

PATEO INNOVATION

**Porsche PCM3
Technical Operation Description**

HEAD UNIT
PORSCHE PCM3 HEAD UNIT
AnpingTan
V1.0
2024/12/2

REVISION HISTORY

Version	Date	Author	Contents
1.0	2024/12/02	AnpingTan	Initial Version

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1 Overview

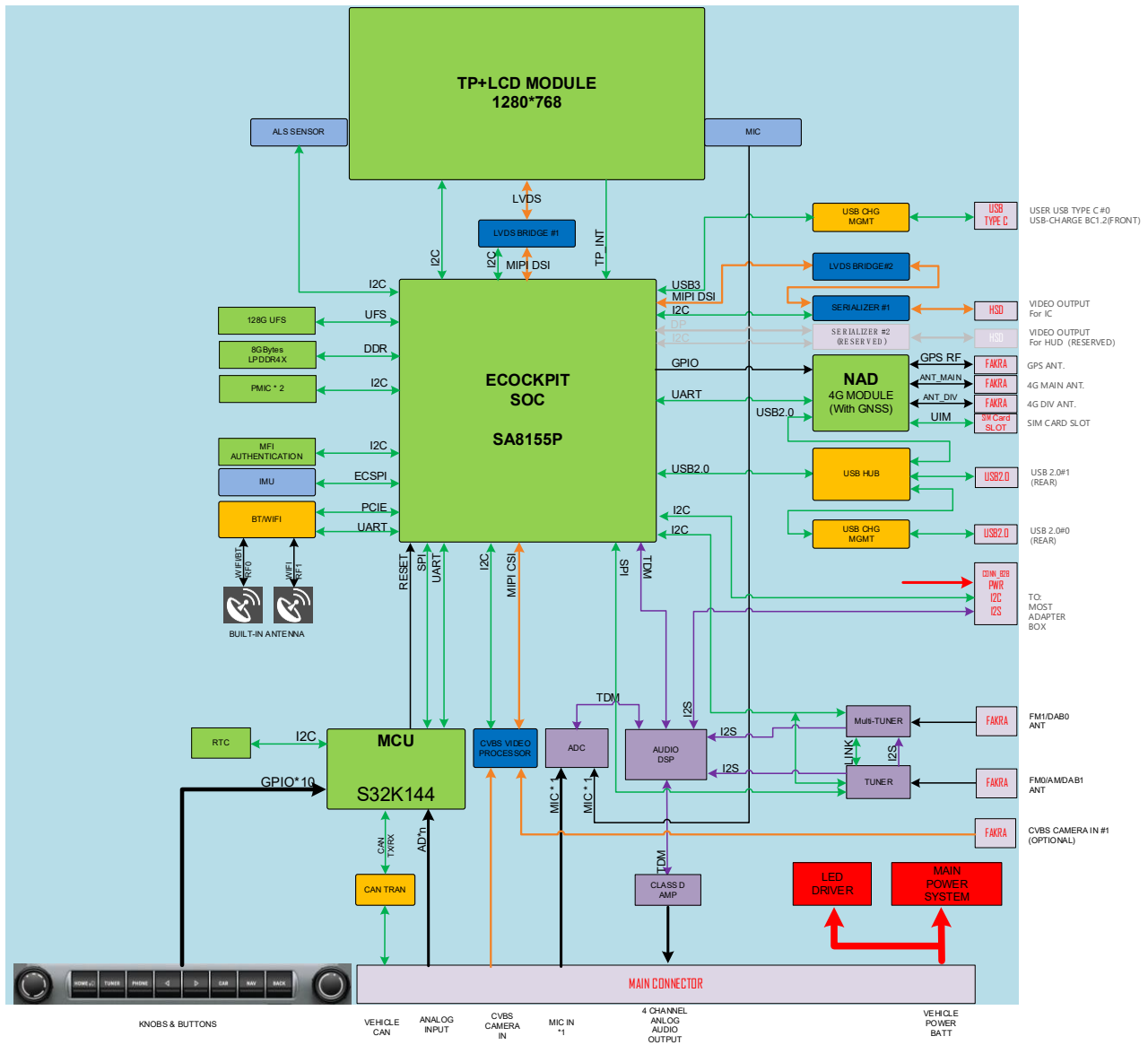
This document specifies the specific requirements of the customer for the overview, the connectors definition, operation methods, performance of the PCM3 Head Unit product.

