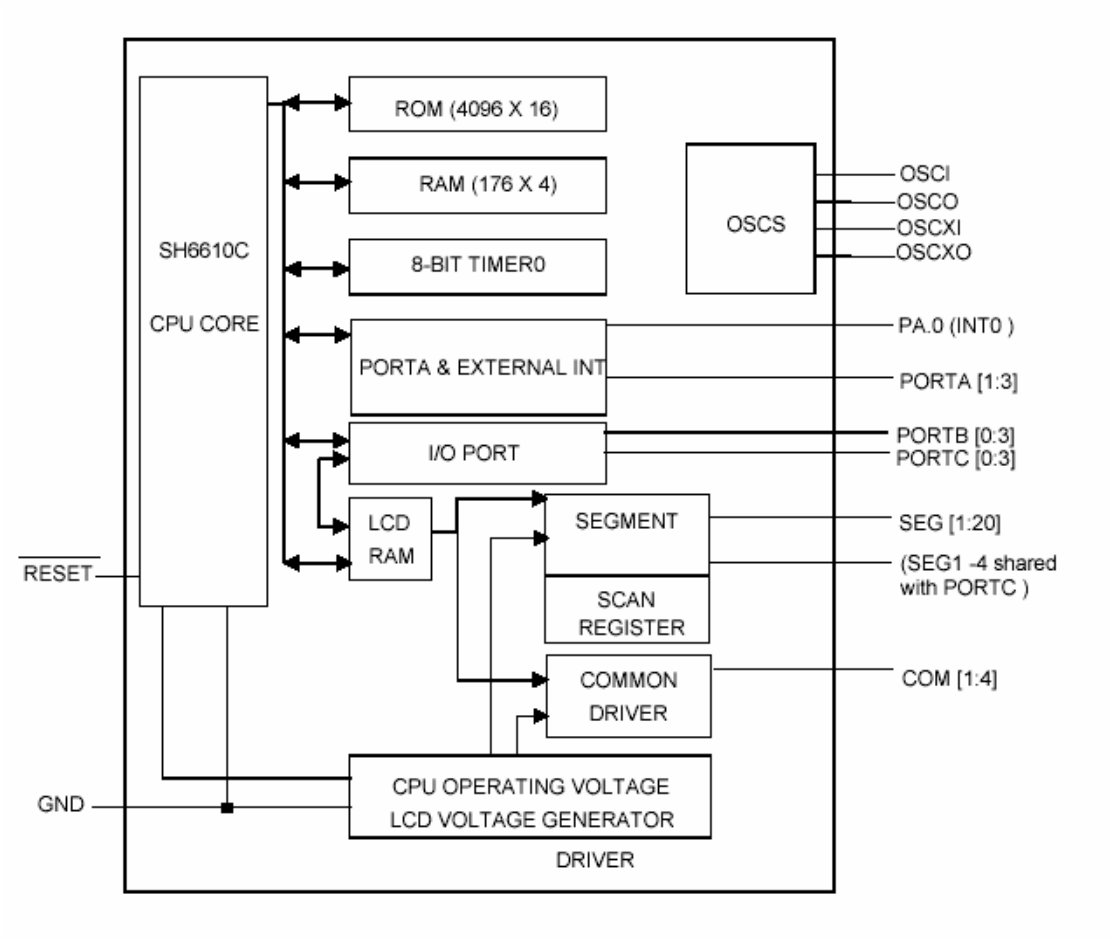
Product Introduction

System Introduce

XF101 Mobile FM Transmitter the audio signal from MP3 ,WMA Player .CD/MD player is input into Transmitter through Line-in cable.. the Transmitter transmits audio signal by FM model Tune your car receiver or home stereo frequency to the transmitter frequency. You will share your favor music freely.

It consists of 3 units.1: controller(SH67P53)-CPU. 2:FM transmitting units(BH1415). The range of frequency is from 88.1MHz to 107.9MHz.3: Power Supplier units.

1 Controller Block Diagram



Functional Description

1. CPU

The CPU core contains the following function blocks:

Program Counter, ALU, Carry Flag, Accumulator, Table

Branch Register (TBR), Data Pointer (INX, DPH, DPM andDPL), and Stack.

1.1. PC (Program Counter)

The PC is used for ROM addressing consisting of 12-bits:

Page Register (PC11), and Ripple Carry Counter (PC10PC0)

The program counter normally increases by one (+1) with

each execution of an instruction except in the followingcases:
(1) When executing a jump instruction (such as JMP, BA0, BC),
(2) When executing a subroutine call instruction (CALL),
(3) When an interrupt occurs,
(4) When the chip is at INITIAL RESET.
The program counter is loaded with data corresponding to each instruction. The unconditional jump instruction (JMP) can be set at 1-bit page register for higher than 2K. Program Counter can only address a 4K of program ROM.

1.2. ALU and CY

The ALU performs arithmetic and logic operations.
It provides the following functions:
Binary addition/subtraction
(ADC, SBC, ADD, SUB, ADI, SBI)
Decimal adjustment for addition/subtraction (DAA, DAS),
Logic operations (AND, EOR, OR, ANDI, EORI, ORI)
Decision (BA0, BA1, BA2, BA3, BAZ, BC)
The Carry Flag (CY) holds the arithmetic operation ALU overflow.
During interrupt or call instruction, carry is pushed into stack and restored from stack by RTNI. It is unaffected by an RTNW instruction.

1.3. Accumulator

The accumulator is a 4-bit register holding the results of the arithmetic logic unit. In conjunction with the ALU, data transfers between the accumulator and system register, LCD RAM, or data memory can be performed.

