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# **Embedded Demonstration Board Product Datasheet**

## **EMB043INTDEMO**

4.3" Integrated TFT Demonstration Board

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## 1. Introduction

The Displaytech EMB043INTDEMO is a demonstration board for the Displaytech INT043BTFT integrated driver board. The EMB043INTDEMO is controlled by a Microchip PIC32MX460F512L MCU and includes a USB connection, 2Mbyte SPI flash, and an SD card slot.

The INT043BTFT integrated display module powers and controls a Displaytech DT043BTFT TFT display with a 480 x 272 RGB resolution. The TFT module is mounted on a PCB on which is mounted a Solomon SSD1961 controller with integrated touch screen control and LED backlight power circuitry. Please see the [INT043BTFT Datasheet](#) for more information.

The EMB043INTDEMO is powered via a 5v USB connection, with a power switch (SW2) to turn the device on and off. All power levels required by the INT043TFT are generated and regulated by on-board voltage

regulators (see the [schematic](#) for more information).

## 2. INT Module Auto-Initialization

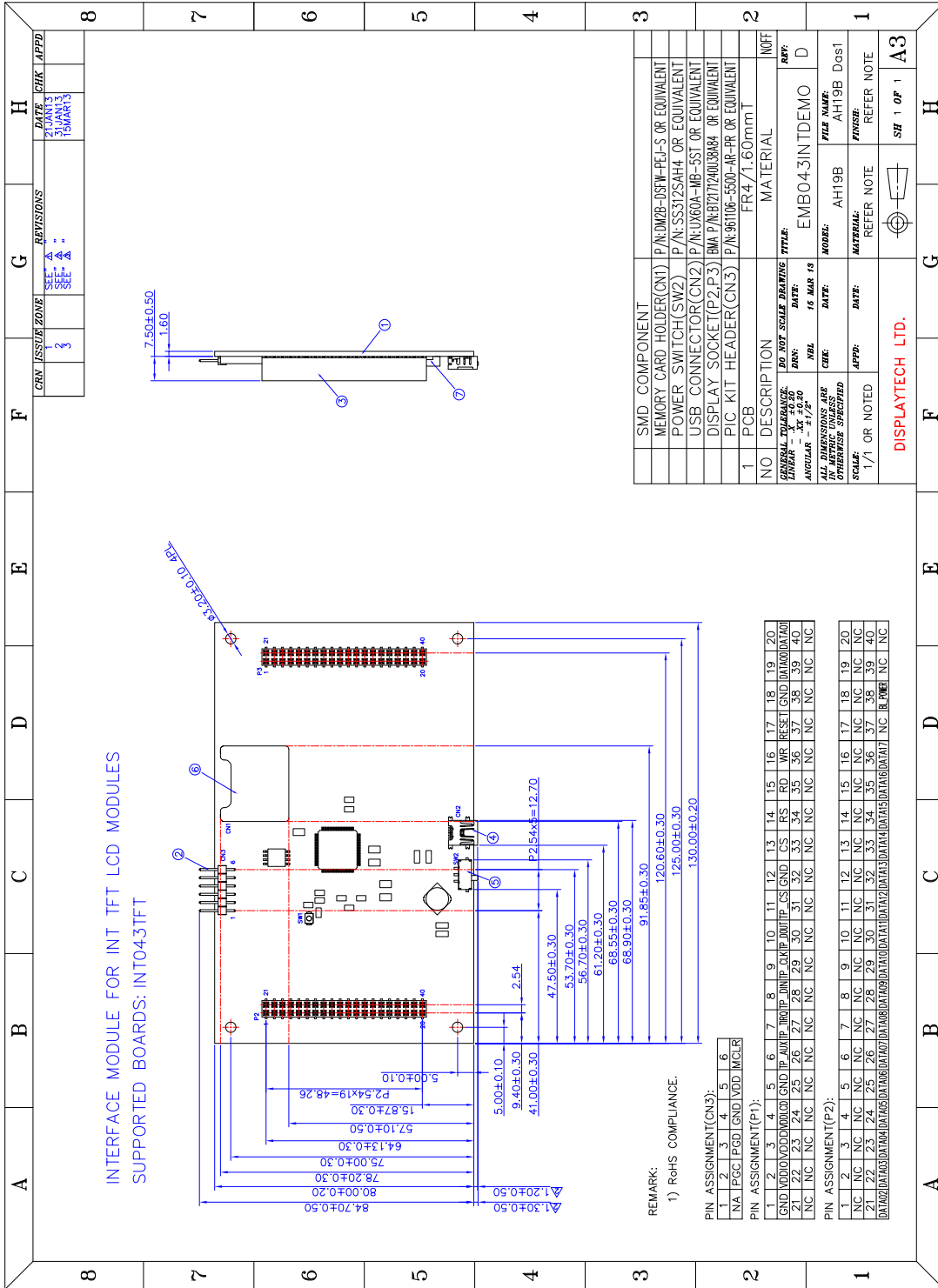
The SSD1961 as well as the Himax HX8257-A COG TFT Controller/Driver on-board the TFT module are automatically initialized upon power-up of the integrated module by an on-board ATmega8 microcontroller.

