HI Series Tracking and Recognition Smart Module

—— Sony

1 Product Introduction

Equipped with domestically developed intelligent AI chips and self-designed image recognition algorithms, the system performs real-time autonomous detection and identification of targets, automatically or manually selects targets for locking and tracking, while simultaneously providing off-target deviation measurements relative to the field of view center.

2 product function

1、 Supports AI intelligent detection and target recognition

2、 Supports initiating tracking by target confidence level, click, or other methods

3、 The tracking target supports adaptive aperture and allows manual adjustment of the aperture size

4、 Supports re-detection after tracking loss and demonstrates strong resistance to background interference and occlusion

5、 with electronic amplification capability

6、 Supports picture-in-picture display. You can control whether to show or hide picture-in-picture.

7、 Supports OSD customization

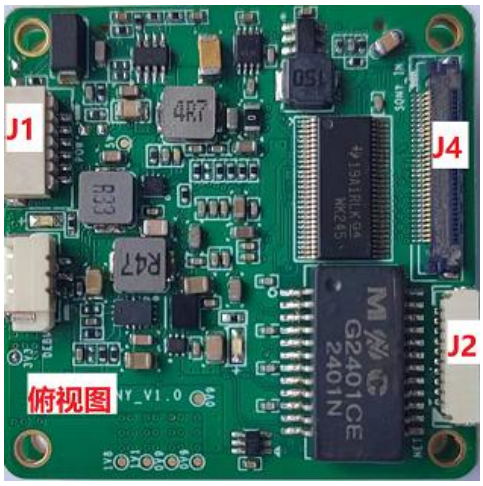
8、 Supports adjusting target position and size during tracking

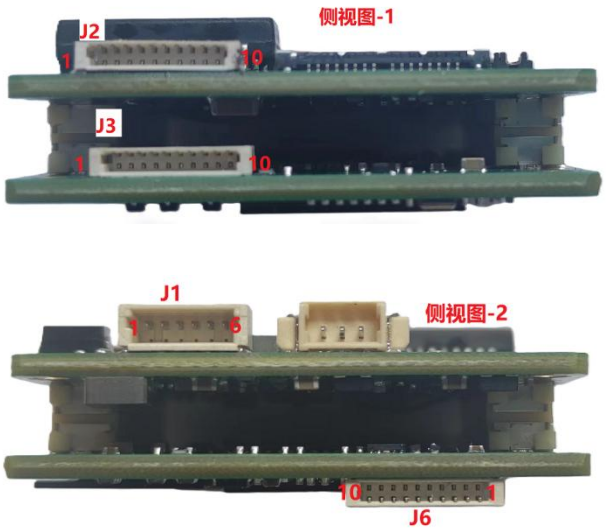
9、 Strong adaptability to target deformation

3 Specification Parameters

Video parameter	Upload video	Visible Light: Sony Watch Movement and Its Domestic Replacement Infrared: Resolution of 1280 or lower
	Network output video	1080P@30Hz
	Video display	Picture-in-picture, OSD information customization
Tracking metrics	Tracking frame rate	50HZ
	Tracking output delay	1 frame
	Tracing accuracy	±2 pixels
	Target memory tracking function	Obstruction ≤3 seconds
	Target size	16×16 to 128×128 pixels
	Tracking Mode	A. Manual confirmation B. Automatic recognition and confirmation
Monitoring indicators	Data refresh rate	≥25Hz
	Detect quantity	≥ 10 (different types, multiple objectives)
	Detectable	Visible light: ≥32×32 pixels Infrared: ≥16×16 pixels
	Stabilization test	Visible light: ≥64×64 pixels Infrared: ≥32×32 pixels
Electrical interface	Video input interface	LVDS, USB3.0 (compatible with 2.0)
	Video output interface	Gigabit port (compatible with 100 Mbps)
	Communication interface	TTL
	Power input	DC-12V/2A
Environmental suitability	Working temperature	-40℃～60℃
	Storage temperature	-45℃～80℃
	Launch shock	≥200g
Other	Core board size	38*38*13mm (customizable size)
	Average power consumption	<4W@25℃ (excluding power consumption of visible light modules and infrared mechanisms)

4 Interface Definition





J1 interface (power communication): (Model: SH1.0_6P 1mm pitch surface-mount pin socket)

Pin definition:

Pin number	Signal name	Signal definition	Direction
1	Power supply positive	+12V	
2		+12V	
3	Power supply ground	GND	
4		GND	
5	Communication serial port	RXD	Tracker receiving
6		TXD	Tracker send

J2 interface (Gigabit network): (Model: BM10B-SURS-TF 0.8mm pitch surface-mount pin socket)

Pin definition:

Pin number	Signal name	Signal definition
1	Network	MDI2-
2		MDI2+
3		MDI1-
4		MDI1+
5		MDI3-
6		MDI3+
8		MDI4-
9		MDI4+
7、10	Signal ground	GND

Note: 100Mbps network connection to pins 1, 2, 3, 4, and 10

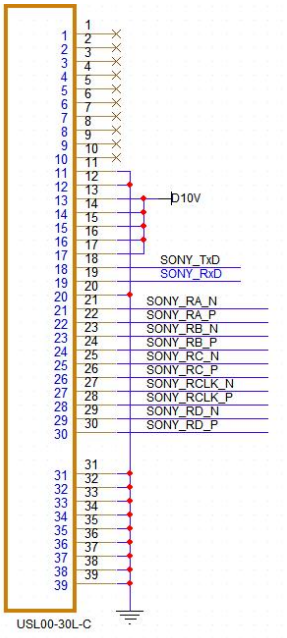
J3 interface (SD card slot): (Model: BM10B-SURS-TF 0.8mm pin layout)

Pin definition:

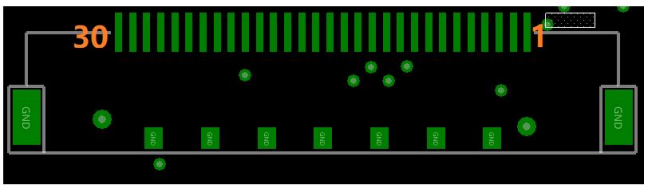
Pin number	Signal name	Signal definition
1	SDIO signal	SDIO0_CARD_DETECT
2	SDIO signal	SDIO0_CDATA2
3	SDIO signal	SDIO0_CDATA3
4	SDIO signal	SDIO0_CCMD
5	Source	3.3V
6	SDIO signal	SDIO0_CCLK_OUT
7	Power supply ground	GND
8	SDIO signal	SDIO0_CDATA0
9	SDIO signal	SDIO0_CDATA1
10	Power supply ground	GND

J4 Interface (LVDS Input) – Schematic Design

(Model: USL00-30L-C)



PCB Design (Top View)



J6 interface (USB3.0) (Model: BM10B-SURS-TF 0.8mm pitch surface-mount pin socket)

Pin number	Signal name	Signal definition	Remarks
1	USB source	VBUS	Main equipment output
2			
3	The earth	GND	
4			
5	USB2.0 data transfer or TYPE-C OTG	USB_D-	Twisted-pair
6		USB_D+	
7	TYPEC_TX signal	TYPEC_TX-	Twisted-pair
8		TYPEC_TX+	
9	TYPEC_RX signal	TYPEC_RX-	Twisted-pair
10		TYPEC_RX+	

remarks：

1）USB2.0 to pins 1, 2, 3, 4, 5, and 6

2）Twisted Pair Cables Should Be Kept as Short as Possible.