2 Introduction

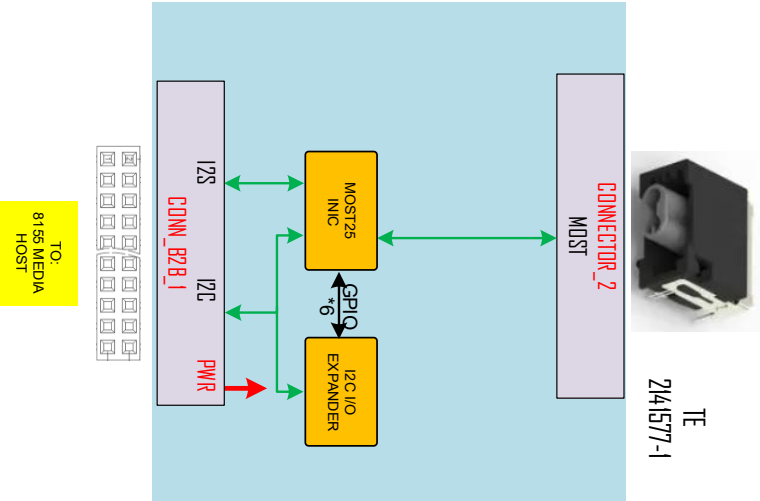
2.1 Product Overview

The PCM3 Head Unit integrates in-vehicle multimedia audio and video functions, RVC video, BT/WIFI, local radio, navigation, vehicle related settings, and other related functions. This controller is equipped with a high computing capability in automotive SOC, which can support video output to drive multiple displays, MOST25 digital audio output, multi-channel analog audio output, support RVC camera video input, dual microphone audio input, 4G remote network accessing and CAN network. It is a key controller for vehicle intelligence.

3 System Block Diagram/PCM3 Head Unit



Head Unit



Most Adapter Box

4 Definition of RF Character

FCC Frequency	GSM 850	824 ~ 849	869 ~ 894
	GSM 1900	1850 ~ 1910	1930 ~ 1990
	WCDMA Band II	1850 ~ 1910	1930 ~ 1990
	WCDMA Band IV	1710 ~ 1755	2110 ~ 2155
	WCDMA Band V	824 ~ 849	869 ~ 894
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 5	824 ~ 849	869 ~ 894
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	LTE Band 12	699 ~ 716	729 ~ 746
	LTE Band 13	777 ~ 787	746 ~ 756
	LTE Band 17	704 ~ 716	734 ~ 746
	Bluetooth- SISO	2400 ~ 2483.5	2400 ~ 2483.5
	Bluetooth LE- SISO	2400 ~ 2483.5	2400 ~ 2483.5
	Wi-Fi 2.4GHz- SISO	2400 ~ 2483.5	2400 ~ 2483.5
	Wi-Fi 5GHz (U-NII-1) MIMO 2*2	5150 ~ 5250	5150 ~ 5250
	Wi-Fi 5GHz (U-NII-3) MIMO 2*2	5725 ~ 5850	5725 ~ 5850
	GPS L1 C/A	/	1559 ~ 1610
	GLONASS G1	/	1559 ~ 1610
	Galileo E1	/	1559 ~ 1610
Antenna Gain	FM	/	87.5 ~ 108
	AM (MF)	/	526.5 kHz to 1606.5 kHz
	DAB	/	174 to 240
	WWAN antenna gain: 6.85 dBi Bluetooth: 2.90 dBi Wi-Fi 2.4GHz: 5.90 dBi Wi-Fi 5GHz: 7.80dBi		

5 Key Components

Index	Name (Function)	Supplier	PN
1	MAIN MCU	NXP	S32K144
2	SOC	QUALCOMM	SA8155P
3	UFS	FORESEE	FEUDME128G
4	MAIN POWER	TI	TPS43331
5	BT/WIFI MODULE	IVT	I1495-SP
6	SERIALIZER #1	TI	DS90UR907
7	CVBS VIDEO PROCESSOR	INTERSIL	TW9992
8	NAD (4G MODULE)	QUECTEL	AG35
9	IMU	ST	ASM330
10	USB CHARGE MGMT (TYPE A)	TI	TPS25846
11	USB CHARGE MGMT (TYPE C)	TI	TPS25830
12	USB HUB	EPSON	S2R72A54
13	CLASS D AMPLIFIER	TI	TAS6424
14	CAN TRANSCEIVER	TI	TCAN1043
15	LVDS BRIDGE #1	TI	SN65DSI83
16	RTC	EPSON	RA8900
17	MFI AUTHENTICATION	APPLE	MFI343S00177
18	LED DRIVER	TI	LP8861
19	LCD+TP MODULE	TRULY	1280768-40093
20	ALS SENSOR	TI	OPT3001
21	ADC	TI	PCM6340
22	LVDS BRIDGE #2	TI	SN65DSI83
23	AUDIO DSP	ADI	ADSP21489
24	TUNER	NXP	TEF3200

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25	DAB/HD	NXP	SAF4000
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