

**Wuxi Auto-Link World Information
Technology Co., LTD**

User manual

Model: MTCA05

CONTENT

Part 1 Style figure

Part 2 Statement & Notice

Part 3 Function List

Part 4 Statement

Manufacturer: Wuxi Auto-Link World Information Technology
Co., LTD

制造商：无锡车联天下信息技术有限公司

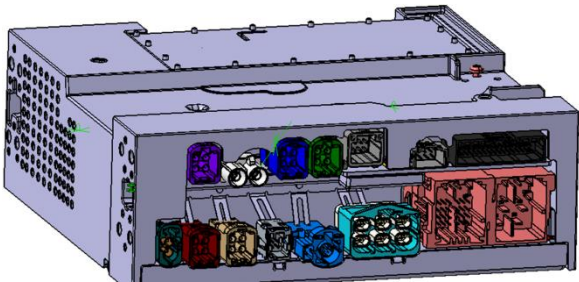
Address: No.8, Huayun Road, Wuxi City, Jiangsu Province

地址：江苏省无锡市华运路 8 号

Wuxi Auto-Link World Information Technology Co., LTD

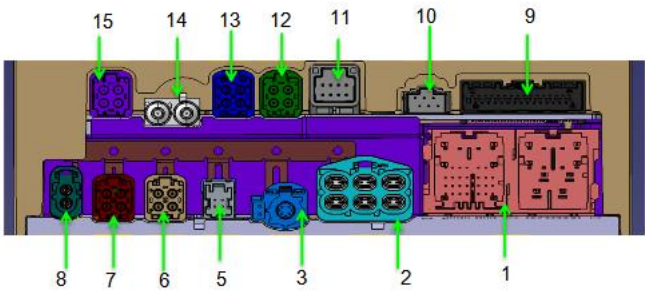
Part 1 Style figure

第 1 部分样式图（立体外观图）



Pin definition

1.1 引脚定义



order number	Connector name	Equipment end supplier	Device-end connector part number
1	M1-primary connector (12 + 32pin)	Molex	2005062012
2	M7-Eth _ Ethernet	Amphenol	VNTBR23A2001SR Coding A,Black
3	M5-USB_ user	Amphenol	HSDNBRPPCB7B
5	M4-USB_K song	Amphenol	HSCHD02AR00011R
6	M9-Instrument / HUD / C 2 / C 1	Amphenol	FRNARPPCB04A Coding A,Black
7	M10-First-passenger screen/streaming media	Amphenol	FRNBRPPCB04A Coding B,White
8	M14-BT/WIFI External	Aptiv	35667171

Wuxi Auto-Link World Information Technology Co., LTD

order number	Connector name	Equipment end supplier	Device-end connector part number
	antenna		
9	M2-Signal connector (32pin)	Amphenol	10153118-132KALF Coding A,Black
10	M15-The gateway OBD	Amphenol	10153745-206KLF
11	M3-Camera PWR	Sumitomo	60988549
12	M11-4 in 1, panoramic camera input	TE (one supply priority)	2321775-5 Coding E
		Electricity connection (second supply)	818014016
13	M12-DMS/IMS/Streaming media / OMS 1 input	Amphenol	FRNCRPPCB04A Coding C,Blue
14	M13-Twin camera input DVR/Face ID	TE (one supply priority)	2314188-2 Coding B,CREAW WHITE
15	M6-4-1, antenna input FM1/AM,FM2/DAB,GPS, SXM	Aptiv	35496218
		Electricity connection (second supply)	818014330

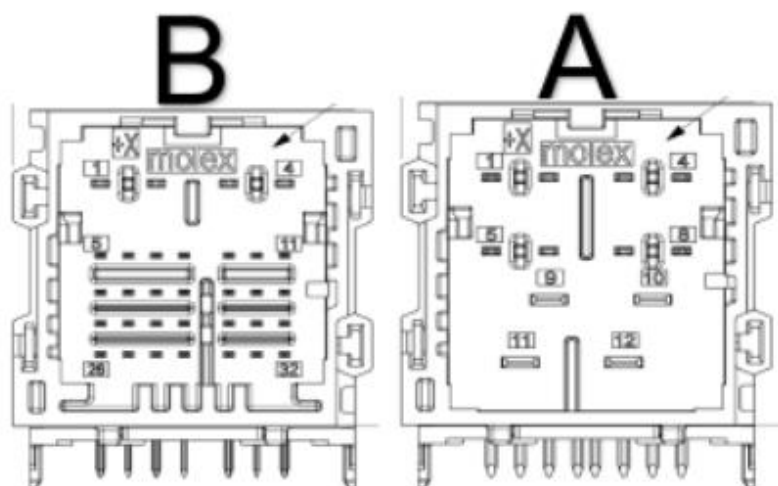
5.10.1 M1-Main connector

5.10.1 M1-主接插件

5.10.1.1 Schematic diagram

5.10.1.1 示意图

Wuxi Auto-Link World Information Technology Co., LTD



Molex: 2005062012

serial number	The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
1	A1	RL+	OUT	Analog Out	3A	Built-in power amplifier RL +	needless
2	A2	RR+	OUT	Analog Out	3A	Built-in power amplifier RR +	
3	A3	FR+	OUT	Analog Out	3A	Built-in power amplifier FR +	
4	A4	FL+	OUT	Analog Out	3A	Built-in power amplifier FL +	
5	A5	RL-	OUT	Analog Out	3A	Built-in power amplifier RL-	
6	A6	RR-	OUT	Analog Out	3A	Built-in power amplifier RR-	
7	A7	FR-	OUT	Analog Out	3A	Built-in power amplifier FR-	

