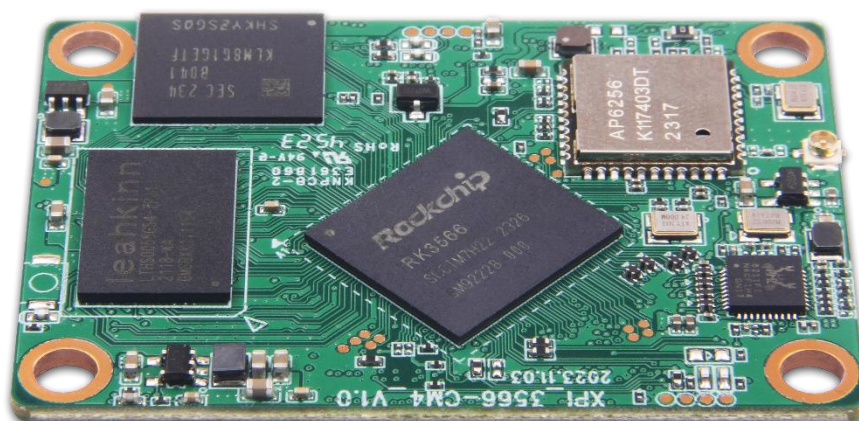


深圳金亚太科技有限公司

Shenzhen Geniatech Co.,Ltd.

SPECIFICATION

MODEL:XPI-3566-CM4



Website: www.geniatech.com

Address: Room 02-04, 10/F, Block A, Building 8, Shenzhen International Innovation Valley,
Dashi Road, Nanshan District, Shenzhen, Guangdong, China

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Revision History

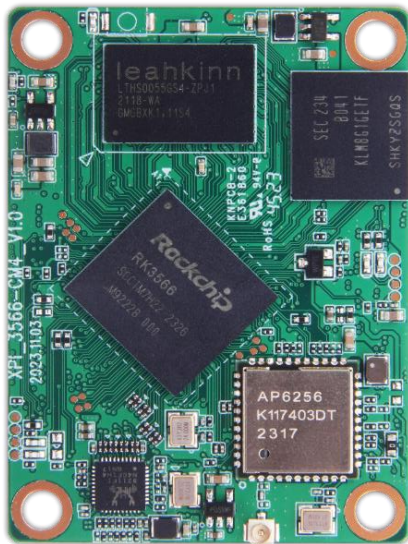
VERSION	DATE	PAGE	DESCRIPTION	AUTHOR
V1.0	20230325	10	Initial Version	lzc
V1.1	20240110	11	Update the interface definition	lzc

1. GENERAL DESCRIPTION

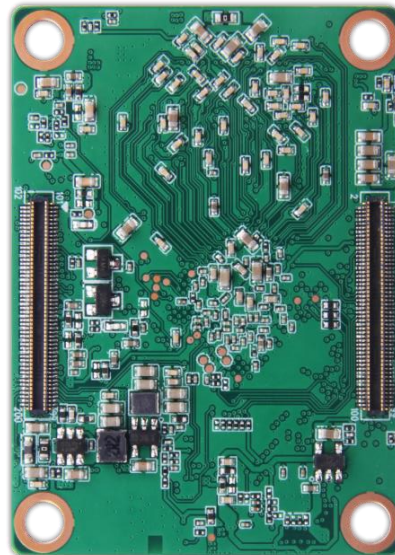
The XPI-3566-CM4 is designed based on the Rockchip RK3566 platform and is fully compatible with the CM4 carrier board produced by Raspberry Pi, which is suitable for integration into smart home applications, youth programming education and IoT products.

This product's key features including a Rock-Chip RK3566 high-performance and low power 64-bit quad-core processor, HDMI display support at resolutions up to 4KP60, hardware video decode at up to 4KP60, hardware video encode at up to 1080P60, 1GB LPDDR (up to 8GB) , 8GB EMMC(up to 32GB),Type-C for USB OTG, Bluetooth 5.0, dual-band 2.4/5 GHz wireless LAN.

