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Find the *WinSystems PCM-CFLASH2-40-0* at our website: *Click HERE*

OPERATIONS MANUAL
PCM-CFLASH-2

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REVISION HISTORY

P/N 403-0029-000

ECO Number	Date Code	Rev Level
ORIGINATED	011012	C
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07-143	080108	G.1

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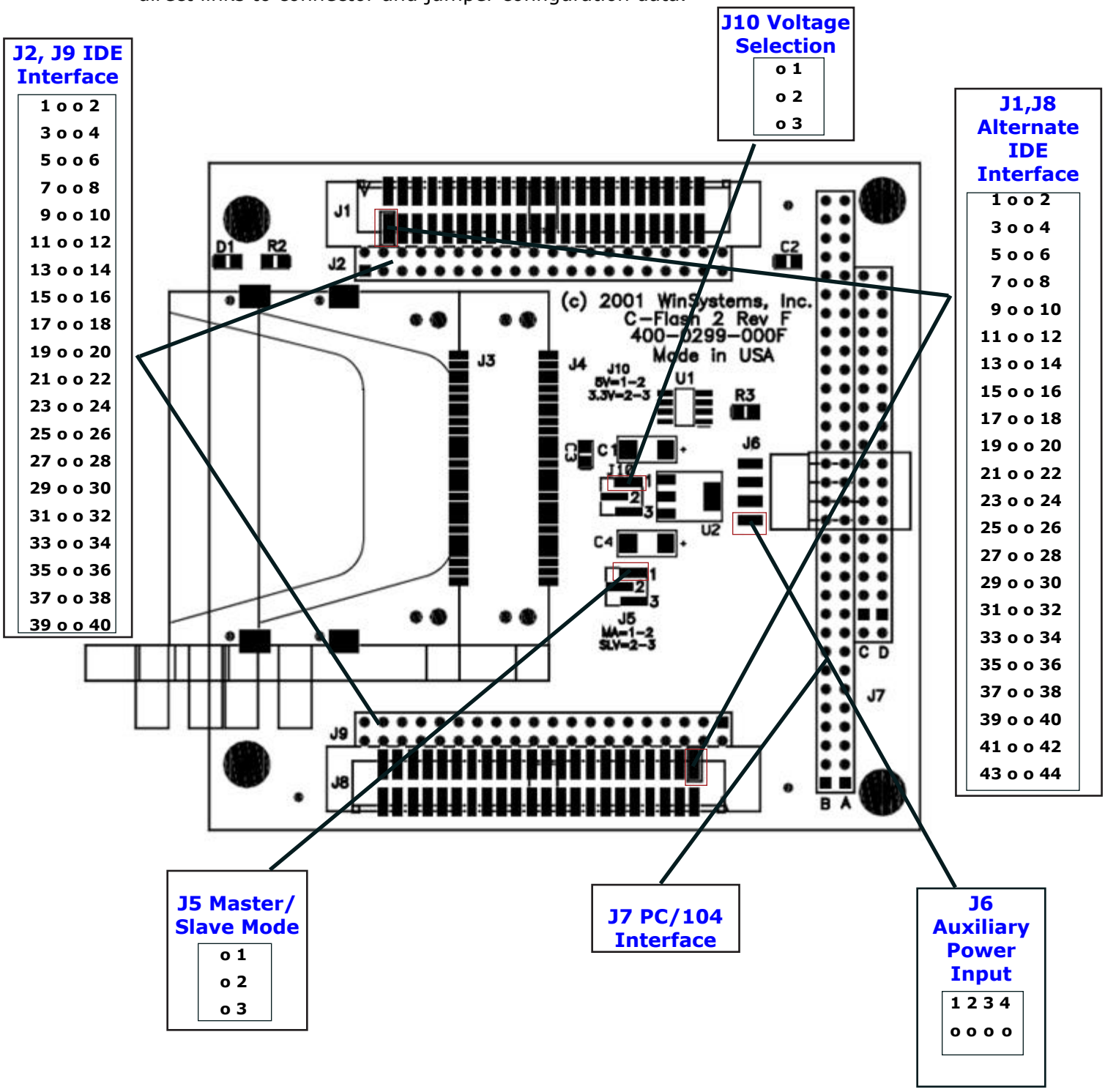
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Visual Index – Quick Reference

Top View - Connectors

For the convenience of the user, a copy of the Visual Index has been provided with direct links to connector and jumper configuration data.



NOTE: The reference line to each component part has been drawn to Pin 1, where applicable. Pin 1 is also highlighted with a red square, where applicable.