1.4. Stack

This group of registers is used to save the contents of CY & PC (11 - 0) sequentially with each subroutine call or interrupt It is organized 13 bits X 4 levels. The MSB is saved for CY. Eight levels are the maximum allowed for subroutine calls and interrupts.
The contents of Stack are returned sequentially to the PC with the return instructions (RTNI/RTNW). Stack is operated on a first-in, last-out basis. This 4-level nesting includes both subroutine calls and interrupts requests. Note that program execution may enter an abnormal state if the number of calls and interrupt requests exceeds 4, where then the bottom of stack will be shifted out

2，Wireless Audio Link IC

BH1415S / BH1415F

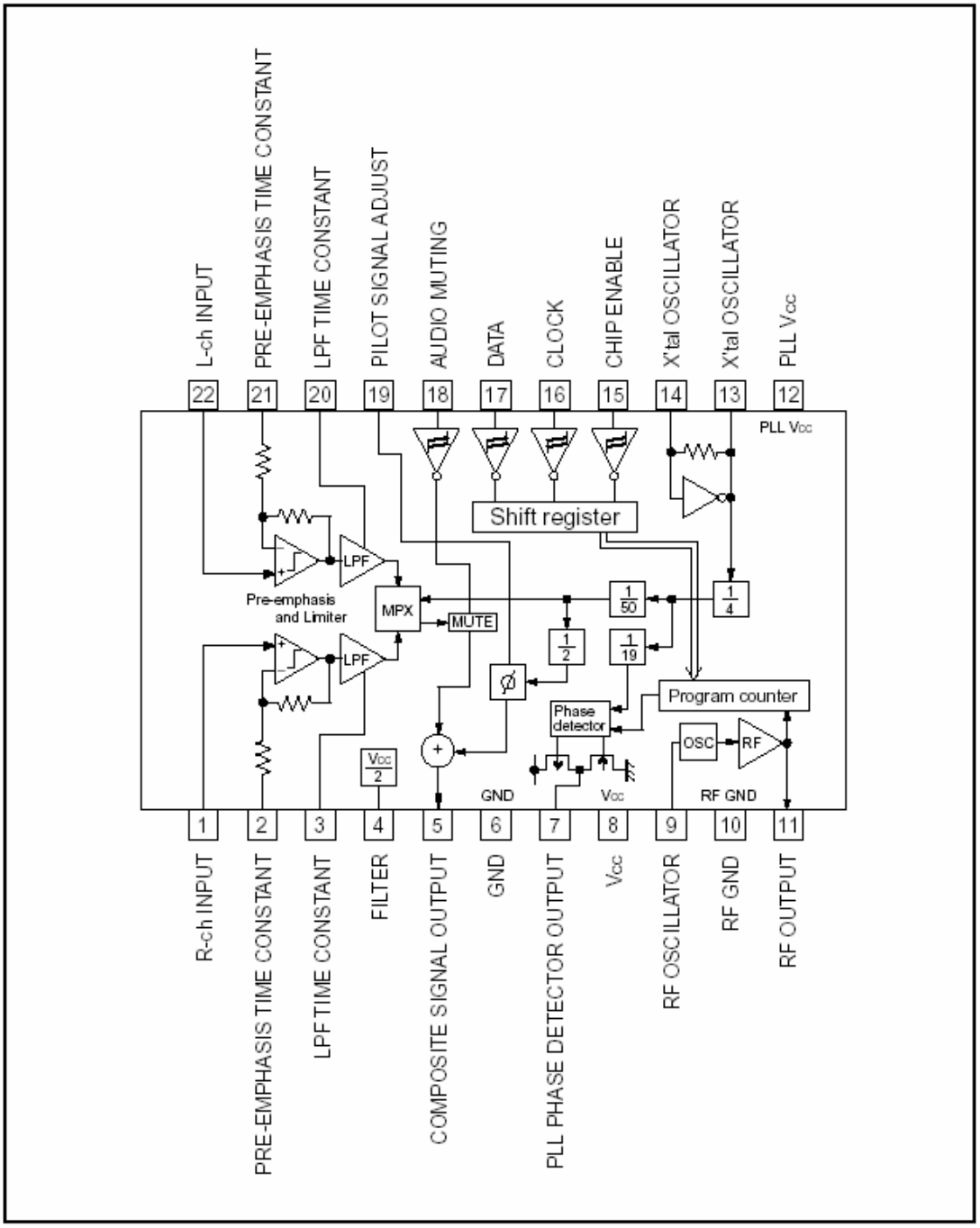
The BH1415S/F are FM stereo transmitter ICs that transmit simple configuration. The ICs consist

of a stereo modulatorfor generating stereo composite signals and a FM transmitter for broadcasting a FM signal on the air. The stereomodulator generates a composite signal which consists of the MAIN, SUB, and pilot signal from a 38kHz oscillator. The FM transmitter radiates FM wave on the air by modulating the carrier signal with a composite signal.

Features

1) It is possible to improve the timbre because it has the pre-emphasis circuit, limiter circuit, and the low-pass filter circuit.
2) Built-in pilot-tone system FM stereo modulator circuit.
3) The transmission frequency is stable because it has a PLL system FM transmitter circuit.
4) PLL data input (CE, CK, DA) by serial input.

Block diagram



3， Power Supplier unit

Input Voltage (DC 12v) is converted into DC 5 v through 78L05. The 3 V of Battery is converted into DC 5V through DC-DC(XC6371A501PR).