

# Embedded System in Medical – A Review

Dr. M. Siva Ramkumar<sup>1</sup>, S.Vijaya<sup>2</sup>, Vidyalakshmi R<sup>3</sup>

1 Asst Prof, Dept of EEE, Karpagam Academy of Higher Education, India

2 Asst Professor, Dept of EEE Karpagam Institute of Technology, India.

3 Asst Prof, Dept of EEE, Karpagam College of Engineering, India

siva.m@kahedu.edu.in

## Article Info

Volume 83

Page Number: 10043 - 10048

Publication Issue:

March - April 2020

## Article History

Article Received: 24 July 2019

Revised: 12 September 2019

Accepted: 15 February 2020

Publication: 11 April 2020

**Abstract:** Presently a day's catastrophic events are driving the significant reason for the expansion in the level of the death rate. One of the significant reasons is seismic tremor, for which as a specialist a microwave life identification framework is proposed to evade these incidents. With the fleeting installed frameworks alongside microchip, the structured framework produces safe yards gauges and forestalls demise by working at certain recurrence can remotely distinguish the breathing and heartbeat signs of individuals covered under seismic tremor rubble. By legitimate preparation of these signs, the status of the individual under snare can be handily judged. The whole procedure happens inside a couple of moments as the framework is constrained by the chip (8085) or microcontroller unit.

**Keywords:** Embedded System.

## I. INTRODUCTION

At present, as we as a whole know the need of great importance is to locate a compelling technique for protecting individuals covered under tremor rubble or falling structure. It must be done before we experience another shake. Present techniques for looking and protecting casualties covered or tapped under seismic tremor rubble are not viable. Taking all the variables as a primary concern, a framework that will be compelling to take care of the issue has been structured.

## II. PRINCIPLE OF OPERATION

The essential guideline is that when a microwave light emission recurrence (L or S-band or UHF band) is focused on a part of rubble or crumbled working under which an individual has been

caught, the microwave shaft can infiltrate through the rubble to contact the individual.

At the point when the individual is engaged by the microwave bar, the reflected wave from the individual's body will be adjusted or changed by their developments, which including breathing and heartbeat. At the same time, reflected waves are likewise gotten from the crumpled structures. In this way, if these reflected waves from the relentless trash are dropped and the reflected wave from the individual's body is appropriately recognized, the breathing and heartbeat signs can be identified.

By appropriate preparation of these signs, the status of the individual under snare can be handily judged. In this manner, an individual under flotsam and jetsam can be recognized.

### III. MAJOR COMPONENTS OF THE CIRCUIT:

The microwave life identification framework has four significant segments.

They are A. A microwave circuit which creates, intensifies and conveys microwave Signals to various smaller scale segments.

B. A microwave controlled mess undoing framework, which makes an Optimal sign to drop the messiness from the rubble.

C. A double receiving wire framework, which comprises two reception apparatuses, empowered consecutively.

D. A PC controls the chip and goes about as the Monitor.

#### WORKING FREQUENCY:

The recurrence PC of the microwave falls under two classifications, contingent upon the sort and nature of the fallen structure. They are,

(I). L or S-band recurrence says 1150 MHZ (ii). UHF band recurrence says 450 MHZ

#### CIRCUIT DESCRIPTION:

The circuit depiction is as per the following:

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##### Phase Locked Oscillator:

The stage bolted oscillator produces an entirely steady electromagnetic wave say 1050 MHZ with yield power say 350 mW..

##### Directional Coupler 1(10 db):

This wave is then taken care of through a 12 dB directional coupler and a circulator before

arriving at a radio recurrence switch, which invigorates the double receiving wire framework. Additionally, the ten dB directional coupler stretches out one-tenth of the wave (35 mW ) which is then separated similarly by a directional coupler1(2.5dB)

##### Directional coupler2 (3db):

One yield of the 3 dB directional coupler2 (20mW) drives the messiness abrogation unit. Other yield fills in as a nearby reference signal for the twofold adjusted blender.

##### Antenna System:

The double receiving wire framework has two radio wires, which are invigorated successively an electronic switch. Every reception apparatus acts independently.