During the auto-initialization time, the PIC MCU should configure all I/O pins connected to the integrated board as inputs, as the on-board ATmega8 asserts control over these pins to configure the controller and driver. Please see the [INT043BTFT datasheet](#) for more details.

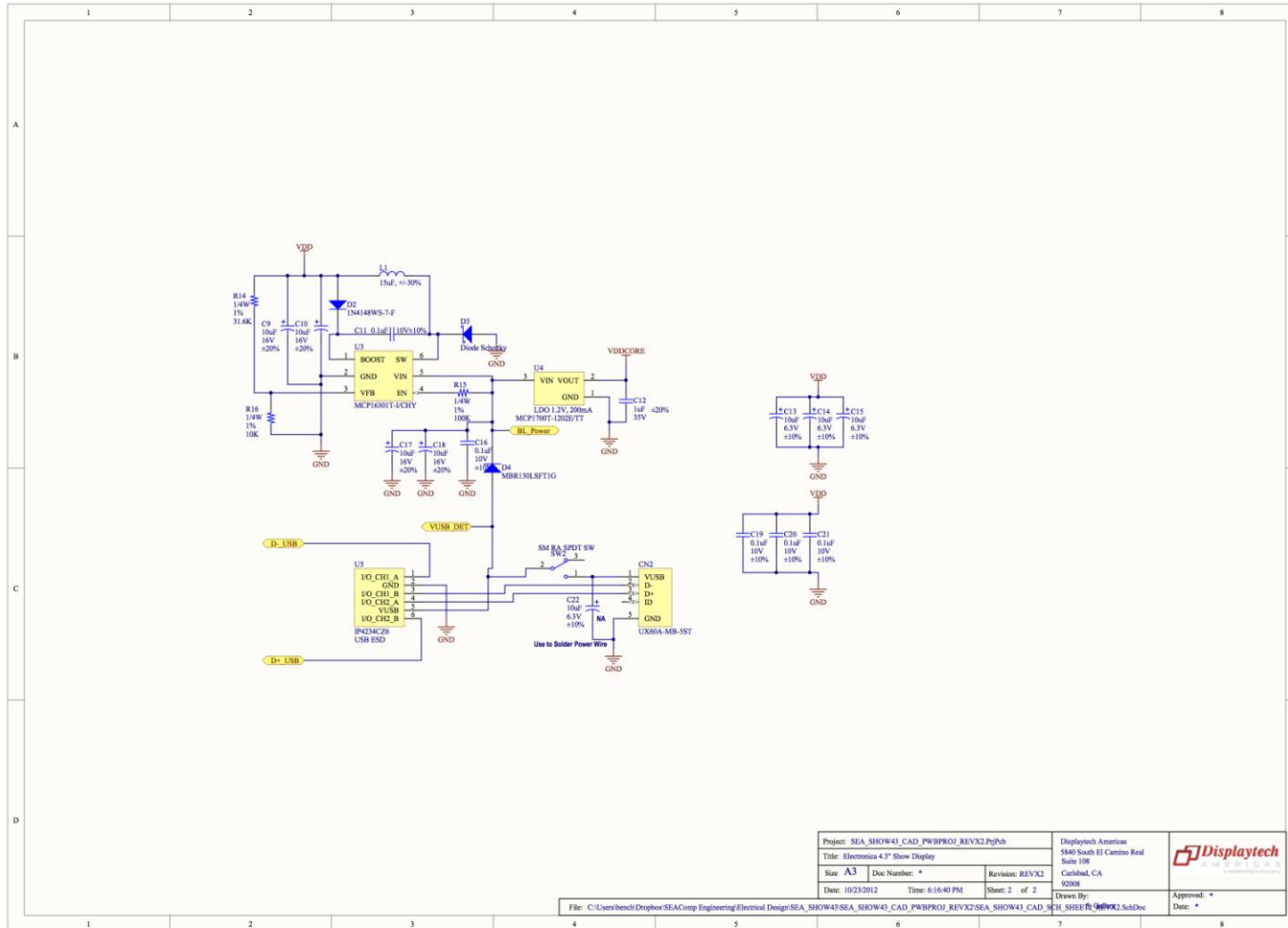
## 3. Example Software

Example software is available from Displaytech upon request. Please contact Displaytech at [sales@displaytech-us.com](mailto:sales@displaytech-us.com).

