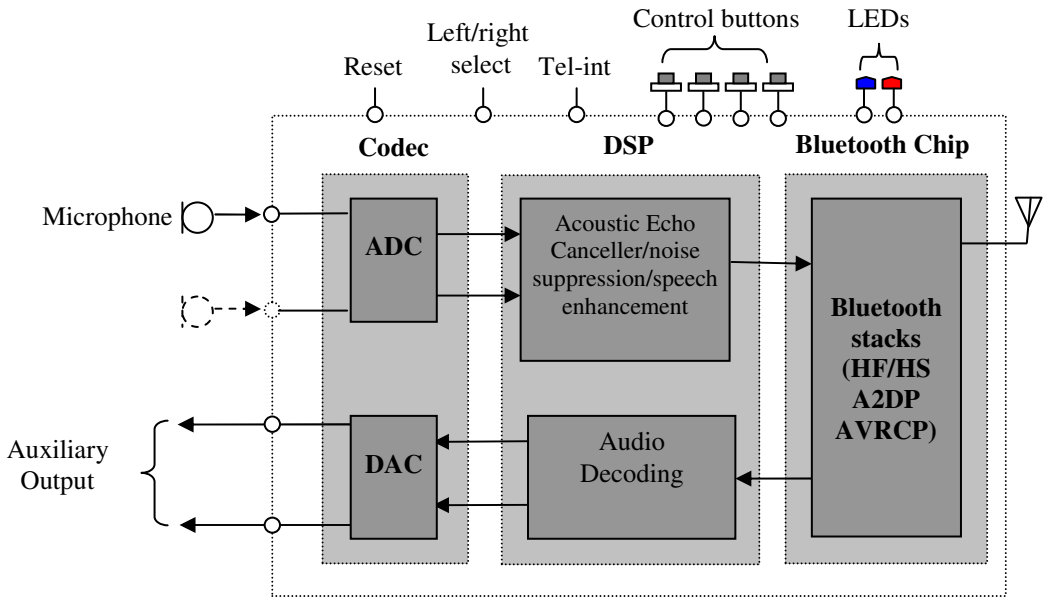
# 1. Receiver Block Diagram




Block diagram above shows the interconnects and IO interfaces of Clarion receiver unit. The system consists of following functional units

a) Bluetooth functions (SIW3500)
   All Bluetooth protocols, profiles are implemented in this module. It communicates with other Bluetooth device (audio gateway).

b) DSP (ADSST-BITW-2000)
   It is the onboard digital processor that handles all audio processing such as noise suppression, echo cancellation, sub-band coding (SBC) etc.

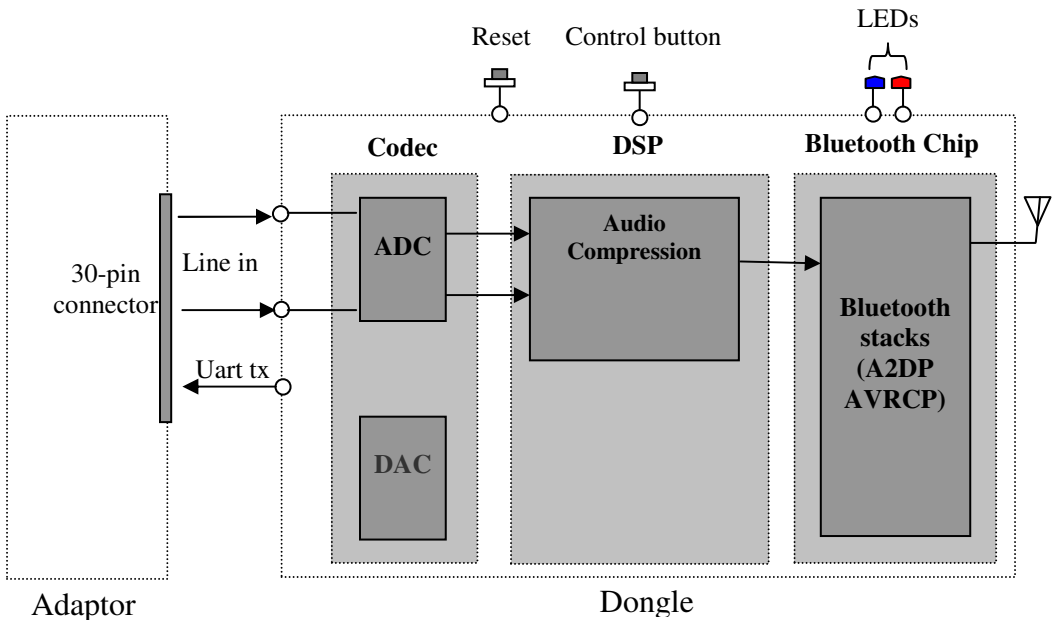
c) Codec (TLV320AIC23B)
   Converts audio data from digital to analog form and vice-versa.

d) IO interfaces

| | **IO Pins** | **Definition** |
|---|---|---|
| 1 | Microphone in | There are 2 inputs for microphone. However, only one channel is supported. |
| 2 | Auxiliary output | Audio output for both music and communication mode. It should be connected to the aux-in of car stereo unit. |

| | | |
|---|---|---|
| 3 | Reset | Perform system reset, factory default settings will be restored. |
| 4 | Left/right mono audio select | Controls whether the audio signal should come out from the auxiliary left or right channel during hands-free mode.<br>The pin will be checked only during device initialization. After that changing the pin status will have no impact until the device is re-started. |
| 5 | Tel-int | This pin will be asserted (active low) when there is incoming call and through out the duration hands-free mode.<br>It can be used to notify the car stereo unit to switch to hands-free mode when there is incoming call. |
| 6 | Control buttons | These are navigation buttons to control various operation of the device eg pairing, volume up/down, play/pause, skip track etc. |
| 7 | LEDs | 2 LEDs (red and blue) to indicate current operating mode of the device.<br>For blue LED, there are 2 level of brightness. Brighter blue indicates operation of Bluetooth, dimmer blue indicates operation of DSP.<br>The LED sequence is controlled by software. |

# 2. Dongle Block Diagram




Block diagram above shows the interconnects and IO interfaces of Clarion dongle and adaptor. The system consists of following functional units

a) Bluetooth functions (SIW3500)
All Bluetooth protocols, profiles are implemented in this module. It communicates with other Bluetooth device.

b) DSP (ADSST-BITW-2000)
It is the onboard digital processor that handles all audio processing such as audio compression using sub-band encoding (SBC).

c) Codec (TLV320AIC23B)
Converts audio data from analog to digital form.

d) IO interfaces

| | **IO Pins** | **Definition** |
|---|---|---|
| 1 | Uart tx | This is the communication channel between the dongle and iPod.<br>AVRCP commands are translated to appropriate format before it is transmitted from dongle to the |

| | | |
|---|---|---|
| | | iPod. |
| 2 | Line in | Analog output signal from external source eg iPod is fed to the line-in so that it can be converted to digital format and transmitted to the audio sink. |
| 3 | Reset | Perform system reset. All current setting will be erased and factory defaults will be restored. |
| 4 | Control button | This is a multi-function button that controls various operation of dongle such as on/off, pairing. |
| 5 | LEDs | 2 LEDs (red and blue) to indicate current operating mode of the device.<br>For blue LED, there are 2 level of brightness. Brighter blue indicates operation of Bluetooth, dimmer blue indicates operation of DSP.<br>The LED sequence is controlled by software. |