Introduction

This manual is intended to provide the necessary information regarding configuration and usage of the PCM-CFLASH-2 board. WinSystems maintains a Technical Support Group to help answer questions regarding usage, or programming of the board. For answers to questions not adequately addressed in this manual, contact Technical Support at (817) 274-7553 between 8 a.m. and 5 p.m. Central Standard Time.

General Information

Features

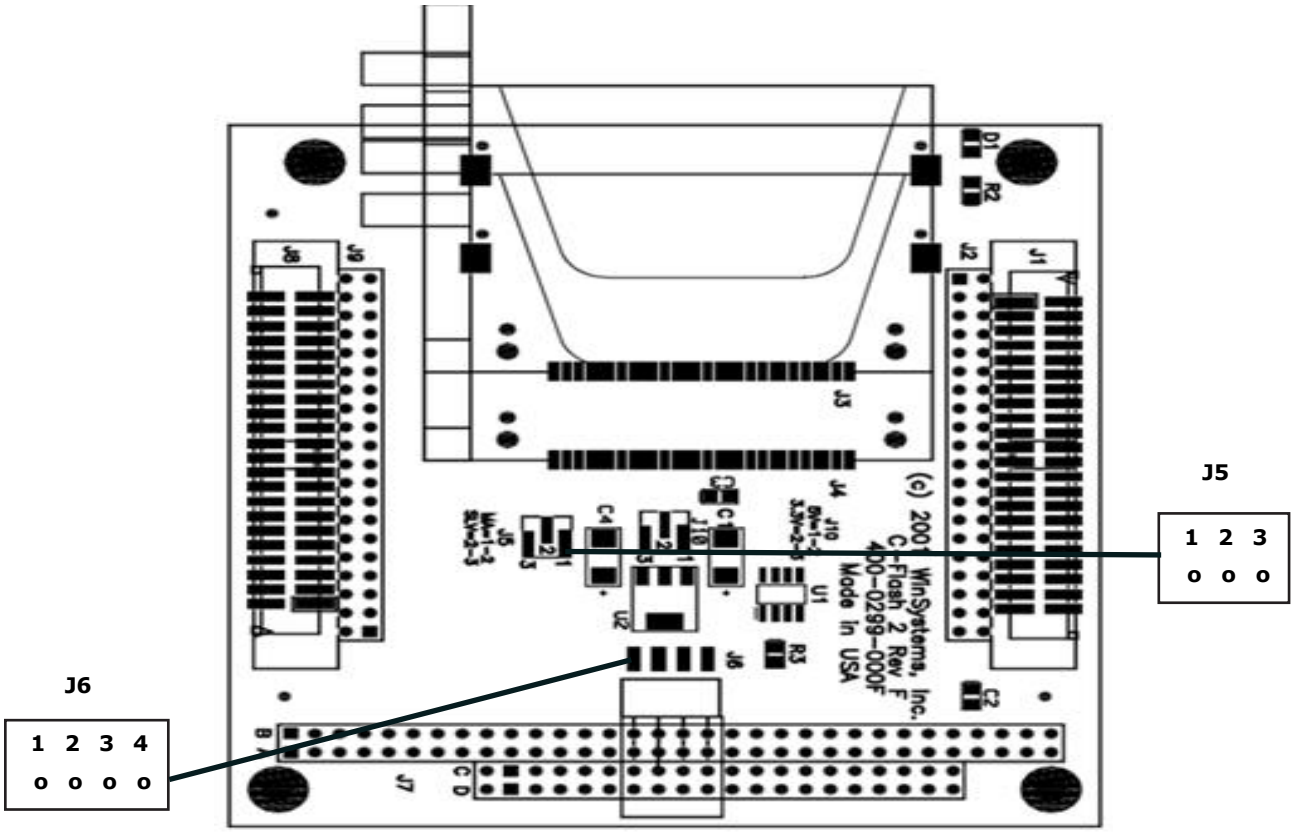
- PC/104 Compatible Flash Disk Adapter Module
- Supports Compact Flash and IBM Microdrives
- Master/Slave operation for multiple drive support
- LED provides visual status indication of data transfer
- Two IDE input/output connectors for cabling flexibility
- +5 Volt only operation

The PCM-CFLASH-2 is a PC/104-compatible adapter module designed specifically to adapt Compact Flash modules for rugged embedded systems use. The adapter provides for master/slave selection as well as providing a visual drive status indicator. Two IDE connectors are provided for maximum cabling flexibility. The Compact Flash Drives are IDE interfaced and are fully software compatible with IDE hard disks. This compatibility at the hardware level means that special software drivers are not required. The PCM-CFLASH-2 supports Compact Flash Type I and II and IBM Microdrives.

