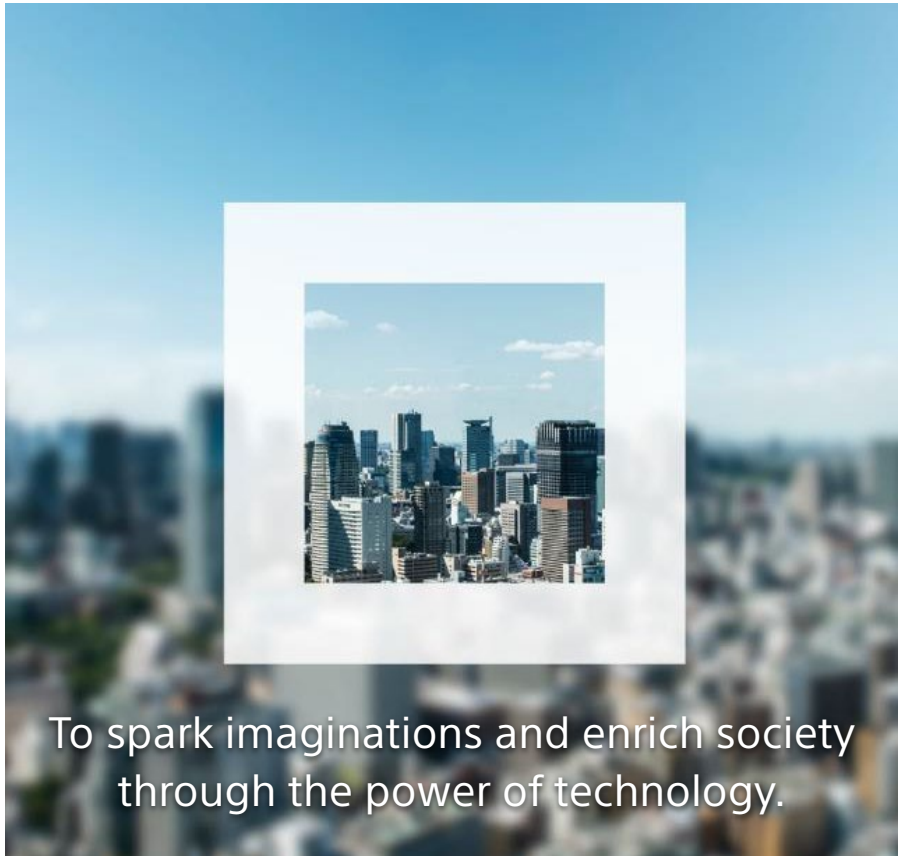
SONY

CAS000 operation Spec.

