

# OTG15A User Manual

## ◆ Features

- ❖ OTG15A is completely compatible with OTG12A; both can be replaced each other.
- ❖ Support MP3, WMA, MIDI, and WAV lossless compression file; the highest code stream is up to 1.44Mbps.
- ❖ Adopt XILINX XC3S100E large-scale 100,000 FPGA field programming logic chip as main chip; use STL311 double USB logic IP and the DOS disk operating system of HSAV. This kind of DOS has been used for many years, and it is compatible with all USB interface memories, moreover, the performance is preeminent, stable, and reliable.
- ❖ User mainframe applies hardware three-line CTB bus usually; the speed of communication is 10 times of OTG12A.
- ❖ Support many kinds of character libraries such as 12×12 or 16×16 simplified Chinese and traditional Chinese; in order to reduce cost, it is acceptable that users don't choose supporting character library.
- ❖ Support various internal code filename such as ID3 such as GB international standard internal code, BIG5 internal code, and UNICODE standard internal code; user can get all information of playing file.
- ❖ Double USB interface; support U disk, USB mobile disk, and connect USB card reader or internal read card chip at the same time; via card reader can support all mobile flash memory cards such as CF, SMC, MMC, SD, XD, MS memory bar.
- ❖ Adopt FLASH memory; using AR5 upgrade device can directly upgrade program; it is possible to customize different functions and interfaces, and cooperating with user mainframe is better; user can upgrade program by yourself.
- ❖ Plus and minus power supply and +5V power supply, can directly use the power supply of power amplifier grade to supply power for operational amplifier; analog power supply and digital power supply are separate, which makes signal-to-noise ratio much better and noise level lower.
- ❖ Full SMC mount technology; using Ta capacitance can make mechanical property much better, and reduce voice distortion.
- ❖ Dual CPU communication mode: apply the three-line CTB bus of HSAV, the control is very simple, and it is very fast to exchange data with user mainframe; user mainframe can send Chinese internal code to get corresponding character library display contents, it is very convenient like looking up the dictionary; the format of character library response can be made to order according to user's needs, which is more easy to connect all dot matrix Chinese display screens.
- ❖ Single CPU solution: reserve many bi-directional expansion input and output ports, can realize all functions of home audio; it is acceptable that user doesn't need to expand MCU, and can add electronic tune, radio, and RDS system etc.; stable and reliable home audio control technology can customize home audio complete machine for user rapidly.