Functional Capability

Visual Index

Master/Slave Mode Selection



The PCM-CFLASH-2 can be used in any of four modes.

1. Stand-alone - no other IDE device.
2. As a master to a slave PCM-CFLASH-2.
3. As a secondary drive to another PCM-CFLASH-2.
4. As a secondary drive to an IDE hard disk.

NOTE: Master/Slave capabilities may be limited by certain media.

The jumper block at **J5** selects master/slave mode as shown here.



Auxiliary Power Input

When the PCM-CFLASH-2 is not used on a PC/104 stack, power must be supplied via the connector at **J6**. The pin definitions for J6 are shown here:

Visual Index

J6

1 o	N/C
2 o	GND
3 o	GND
4 o	VCC

IDE Interface

Visual Index

The PCM-CFLASH-2 default IDE interface is made via the connectors at **J2** and **J9**. An alternate IDE interface is available at J1 and J8, wtih 44-pin connectors that supply voltage through the extra pins. Pinout for J2 and J9 is shown here for reference. Pinout for J1 and J8 is shown on the following page. A red activity LED is present at D1.

J2 and J9

Reset*	**1 o o 2**	GND
D7	**3 o o 4**	D8
D6	**5 o o 6**	D9
D5	**7 o o 8**	D10
D4	**9 o o 10**	D11
D3	**11 o o 12**	D12
D2	**13 o o 14**	D13
D1	**15 o o 16**	D14
D0	**17 o o 18**	D15
GND	**19 o o 20**	N/C
GND	**21 o o 22**	GND
IOW	**23 o o 24**	GND
IOR	**25 o o 26**	GND
N/C	**27 o o 28**	ALE
N/C	**29 o o 30**	GND
INTRQ	**31 o o 32**	IOCS16*
A1	**33 o o 34**	N/C
A0	**35 o o 36**	A2
HDCS0	**37 o o 38**	HDCS1
N/C	**39 o o 40**	GND

Alternate IDE Interface

Visual Index

Optional 44-pin IDE connectors with power can be substituted at **J1** and **J8**. Pinouts for the connectors at J1 and J8 are shown here for reference.

J1 and J8

Reset*	**1 o o 2**	GND
D7	**3 o o 4**	D8
D6	**5 o o 6**	D9
D5	**7 o o 8**	D10
D4	**9 o o 10**	D11
D3	**11 o o 12**	D12
D2	**13 o o 14**	D13
D1	**15 o o 16**	D14
D0	**17 o o 18**	D15
GND	**19 o o 20**	N/C
GND	**21 o o 22**	GND
IOW	**23 o o 24**	GND
IOR	**25 o o 26**	GND
N/C	**27 o o 28**	ALE
N/C	**29 o o 30**	GND
INTRQ	**31 o o 32**	IOCS16*
A1	**33 o o 34**	N/C
A0	**35 o o 36**	A2
HDCS0	**37 o o 38**	HDCS1
N/C	**39 o o 40**	GND
VCC	**41 o o 42**	VCC
GND	**43 o o 44**	GND

PC/104 Bus Interface

The PCM-CFLASH-2 supports I/O expansion through the standard PC/104 connectors at **J7**. The PCM-CFLASH-2 supports both 8-bit and 16-bit PC/104 modules. The PC/104 connector pin definitions are provided here for reference purposes.