Rev. 1.0

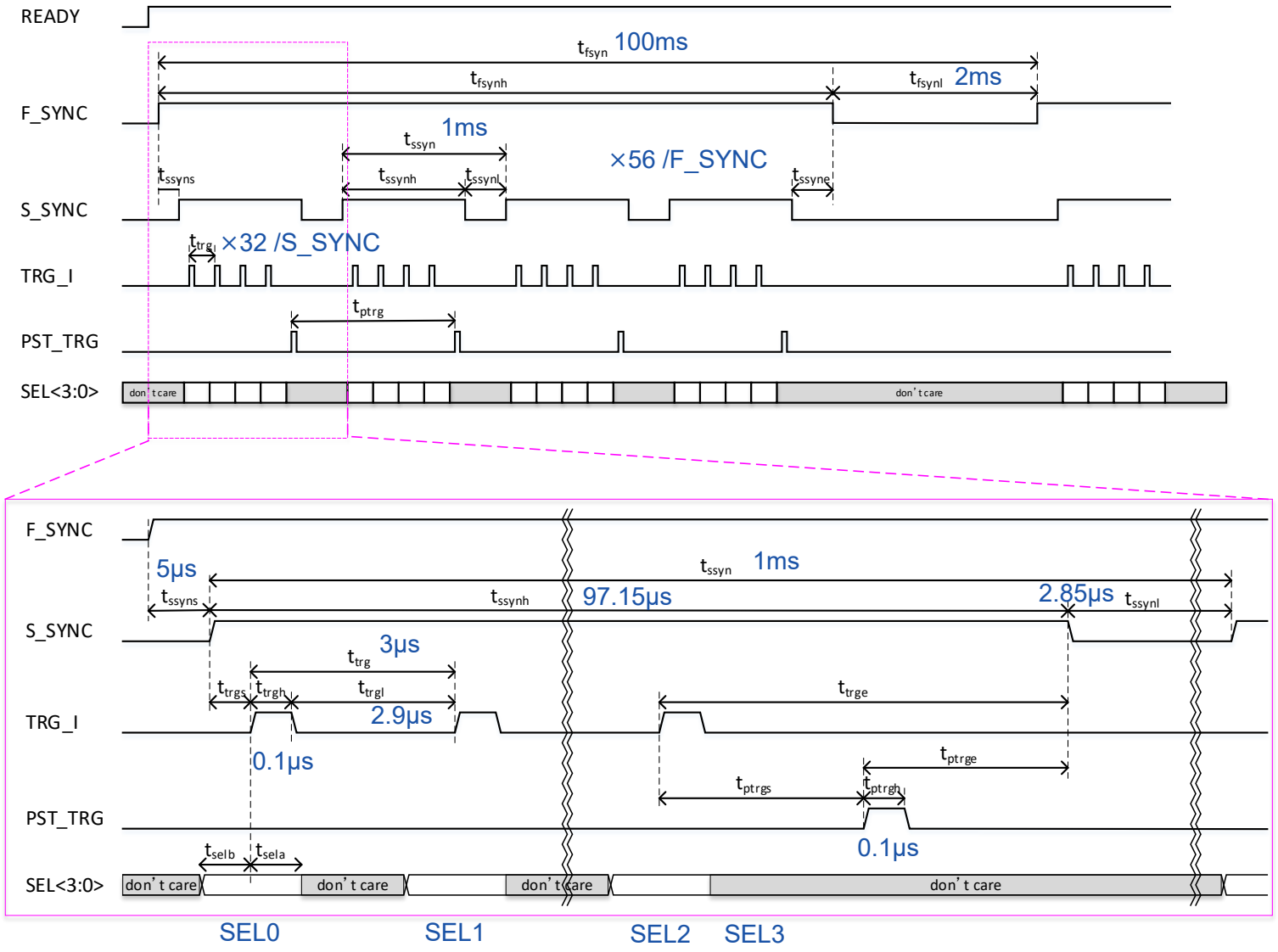


Sony Semiconductor Solutions Group

Setting Overview

- Array Mode
- Detection range : 150m
- Area Division Control(LD Number) : 4
- SEL Signal change 0,1,2,3,0,1,2,3…(Loop).
- Specifying the Sampling Frequency : 1GHz
- Number of horizontal pixels : 192
- Output Data Mode : Ranging
- Aligns the data length

Timing Chart overview



SEL Signals are going to change 0,1,2,3,0,1,2,3….

IMX459 Setting

IMX459 Setting Item		IMX459 Setting Range	CAS000 Setting	IMX459 Application Note
Input Clock Freq.	INCK/REFCK Frequency[MHz]	16, 20, 24, 30	20Hz	2.3. Clock Specifications
MIPI	output data rate [Mbps/Lane]	250MHz ~	800MHz	2.3. Clock Specifications
	Number of Lines	2, 4	4	2.3. Clock Specifications
Element Select	Pixel Basic Control	Line, Array	Array	6.1. Basic Operation
	Area Divition Control(LD Number)	1, 2, 4, 8, 12, 24	4	6.2.3. Area Division Control (Pixel Control in LD Emission Division)
	Reverse Operation	Normal, Reverse	Normal	6.3.2. Reverse Operation
	Horizontal Offset [Hroi_offset]	0 ~ 24 SPAD	-	6.2.1. Area Control(Line Mode)
	Vertial_ACTIVE Area width[Vact]	3 ~ 42 SPAD	-	6.2.1. Area Control(Line Mode)
	Vertial_ACTIVE Area Offset[Vact_start]	1 ~ 187 SPAD	-	6.2.1. Area Control(Line Mode)
	Vertial_ACTIVE Area Number of STEP	-	1	6.2.1. Area Control(Array Mode)
	Vertial ROI Area width[Vroi]	1 ~ 21 SPAD	3	6.2.1. Area Control(Line Mode)
	Vertial ROI offset[Vroi_org]	0 ~ 41 SPAD	0	6.2.1. Area Control(Line Mode)
Data Processing	Specifying the Sampling Frequency	0.5G, 1G [Hz]	1G	7.2.2. Downsampling
	Number of horizontal pixels	192, 96, 48	192	6.4. Output Pixel Count Settings
	Measuring distance [m]	150m, 300m	150	-
	Output Data Mode	Ranging, Echo, Histgram	Ranging	7.2.1. Output Mode
	Upsampling	No, x2fine, x2coarse	No	7.2.7.3. Upsampling
Ambient Light Measure	number of horizontal pixels of ambient light	192, 576	192	7.2.4. Pixel Addition
	sampling rate of ambient light	once at 1, 2, 4, 8 cycle	1	7.2.5. Ambient Light Measurement
	number of times of ambient light	0x0 ~ 0xFFFF	255	7.2.6. Reference Light Measurement
Reference light	Reference lights Measurement	No, 1, 2,,,	No	7.2.7. Reflected Light Measurement
Temp. Vol. Control	Thermometer	On, Off	On	8.1.1. Thermometer Control
	Voltage meter Control	On, Off	On	8.1.2. Voltmeter Control
Output Data format	number of pixels into each one line	Ranging = 8, Histgram = 1	8	7.7.4. Active Area
	Ambient data output	Yes, No	Yes	7.7.2. Ambient Data
	Statistics data output	Yes, No	Yes	7.7.3. Statistics Data
	Common information output	Yes, No	Yes	7.7.4.1. Common Information
	Ranging mode other info. Output	Yes, No	Yes	7.7.4.2. Ranging Mode
	output Echo Count	1~10	10	7.7.4.2. Ranging Mode
	output Echo Priority	Ordered by time , by score	By score	7.4.2. Echo Detection Process
	Output Starting/Ending Sampling Number	No Output, Output	-	7.7.4.4. Histogram Mode
	Number of bin	0x0 ~ 0x7E7	-	7.7.4.4. Histogram Mode
	Aligns the data length	Yes, No	Yes	7.7. Output Data Format

Revision history

Revision	Date	Remarks
1.0	2022.3.24	First release