Wuxi Auto-Link World Information Technology Co., LTD

8	A8	FL-	OUT	Analog Out	3A	Built-in power amplifier FL-	
9	A9	VBAT 2	IN	Ground2	20A		need
10	A10	GND 2	IN	PWR2	20A		
11	A11	VBAT 1	IN	Ground1	20A		
12	A12	GND 1	IN	PWR1	20A		
13	B1	Built-in power amplifier: two heavy bass channels (two channels in parallel) +	OUT	Analog Out	6A		needless
14	B2	Built-in power amplifier with two heavy bass channels (two channels in parallel) -	OUT	Analog Out	6A		
15	B3	Large screen power supply +	OUT	PWR	2.4A	12v power supply, IMax:2.88A	
16	B4	Large Screen Power Supply-	OUT	Ground	2.4A	12v power supply, IMax:2.88A	
17	B5	Built-in power amplifier _ central voice speaker +	OUT	Analog Out	3A		
18	B6	Built-in power amplifier _ AVAS	OUT	Analog Out	3A	Built-in power amplifier AVAS output	

Wuxi Auto-Link World Information Technology Co., LTD

		speaker +					
19	B7	Built-in power amplifier _ Medium speaker-	OUT	Analog Out	3A		
20	B8	Built-in power amplifier _ AVAS speaker-	OUT	Analog Out	3A	Built-in power amplifier AVAS output	
21	B9	AMP _ PWR enables control of signal output amplifier	I/O	High and effective 	12v	High level effectively enables Operating voltage: MAX 16V; normal 14.4V; MIN 6V Operating current: MAX 0.2 A; normal 0.05A; MIN 0.01 A	need
22	B10	USB_DET1	I/O	Low effective	0V	Receiving the external USB user box enable signal, Normal condition: 3.3V. Less than 2V enabling	
23	B11	NC					
24	B12	Central control screen power supply +	OUT	PWR	2A	12v power supply, IMax:2.4A	need
25	B13	Instrument screen power supply +	OUT	PWR	2.4A	12v power supply, IMax:2.88A	
26	B14	Central	OUT	Ground	2A		

Wuxi Auto-Link World Information Technology Co., LTD

		Control Screen Power Supply-					
27	B15	Instrument Screen Power Supply-	OUT	Ground	2.4A		
28	B16	E-Call_MU TE E-Call mute signal input	I/O	Low effective	0V	Normal: For the high resistance state Mute: 0V, less than 0.3V voltage is effective	
29	B17	The T-BOX wakes up the host	I	High and effective	> 4V	GPIO. High level is effective, the output level of T-BOX is> 4V, host mcu gets high level (3.3v); T-BOX _ GPIO output open circuit (suspended), ground or level <4V, host mcu gets low level	needless
30	B18	The Host awakens the T-BOX	O			GPIO. High level is effective, the output level of the host is> 4V, T-BOX mcu gets high level (3.3v), the host GPIO output is open circuit (suspended),	needless

Wuxi Auto-Link World Information Technology Co., LTD

						grounding or level is <4V, T-BOX mcu gets low level	
31	B19	CAN 0 _ FD _ HCAN bus intelligent into the network H vehicle intelligent into the network high	I/O	Databus	100mA	120 Ω terminal resistance, design reserved	demand
32	B20	CAN 0 _ FD _ LKAN bus intelligent into network L vehicle intelligent into network low	I/O	Databus	100mA	120 Ω terminal resistance, design reserved	
33	B21	ANT_ PWR AM /FM/DAB antenna for power supply	OUT	PWR	100mA	12V output, mos tube control Maximum current is 150 mA	
34	B22	KEY _ POWER sound off / on signal I / O, long press for 3 seconds, multimedia a restart	I/O	Digital volume output, Low effective	Less than 0.3V	reference circuit 	needless
35	B23	KEY AD0 Steering	I/O	Analog IN		Hardware reserved,	

Wuxi Auto-Link World Information Technology Co., LTD

		wheel key signal input				reference circuit 	
36	B24	KEY AD1 Steering wheel key signal input	I/O	Analog IN		Hardware reserved, reference circuit 	
37	B25	The GND steering wheel button is ground	I/O	Analog IN			
38	B26	CAN 1 _ FD _ HCAN bus chassis network H vehicle chassis network height	I/O	Databus	100mA	120 Ω terminal resistance, design reserved	demand
39	B27	CAN 1 _ FD _ L CAN bus chassis network L the vehicle chassis network is low	I/O	Databus	100mA		
40	B28	CAN2_H CAN bus energy network H complete vehicle energy network is high	I/O	Databus	100mA	120 Ω terminal resistance, design reserved	
41	B29	CAN2_L CAN bus	I/O	Databus	100mA		