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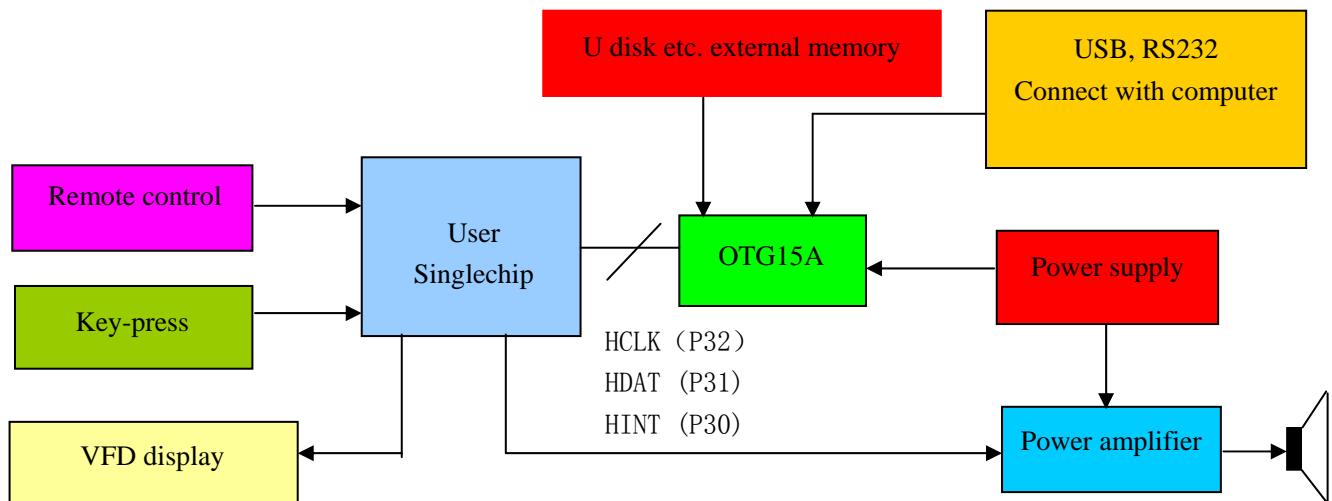
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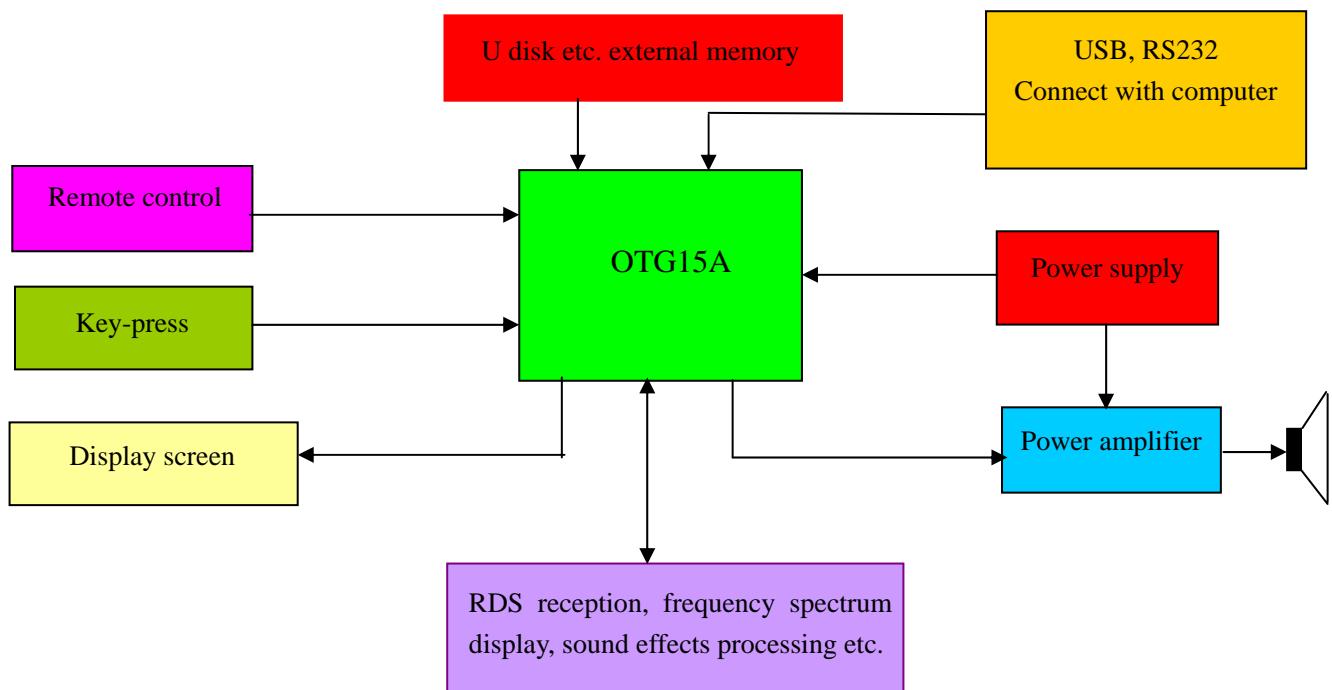


## ◆ Application Fields

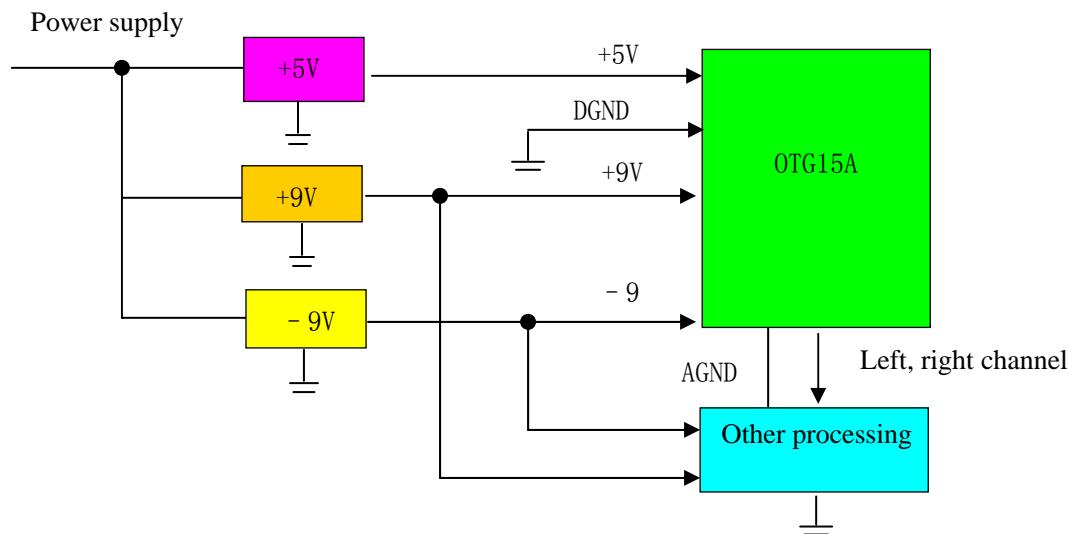
- Home audio system can easily be upgraded to the system supporting computer music; the quality of products is improved to a higher grade.
- The places requiring long time to play music, voice signals etc.
- Common broadcast system, background music playing system etc.
- The places that have to play background music because environment is very bad.
- Other music playing places.