2. PRODUCT OVERVIEW



TOP



BOTTOM



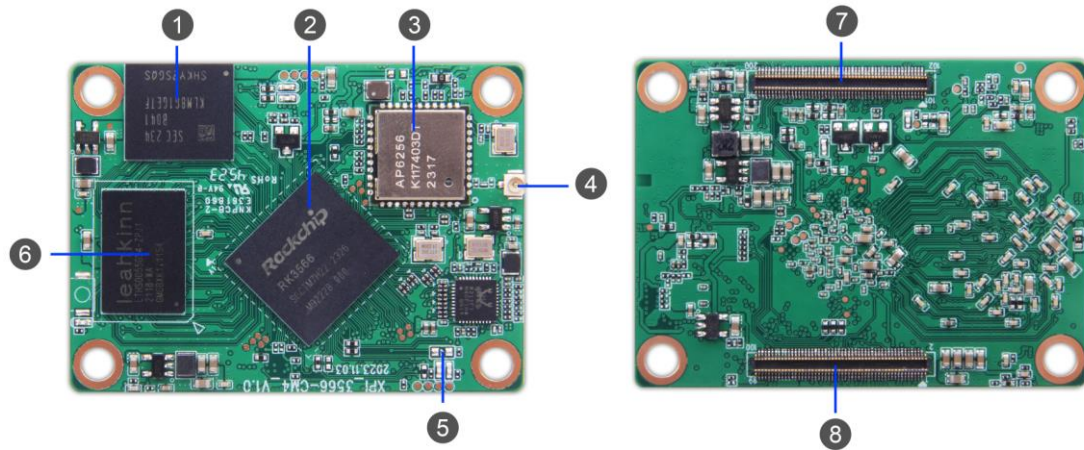
RK3566 Ref Block Diagram (Typical Application Case)



4. SPECIFICATION CHARACTERISTICS

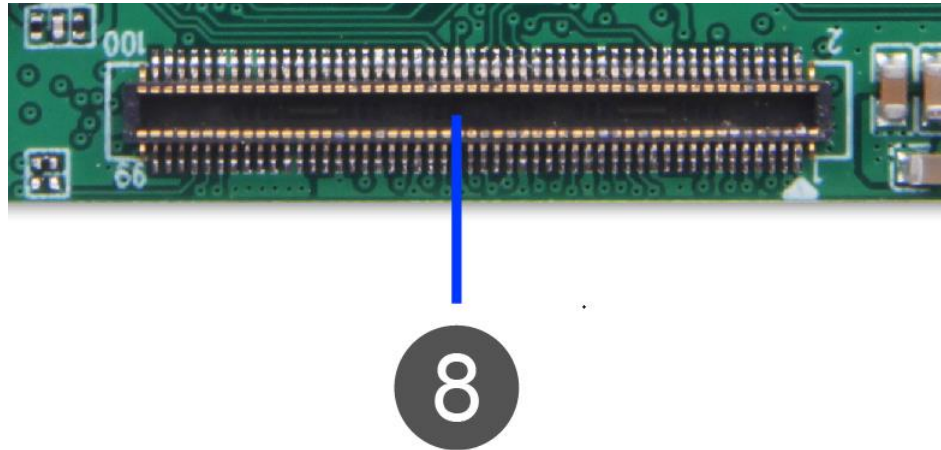
CHIPSET	RK 3566	
MARKET AREA	Global	
PROCESSOR	OS	Debian 11/Raspberry Pi OS
	CPU	Quad-core ARM Cortex-A55 CPU
	GPU	OpenGL ES 1.1/2.0/3.2, OpenCL 2.0 and Vulkan 1.1. Embedded high-performance 2D acceleration hardware
	NPU	supports INT8/INT16/FP16/BFP16 MAC hybrid operation. supports TensorFlow/MXNet/PyTorch/Caffe network models converted.
	LPDDR4	1G (up to 8GB optional)
	EMMC FLASH	8GB eMMC (up to 32GB Optional)
NETWORK	Wired Network	Onboard Gigabit Ethernet PHY supporting IEEE1588
	WIFI	WIFI Module 2.4G/5.0G
	Bluetooth	BT5.0(integrated in the Wi-Fi module)
INTERFACE	HDMI Out	*1(up to 4Kp60 supported)
	USB	*1 USB 2.0 + 1 USB 3.0
	MIPI-CSI	*1(4 Lane)
	MIPI DSI	*1(2 Lane)
	MIPI DSI	*1(4 Lane)
	PCIe	*1
	GPIO	*1 Standard 28-pin GPIO header Can be expanded to UART, SPI, I2C, PWM, SDIO, DPI, PCM, GPCLK function
ADAPTER	DC 5V / 2A	
POWER CONSUMPTION	Standby: 110mA Maximum: 200mA (Theoretical)	
DIMENSIONS	55*40*4.7mm	
WEIGHT	12g	
WORK ENVIRONMENT	Relative humidity: 10% ~ 90% Storage temperature: 0~85℃ Operating temperature: 0℃ ~60℃	
CARRIER BOARD	Raspberry Pi-CM4 IO Board	