### 4. Mechanical Drawing







Project: SEA_SHOW43_CAD_PWBPROJ_REVX2.PcbJob		Displaytech America	
Title: Electronics 4.3" Show Display		5441 South El Camino Real	
Size: A3	Doc Number: *	Revision: REVX2	Carlsbad, CA
Date: 10/23/2012	Time: 6:16:40 PM	Sheet: 2 of 2	92008
File: C:\Users\bench\Dropbox\SEAComp\Engineering\Electrical Design\SEA_SHOW43\SEA_SHOW43_CAD_PWBPROJ_REVX2\SEA_SHOW43_CAD_SCH_SHEETS\041010\REVX2.SchDoc		Drawn By: <i>[Signature]</i>	Approved: *
		Date: *	

## 6. Bill of Materials

Manufacturer	Part Number	Package	Qty	Value	Designator	Description
Kemet	T491A106M016AT	1206	5	10uF	C1, C13, C14, C15, C22	Polarized Capacitor (Axial)
TDK	C1608X7R1C474K	0603	1	470nF	C2	Ceramic Capacitor
Kemet	C0603C104K8RAC TU	0603	7	0.1uF	C3, C8, C11, C16, C19, C20, C21	Polarized Capacitor (Axial)
AVX	06031A390FAT2A	0603	2	39pF	C4, C5	Polarized Capacitor (Axial)
AVX	06031A510JAT2A	0603	2	51pF	C6, C7	Polarized Capacitor (Axial)
Kemet	T491A106M016AT	1206	4	10uF	C9, C10, C17, C18	Polarized Capacitor (Axial)
TDK	C1608X7R1V105M	0603	1	1uF	C12	Ceramic Capacitor
Hirose	DM2B-DSFW-PEJ-S	-	1	-	CN1	CONN MEMORY MINI SD BOTTM MT SMD
Hirose	UX60A-MB-5ST	-	1	-	CN2	USB 2.0, Right Angle, SMT, MINI-B Type, Receptacle, 5 Position
3M	961106-5500-AR- PR	-	1	-	CN3	SM Header, 1x6-Pin, Right Angle, 0.1"
Vishay	1N4148W-V-GS18	SOD-123-2	1	-	D1	High Conductance Fast Diode
Vishay	1N4148WS-7-F	SOD-323	1	-	D2	High Conductance Fast Diode
Diodes	ZLLS400TA	SOD-323	1	-	D3	Schottky Rectifier
ON Semi	MBR130LSFT1G	SOD-123FL	1	-	D4	High Conductance Fast Diode
Sumida	CDRH6D28NP- 150NC	-	1	15uF, +/-30%	L1	Inductor
FCI	89898-320LF	-	2	-	P2, P3	Header, SMT, 2x20-Pin, 0.1"
Vishay	CRCW06031K00FK EAHP	0603	2	1K	R1, R12	Resistor
Yageo	RC0603JR- 07100RL	0603	1	100	R2	Resistor

Manufacturer	Part Number	Package	Qty	Value	Designator	Description
Vishay	CRCW0603100KFK EAHP	0603	2	100K	R3, R15	Resistor
Yageo	RC0603JR-070RL	0603	1	0 Ohm	R4	Resistor
Vishay	CRCW060347K0FK EAHP	0603	7	47K	R5, R6, R7, R8, R9, R10, R13	Resistor
Vishay	CRCW06034K70FK EAHP	0603	1	4.7K	R11	Resistor
Vishay	CRCW060331K6FK EA	0603	1	31.6K	R14	Resistor
Vishay	CRCW060310K0FK EAHP	0603	1	10K	R16	Resistor
Omron	B3U-1000P	ELTSM-65	1	-	SW1	Switch
NKK Switches	SS312SAH4	-	1	-	SW2	SM SPDT Sub Min Tog Switch, Right Angle
Microchip	PIC32MX460F512L -80I/PT	TQFP-PT100	1	-	U1	80 MHz32-Bit Microcontroller with USB, 512KB Program Memory, 100-pin TQFP
Microchip	SST25VF016B-75- 4I-S2AF	SOIJ-SM8	1	-	U2	16mbit SPI Bus Serial flash, 8-Pin SOIJ, Industrial Temperature
Microchip	MCP16301T-I/CHY	SOT-23-6	1	-	U3	Buck Adj 0.6A SOT23-6 Regulator. 2-15Vout, 4-30Vin
Microchip	MCP1700T- 1202E/TT	SOT23-3	1	-	U4	LDO, 3-Pin SOT-23, 1.2V Out, 200mA
NXP	IP4234CZ6	SC-74, SOT- 457	1	-	U5	Single USB 2.0 ESD protection to IEC 61000-4-2 level 4
CTS	TF322P32K7680	3215	1	-	Y1	Crystal Oscillator
CTS	ABMM2- 8.000MHZ-E2-T	SMD 6mmx3.6mm	1	-	Y2	Crystal Oscillator