-M LVDS Connector	KTD-00599	Optrex T-51750 to 886LCD-M family
886LCD-M LVDS Connector	KTD-00703	Samsung LTI570HH-L01 Display Interface

The cable kit specifications in the table are not available cable kits, but the specifications might be useful when designing cable kits. (Maybe also above mentioned Open-End LVDS Cable Kit no. 821515 can be useful designing prototypes).

6. Display Adaptation Service

1. Email to KT support (martin.larsen@kontron.com) Datasheet for Display + Inverter and specify cable length and expected volume.
2. KT Support generates Cable Specification.
3. Customer approves the Cable Specification.
4. Customer order 740100 "Display Adaptation Service".
5. KT Support makes Prototype Cable Kit and integrates display driver in Display Block (BIOS part).
6. Customer approves the Prototype Cable Kit display driver.
7. KT Support makes final Cable Kit sample for customer approval.
8. Customer order Cable Kit volume.

7. Display Panel setup in BIOS

On the basis of the Default settings

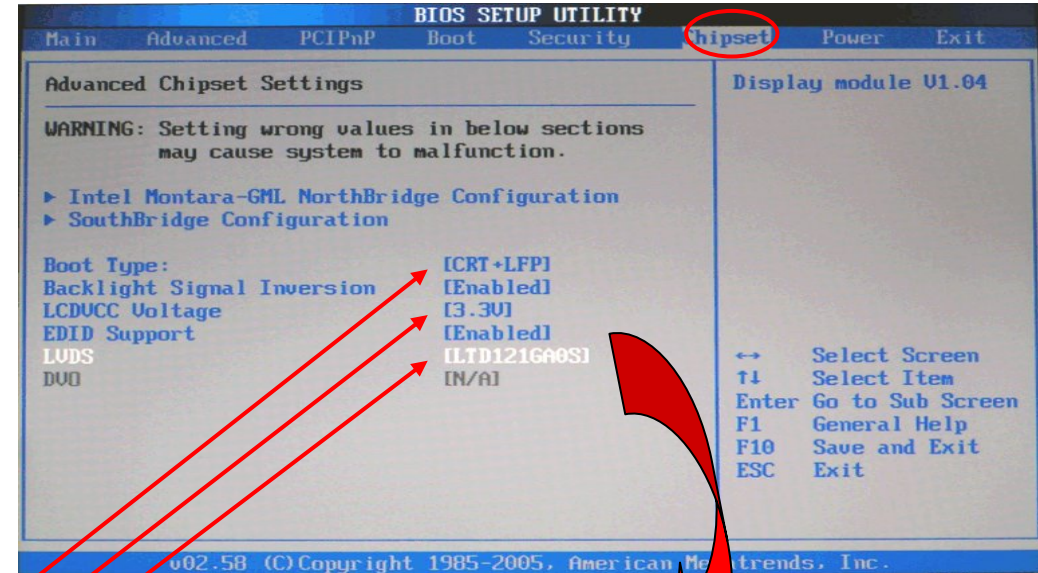
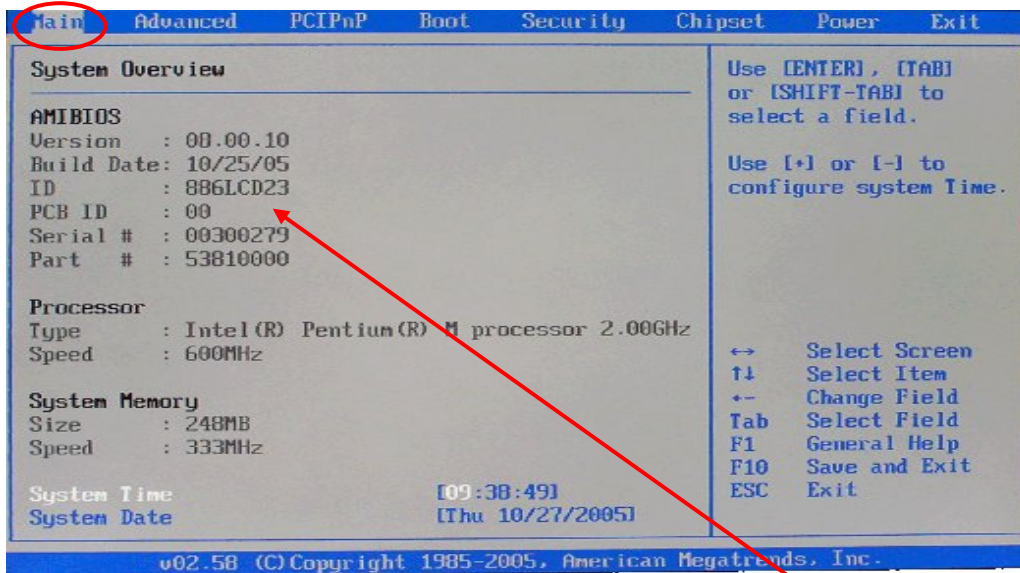
Chipset> Boot Type = [CRT], output only to CRT. (Default).
[CRT+LFP], most common selection when using LFP (**L**ocal **F**lat **P**anel) on board LVDS Output.
[CRT+EFP], most common selection when using EFP (**E**xternal **F**lat **P**anel) via ADD-DVI-CRT
[LFP], when CRT is not used and LFP shall be the display used while booting.
[EFP], when CRT is not used and EFP shall be the display used while booting.

