FRS BASEBAND CHIP WITH OTP

1. GENERAL DESCRIPTION

The Conwise cw6675 is a highly integrated system on chip incorporating all base-band signal processing and system control functions that are required for a family radio or walkie-talkie system. It provides a 16K byte OTP within a 8bit microprocessor for customer MMI. In the meantimes, the chip provides many functions such as 38 standard and 10 non-standard code for CTCSS tone generator and CTCSS detector, weather detector, scramble/descramble for security, vibration detection and remote detection, ALC(Auto-level Control), Band-pass filter between 300 to 3.2 KHz and pre-emphasis and de-emphasis filter , call tone generator, a 8bit A/D for VOX, battery and RSSI detector, a 8bit D/A , a 32 ohm speaker driver , and a LCD driver with maximal 23X8 dots. In the meantime, it includes a 68 bytes control registers via internal micro-processor or host interface with exernal micro-processor for many functions control. It also provides a comparator for external microphone control. The system clock is from 32.768KHz crystal and the chip is built in PLL to synthesize the frequency up to 24.576MHz. In addition,It supports PGA(programbable Gain control) for microphone and modulation gain without many external passive components. This chip allows half-duplex operation over a 3.6—5.25 volt within 3 regulators for basband and RF portion. Moreover, its low power consumption makes it ideal for battery applications. In the meantime, it is easy to connect RF module by setup RF PLL synthesizer' s GPIOs and power switch and moduated/demodulated signal.

2. FEATURES

- Power supply from 3.6 to 5.25 volt to generate 3 regulators, DVDD,AVDD, and RVDD for cw6675
- Master clock rate: 32.768 KHz with internal analog PLL to generate the system clcok up to 24.576MHz..
- Support Family Radio Service applications with 38 standard and 10 non-standard code for CTCSS Tone Generator/Detector (from 62.5 Hz to 250.3 Hz)
- Integrated audio Band-pass filter(300 to 3.2K Hz) to suppress out-of-band noise
- Integrated an optional pre-emphasis and de-emphasis filter
- Built-in high-accuracy CTCSS tone detection less than 148 ms
- Built-in weather channel detection less than 110 ms
- Built-in vibration and remote monitor detection less than 110 ms
- Built-in VOX(Voice Activity Detection) for hand-free microphone input
- Built-in ALC(Auto-Level Control) on transmission path
- Provide a 8-bit A/D with range from 0 to 2.2 volt for Battery detector, RSSI detection
- Provide a 8-bit D/A with range from 0.7 to 2.2 volt for output of CTCSS enocder
- Provide 8 Key Input Controls
- Provide max. 53 GPIOs
- Provide gain/volume control with 32 level for speaker driver
- Built-in High-power speaker driver with min 32 Ω load
- Built-in LCD driver for 23X8 LCD pannel

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- Support internal and external micrphone input without glue logic
- Built-in scramble/descramble function for security
- Built-in an 8-bit MCU with 16KB OTP,internal RAM 256X8 and external RAM 256X8 for user MMI
- Two groups of Control registers for MCU and DSP
- Support UART interface to communicate with MCU
- Very low external components for full function
- Easy to connect RF module with internal 6 power switches and 3-pin control to PLL synthesizer
- Packaged in 100-pin LQFP