Wuxi Auto-Link World Information
Technology Co., LTD

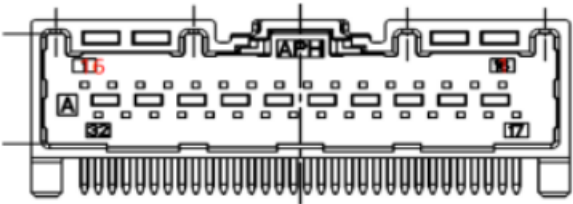
		energy network L the vehicle energy network is low					
42	B30	KEY _ SPINB Volume knob signal B _ IO signal	I/O	Analog IN		Hardware reserved, reference circuit 	needless
43	B31	KEY _ SPINA volume knob signal A _ IO signal	I/O	Analog IN		Hardware reserved, reference circuit 	
44	B32	GND volume knob ground					

5.10.2 M2-Signal plug-in

5.10.2 M2-信号接插件

5.10.2.1 Schematic diagram

5.10.2.1 示意图



Amphenol: 10153118-132KALF

Wuxi Auto-Link World Information Technology Co., LTD

serial number	The pin number	Feet name	inputoutput	Signal type	rated current	remark	Tang EV model pin demand
1	1	AUX1_R+	I/O	Analog IN		100Ω impedance, signal line (shielding with pin2 and pin18)	needless
2	2	AUX1_L+	I/O	Analog IN		Signal line (shielding together with pin1 and pin18)	
3	3	AUX2_R+	I/O	Analog IN		100 Ω impedance, signal line (shielding with pin4 and pin20)	
4	4	AUX2_L+	I/O	Analog IN		100 Ω impedance, signal line (shielding with pin3 and pin20)	
5	5	MIC_RF_AGND	I/O	Analog IN	6mA@8V	Pin 6, shielding of Pin 21	need
6	6	MIC_RF_N	I/O	Analog IN	6mA@8V	Pin 6, Pin 21 twisted pair	
7	7	MIC_LF_P	I/O	Analog IN	6mA@8V	Pin 7, Pin 23 twisted pair	
8	8	MIC_RB_P	I/O	Analog IN	6mA@8V	Pin 8, Pin 24 twisted pair	
9	9	GND	OUT	Ground			
10	10	A2B_B_N		Differential signal, A2B audio bus B terminal negative electrode	300mA	output	
11	11	A2B_B_P		Differential signal, A2B, audio bus, B, correct pole	300mA@8V	output	

Wuxi Auto-Link World Information Technology Co., LTD

serial number	The pin number	Feet name	inputoutput	Signal type	rated current	remark	Tang EV model pin demand
12	12	A2B_B_GND		PIN 10 & PIN 11 shielding ground		output	
13	13	A2B_A_P		Differential signal, A2B audio bus, A correct pole	300mA	Design reserved	needless
14	14	A2B_A_N		Differential signal, A2B audio bus A negative terminal	300mA	Design reserved	
15	15	A2B_A_GND		PIN 13 & PIN 14 shielding ground		reserved	
16	16	MIC_5_N	I/O	Analog IN	6mA@8V	Pin 16, Pin 32 twisted pair	
17	17	AUX1_GND	I/O	Analog IN		The ded of Pin 1,2,18	
18	18	AUX1_R-/AUX1_L-	I/O	Analog IN		Shield them together with pin1 and pin2	
19	19	AUX2_GND		Analog IN		AUX signal ground (shield from pin3,4, pin20)	
20	20	AUX2_R-/AUX2_L-		Ground		Pin 3, pin4 is put together to shield	
21	21	MIC_RF_P	I/O	Analog IN	6mA@8V	And pin6, pin21 twisted pair	need
22	22	MIC_LF_AGND	I/O	Analog IN	6mA@8V	Pin 7, shielding of Pin 23	
23	23	MIC_LF_N	I/O	Analog IN	6mA@8V	Pin 7, Pin 23 twisted pair	
24	24	MIC_RB_N	I/O	Analog IN	6mA@8V	Pin 8, Pin 24	
25	25	MIC_RB_AGND	I/O	Analog IN	6mA@8V	Pin 8, shielding of Pin 24	

Wuxi Auto-Link World Information Technology Co., LTD

serial number	The pin number	Feet name	input/output	Signal type	rated current	remark	Tang EV model pin demand
26	26	MIC_LB_N	I/O	Analog IN	6mA@8V	Pin 26, Pin 27 twisted pair	
27	27	MIC_LB_P	I/O	Analog IN	6mA@8V	Pin 26, Pin 27 twisted pair	
28	28	MIC_LB_AGND	I/O	Analog IN	6mA@8V	Pin 26, shielding of Pin 27	
29	29	MIC_6_P	I/O	Analog IN	6mA@8V	Pin 29, Pin 30 twinning	needless
30	30	MIC_6_N	I/O	Analog IN	6mA@8V	Pin 29, Pin 30 twinning	
31	31	MIC_5/6_AGN D	I/O	Analog IN	6mA@8V	A ground shared by Pin 29, Pin 30, Pin 16 and Pin 32	
32	32	MIC_5_P	I/O	Analog IN	6mA@8V	Pin 32, Pin 16 Pinning	