Note: the [LFP] or [EFP] is also used for dual (independent) display using the LFP and EFP, but this mode can only be enabled from Windows.

LVDS = select Display type:
[800x600, (standard), Normal] when not using on board LVDS (LFP).
[1366x768, (standard), CRT] when using 1366x768 on the on board CRT output as the only display.
in all other cases [Resolution, Manufacture, Type no] as according to the Display data.
for more details see next page "**How to select Display type in BIOS**".

Exit> Secure CMOS = [Enabled] (Recommended setting).

How to select Display type in BIOS

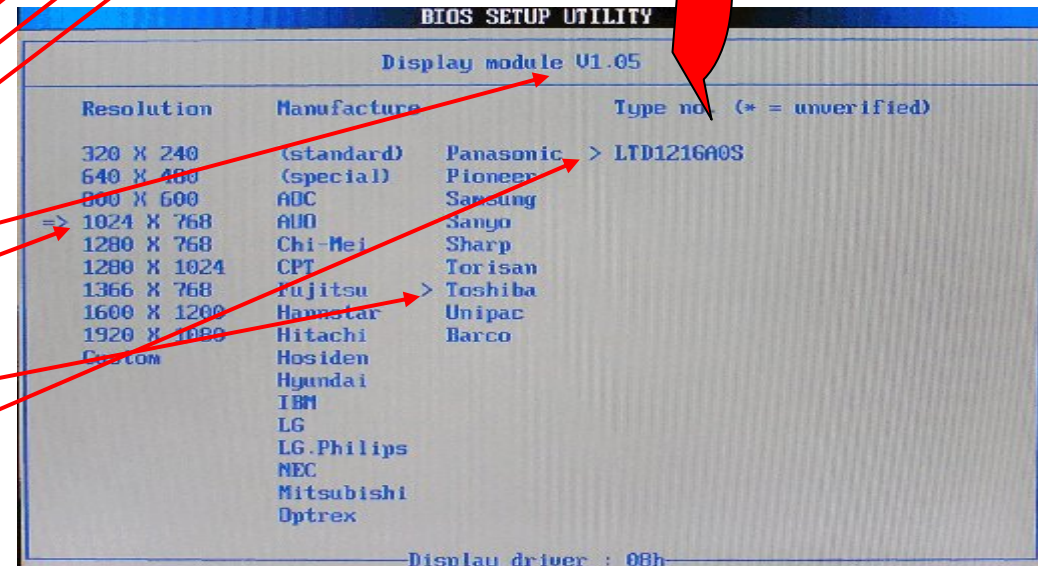


In Main Menu verify that the BIOS version is as requested.

In the Chipset Menu select CRT+LFP (LFP = Local Flat Panel) select LCDVCC voltage (3.3 or 5V) if required and enter (<Enter>) the LVDS Sub Screen

In the LVDS sub menu verify the version of the Display module (in this case V1.04).

For the actual display select Resolution, Manufacturer and Type no.



8. Windows XP and 2000 Intel® Extreme Graphic Driver

... when not using the analogue output from ADD-CRT-Internal card or ADD-DVI-CRT card.

The best Intel Extreme Graphic Driver at present time is the version 6.14.10.4396 (Package win2k_xp1417.exe). It supports WinXP very well and W2K with some limitations.

Note: If you chance the display configuration (removing displays) without making sure that the Extreme Graphic Driver Settings is prepared for that, you might get a black screen next time you boot OS. Example: You use only LVDS output to drive a Flat Panel and the XP Extreme Graphic Driver has "Output To" = "Notebook". You turn off the computer and remove the Flat Panel and connect a CRT in stead. Now when you boot XP you will get a black picture because Extreme Graphic Driver still has "Output To" = "Notebook". In this case it might be possible for you even without anything on the display to correct the problem:

XP: Press <Ctrl><Alt> and type in your Password (if this is normally required) and finish by <Enter>

W2K: Type in your Password (if this is required) and finish by <Enter>

Wait ½ minute until no activity seems to be going on and then use the required hot-key combination:

<Ctrl><Alt><F3> to turn on the on board LVDS Output.

<Ctrl><Alt><F1> for the on board CRT output.