Visual Index

J7 PC/104 BUS CONNECTOR

GND	**D0 o o C0**	GND	IOCHK#	**A1 o o B1**	GND
MEMCS16#	**D1 o o C1**	SBHE#	SD7	**A2 o o B2**	RESET
IOCS16#	**D2 o o C2**	LA23	SD6	**A3 o o B2**	+5V
IRQ10	**D3 o o C3**	LA22	SD5	**A4 o o B4**	IRQ9
IRQ11	**D4 o o C4**	LA21	SD4	**A5 o o B5**	-5V
IRQ12	**D5 o o C5**	LA20	SD3	**A6 o o B6**	DRQ2
IRQ15	**D6 o o C6**	LA19	SD2	**A7 o o B7**	-12V
IRQ14	**D7 o o C7**	LA18	SD1	**A8 o o B8**	SRDY#
DACK0#	**D8 o o C8**	LA17	SD0	**A9 o o B9**	+12V
DRQ0	**D9 o o C9**	MEMR#	IOCHRDY	**A10 o o B10**	KEY
DACK5#	**D10 o o C10**	MEMW#	AEN	**A11 o o B11**	SMEMW#
DRQ5	**D11 o o C11**	SD8	SA19	**A12 o o B12**	SMEMR#
DACK6#	**D12 o o C12**	SD9	SA18	**A13 o o B13**	IOW#
DRQ6	**D13 o o C13**	SD10	SA17	**A14 o o B14**	IOR#
DACK7#	**D14 o o C14**	SD11	SA16	**A15 o o B15**	DACK3#
DRQ7	**D15 o o C15**	SD12	SA15	**A16 o o B16**	DRQ3
+5V	**D16 o o C16**	SD13	SA14	**A17 o o B17**	DACK1#
MASTER#	**D17 o o C17**	SD14	SA13	**A18 o o B18**	DRQ1
GND	**D18 o o C18**	SD15	SA12	**A19 o o B19**	REFRESH#
GND	**D19 o o C19**	KEY	SA11	**A20 o o B20**	BCLK
			SA10	**A21 o o B21**	IRQ7
			SA9	**A22 o o B22**	IRQ6
			SA8	**A23 o o B23**	IRQ5
			SA7	**A24 o o B24**	IRQ4
			SA6	**A25 o o B25**	IRQ3
			SA5	**A26 o o B26**	DACK2#
			SA4	**A27 o o B27**	TC
			SA3	**A28 o o B28**	BALE
			SA2	**A29 o o B29**	+5V
			SA1	**A30 o o B30**	OSC
			SA0	**A31 o o B31**	GND
			GND	**A32 o o B32**	GND

= Active Low Signal

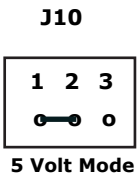
NOTES:

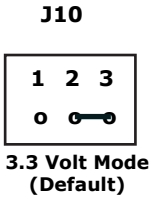
1. Rows C and D are not required on 8-bit modules.
2. B10 and C19 are key locations. WinSystems uses key pins as connections to GND.
3. Signal timing and function are as specified in ISA specification.
4. Signal source/sink current differ from ISA values.