1. The home audio solution adopting double CPU



2. The complete machine solution adopting OTG15A internal single chip



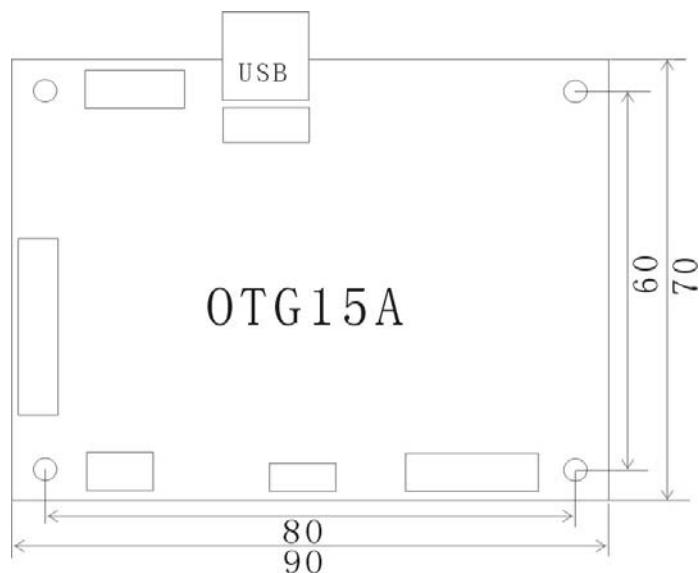
### 3. The power supply diagram of OTG15A

Attention: there is no connection between the analog power supply and digital power supply in OTG15A. User has to connect digital ground wire with analog ground wire, both can be connected in the power supply terminal or a proper place connecting ground for connection.

#### ◆ The Files Applying to The OTG15A

- 《OTG15A Software User Manual》 .....hsavd105.pdf
- 《CTB Communication Bus Application Attention 》 .....hsavd305.pdf
- 《OTG Series Products U Disk File Format Application Attention》 .....hsavd306.pdf
- 《OTG Series Products Software Introduction》.....hsavd307.pdf

#### ◆ OTG15A Dimension Diagram

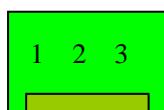




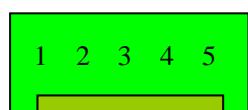
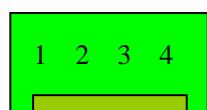
## ◆ The Socket Ports Instructions of OTG15A

**CN1**

Expansion interface.

**VCC** Power supply input/output.**GND** Ground wire input/output.**FCKC** Clock input/output.**MISO** Data input.**MOSI** Data output.**SFCS** Control input/output.**GPO** Expansion single chip I/O port P0, it is a standard bi-directional port, doesn't connect with pull-ups.**GP1** Expansion single chip I/O port P1, it is a standard bi-directional port, doesn't connect with pull-ups.**GP2** Expansion single chip I/O port P2, it is a standard bi-directional port, doesn't connect with pull-ups.**GP3** Expansion single chip I/O port P3, it is a standard bi-directional port, doesn't connect with pull-ups.**CN2**

TCB communication interface.

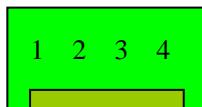
**HCLK** Standard I<sup>2</sup>C communication clock output.**HDAT** Standard I<sup>2</sup>C communication data input/output.**HINT** Interrupt input, low when interrupt occurs.**CN3****CDPW****GND****CD+****CD-****C+5V****CN4**

Only when user connects USB with computer, it may be used; if decoder only has an interface used to connect with U disk, user doesn't need to pay attention to this socket.



- GND** Digital ground wire input/output.  
**UD+** USB serial data D+ input/output connecting from outside.  
**UD-** USB serial data D- input/output connecting from outside.  
**+5V** +5V power supply input/output.

## CN5



Used to upgrade program and expand serial interface. User can skip over it in general.

- SDA** Expansion serial interface data input.  
**SCL** Expansion serial interface clock input.  
**GND** Expansion serial interface ground wire output.  
**+5V** Expansion serial interface +5V output.

## CN6



- +5V** Digital power supply +5V input.  
**DGND** Digital ground wire input.  
**LCH** Left channel audio signal output.  
**AGND** analog ground wire audio output and power supply input.  
**RCH** Right channel audio signal output.  
**+9V** Analog signal power supply input.  
**-9V** Analog signal power supply input.

## ◆ Electrical Specification

Item	Minimum	Normal	Maximum
Digital service voltage (V)	+4.8V	+5V	+5.8V
Digital working current (mA)	180mA	200mA	250mA
Analog service voltage	+5V / -5V	+9V / -9V	+18V / -18V
Analog working current	5mA	6mA	8mA
Output level1KHz@-20dB	-1dB	200mV	+1dB
Frequency response 20Hz-20KHz	--	+/-1dB	--
Signal-to-noise ratio @0dB(CCIR)	90dB	92dB	95dB
Total harmonic distortion 1KHz@-20dB	0.01%	0.1%	0.2%