5.HARDWARE INTERFACE



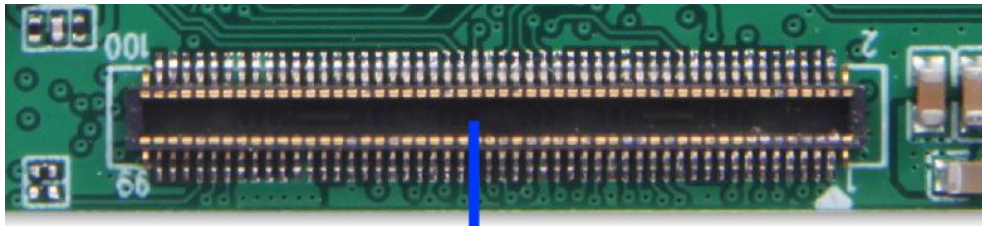
PIN	interface	Description
1	EMMC chip	8GB eMMC (up to 32GB Optional)
2	CPU chip	Quad-core ARM Cortex-A55 CPU up to 1.8GHz
3	WIFI chip	AP6256 WIFI MODULE
4	RF stand	Support Wi-Fi 2.4G/5.0G/BT5.0
5	LED Light	Monochrome red light, power indication function
6	LPDDR chip	1G (up to 8GB Optional)
7	PIN TO PIN stand	PIN 101-PIN200
8	PIN TO PIN stand	PIN 1-PIN100

PIN TO PIN MALE INTERFACE DEFINITION (PIN1-PIN50):



PIN	定义	PIN	定义
1	GND	2	GND
3	PHY0_MDI3+-(1.8V IN)	4	PHY0_MDI1+-(1.8V IN)
5	PHY0_MDI3--(1.8V IN)	6	PHY0_MDI1--(1.8V IN)
7	GND	8	GND
9	PHY0_MDI2--(1.8V IN)	10	PHY0_MDI0--(1.8V IN)
11	PHY0_MDI2+-(1.8V IN)	12	PHY0_MDI0+-(1.8V IN)
13	GND	14	GND
15	PHY0_LED1/CFG_LDO0-(1.8V IN)	16	NO
17	PHY0_LED2/CFG_LDO1-(1.8V IN)	18	NO
19	NO	20	eMMC_RSTn/FSPI_D2/FLASH_WPn/GPIO1_C7_d-(1.8V/3.3V OUT)
21	PI_NLED/GPIO4_A6_d-(3.3V IN)	22	GND
23	GND	24	SDMMC2_D2_M0/GPIO3_D0_d-(3.3V/1.8V OUT)
25	I2S1_SDO0_M0_PMIC/GPIO1_A7_d-(3.3V OUT)	26	I2S1_LRCK_TX_M0_PMIC/GPIO1_A5_d-(3.3V OUT)
27	I2S1_SDI0_M0/PDM_SDI0_M0_PMIC /GPIO1_B3_d-(3.3V IN)	28	PWM13/UART9_RX/GPIO4_C6_d-(3.3V OUT)
29	I2S1_SCLK_TX_M0_PMIC/GPIO1_A3_d-(3.3V OUT)	30	SPI0_MOSI_M0/GPIO0_B6_u-(3.3V OUT)
31	PWM12/UART9_TX/GPIO4_C5_d-(3.3V OUT)	32	GND
33	GND	34	SPI0_MISO_M0/GPIO0_C5_d-(3.3V OUT)
35	I2C3_SCL_ACODEC/GPIO1_A1_u-(3.3V OUT)	36	I2C3_SDA_ACODEC/GPIO1_A0_u-(3.3V OUT)
37	SPI0_CLK_M0/GPIO0_B5_u-(3.3V OUT)	38	PDM_CLK0_M0_PMIC/GPIO1_A6_d-(3.3V OUT)
39	I2C2_SDA_M1/GPIO4_B4_d-(3.3V OUT)	40	I2C2_SCL_M1/GPIO4_B5_d-(3.3V OUT)
41	SDMMC2_D1_M0/GPIO3_C7_d-(3.3V/1.8V OUT)	42	GND
43	GND	44	I2S1_MCLK_M0_PMIC/GPIO1_A2_d-(3.3V OUT)
45	SDMMC2_D0_M0/GPIO3_C6_d-(3.3V/1.8V IOUT)	46	SDMMC2_CLK_M0/GPIO3_D3_d-(3.3V/1.8V OUT)
47	SDMMC2_CMD_M0/GPIO3_D2_d-(3.3V/1.8V OUT)	48	SDMMC2_D3_M0/GPIO3_D1_d-(3.3V/1.8V OUT)
49	I2S2_SCLK_TX_M1/GPIO4_B7_d-(3.3V OUT)	50	UART1_RTSn_M1/I2S2_MCLK_M1/GPIO4_B6_d-(3.3V OUT)

