

Table of Contents	
2	Notes
3	Block Diagram
4	PK40DX256VMD10 MCU
5	USB/OSBDM/V-TRAN/PWR
6	Peripherals
7	Sensors
8	Elevator Connectors

Revisions			
Rev	Description	Date	Approved
X1	Release to A070	11-9-2011	LS
A	Release to A085	11-28-2011	LS

		Microcontroller Solutions Group 6501 William Cannon Drive West Austin, TX 78725-8598	
This document contains information proprietary to Freescale Semiconductor and shall not be used for engineering design, procurement or manufacture in whole or in part without the express written permission of Freescale Semiconductor.			
Design: J.Antony (L&T)		ICAP Classification: FCP: PUC: ☒ PUB:	
Drawn by: J.Antony (L&T)		Page Title: TWR-K40D100M	
Approved: Shelaby Lawrence		Size C Document Number SCH-27292 PDF: SPF-27292	
Date: Monday, November 28, 2011		Sheet 1 of 8	

1. Unless Otherwise Specified:

- All resistors are in ohms
- All capacitors are in uF
- All voltages are DC
- All polarized capacitors are aluminum electrolytic

2. Interrupted lines coded with the same letter or letter combinations are electrically connected.

3. Device type number is for reference only. The number varies with the manufacturer.

4. Special signal usage:

- _B Denotes - Active-Low Signal
- <> or [] Denotes - Vectored Signals

5. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

Power & Ground Nets

NET	VOLTAGE	DESCRIPTION
P5V_USB	5V	Primary input power. Filtered from USB connector. Input to USB power switch.
P5V_TRG_USB	5V	Output of USB power switch controlled by the VTRG_EN signal from the JM60 MCU. Provides input to regulator.
P5V_SW	5V	Output of USB power switch controlled by the 5V_EN signal from the JM60 MCU. Used by OSBDM voltage translation circuits.
P5V_ELEV	5V	5V power on the Tower Elevator. This board provides power from P5V_TRG_USB to the elevator connectors through a diode.
P3V3	3.3V	Output of 3.3V regulator using USB power input (P5V_TRG_USB).
P1V8	1.8V	Output of 1.8V regulator using P3V3 power input.
V_BRD	1.8V/3.3V	Board power - selected from either the 1.8V or 3.3V supplies by a header and shunt.
MCU_PWR	1.8V/3.3V	MCU digital power. Filtered from V_BRD.
VDDA	3.3V	VDDA power for MCU and analog circuits. Filtered from 3V3_MCU.
VREFH	3.3V	Upper reference voltage for ADC on the MCU. Filtered from VDDA.
VREFL	0V	Lower reference voltage for ADC on the MCU. Filtered from VSSA.
VSSA	0V	VSSA power for MCU and analog circuits. Filtered from GND.
GND	0V	Digital Ground.



ICAP Classification:		FCP:	FRG: X	PUR:
Drawing Title:		TWR-K40D100M		
Page Title:		Notes		
Size C	Document Number	SCH-27292 PDF: SPF-27292	Rev A	
Date:	Monday, November 28, 2011	Sheet 2	of 8	

ELEVATOR CONNECTORS		Sheet 8
OSJTAG/USB Bridge Circuit USB Mini B Connector MC9S08JM60 Voltage Translation OSJTAG/JTAG Header SCI Source Selectors Power Supply Circuits	PK40DX256VMD10 MCU 8 MHz XTAL 32.768 KHz XTAL VSSA/VDDA filter VREFH/VREFL filter VREF_OUT VREGIN, VOUT33 VBAT	INFRARED PORT PUSH BUTTONS CAPACITIVE TOUCH PADS WITH LEDs SD CARD SOCKET
TOWER PLUG-IN (TWRPI) SENSOR HEADERS	ANALOG INPUTS MMA8451Q ACCELEROMETER POTENTIOMETER	