5.10.3 M3-Camera PWR

5.10.3 M3-Camera PWR

5.10.3.1 Schematic diagram

5.10.3.1 示意图



住友: 60988549

The pin number	Feet name	Input/output	Signal type	current	remarks	Tang EV model pin demand
----------------	-----------	--------------	-------------	---------	---------	--------------------------

Wuxi Auto-Link World Information Technology Co., LTD

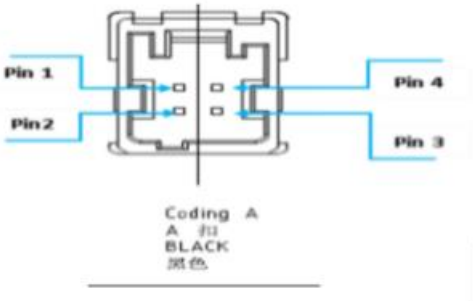
The pin number	Feet name	Input/out put	Signal type	current	remarks	Tang EV model pin demand
1	DMS_POW+	OUT	PWR	Itype=250mA Imax = 850 mA; 850 mA @ 12 V (duration of 10ms / frame)	Transient 30us current of 5A 12V power supply: LED and camera are this pin foot power supply;	need
2	IMS_POW+	OUT	PWR	Itype=150mA Imax=500mA	DC=9v~16v 12V power supply	need
3	OMS1_POW+	OUT	PWR	Itype=300mA Imax=500mA	12V power supply	needless
4	NC	-				
5	DMS_POW-	OUT	Ground	Itype=250mA Imax=850mA	12V power supply	need
6	IMS_POW-	OUT	Ground	Itype=150mA Imax=500mA	12V power supply	need
7	OMS1_POW-	OUT	Ground	Itype=300mA Imax=500mA	12V power supply	needless
8	NC	-				

5.10.4 M4-USB_K song

5.10.4 M4-USB_K 歌

5.10.3.1 Schematic diagram

5.10.3.1 示意图



Amphenol: HSCHD02AR00011R

Wuxi Auto-Link World Information Technology Co., LTD

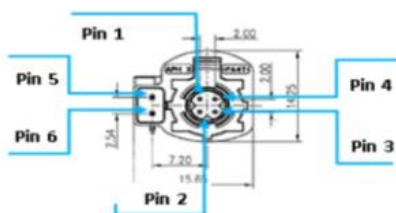
The pin number	Feet name	Input/output	Signal type	rated current	rated current	remarks	Tang EV model pin demand
1	GND	OUT	Ground	300mA	500mA	90 Ω impedance	Not required (for debug and map upgrades only)
2	UHF_USB_DP	IN	BUS	2-16mA	50mA	90 Ω impedance	
3	UHF_USB_DM	IN	BUS	2-16mA	50mA	90 Ω impedance	
4	UHF_5V	OUT	5v	300mA	500mA	90 Ω impedance	

5.10.5 M5-USB_user

5.10.5 M5-USB_用户

5.10.5.1 Schematic diagram

5.10.5.1 示意图



Amphenol: HSDNBRPPCB7B

The pin number	Feet name	Input/output	Signal type	rated current	maximum current	remarks	Tang EV model pin demand
1	USB_DM	I/O	BUS	2-16mA	50mA	90Ω impedance	need
2	TF_USB_DP	I/O	BUS	2-16mA	50mA	90 Ω impedance 90 Ω阻抗	
3	USB_DP	I/O	BUS	2-16mA	50mA	90 Ω impedance	
4	TF_USB_DM	I/O	BUS	2-16mA	50mA	90 Ω impedance	
5	USB_12V	OUT	PWR	1A	2A		

Wuxi Auto-Link World Information Technology Co., LTD

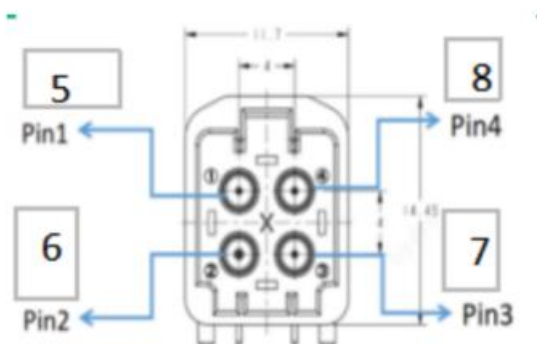
The pin number	Feet name	Input/output	Signal type	rated current	maximum current	remarks	Tang EV model pin demand
6	USB_GND	OUT	GND	1A	2A		

5.10.6 M6-FM1/AM,FM2/DAB,GPS,SXM

5.10.6 M6-FM1/AM,FM2/DAB,GPS,SXM

5.10.6.1 Schematic diagram

5.10.6.1 示意图



Aptiv: 35496218

The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
1	GPS			IType: 30mA@3.3V IMax: 100mA	50 Ω impedance The power supply ground and the shielding ground land together	Needless
2	Sirius XM			IType: 75mA@5V IMax: 120mA	50 Ω impedance The power supply ground and the shielding ground land together	
3	FM1 / AM 1 / DRM / HD _ Radio antenna			IType: 50mA@12V IMax: 100mA	50 Ω impedance, and the POC power supply is configurable. Non-coexistence	Need

