DS90C3201,DS90C3202,DS90C363B,DS90C365A, DS90C383B,DS90C385A,DS90C387,DS90C387A, DS90C387R,DS90CF363B,DS90CF364, DS90CF364A,DS90CF366,DS90CF383B, DS90CF384,DS90CF384A,DS90CF384AQ, DS90CF386,DS90CF388,DS90CF388A,DS90CF564

Application Note 1163 TFT Data Mapping for Dual Pixel LDI Application - Alternate A - Color Map

Literature Number: SNLA015

TFT Data Mapping for Dual Pixel LDI Application - Alternate A - Color Map

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INTRODUCTION

The purpose of this application note is to provide the data mapping information for an 8-bit color dual pixel application using the DS90C387 (LDI Transmitter) to the DS90CF388 (LDI Receiver). This is an alternate color mapping scheme and differs from the Open LDI color data mapping. (See AN-1127 for information on Open LDI color mapping).

The tables below show the connections needed when using the LDI chipset (DS90C387 / DS90CF388) with this color mapping.

HOW TO READ THE TABLE

Table 1 is read from left to right. The first column notes the LSB (least significant bit) and MSB (most significant bit) color bit designations. Next are the VGA-TFT Color Bit Names (R, G, B). Note that these are ODD and EVEN (Dual Pixel Application) and are designated with an 'O' and 'E' respectively. Transmitter pins are listed by the DS90C387 'pin name' and pin number. The output signals of the receiver are mirror images of the input signals to the transmitter. These are also listed by the respective pin name and pin number. The last column repeats the TFT Data Signal color designation. Color Data is provided in Table 1 and Control Bits are listed in Table 2.

TABLE 1. 8-Bit Dual Pixel per Clock Input Application

VGA — TFT Data Signal			DS90C387		DS90CF388		TFT Data Signal
LSB/MSB	Color Bit		Pin Name (Pin Number)		Pin Name (Pin Number)		8 Bit Color, Dual Pixel
LSB	RO0		R10 (10)		R10 (8)		RO0
	RO1		R11 (9)		R11 (9)		RO1
	RO2		R12 (8)		R12 (10)		RO2
	RO3		R13 (7)		R13 (11)		RO3
	RO4		R14 (6)		R14 (12)		RO4
	RO5		R15 (5)		R15 (14)		RO5
	RO6		R16 (4)		R16 (15)		RO6
MSB	RO7		R17 (3)		R17 (17)		RO7
LSB	GO0		G10 (2)		G10 (18)		GO0
	GO1		G11 (1)		G11 (19)		GO1
	GO2		G12 (100)		G12 (20)		GO2
	GO3		G13 (99)		G13 (21)		GO3
	GO4		G14 (96)		G14 (22)		GO4
	GO5		G15 (95)		G15 (24)		GO5
	GO6		G16 (94)		G16 (26)		GO6
MSB	GO7		G17 (93)		G17 (27)		GO7
LSB	BO0		B10 (92)		B10 (28)		BO0
	BO1		B11 (91)		B11 (29)		BO1
	BO2		B12 (90)		B12 (30)		BO2
	BO3		B13 (89)		B13 (31)		BO3
	BO4		B14 (88)		B14 (32)		BO4
	BO5		B15 (87)		B15 (34)		BO5
	BO6		B16 (86)		B16 (36)		BO6
MSB	BO7		B17 (85)		B17 (37)		BO7

TABLE 1. 8-Bit Dual Pixel per Clock Input Application (Continued)

VGA — TFT Data Signal			DS90C387		DS90CF388		TFT Data Signal
LSB/MSB	Color Bit		Pin Name (Pin Number)		Pin Name (Pin Number)		8 Bit Color, Dual Pixel
LSB	RE0		R20 (84)		R20 (38)		RE0
	RE1		R21 (81)		R21 (39)		RE1
	RE2		R22 (80)		R22 (40)		RE2
	RE3		R23 (79)		R23 (41)		RE3
	RE4		R24 (78)		R24 (43)		RE4
	RE5		R25 (77)		R25 (46)		RE5
	RE6		R26 (76)		R26 (47)		RE6
MSB	RE7		R27 (75)		R27 (48)		RE7
LSB	GE0		G20 (74)		G20 (49)		GE0
	GE1		G21 (73)		G21 (50)		GE1
	GE2		G22 (72)		G22 (51)		GE2
	GE3		G23 (71)		G23 (52)		GE3
	GE4		G24 (70)		G24 (53)		GE4
	GE5		G25 (69)		G25 (55)		GE5
	GE6		G26 (66)		G26 (57)		GE6
MSB	GE7		G27 (65)		G27 (58)		GE7
LSB	BE0		B20 (64)		B20 (59)		BE0
	BE1		B21 (63)		B21 (60)		BE1
	BE2		B22 (62)		B22 (61)		BE2
	BE3		B23 (61)		B23 (62)		BE3
	BE4		B24 (60)		B24 (64)		BE4
	BE5		B25 (59)		B25 (65)		BE5
	BE6		B26 (58)		B26 (67)		BE6
MSB	BE7		B27 (57)		B27 (68)		BE7

Note: O = Odd (First) Pixel, E = Even (Second) Pixel

TABLE 2. TFT Control Data Signal and CLK

VGA — TFT Control Signal		DS90C387 Pin Name (Pin Number)		DS90CF388 Pin Name (Pin Number)		TFT Control Signal
HSYNC		HSYNC (54)		HSYNC (71)		HSYNC
VSYNC		VSYNC (55)		VSYNC (70)		VSYNC
DEN		DE (56)		DE (69)		DEN
CLK		CLKIN (11)		CLKOUT (42)		CLK

SUMMARY

This color mapping provides the necessary information to connect graphic cards to existing panels using this color mapping. The 'ALT A' color map documented in this application note provides connection information to the respective DS90C387/DS90CF388 LDI chipset Pin Names / Pin Numbers. A careful review of this information is recommended as there is not a standardized color naming convention between 6 bit and 8 bit color data with regard to LSB and MSB designations.

Notes

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