CFLASH Device 3.3V/5V Mode Selection

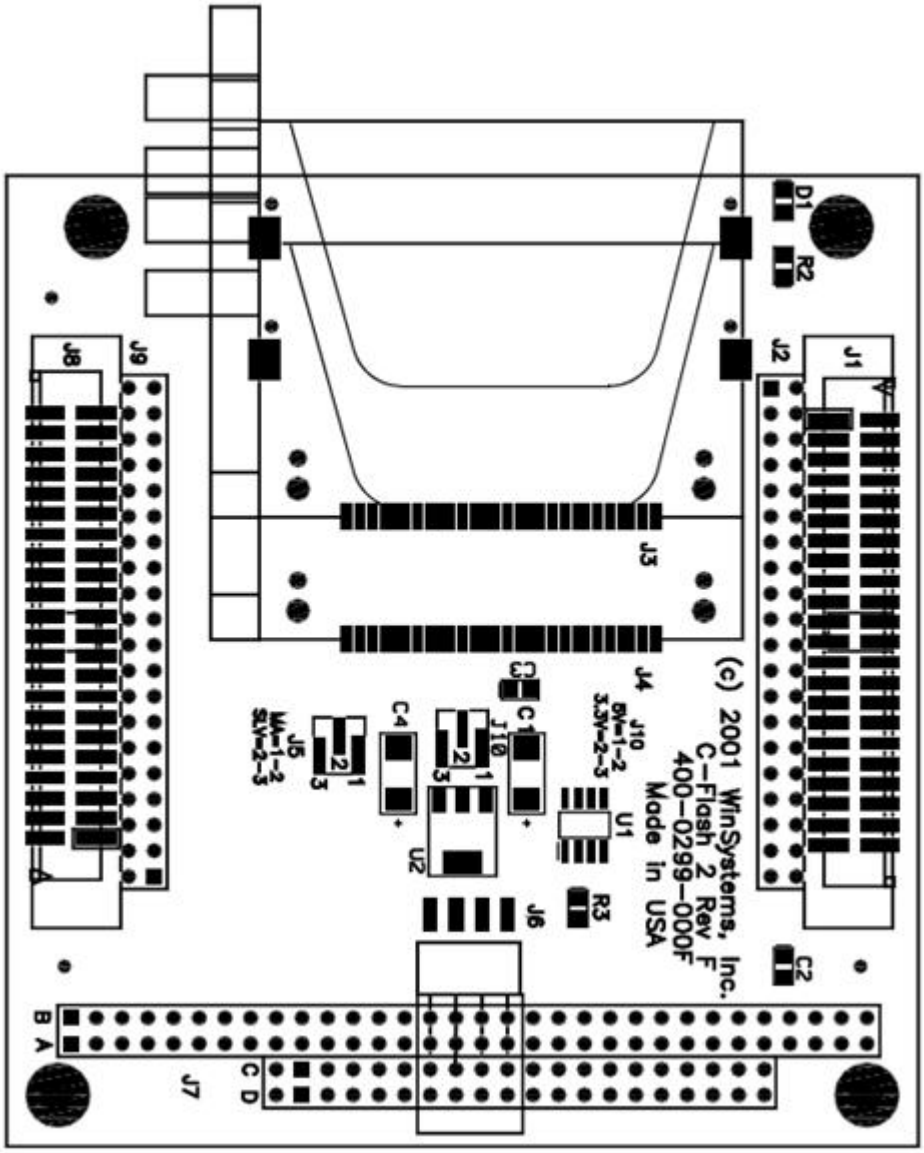
Visual Index

CFlash devices can operate on either 3.3 Volts or 5 Volts. Jumper **J10** allows switching between these two settings. When J10 = 1-2, the CFLASH2 is in 5 Volt operating mode. 3.3 Volt mode is selected with J10 = 2-3. The default mode for the CFlash device is 3.3V (J10 = 2-3). Unless the CompactFlash manufacturer recommends otherwise, we suggest that you operate this device using 3.3V.





PCM-CFLASH-2 Parts Placement Guide



PCM-CFLASH-2 Parts List

ASSM ITEM FROM: PCM-CFLASH2-40-0 ASSM ITEM THRU: PCM-CFLASH2-40-0
PARENT LOC FROM: <FIRST> DEFAULT COMPONENT LOCATION: ARLIN PARENT LOC THRU: <LAST>

