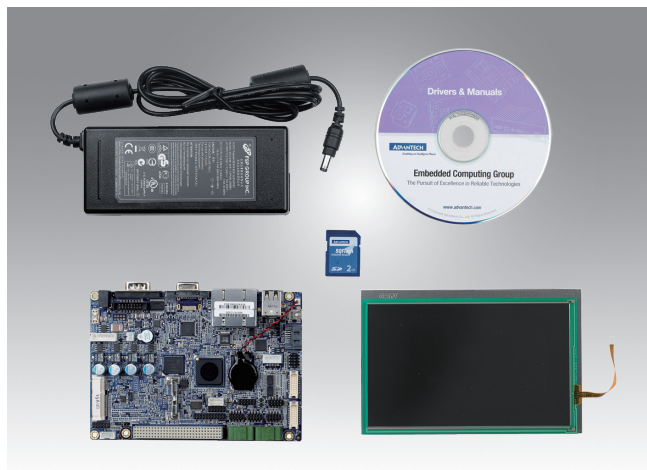


# RSB-4210 Evaluation Kit

Development Kit for 3.5" SBC RSB-4210



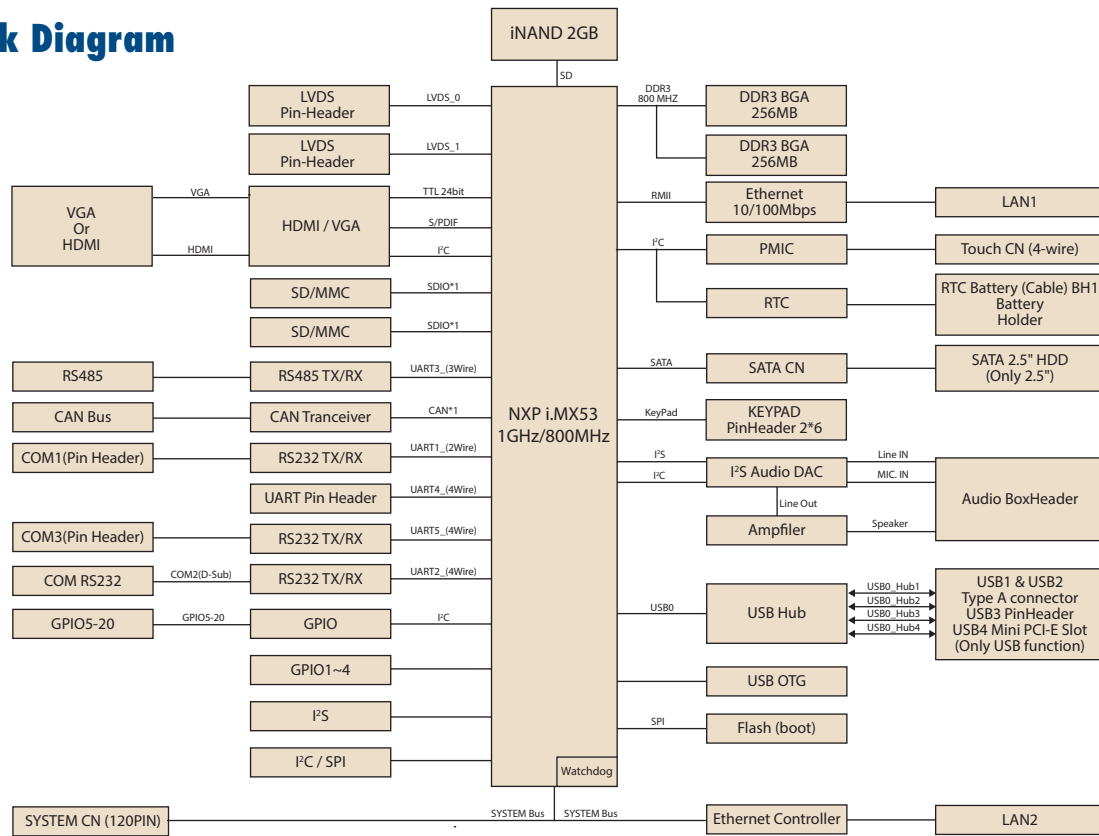
## Features

- Evaluation kit for RSB-4210
- High performance NXP i.mx53 800MHz processor
- Onboard DDR3 512MB memory and eMMC 4GB
- Supports OpenGL ES 2.0 and OpenVG™ 1.1 hardware accelerators
- Supports full HD 1080p video decode and HD 720p video encode hardware engine
- LCD, Touch, UART, I<sup>2</sup>C, I<sup>2</sup>S, SPI, GPIO, USB, VGA, HDMI I/O interface
- Supports SATA storage interface and CAN-bus for vehicle applications
- Cable pack & panel included
- Evaluative image & test utilities built-in

## Specifications

|                            |                              |                                                                                                                                                                 |
|----------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kernel                     | CPU                          | NXP i.MX53 Cortex-A8 800 MHz                                                                                                                                    |
|                            | System RAM                   | On-board DDR3 512 MB                                                                                                                                            |
|                            | Image/AP Flash               | 4 GB eMMC NAND Flash for O.S. and 4 MB SPI NOR Flash for Advantech boot loader                                                                                  |
|                            | Graphics Engine              | 1 IPU, OpenGL ES 2.0 for 3D, BitBlt for 2D and OpenVG 1.1                                                                                                       |
|                            | H/W Video Codec              | Decoder: MPEG-4 ASP, H.264 HP, H.263, MPEG-2 MP, MJPEG BP<br>Encoder: MPEG-4 SP, H.264 BP, H.263, MJPEG BP                                                      |
|                            | Watchdog Timer               | 256-level timer interval from 0~128 sec                                                                                                                         |
|                            | Power Management             | Normal / idle mode                                                                                                                                              |
|                            | Reset                        | H/W reset & S/W reset                                                                                                                                           |
| I/O                        | COM                          | UART1 pin header x1 (2 wires)<br>UART2 RS-232 DB9 connector x1 (4 wires)<br>UART3, UART4 pin header x2 (4 wires)<br>UART5 RS-485 phoenix connector x1 (2 wires) |
|                            | Ethernet LAN                 | 2 x 10/100 Mbps                                                                                                                                                 |
|                            | USB Host                     | 4 (2 x Type A, 1 x pin header and 1 x mini PCIe)                                                                                                                |
|                            | USB OTG                      | 1                                                                                                                                                               |
|                            | SD/MMC                       | 2                                                                                                                                                               |
|                            | SATA                         | 1                                                                                                                                                               |
|                            | Touch                        | 4-wire resistive type                                                                                                                                           |