Wuxi Auto-Link World Information Technology Co., LTD

The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
					with host independent hard wire power supply (shared with FM2 / DAB independent power supply hard wire) The power supply ground and the shielding ground land together	
4	FM2 / AM 2 / DAB antenna			IType: 50mA@12V IMax: 100mA	50 Ω impedance, and the POC power supply is configurable. Non-coexistence with host independent power cable (shared with AM 1 / FM1 independent power cable) The power supply ground and the shielding ground land together	

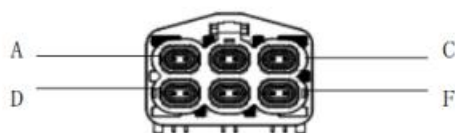
5.10.7 M7-Ethernet

5.10.7 M7-Ethernet

5.10.7.1 Schematic diagram

Wuxi Auto-Link World Information Technology Co., LTD

5.10.7.1 示意图



Amphenol: VNTBR23A2001SR

The pin number	Feet name	input/output	Signal type	steady-state current	Impact current, impact time, blocking current, and blocking time	remarks	Tang EV model pin demand
1/A1	ETH_1000B ASE_A_M	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	Connected domain control	needless
2/A2	ETH_1000B ASE_A_P	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	Connected domain control	
3/B1	ETH_1000B ASE_B_P	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	Attach to an external TBOX	
4/B2	ETH_1000B ASE_B_M	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	Attach to an external TBOX	
5/C1	ETH_100BA SE_A_P	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	Reserved uav (overseas Tang EV model connected to 4G-t_box)	need
6/C2	ETH_100BA SE_A_M	I/O	Differential signal, 100	2-16mA	100mA	Reserved uav	

Wuxi Auto-Link World Information Technology Co., LTD

The pin number	Feet name	input/output	Signal type	steady-state current	Impact current, impact time, blocking current, and blocking time	remarks	Tang EV model pin demand
			Ω of impedance			(overseas Tang EV model connected to 4G-t_box)	
7/D1	ETH_100BA SE_A_P	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	HUD is reserved	needless
8/D2	ETH_100BA SE_A_M	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	HUD is reserved	
9/E1	ETH_100BA SE_A_P	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	Reserve ved DLP 1	
10/E2	ETH_100BA SE_A_M	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	Reserve ved DLP 1	
11/F1	ETH_100BA SE_A_P	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	Reserve for the DLP 2 connection	
12/F2	ETH_100BA SE_A_M	I/O	Differential signal, 100 Ω of impedance	2-16mA	100mA	Reserve for the DLP 2 connection	

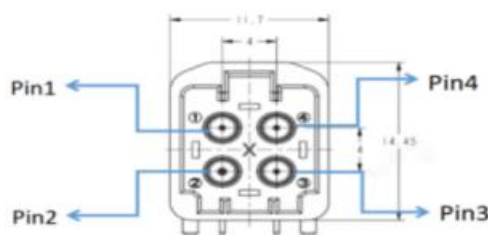
5.10.8 M9-Video output-meter/HUD/central control 2/central control 1

5.10.8 M9-视频输出-仪表/HUD/中控 2/中控 1

5.10.8.1 Schematic diagram

Wuxi Auto-Link World Information Technology Co., LTD

5.10.8.1 示意图



Amphenol: FRNARPPCB04A

The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
1	meter	I/O	Databus	\	50 Ω impedance; host hard wire power separately	need
2	HUD (Pixel headlight)	I/O	Databus	\	50 Ω impedance; complete vehicle power supply	needless
3	Central control 2	I/O	Databus	\	50 Ω impedance The host hard wire separate power separately	need
4	Central control 1	I/O	Databus	\	50 Ω impedance The host hard wire separate power separately	

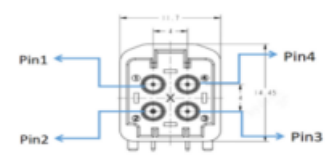
5.10.9 M10-Video output-First-passenger screen / streaming media

5.10.9 M10-视频输出-副驾屏/流媒体

5.10.9.1 Schematic diagram

Wuxi Auto-Link World Information Technology Co., LTD

5.10.9.1 示意图



Amphenol: FRNBRPPCB04A

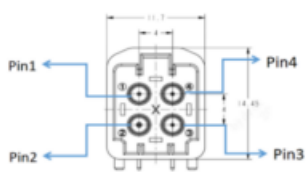
The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
1	streaming media	I/O	Databus	\	Tang EV model pin demand	needless
2	front passenger seat	I/O	Databus	\	50 Ω impedance; host wire power supply	needless
3	NA					
4	NA					

5.10.10 M11-Panorama Camera / AP A/MDC

5.10.10 M11-全景摄像头/APA/MDC

5.10.10.1 Schematic diagram

5.10.10.1 示意图



TE: 2321775-5

The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
1	CAM-Coax-Left	I/O	Databus	IType:100mA,IMax:150mA DC:9~16V;Type:12V	The POC power supply is configurable 50 Ω impedance, MDC video input	need

