

# **BM3026**

## **Digital Media Processor**

**(Primarily & Brief)**

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## Contents

1. GENERAL DESCRIPTION.....	3
2. FEATURES.....	3
3. APPLICATION FIELDS.....	4
4. SYSTEM ARCHITECTURE.....	4
5. PIN ASSIGNMENTS.....	5
6. PIN DESCRIPTIONS.....	5
7. ELECTRICAL SPECIFICATIONS.....	11
8. PACKAGE DESCRIPTIONS.....	12

# 1. General Description

**BM3026** Digital Media Processor (DMP) is a high performance single-chip JPEG/ M-JPEG/ Audio/ Video decoder for Door phone, Digital Photo Frame, Car Media applications and a wide series of applications with portable digital audio/video products. The processor has a high performance 32-bit RISC CPU, DMA controller, a hardware JPEG/Video decoder, JPEG/MJPEG encoder and a serial interface is built-in interface to SPI, NAND, SD, TF controller, DDR1/SDRAM controller, GPIO, UART, SPI, IR, I2S controller.

The BM3026 processor package is available in a 144/128/100pin Plastic Quad Flat Package (eLQFP).

# 2. Features

## ● General

- 32bit RISC MCU with 8K I-cache/8K D-cache (up to 200MHz)
- Built-in 4Mx16 DDR-SDRAM
- System (Power) Management Unit

## ● Video/Display

- Supports NTSC, PAL analog video input
- Up to 4 channels CVBS input
- Supports CCIR656 and CCIR601 digital input
- VADC, ACC, AGC, and DCGC (Digital Chroma Gain Control) formats
- High quality scaler
- High quality 2D and 3D de-noise module
- Support weak and distorted signal
- Built-in hardwired JPEG, Motion-JPEG codec
- Built-in internal OSD

## ● Analog Input

- On-chip clock synthesizer and PLL
- Auto adjustment for position, phase, gain and mode detection

## ● Color Engine

- Brightness, contrast, saturation, and hue adjustment

## ● Panel Interface

- Panel Controller/Interface, Supports RGB/SRGB/CPU/DTCON Panel
- Supports various displaying modes (RGB/YUV)
- Supports horizontal panorama scaling

## ● Peripherals

- Built-in RTC
- Built-in WDT

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- 4 UART
- 4 Timers
- 1 hardware I<sup>2</sup>C controller
- 1 4-channel PWM controller
- 1-wire temperature sensor controller
- All digital pins can be used as GPIO (except SPI0 pins), each GPIO support interrupt
- SAR-ADC support ADC-Key and touch panel
- Supports up to 2 SPI flash or other SPI device
- Supports up to 2 SD Card or other SDIO device
- RCRT controller can support hardware NEC/RC5/Sony IR decoder
- Built-in audio ADC/DAC