|                            | Keypad                       | 6 x 6 matrix                                                                                                                                                    |
|                            | I <sup>2</sup> C Interface   | 1                                                                                                                                                               |
|                            | I <sup>2</sup> S Interface   | 1                                                                                                                                                               |
|                            | CAN Bus                      | 1                                                                                                                                                               |
|                            | SPI Interface                | 1                                                                                                                                                               |
|                            | VGA                          | Up to 1600 x 1200 at 60Hz                                                                                                                                       |
|                            | Mini PCIe Connector          | Yes (USB interface)                                                                                                                                             |
|                            | System Bus                   | Address: 25 pins<br>Data: 16 pins                                                                                                                               |
| Multimedia                 | GPIO                         | 20 GPIO w/o Isolation                                                                                                                                           |
|                            | Graphics Chip                | CPU internal 24-bit LCD controller                                                                                                                              |
|                            | Resolution                   | Default: 800 x 480 WVGA; 320 x 240 ~ 1920 x 1080 (optional)                                                                                                     |
|                            | LCD Interface                | 2 x 24 bit LVDS LCD connector                                                                                                                                   |
|                            | Brightness/Backlight Control | Yes                                                                                                                                                             |
| Power                      | Audio                        | Line-in, Line-out, MIC-in, Speaker-out                                                                                                                          |
|                            | DC-input                     | 12 V, 19 V, 24 V                                                                                                                                                |
| Power Consumption          |                              | 3.8W (Max)                                                                                                                                                      |
| Mechanical & Environmental | Board Size                   | 146 x 102 x 20 mm                                                                                                                                               |
|                            | Weight                       | 110g                                                                                                                                                            |
|                            | Operating Temperature        | 0 ~ 60 °C                                                                                                                                                       |
|                            | Operating Humidity           | 5% ~ 95% relative humidity, non-condensing                                                                                                                      |