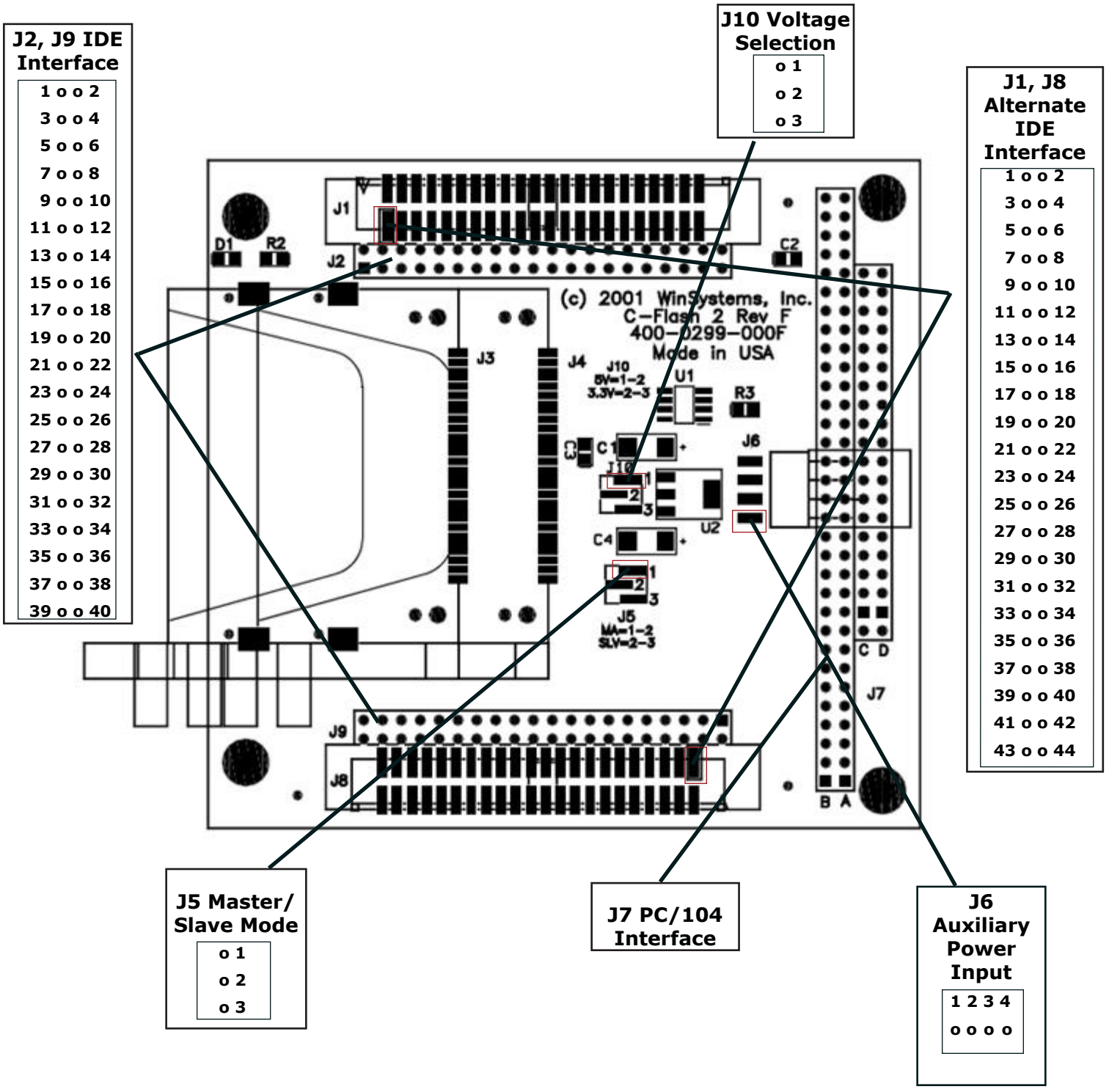
LVL	ITEM KEY	ITEM DESCRIPTION	BOM COMMENT		ITEM TYPE	QTY REQUIRED
PCM-CFLASH2-40-0		PC/104, 16-BIT, 0MB, TYPE 2 COMPACT	PC/104, 16-BIT, 0MB, TYPE 2 COMPACT	FL	F	1.0
1	999-9999-001	SPECIAL NOTES	09/17/03 MEB ECO 03-48		I	1.0
1	999-9999-001	SPECIAL NOTES	04-23-03 MEB ECO 03-04		I	1.0
1	999-9999-001	SPECIAL NOTES	08-09-01 MEB ECO 01-37		I	1.0
1	999-9999-001	SPECIAL NOTES	05-23-01 MEB ECO 01-19		I	1.0
1	999-9999-001	SPECIAL NOTES	04/05/01 MEB (ATTACH ASSY'S TO FIN.GOODS)		I	1.0
1	999-9999-001	SPECIAL NOTES	SPECIAL NOTES		I	0.0
1	0299-001-0000F	ASSY CORE, TOP-SMT PCM-CFLASH2 REV.F			F	1.0
2	999-9999-001	SPECIAL NOTES	09/17/03 MEB ECO 03-48		I	1.0
2	999-9999-001	SPECIAL NOTES	04-23-03 MEB ECO 03-04		I	1.0
2	999-9999-001	SPECIAL NOTES	08-09-01 MEB ECO 01-37		I	1.0
2	999-9999-001	SPECIAL NOTES	05-23-01 MEB ECO 01-19		I	1.0
2	999-9999-001	SPECIAL NOTES	03/20/01 MEB (REVA)		I	1.0
2	999-9999-001	SPECIAL NOTES	SPECIAL NOTES		I	1.0
2	601-0103-503	RES 10K Ohm 5% 1/10W 0805	R1,R3		I	2.0
2	601-0271-503	RES 270 Ohm 5% 1/10w 0805	R2		I	1.0
2	603-1065-82D	CAP 10uF 25v 20% TAN 6032	C1,C4		I	2.0
2	603-1047-803	CAP .1uF 50v 20% CER 0805	C2,C3		I	2.0
2	607-0006-005	LED, RED SMT Stanley Elec BR1112H-TR 3k	D1		I	1.0
2	650-2003-0E0	HDR 1X3 2MM SMT SAMTEC (425 per reel)	J5,J10		I	2.0