Wuxi Auto-Link World Information Technology Co., LTD

The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
					port 1; common	
2	CAM-Coax-Back	I/O	Databus	IType:100mA,IMax:150mA DC:9~16V;Type:12V	The POC power supply is configurable 50 Ω impedance; common ground	
3	CAM-Coax-Front	I/O	Databus	IType:100mA,IMax:150mA DC:9~16V;Type:12V	The POC power supply is configurable 50 Ω impedance, MDC video input port 2; common ground and coaxial signal ground	
4	CAM-Coax-Right	I/O	Databus	IType:100mA,IMax:150mA DC:9~16V;Type:12V	The POC power supply is configurable 50 Ω impedance, APA video input port; power supply ground and coaxial signal ground ground	

5.10.10 M11-Panorama Camera / AP A/MDC

5.10.10 M11-全景摄像头/APA/MDC

5.10.10.1 Schematic diagram

5.10.10.1 示意图

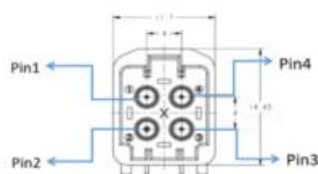
5.10.11 M12-DMS / IMS / Streaming Media / OMS 1

5.10.11 M12-DMS/IMS/流媒体/OMS1

Wuxi Auto-Link World Information Technology Co., LTD

5.10.11.1 Schematic diagram

5.10.11.1 示意图



Amphenol: FRNCRPPCB04A

The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
1	DMS	I/O	Databus	IType:250mA,IMax:420mA DC:9~16V;Type:12V	50 Ω impedance The POC power supply is configurable	needless
2	IMS / in-car camera	I/O	Databus	IType:150mA,IMax:500mA DC:9~16V;Type:12V	50 Ω impedance Host independent hard wire power supply, POC power supply reservation	need
3	OMS1	I/O	Databus	IType:250mA,IMax:500mA DC:9~16V;Type:12V	50 Ω impedance The POC power supply is configurable	needless
4	streaming media	I/O	Databus	IType:120mA,IMax:150mA DC:9~16V;Type:12V	50 Ω impedance The POC power supply is configurable	

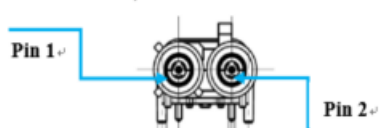
Wuxi Auto-Link World Information Technology Co., LTD

5.10.12 M13-DVR/Face ID

5.10.12 M13-DVR/Face ID

5.10.12.1 Schematic diagram

5.10.12.1 示意图



TE: 2314188-2

The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
1	DVR	I/O	Databus	IType:250mA,IMax:500mA DC:9~16V;Type:12V	50 Ω impedance The POC power supply is configurable; the power supply ground coincides with the shielding ground	needless
2	Face ID	I/O	Databus	IType:250mA,IMax:500mA DC:9~16V;Type:12V	50 Ω impedance; complete vehicle power supply; The POC power supply is configurable; the power supply ground coincides with the shielding ground	

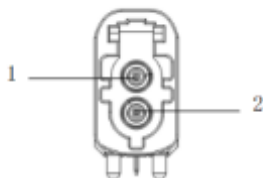
5.10.13 M14-BT/WIFI

5.10.13 M14-BT/WIFI

Wuxi Auto-Link World Information Technology Co., LTD

5.10.12.1 Schematic diagram

5.10.12.1 示意图



APTIV: 35667171

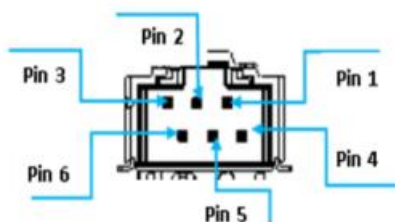
The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
1	WIFI_CH0_ANT0	I/O	BUS	/	50 Ω impedance bt/wifi 2.4G/5.8G	need
2	WIFI_CH1_ANT1	I/O	BUS	/	50 Ω impedance bt/wifi 2.4G/5.8G	

5.10.14 M15-The gateway OBD

5.10.14 M15-网关 OBD

5.10.14.1 Schematic diagram

5.10.14.1 示意图



Amphenol: 10153745-206KLF

The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
1	Ethernet Rx-	I/O	Differential signal, 100 Ω of impedance			needless

Wuxi Auto-Link World Information Technology Co., LTD

The pin number	Feet name	Input/output	Signal type	rated current	remarks	Tang EV model pin demand
2	Activate the line	IN	enable signal			
3	Etherent Tx-	I/O	Differential signal, 100 Ω of impedance			
4	Etherent Rx+	I/O	Differential signal, 100 Ω of impedance			
5	GND	IN	enable signal			
6	Etherent Tx+	I/O	Differential signal, 100 Ω of impedance			

Part 2 Product information

第 2 部分产品信息

1. It is forbidden for users to change the device privately.

1.禁止用户私自更换设备。

1.1Data protection, network security, and wireless aspects

1.1 数据保护，网络安全和无线方面

In order to consider the security aspects of data and software of products and components installed in vehicles, the product properties of related measures are described here.