## Block Diagram



## Ordering Information

| Part No.          | CPU                              | Memory | Flash Memory | HDMI | VGA | LVDS | LAN | Serial Port                                 | SATA | USB Host | USB OTG | System bus | SD | CANbus | Operating Temperature |
|-------------------|----------------------------------|--------|--------------|------|-----|------|-----|---------------------------------------------|------|----------|---------|------------|----|--------|-----------------------|
| RSB-4210CF-A78AAE | NXP i.MX536<br>Cortex-A8 800 MHz | 512 MB | 4 GB         | -    | 1   | 2    | 2   | 2 x 2 wire UART,<br>1 x RS232,<br>1 x RS485 | Yes  | 4        | 1       | Yes        | 2  | Yes    | 0 ~ 60 °C             |
| RSB-4210WF-A78AAE | NXP i.MX536<br>Cortex-A8 800 MHz | 512 MB | 4 GB         | -    | 1   | 2    | 2   | 2 x 2 wire UART,<br>1 x RS232,<br>1 x RS485 | Yes  | 4        | 1       | Yes        | 2  | Yes    | -40 ~ 85 °C           |

## Packing List

| Part No.           | Description                                         |
|--------------------|-----------------------------------------------------|
| RSB-4210CF-A78AAE  | FSL i.MX536 512MB DDR3 RAM w/ 2GB flash (0 ~ 60 °C) |
| 1757003734         | Adapter 100-240V 65W 19V 3.42A 9NA0651256           |
| 1700000194         | Touch cable                                         |
| 1700014418         | LVDS cable                                          |
| 1700019577         | LCD backlight cable                                 |
| 1700018785         | SATA power cable                                    |
| 1700004711         | SATA signal cable                                   |
| 1700019546-11      | Speaker & audio cable                               |
| 1700100250         | F Cable IDE#2 10P-2.0/D-SUB 9P (M) 25cm cable       |
| 1700019129         | USB type A Host cable                               |
| 1700019077         | Mini USB cable (Client)                             |
| 1700019076         | Mini USB cable (Host)                               |
| 1654909900         | Terminal connector 9P Female                        |
| 1700019474         | RS-232 AND RS-485 cable                             |
| 1700019476         | RS-422 cable                                        |
| SQF-ISDS2-2G-ETE   | SQFlash SD Card SLC 2G, 2CH (-40 ~ 85 °C)           |
| 96LEDK-A070WV32RB1 | LCD-LED Backlight 7" LVDS RGB 97G070V1N0F-2         |

## Optional Accessories

| Part No.          | Description                                           |
|-------------------|-------------------------------------------------------|
| RSB-4210DK-B00E   | RSB-4210 Evaluation Kit                               |
| RSB-4210WF-A78AAE | FSL i.MX536 512MB DDR3 RAM w/ 2GB flash (-40 ~ 85 °C) |
| 1700001524        | Power cord 3P UL 180cm                                |
| 170203183C        | Power cord 3P EU 183cm                                |
| 170203180A        | Power cord 3P UK 183cm                                |
| 1700008921        | Power Cord 3P PSE 183cm                               |

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