2	650-2050-0K1	HEADER, CFLASH TYPE 2 1.27MM .050"PITCH	J4		I	1.0
2	650-0064-0CA	CONN. PC/104, 64PIN STK THRU W/SOLDER	J7A		I	1.0
2	650-0040-0CA	CONN. PC/104, 40PIN STK THRU W/SOLDER	J7B		I	1.0
2	125-0008-000	TRANSISTOR SI4947DY DUAL P-CHANNEL FET	U1		I	1.0
2	670-0004-026	REGULATOR LT1963 3.3V	U2		I	1.0
2	400-0299-000F	PCB, C-Flash2 Rev F	PCB, C-Flash2 Rev F		I	1.0
SUB-ASSEMBLY TOTAL: 0299-001-0000F ARLIN - 18 Items						
1	0299-040-0000F	ASSY-THR-100MIL ADP/PCM-CFLASH2-XX REV.F			F	1.0
2	999-9999-001	SPECIAL NOTES	09/17/03 MEB ECO 03-48		I	1.0
2	999-9999-001	SPECIAL NOTES	04-23-03 MEB ECO 03-04		I	1.0
2	999-9999-001	SPECIAL NOTES	08-09-01 MEB ECO 01-37		I	1.0
2	999-9999-001	SPECIAL NOTES	03/20/01 MEB (REVA)		I	1.0
2	999-9999-001	SPECIAL NOTES	SPECIAL NOTES		I	0.0
2	201-0040-121	HDR 40 RA Aptos #LPHS-40R3-B-032-SP	J2,J9		I	2.0
SUB-ASSEMBLY TOTAL: 0299-040-0000F ARLIN - 6 Items						
1	0299-100-0000F	SUB ASSY, ADP/PCM-CFLASH2 REV.F			F	1.0
2	999-9999-001	SPECIAL NOTES	09/17/03 MEB ECO 03-48		I	1.0
2	999-9999-001	SPECIAL NOTES	04-23-03 MEB ECO 03-04		I	1.0
2	999-9999-001	SPECIAL NOTES	08-09-01 MEB ECO 01-37		I	1.0
2	999-9999-001	SPECIAL NOTES	05-23-01 MEB ECO 01-19		I	1.0
2	999-9999-001	SPECIAL NOTES	SPECIAL NOTES		I	0.0
2	201-0050-012	CARD EJECTOR, CFLASH TYPE 2 1.27MM .050"	ADP-CFLASH=J3 -OR- PCM-CFLASH=J4		I	1.0

