RK3568

A high-performance and low power quad-core application processor

Features

CPU

Quad-core ARM Cortex-A55 processor

GPU

ARM G52-2EE

OpenGL ES1.1/2.0/3.0/3.1/3.2, Vulkan 1.1,

OpenCL 2.1

NPU

1TOPs@INT8

Support INT8/INT16/FP16/BFP16

Support deep learning frameworks:

TensorFlow, Caffe, Tflite, Pytorch, Onnx,

Android NN, etc

Memory

32bit DDR4/3/3L/LPDDR4/4X/3

DRR4 and DDR3 support ECC

Support eMMC 5.1, SFC

Display

Multiple display engine, max 3 screen support

HDMI2.0

eDP 1.3

Dual MIPI-DSI, combo with single LVDS

24bit RGB/BT1120

EBC interface

Multi-Media

4K H.265/H.264/VP9 video decoder

1080p@60fps H.264/H.265 video encoder

Video Input

8M Pixel ISP with HDR&3DNR

1*4lanes or 2*2lanes MIPI CSI-2 and DVP

interface

Audio Interface

I2S0/I2S1 with 8 channels

I2S2/I2S3 with 2 channels

SPDIF0

PDM0 with 8 channels

TDM0 with 8 channels

VAD (Voice Activity Detection)

High Speed Interface

Quad USB 3.0 host, three SATA 3.0,

one USB 3.0 OTG, one PCIe 2.1, one QSGMII

Share three serdes lanes

Dual USB 2.0 host

PCIe 3.0, 1*2 lanes or 2*1 lane

Dual RGMII interface

Security

ARM Trustzone security extension

Secure Video Path

Secure JTAG to debug

Secure boot

OTP

Crypto (AES/TDES/SM4/SM3/SHA256/SHA512 /RSA)

SDK

Linux4.19 & 5.10

Android11 & 12

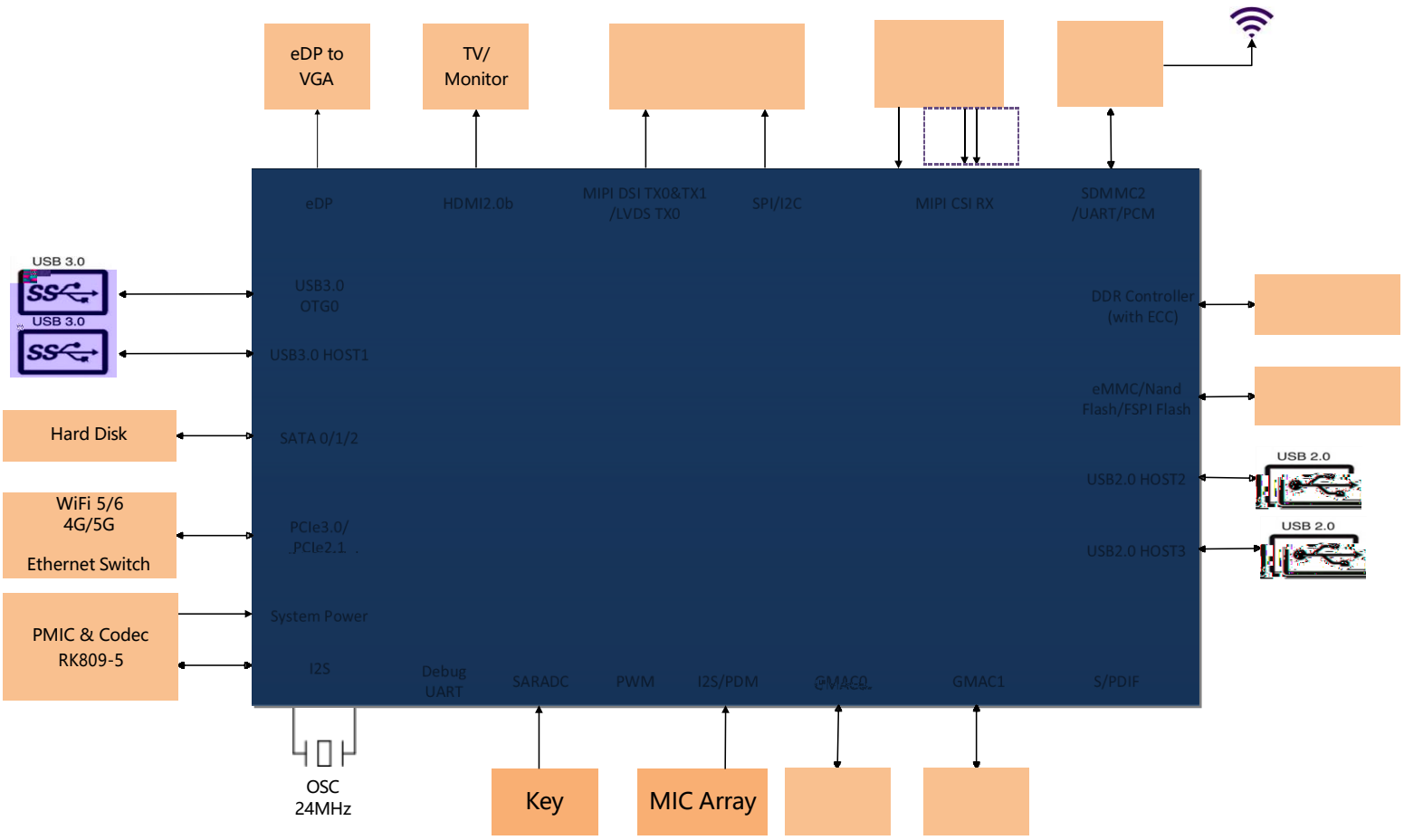
Device Information

Package: FCBGA22SL & FCCSPC21L

Body: 19mm x 19mm

Ball pitch: 0.65mm

Typical


eDP to VGA
TV/ Monitor
eDP
HDMI2.0b
MIPI DSI TX0&TX1 /LVDS TX0
SPI/I2C
MIPI CSI RX
SDMMC2 /UART/PCM
USB 3.0
USB 3.0
USB3.0 OTG0
USB3.0 HOST1
DDR Controller (with ECC)
eMMC/Nand Flash/FSPI Flash
Hard Disk
SATA 0/1/2
USB 2.0
USB2.0 HOST2
WiFi 5/6 4G/5G
Ethernet Switch
PCIe3.0/ PCIe2.1
USB 2.0
USB2.0 HOST3
PMIC & Codec RK809-5
System Power
I2S
Debug UART
SARADC
PWM
I2S/PDM
GMAC0
GMAC1
S/PDIF
OSC 24MHz
Key
MIC Array