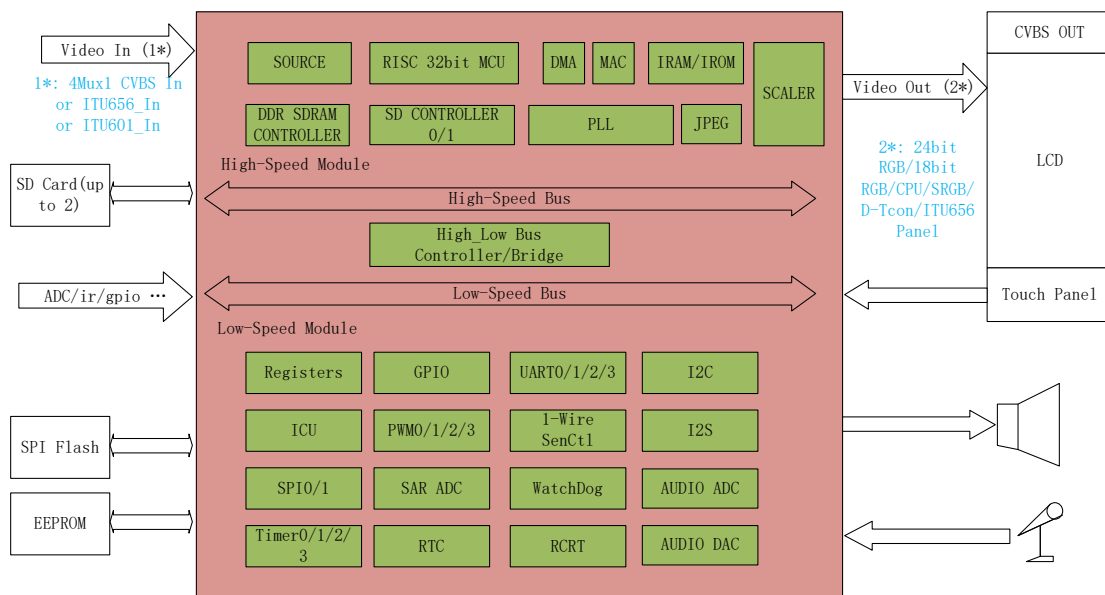
● **Package**

- 144-pin LQFP package
- 128-pin LQFP package
- 100-pin LQFP package

### 3. Application Fields

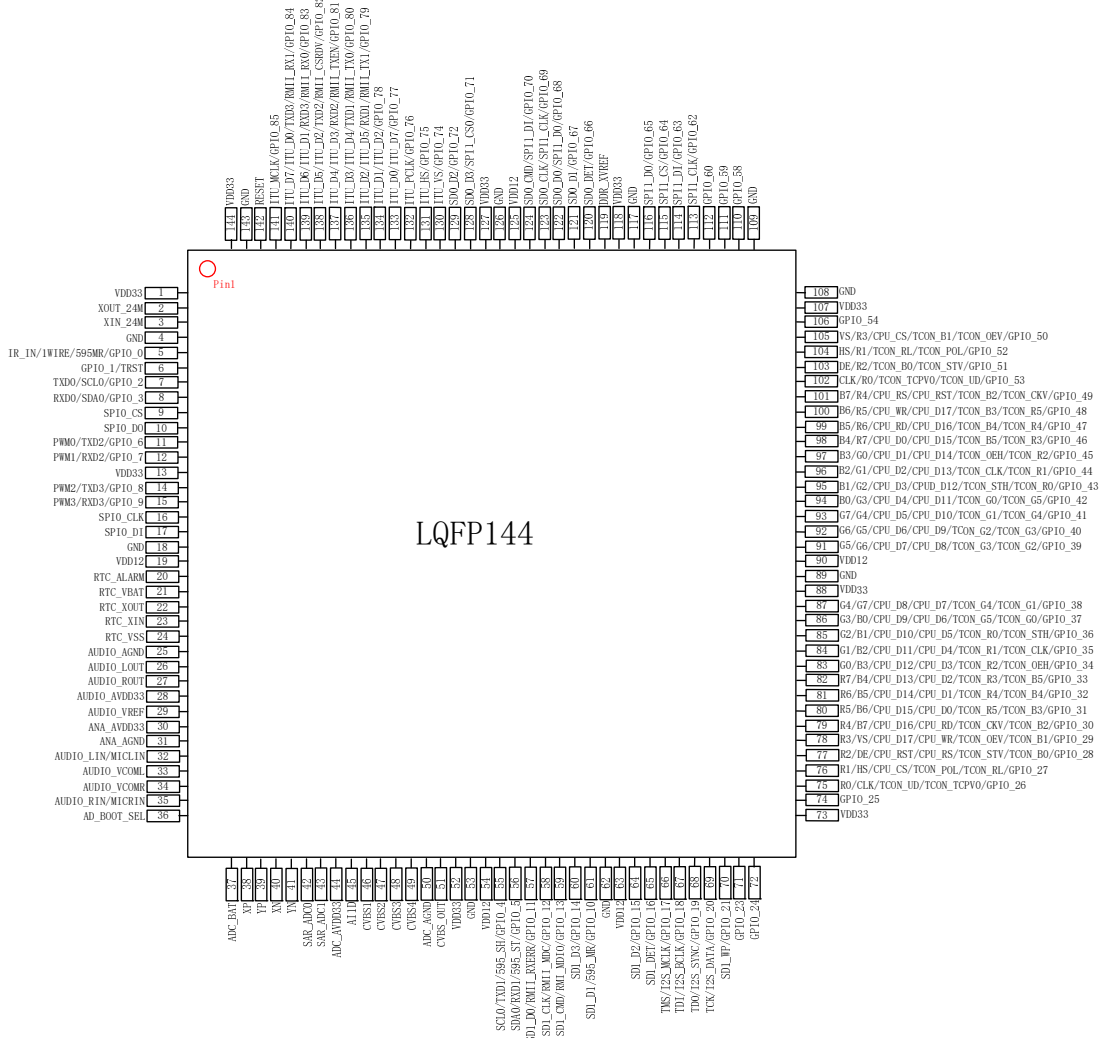
- **Recording Door phone**
- **Car Entertainment**
- **HD Media Play Box**

### 4. System Architecture



**Fig1. BM3026 Architecture**

## 5. Pin Assignments



**Fig2. BM3026 Pin assignment diagram**

## 6. Pin Descriptions

**Table 1 Power Pins**

Pin Name	Pin Type	Function	Pin	Number
VDD33	3.3V Power	Digital I/O Power	1, 13, 52, 73, 88, 107, 118, 127, 144	9
VDD12	1.2V Power	Digital Core Power	19, 54, 90, 125,	4
RTC_VBAT	RTC Power	RTC Supply Power	21	1
AUDIO_AVDD33	3.3V Power	Analog Audio Power	28	1