

The logo for GadgEon, with 'Gadg' in blue and 'Eon' in orange.

Engineering Smartness

# END TO END REFERENCE APPLICATION FOR MBAN

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Version 01





# End to End Reference Application for MBAN



As more and more connected devices being used in hospitals for patient monitoring, a real concern for hospitals and healthcare institutions is how to handle wireless congestion. This could lead to delay or loss in transmission of vital body signals and might lead to incorrect medical diagnosis.

## Solution Description

- Medical Body Area Networks (MBANs) supporting healthcare applications are in early development stage offers a viable solution to wireless congestion in hospitals. Medical Body Area Network technology or MBAN uses 40Mhz of protected spectrum in the 2360-2400 MHz band specifically for wireless medical devices providing a more reliable, faster, and interference free data transmission.
- Due to the increasing demand for MBAN applications, many semiconductor manufacturers have indicated their current 2400-2483.5 MHz ISM band chipsets used for ZigBee/Bluetooth can easily be modified or adapted to MBAN spectrum. This should allow for rapid deployment of this technology.

## Outcome and Benefits Delivered

- A minimum viable solution has been developed, tested and demonstrated



# Business Context / Challenges of the Customer

Our Client, a market leader in healthcare device manufacturing in the US wanted to develop an end to end application which could transport real time data over MBAN from an ECG patch.



# The Solution / System Description

## Implementation:

The Wireless ECG system consists of 3 units:

### Patch

Patch is a coin cell operated wearable device which collects 4 lead ECG and Respiration from human body. Patch digitize data and transmits it over MBAN/WiFi.

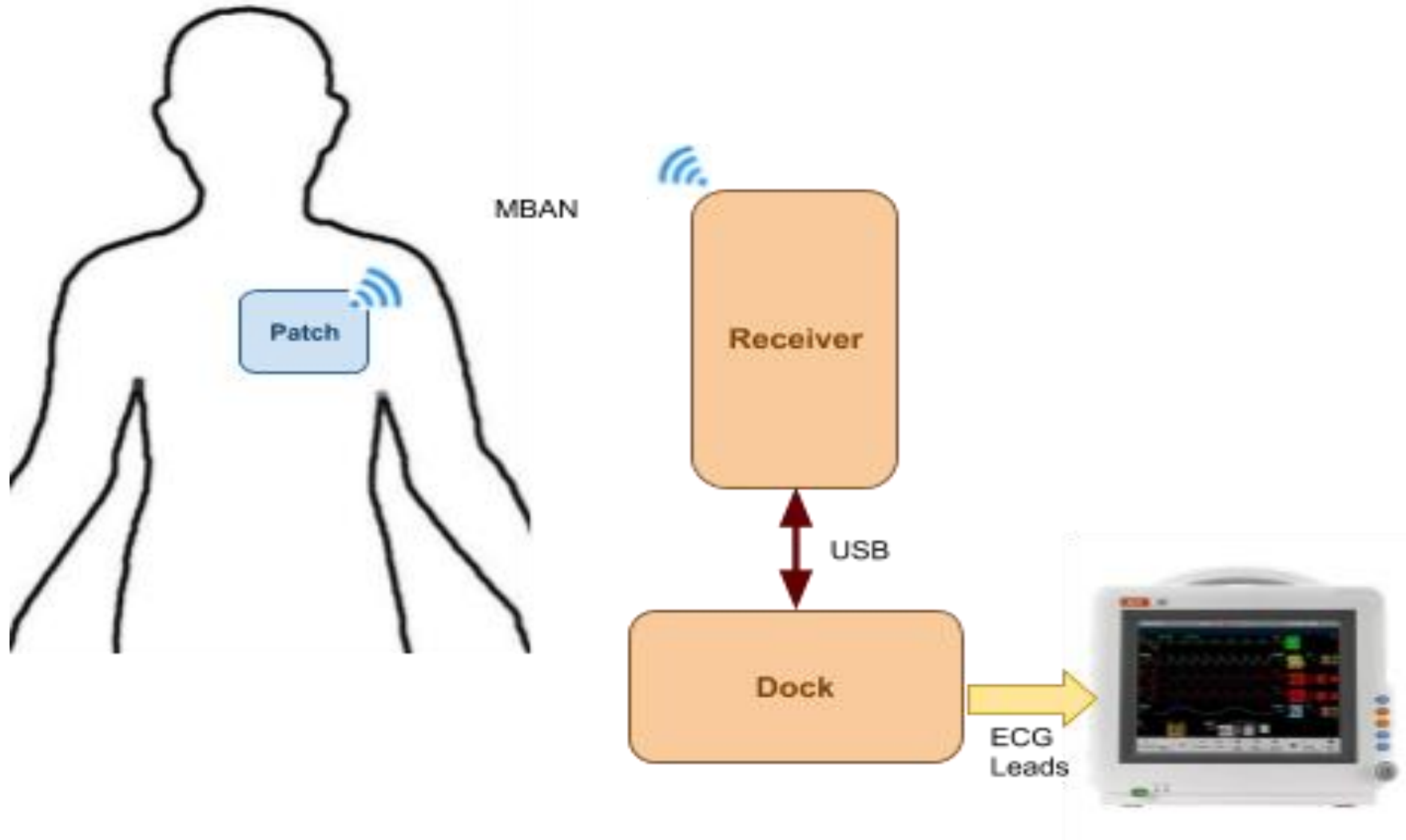
### Receiver

Receiver unit collects the data from a patch and and sends the data stream to dock over USB interface. Receiver provides user interface through onboard display and LEDs. Receiver to transmitter pairing is based on proximity. Receiver configuration updates and firmware upgrade can be done by connecting the USB port to a PC running the utility software.

### The Dock

Dock receives ECG data and play out data through a conventional ECG monitor. The data is then converted to analog output using DAC which can be directly connected to ECG monitor. Respiration data is simulated to the ECG monitor using digital potentiometer controlled based on the patch respiration data.

# ▶ System / Architecture Description



# THANK YOU



For More Details, Let's Connect



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