ASSM ITEM FROM: PCM-CFLASH2-40-0 ASSM ITEM THRU: PCM-CFLASH2-40-0
PARENT LOC FROM: <FIRST> DEFAULT COMPONENT LOCATION: ARLIN PARENT LOC THRU: <LAST>

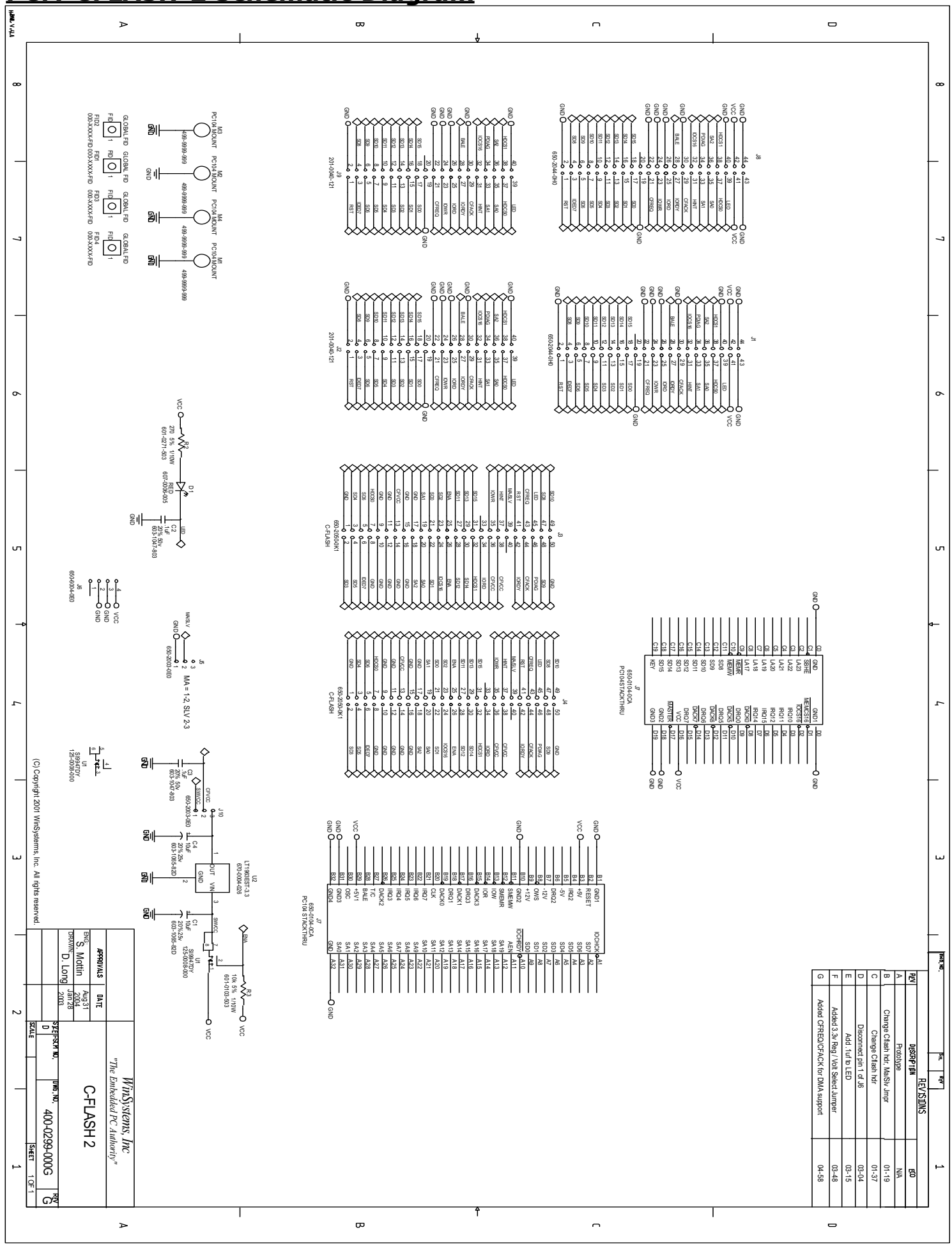
LVL	ITEM KEY	ITEM DESCRIPTION	BOM COMMENT		ITEM TYPE	QTY REQUIRED
2	201-0002-005	JUMPER PLUG, 2MM Aptos MJ-P-045-B-50	J5=1-2		I	1.0
2	999-9999-001	SPECIAL NOTES	J10=2-3		I	1.0
SUB-ASSEMBLY TOTAL: 0299-100-0000F ARLIN - 8 Items						
1	KIT-PCM-STANDOFF-2	PC/104 STANDOFF KIT CONSISTING OF 2	LABEL, STATIC SENSITIVE 130-02		F	1.0
2	CONTRACT LABOR	OUTSIDE CONTRACT LABOR			L	.1
2	999-9999-001	SPECIAL NOTES	04-28-95 MEB (NEW BOM)		I	1.0
2	500-0200-091	SPACER M/F RAF 4000-440-N-MODL.600	SPACER M/F RAF 4000-440-N-MODL.600		I	2.0
2	500-0200-033	SCREW PPH 4-40 X 1/4"	SCREW PPH 4-40 X 1/4"		I	2.0
2	500-0200-092	NUT HEX NYLON 4-40	NUT HEX NYLON 4-40		I	2.0
2	525-0304-001	SIZE 3 COIN ENVELOPE 2.5" X 4.25"	SIZE 3 COIN ENVELOPE 2 1/2 X 4 1/4		I	1.0
SUB-ASSEMBLY TOTAL: KIT-PCM-STANDOFF-2 ARLIN - 6 Items						
1	910-0024-000	LABEL, STATIC SENSITIVE 130-02	LABEL, STATIC SENSITIVE 130-02		I	1.0
1	950-0001-000	BAG STATIC BARRIER 07-0610 6X10	BAG STATIC BARRIER 07-0610 6X10		I	1.0
1	500-0200-174	VINYL, PC-104 PROTECTIVE ESD CAP.	VINYL, PC-104 PROTECTIVE ESD CAP.		I	1.0
TOP ASSEMBLY TOTAL: PCM-CFLASH2-40-0 ARLIN - 13 Items						

Jumper Reference

For the convenience of the user, a copy of the Visual Index has been provided with direct links to connector and jumper configuration data.



NOTE: The reference line to each component part has been drawn to Pin 1, where applicable. Pin 1 is also highlighted with a red square, where applicable.



Specifications

Electrical

Power Requirements	:See drive manufacturer's user manual

Mechanical

Dimensions	:3.6 in x 3.8 in x 0.6 in
PC-Board	:FR-4 Epoxy Glass with 2-signal layers, plated through holes and screened component legend
Jumpers	:0.025 in square posts on 2 mm centers
Connectors	:IDE I/O - IDH-40-LP IDE I/O - STMM-122-02-G-D-SM-P-TR (Optional) Power Input: 4-pin Molex (Optional) PC/104-Bus: COMM CON 50711C-104G

Environmental

Operating Temperature	:-40°C to +85°C using industrial drives
Non-condensing relative Humidity	:8% to 95%
Vibration	:15 G Peak to Peak
Shock	:2000 G Max.

(All parameters depend on media used.)

WARRANTY REPAIR INFORMATION

WARRANTY

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1. To obtain service under this warranty, obtain a return authorization number. In the United States, contact the WinSystems' Service Center for a return authorization number. Outside the United States, contact your local sales agent for a return authorization number.

2. You must send the product postage prepaid and insured. You must enclose the products in an anti-static bag to protect from damage by static electricity. WinSystems is not responsible for damage to the product due to static electricity.

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