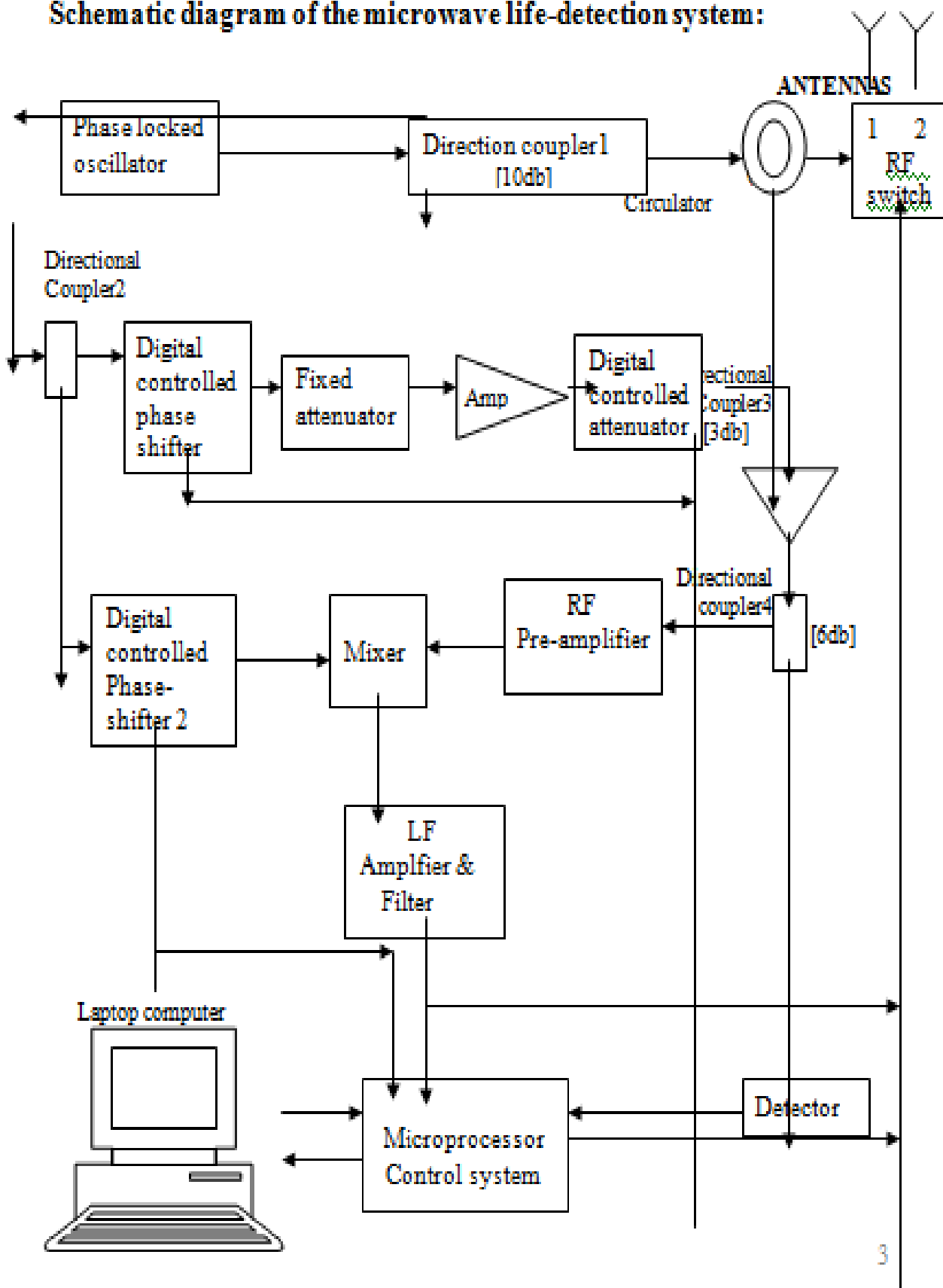
### IV. WORKING

#### Clutter Cancellation of the Received Signal:

The wave transmitted by the receiving wire I infiltrate the seismic tremor rubble to contact the covered individual. The reflected wave got by the antenna2 comprises an enormous reflected wave from the rubble and a little reflected wave from the individual's body. The enormous mess from the rubble can be dropped by a messiness dropping sign. .