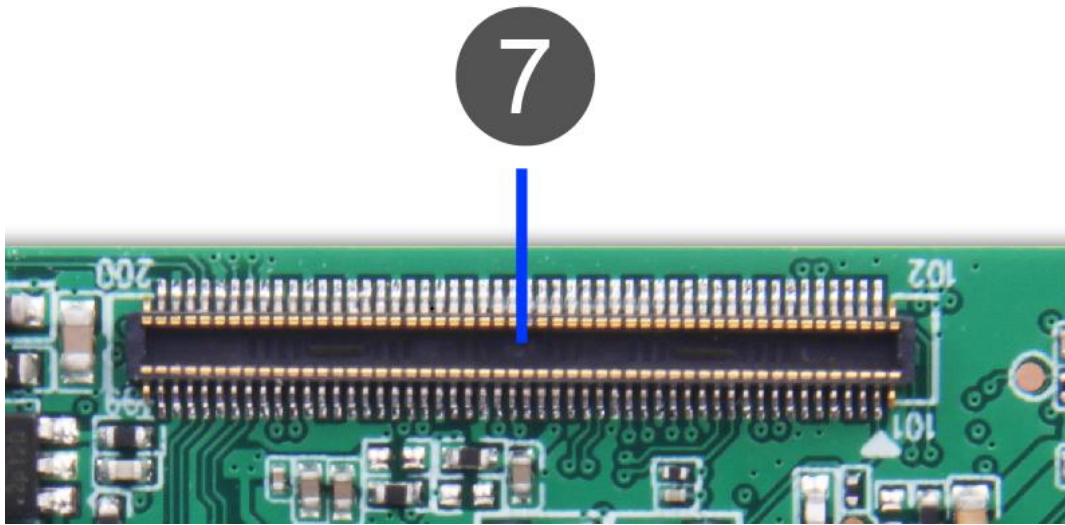
PIN TO PIN MALE INTERFACE DEFINITION (PIN51-PIN100):