<Ctrl><Alt><F4> for the EFP (External Flat Panel) output (via the ADD Card).

For XP: The only problem/limitation found is when using LFP having resolution "1366x768" or "Custom" in Extended Desktop mode, then the "Primary Display" shall be "Notebook" to enable the "1366x768" or "Custom" resolution.

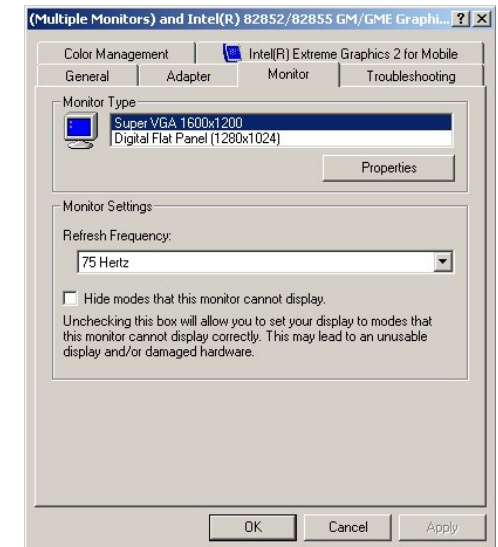
For W2K and Displays with standard resolutions (not 1366x768 or "Custom").

Using both LVDS FPD and CRT and if in the Extreme Graphic Driver the "Output To" to "Dual Display Clone" > "Monitor + Notebook", then the system seems to work fine, except for two problems:

1. The rotation 90° and 270° sometimes fail (bar is located as if it is a smaller picture possibly 800x600), but only until next rotation is carried out.
2. The resolution changes to 800x600 and can't be recovered by another rotation. (Changing from "Monitor + Notebook" to "Notebook + Monitor" makes the problem worse).

If "Output To" is selected to be "Notebook" then CRT doesn't need to be connected at all, but please notice that only Rotation "Normal" and "180°" is possible.

If the driver is made for 75Hz Frame Rate then unclick "Hide modes that this monitor cannot display" and select 75Hz (in the Display Control Panel, Monitor section, see picture to the right), otherwise some resolutions and colour depth might not be selectable.



For W2K and Displays with resolutions "1366x768" or "Custom".

If using LVDS FPD then also CRT must be connected and in the Extreme Graphic Driver the "Output To" to "Dual Display Clone" > "Monitor + Notebook", then the system seems to work fine, except for two problems:

1. The rotation 90° and 270° sometimes fail (bar is located as if it is a smaller picture possibly 800x600), but only until next rotation is carried out.
2. The resolution changes and can not be recovered by another rotation. (Changing from "Monitor + Notebook" to "Notebook + Monitor" makes the problem worse).

In order to use the CRT interface to drive a 1366x768 display, select in BIOS Chipset Menu a 1366x768 display in the LVDS sub menu (for instance 1366x768, Standard, CRT 1366x768) and select in the Extreme Graphic Driver: "Output To" to "Dual Display Clone" > "Monitor + Notebook". The above mentioned two problems still occur but the wrong resolution now seems to be changed to 640x480.

... when using the analogue output from ADD-CRT-Internal card or ADD-DVI-CRT card.

When using the analogue output from ADD-DVI-CRT (or ADD-CRT-Internal) card a special Kontron Technology modified "Intel Extreme Graphic Driver" (only XP/W2K) is required.

Procedure to install and setup the system:

In case the BIOS is older than revision 2.3 ("886LCD23"):

1. Go to <http://www.kontron-emea.com/index.php?id=780&cat=61&productid=297#d28-O> and download a BIOS package (DOS or XP/W2K) which is 2.3 or newer.
2. Execute the Update.bat file on 886LCD-M/mITX and when the BIOS programming is done please reset the computer and enter BIOS.

In BIOS please select Boot Type = [CRT+EFPP] and select a 1280x1024 display for the LVDS setting (like the LG.Philips LM181E06) even though LVDS display is not used.

Go to <http://www.kontron-emea.com/index.php?id=780&cat=188&productid=1221#d19-O> and download the driver **CRT driver win2k_xp** and install it. (You have to accept a few times to continue installation even though the driver has not passed Windows Logo testing). After installation is completed turn off the computer.

Mount the ADD-DVI-CRT (or ADD-CRT-Internal) card and further connect DVI-to-CRT-Adapter (or 821516) and (second) CRT.

Turn on the system and enter the Intel Extreme Graphic driver where you select output to "Digital Display + Monitor"

When using "Notebook" resolution 1366x768 in XP and changing rotation then reset can happen.

When using "Digital Display + Notebook" and W2K the resolution 1366x768 is not possible. When changing "Output To" then very often a reset is generated.
When using "Monitor + Notebook" and W2K the resolution 1366x768 is possible.