

Practical no: 6

Title: Understanding and connectivity of Raspberry-Pi /Beagle board with a Zigbee module. Write a network application for communication between two devices using Zigbee.

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Aim:

Understanding and connectivity of Raspberry-Pi/ Beagle board with a Zigbee Module. Write a network application for communication between two devices using Zigbee.

Theory:

Zigbee is a communication device used for the data transfer between the controllers, computers, systems, really anything with a serial port. As it works low power consumption, the transmission distances is limited to 10-100 meters line-of-sight. Zigbee devices can transmit data over long distances by passing data through a mesh network of instance intermediate devices to reach more distant ones. Zigbee is typically used in low data rate applications that require long battery life & secure networking. Its main applications are in field of wireless sensor network based on industries as it requires short-range low-rate wireless data transfer. The technology defined by the Zigbee specifications is intended to be simpler & less expensive than other wireless networks.

Here we make use of an interface of Zigbee with Raspberry Pi 2 for a proper wireless communication. Raspberry Pi 2 has got four USB ports, so it Zigbee Dongle for this interface. Now we want to check the communication between two paired Zigbee modules.



* Interfacing of Zigbee

Python Script to perform Zigbee Communication

```
import Serial
# Enable USB Communication
ser = Serial.Serial('/dev/ttyUSB0', 9600, TIMEOUT=5)
while True:
    ser.write('Hello User\r\n') #write a Data
    incoming = ser.readline().strip()
    print 'Received Data:' + incoming
```

Conclusion:

Thus, we have done Zigbee Communication between two Raspberry Pi Devices.