8

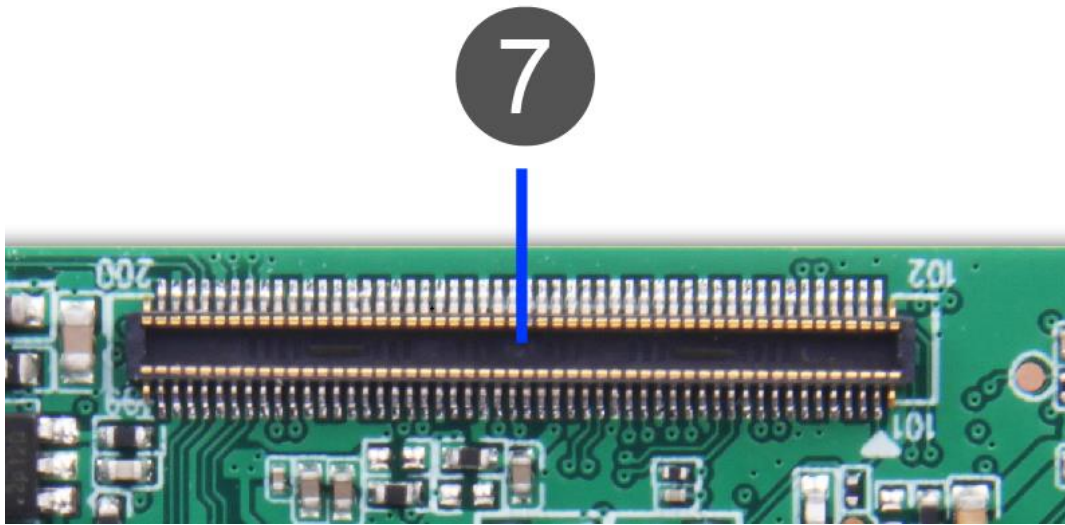
PIN	定义	PIN	定义
51	UART1_RX_M1/GPIO3_D7_d-(3.3V OUT)	52	GND
53	GND	54	SPIO_CSO_M0/GPIO0_C6_d-(3.3V OUT)
55	UART1_TX_M1/GPIO3_D6_d-(3.3V OUT)	56	I2C1_SCL/GPIO0_B3_u-(3.3V OUT)
57	SDMMC0_CLK/GPIO2_A2_d-(3.3V/1.8V OUT)	58	I2C1_SDA/GPIO0_B4_u-(3.3V IN+OUT)
59	GND	60	GND
61	SDMMC0_D3/GPIO2_A0_u-(3.3V/1.8V IN+OUT)	62	SDMMC0_CMD/GPIO2_A1_u-(3.3V/1.8V IN+OUT)
63	SDMMC0_D0/GPIO1_D5_u-(3.3V/1.8V IN+OUT)	64	NO
65	GND	66	GND
67	SDMMC0_D1/GPIO1_D6_u-(3.3V/1.8V IN+OUT)	68	NO
69	SDMMC0_D2/GPIO1_D7_u-(3.3V/1.8V IN+OUT)	70	NO
71	GND	72	NO
73	NO	74	GND
75	SD_PWR_ON/GPIO0_A5_d-(3.3V IN)	76	SD_DET/GPIO0_A4_u-(3.3V OUT)
77	VCC5V0_SYS-(5V IN)	78	VCC_3V3/ VCC_1V8-(3.3V/1.8V OUT)
79	VCC5V0_SYS-(5V IN)	80	I2C0_SCL_PMIC/GPIO0_B1_u-(3.3V OUT)
81	VCC5V0_SYS-(5V IN)	82	I2C0_SDA_PMIC/GPIO0_B2_u-(3.3V IN+OUT)
83	VCC5V0_SYS-(5V IN)	84	VCC_3V3-(3.3V OUT)
85	VCC5V0_SYS-(5V IN)	86	VCC_3V3-(3.3V OUT)
87	VCC5V0_SYS-(5V IN)	88	VCCA_1V8-(1.8V OUT)
89	WIFI_REG_ON_H/GPIO2_B1_d-(3.3V OUT)	90	VCCA_1V8-(1.8V OUT)
91	BT_REG_ON_H/GPIO2_B7_d-(3.3V OUT)	92	RUN_PG/GPIO4_A5_d-(3.3V OUT)
93	nRPIBOOT/SARADC_VIN0_KEY/RECOV-(3.3V OUT)	94	GPIO4_A2/UART7_TX/GPIO4_A2_d-(3.3V/1.8V OUT)
95	WORKING_LEDEN_H/GPIO0_C4_d-(3.3V IN)	96	GPIO4_A3/UART7_RX/GPIO4_A3_d-(3.3V/1.8V OUT)
97	GPIO4_C6_D/GPIO4_B0_d-(3.3V/1.8V IN)	98	GND
99	GLOBAL_EN/GPIO4_A1_d-(3.3V/1.8V IN)	100	RESETn-(3.3V IN)

PIN TO PIN MALE INTERFACE DEFINITION (PIN101-PIN150):