The little reflected wave from the individual's body can't be dropped by an unadulterated sinusoidal dropping in light of the fact that it is regulated by their developments. The yield of the messiness scratch-off circuit is consequently changed in accordance with being of equivalent abundance and inverse stage as that of the messiness from the rubble.

**Schematic diagram of the microwave life-detection system:**



In this way, when the yield of the messiness crossing out circuit is joined with the directional coupler<sup>3</sup> (3 dB), the enormous mess from the rubble is totally dropped. Presently, the yield of the directional coupler<sup>3</sup> (3dB) is gone through a directional coupler<sup>4</sup> (6dB). One-fourth of the yield is coordinated is intensified by an RF pre-enhancer and afterward blended in with a nearby reference signal in a double-balanced mixer.

Three-fourth of the yield is guided by a microwave finder to give a DC yield, which fills in as the marker for the level of messiness abrogation. At the point when the settings of the carefully controlled stage shifter and the attenuator are cleared the microchip control framework, the yield of the microwave locator changes appropriately.

#### **DEMODULATION OF THE CLUTTER CANCELLED SIGNAL:**

At the twofold adjusted blender, the enhanced sign of the reflected wave from the individual's body is blended in with the neighborhood reference signal. The period of the nearby reference signal is constrained by another carefully controlled stage shifter<sup>2</sup> for an ideal yield from the blender. The yield of the blender comprises the breathing and heartbeat signs of the human in addition to some unavoidable clamor. This yield is taken care of through a low recurrence speaker and a bandpass channel (0.4 HZ) before showed on the screen. The capacity of the carefully controlled period of the nearby reference signal to expand the framework affectability. The reflected sign from the individual's body after intensification by the pre-enhancer is blended in with the nearby reference signal in a twofold adjusted blender.

#### **ANTENNA SYSTEM:**

At first, the switch is kept in position<sup>1</sup> i.e Signal is transmitted through the reception apparatus 1 Wait for some foreordained sending time,  $T_s$  Then the switch is tossed to position<sup>2</sup> i.e Signal is gotten

through the radio wire 2 Wait for some foreordained accepting time  $T_r$  Go to stage 1 Repeat the above methodology for some foreordained time,  $T$ .

#### **CLUTTER CANCELLATION SYSTEM:**

Impart the sign to the rubble through antenna<sup>1</sup>. Get the sign from the rubble through antenna<sup>2</sup>. Check the locator yield .in the event that it is inside as far as possible go to step<sup>5</sup>. In any case, impart the amendment sign to the carefully controlled stage shifter<sup>1</sup> and the attenuator and go to step<sup>1</sup>. Check the affectability of the blender. On the off chance that it is ideal to go to stage 7. In any case, impart the rectification sign to the carefully controlled stage shifter<sup>2</sup> to change the stage and go to step<sup>1</sup>. Procedure the flag and send it to the PC

#### **FREQUENCY RANGE OF BREATHING AND HEART BEAT SIGNAL:**

The recurrence scope of heartbeat and breathing signs of people lies somewhere in the range of 0.1 and 2.5 HZ.

#### **Advantages**

The area of the individual under the rubble can be known by figuring the time pass between the sending time,  $T_s$  and getting time. Since it won't be conceivable to constantly watch the framework under basic circumstances, an alert framework has been set, so that at whatever point the PC forms the got signal and recognizes that there is an individual, the caution sound beginnings.

Likewise, under basic circumstances, where living creatures other than people are not required to be discovered, the framework can recognize the signs of other living creatures dependent on the recurrence of the breathing and heartbeat signals.

#### **V. CONCLUSION**

In this manner, another delicate life recognition framework utilizing microwave radiation for

finding people covered under tremor rubble or holed up behind different obstructions has been planned. This framework working either at L or S-band, the UHF band can identify the breathing and heartbeat signs of individuals covered under tremor rubble.

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