为了考虑安装在车辆中的产品和组件的数据和软件的安全性，在此描述相关措施的产品属性。

1.2 Safety and Warning

1.2 安全和警告

The product is provided and approved for a rated voltage of 12 volts. Short circuits must be securely prevented, even in the event of a fault. Creeping short-circuits in particular lead to high arc energies that cannot be switched off by conventional melting fuses. If other rated voltages are present in the vehicle (e.g. 24/48 V for example in hybrid vehicles, or 400/800 V in electric vehicles) we recommend that safety precautions are taken in the vehicle itself (e.g. additional insulation of high voltage lines and the use of edge protectors when passing through sharp-edged areas, in order to prevent short circuits to inputs/outputs of our device, e. g. to loudspeaker lines).

提供并认可该产品的额定电压为 12 伏。即使发生故障，也必须安全地防止短路。尤其是

Wuxi Auto-Link World Information

Technology Co., LTD

爬电短路会导致高电弧能量，而传统的熔断器无法将其关闭。如果车辆中存在其他额定电压（例如，混合动力车辆为 24/48 V，或电动车辆为 400/800 V），我们建议您在车辆本身中采取安全预防措施（例如，高压线路的额外绝缘和当穿过锋利边缘的区域时，应使用边缘保护器，以防止我们设备的输入/输出（例如扬声器线路）短路。

The product is intended, and has been approved, for installation and operation in automobiles, motor homes, commercial vehicles.

该产品旨在并已被批准用于额定电压为 12 伏特的汽车，房车，商用车。

Only connecting cables and external devices that are appropriate for the device in question may be used (e.g.: proper current carrying capability, proper EMC shielding, flammability verified with appropriate certificates). Compliance with the applicable standards can no longer be guaranteed if the device – including the software – is modified without the agreement of Bosch and Autolink. 适用于所讨论设备的连接电缆和外部设备（例如：适当的载流能力，适当的 EMC 屏蔽，可燃性，并通过适当的证书进行验证）。如果未经车联、博世同意修改设计（包括软件），车联、博世将不再保证产品针对适用标准的合规性。

1.3 Material safety requirements

1.3 材料安全要求

All materials shall be selected according to design, durability and other performance requirements (see drawings and standards). Prohibited and hazardous substances shall meet the 《GB/T30512-2014 汽车禁用物质要求》. For plastic, rubber and thermoplastic elastomer parts, there should be material identification / recyclability identification.

所有材料都应根据设计、耐久性等性能要求选择（参见图纸和标准），禁用和有害物质应满足《GB/T30512-2014 汽车禁用物质要求》国家标准要求。对于塑料、橡胶和热塑性弹性体零件应有材料标识/可回收利用性标识。

2. Operating Parameter

2.运行参数

2.1Temperature:

2.1 温度:

Full performance: -30~70°C 全性能: -30~70°C

Function is limited: 75~85°C 功能受限: 75~85°C

Storage temperature: -40 C ~ + 90 C 存储温度: -40°C ~ +90°C

Wuxi Auto-Link World Information Technology Co., LTD

2.2 Power Supply:

2.2 电源:

Operating voltage: 9~16v 工作电压: 9~16v

Rated voltage: 12v 额定电压: 12v

2.3 Security: Please pay attention to the power supply and priority.

2.3 安全: 请注意电源和优先级。

2.4 Frequency:

BT: Frequency range: 2402MHz~2480MHz, the Max output power is
-2.31dBm

1、驻波比 VSWR

频段	VSWR
2.4GHz	≤2
5GHz	≤3

2、WIFI/BT 效率

2.4G WIFI Frequency range:

802.11b/g/n /ax 2412MHz-2462MHz

802.11n/ax 2422MHz-2452MHz

Wuxi Auto-Link World Information Technology Co., LTD

5G WIFI Frequency range:

802.11a/n/ac/ax 5150-5250MHz

802.11a/n/ac/ax 5250-5350MHz

802.11a/n/ac/ax 5470-5725MHz

802.11a/n/ac/ax 5725-5850MHz

Note: 5150-5250MHZ is only for indoor use, including inside cars, trains and aircraft (antennas must be inside cars, trains and aircraft, not outside), 5250-5350MHZ is limited to use in buildings, cars, trains and aircraft cannot be used outdoors (when the product was shipped, frequency 5250-5350MHZ had been ban by the software and was not available.) 5470-5725MHZ can be used both indoors and outdoors, antenna equipment can be used in cars, trains and aircraft are prohibited from being used

Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Efficiency (dBi)	-2.13	-2.44	-2.18	-2.02	-2.04	-2.23	-1.86	-1.96	-2.11	-2.66	-2.30
Gain (dBi)	1.59	1.95	2.30	3.13	2.91	2.70	3.16	3.01	2.33	1.59	2.32

Efficiency (%)	61.17	56.97	60.52	62.78	62.45	59.79	65.11	63.64	61.49	54.26	58.85
----------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Wuxi Auto-Link World Information Technology Co., LTD