PIN	定义	PIN	定义
101	USB_OTG0_ID-(5.0V IN)	102	PCle_CLK_nRSQ/GPIO1_B0_d-(1.8V IN)
103	USB_OTG0_DM-(5.0V IN+OUT)	104	NO
105	USB_OTG0_DP-(5.0V IN+OUT)	106	NO
107	GND	108	GND
109	PCle_Nrst/GPIO1_B2_d-(1.8V IN)	110	PCIE20_REFCLKP-(1.8V OUT)
111	NO	112	PCIE20_REFCLKN-(1.8V OUT)
113	GND	114	GND
115	MIPI_CSI_RX_D0N-(1.8V IN)	116	PCIE20_RXP-(1.8V IN)
117	MIPI_CSI_RX_D0P-(1.8V IN)	118	PCIE20_RXN-(1.8V IN)
119	GND	120	GND
121	MIPI_CSI_RX_D1N-(1.8V IN)	122	PCIE20_TXP-(1.8V OUT)
123	MIPI_CSI_RX_D1P-(1.8V IN)	124	PCIE20_TXN-(1.8V OUT)
125	GND	126	GND
127	MIPI_CSI_RX_CLK0N-(1.8V IN)	128	NO
129	MIPI_CSI_RX_CLK0P-(1.8V IN)	130	NO
131	GND	132	GND
133	MIPI_CSI_RX_D2N-(1.8V IN)	134	NO
135	MIPI_CSI_RX_D2P-(1.8V IN)	136	NO
137	GND	138	GND
139	MIPI_CSI_RX_D3N-(1.8V IN)	140	NO
141	MIPI_CSI_RX_D3P-(1.8V IN)	142	NO
143	NO	144	GND
145	NO	146	NO
147	NO	148	NO
149	NO	150	GND

PIN TO PIN MALE INTERFACE DEFINITION (PIN151-PIN200):



PIN	定义	PIN	定义
151	HDMITX_CEC_M0/GPIO4_D1_u-(1.8V IN+OUT)	152	NO
153	HDMI_TX_HPDIN-(1.8V IN)	154	NO
155	GND	156	GND
157	MIPI_DSI_TX0_D0N/LVDS_TX0_D0N-(1.8V OUT)	158	NO
159	MIPI_DSI_TX0_D0P/LVDS_TX0_D0P-(1.8V OUT)	160	NO
161	GND	162	GND
163	MIPI_DSI_TX0_D1N/LVDS_TX0_D1N-(1.8V OUT)	164	NO
165	MIPI_DSI_TX0_D1P/LVDS_TX0_D1P-(1.8V OUT)	166	NO
167	GND	168	GND
169	MIPI_DSI_TX0_CLKN/LVDS_TX0_CLKN-(1.8V OUT)	170	HDMI_TX2P_PORT-(1.8V OUT)
171	MIPI_DSI_TX0_CLKP/LVDS_TX0_CLKP-(1.8V OUT)	172	HDMI_TX2N_PORT-(1.8V OUT)
173	GND	174	GND
175	MIPI_DSI_TX1_D0N-(1.8V OUT)	176	HDMI_TX1P_PORT-(1.8V OUT)
177	MIPI_DSI_TX1_D0P-(1.8V OUT)	178	HDMI_TX1N_PORT-(1.8V OUT)
179	GND	180	GND
181	MIPI_DSI_TX1_D1N-(1.8V OUT)	182	HDMI_TX0P_PORT-(1.8V OUT)
183	MIPI_DSI_TX1_D1P-(1.8V OUT)	184	HDMI_TX0N_PORT-(1.8V OUT)
185	GND	186	GND
187	MIPI_DSI_TX1_CLKN-(1.8V OUT)	188	HDMI_TXCLKP_PORT-(1.8V OUT)
189	MIPI_DSI_TX1_CLKP-(1.8V OUT)	190	HDMI_TXCLKN_PORT-(1.8V OUT)
191	GND	192	GND
193	MIPI_DSI_TX1_D2N-(1.8V OUT)	194	MIPI_DSI_TX1_D3N-(1.8V OUT)
195	MIPI_DSI_TX1_D2P-(1.8V OUT)	196	MIPI_DSI_TX1_D3P-(1.8V OUT)
197	GND	198	GND
199	HDMITX_SDA/GPIO4_D0_u-(1.8V IN+OUT)	200	HDMITX_SCL/GPIO4_C7_u-(1.8V OUT)

6. PRECAUTIONS

1. Do not squeeze、 distort or disassemble the board.
2. Keep the board away from static electricity.
3. Keep the board away from water and other liquid.
4. Clean the board with soft and clean dry cloth when it's dirty.
5. Don't use long connect wires which may affect performance and image quality.

After-sales service

Tel: (+ 86) 755 86028588

E-Mail: support@geniatech.com

Website: www.geniatech.com

Address: Room 02-04, 10/F, Block A, Building 8, Shenzhen International Innovation Valley, Dashi Road, Nanshan District, Shenzhen, Guangdong, China