12	13	14	15	16	17	18	19	20	21	22	23	24
5150. 0	5185. 0	5220. 0	5255. 0	5290. 0	5325. 0	5360. 0	5395. 0	5430. 0	5465. 0	5500. 0	5535. 0	5570. 0
-3.08	-3.34	-4.63	-3.71	-3.63	-3.50	-3.85	-2.63	-2.37	-2.07	-2.40	-3.29	-2.86
1.63	0.88	-0.82	0.78	1.17	0.51	0.10	1.46	2.02	2.42	1.74	0.51	1.18
49.23	46.38	34.47	42.60	43.33	44.72	41.22	54.59	57.96	62.09	57.57	46.87	51.82

25	26	27	28	29	30	31	32	33	34	35	36
5605. 0	5640. 0	5675. 0	5710. 0	5745. 0	5780. 0	5815. 0	5850. 0	5925. 0	5965. 0	6005. 0	6045. 0
-3.20	-2.83	-3.37	-2.18	-2.09	-2.14	-4.58	-3.03	-3.59	-3.77	-3.67	-3.31
0.38	0.84	0.38	1.83	1.88	1.89	-1.43	0.17	-0.21	-0.29	0.60	0.27
47.85	52.11	46.05	60.50	61.74	61.04	34.80	49.81	43.72	41.93	42.96	46.62

FM/AM:

Frequency range : AM: 526.5kHz~1606.5kHz,

FM:87.5MHz to 108MHz,

参数 - FM/AM 天线	Min 最小	Type 类型	Max 最大	Unit 单位
电源供电 UB	9V	12V	16V	V
电源输入 IB		50mA	100mA	mA
接收频率 FM	76MHz		108 MHz	MHz
接收频率 AM	522 KHz		1800KHz	KHz
特性阻抗		50Ω		Ohm

DAB:

Frequency range : 174MHz to 240MHz

参数 - DAB 天线	Min 最小	Type 类型	Max 最大	Unit 单位
电源供电 UB	9V	12V	16V	V
电源输入 IB		50mA	100mA	mA
接收频率 DAB	174MHz		234.00 MHz	MHz
特性阻抗		50Ω		Ohm

3. Working frequency 样机的工作主频

MCU 晶振 16M，SOC2.4G、2.1G、1.6G，GPU700M

4. Maximum output power 样机的最大输出功率: 140W

5. Hardware/ Software 样机软硬件版本号

Wuxi Auto-Link World Information Technology Co., LTD

软件版本号(Software version number):4.00.3

硬件版本号(Hardware version number):0.0.6

6. Manufactured Name/ address:

Manufacturer: Wuxi Auto-Link World Information Technology
Co., Ltd

制造商：无锡车联天下信息技术有限公司

Address: No. 8, Huayun Road, Wuxi City, Jiangsu Province, P .R.
China.

地址：江苏省无锡市华运路 8 号

Part 3 Function List

第 3 部分功能列表

比亚迪 DX 主机作为平台化产品，本产品主要包含以下关键特性：

BYD DX console as a platform product, this product mainly contains the following key features:

		remarks
1	Up to 10-channel cameras support	The current production software version only supports 8 channels
2	Up to 3 CAN support	yes; right; correct; true
3	Up to 3-way USB is supported	Dependent on the assembly, USB
4	Support 5100M Ethernet and 21000M Ethernet	The production software only supports 100 megabytes
5	Built in single Bluetooth support BT5.0 or above	Production

Wuxi Auto-Link World Information Technology Co., LTD

	protocol	software version is not supported
6	The BT / WIFI module supports BT5.2 and WIFI 6	Yes
7	Reserved GNSS module (support dual band) without RTK	The GNSS is not supported by the current software
8	Support the built-in 3D gyroscope / 3D, acceleration sensor	Yes
9	Support for AM / FM1, FM2 / DAB/RDS / DRM / HD_Radio and SXM	RDS, DRM, HD_Radio and SXM are not supported
10	6 analog Mic input	The current software supports 4 channels
11	Support 2 road AUX IN, each road is divided into left / right sound channel	The AUX is not supported by the current software
12	Reserve up to 8 channels; support external power amplifier controlled by A2B bus	The current software does not support the built-in power amplifier, support A2B external power amplifier
13	Support 1 channel A2B, B port is the main node interface, A, port is reserved from the node interface	The Master node (the BYD host) will only use the B port

Part 4 Statement

第 4 部分声明

1. The distance between user and products should be no less than 20cm
用户与产品之间的距离应不小于 20 厘米
2. The object of the declaration described model MTCA05 is in conformity with the relevant Union harmonization legislation: RED Directive 2014/53/EU.

Wuxi Auto-Link World Information Technology Co., LTD

型号 MTCA05 所述声明符合相关的欧盟 RED 指令 2014/53/EU 要求



3. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

本设备符合 FCC 规则第 15 部分。操作受以下两个条件的约束：(1) 本设备不得造成有害干扰；(2) 本设备必须接受接收到的任何干扰，包括可能导致意外操作的干扰。

4. FCC Part 15.21 information for user.

THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

受让人不对任何未经负责遵守的一方明确批准的更改或修改负责。这种修改可能会使用户失去操作设备的权力。