Transmitting Sound Using Laser Pointer

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Abstract—

Light became very popular in communication it happened by fibre optics, in which it guides to send optical data much like a wire to transmit the current. It might be seen impractical of usage of the laser without a guiding medium to transmit information. Physical connection is unfeasible a need of focused beam arises, the laser light might be seen used logically. A simple inexpensive proof-of-concept is needed to demonstrate the advantages of this seemingly impractical scheme. The unique property of laser is light wave will travel very long distances with a very little divergence.

The main purpose of the project is to realise a transmission-reception system to transfer sound form of the laser without a guiding medium using "Intensity Modulation" with little quality loss.

Being existing an idea of optical fibre communication it concrete existence on laser communication.

-Robert Winston, Professor of Science and Society at Imperial College London. "The atoms become like a moth, seeking out the region of higher laser intensity."

-Steven Chu, co-winner of the Nobel Prize in Physics in 1997 for the "development of methods to cool and trap atoms with laser light".

"INTRODUCTION."

"PROBLEM"-Transmitting optical signal along a fibre to a receiver, there are a number of practical problems need to be solved, signal loss caused by atmospheric turbulence.
"PREVIOUS WORK"-Used in optical fibre communication and laser space communication.
"PURPOSE"-Can be used in speakers by using laser beams, Door Security, Spying, laser alarm, laser space.
"RESULT"- This technique not only used in communication area can be done every part of protection works.

"HOW TO TRANSFER SOUND USING LASER POINTER"

"LASER POINTER."

"Introduction."- The Laser is one which forms with 'dimensions' and it's ranging from "size of a grain of salt" in which takes the time to occupy object. "Lasing medium" can be gas, "insulating crystal", or "semiconductor". Optical fibre systems used laser sources almost are exclusive as semiconductor laser diodes. This is similar to all other lasers which are formed such as conventional solid-state and gas lasers, which are emitted by the radiation spatial and temporal coherence the output radiation is very high monochromatic and the light beam is very highly directional.

Lasers are used in space communications since 1960, used past three decades in the form of advances in system architecture and component technology, it made much attractive approach between the satellites of a not visible laser.

"Literature Survey."-1. It is presently used in radio systems and satellites, we get the idea by "LASER COMMUNICATIONS" which is a concept of optical fibre communications.

2. SONY is using a lot of laser communication in form of "laser projectors" in the present world.

"Existing Methodology."- 1. Laser Technique is still being used by "SONY CORPORATION", in the form of "LASER PROJECTORS" and "SEMICONDUCTOR LASER DRIVE CIRCUIT" going to trend a lot by laser projectors in SONY presently.

2. Laser communication is formed by a concept of "OPTICAL FIBRE COMMUNICATION".

3. Laser communication presently used by SONY in form of laser projectors.

4. Used in the "relay demonstration", the next step in optical communications.

5. Used by NASA since 1958, it's based on the radio frequency communications as a viable medium for exchanging data between a mission and a spacecraft. "lunar reconnaissance orbiter"

the principles and methods of this type of communication are evolved.

6. NASA communicates mission-critical information by LCDR uses a laser to encode and transmit the data.

7. NASA allows the laser communication rates 10 to 100 times faster than RF-based frequency.

8. Used in only some areas like protecting "diamond", laser Security alarm

"Experimental Results."

1. This experiment is purely based on a transfer of sound by a laser pointer by a laser beam.
2. Transferring of sound is very simpler by this process.
3. The Process is very easier and simpler any person can try and make new things by this communication.

"Proposed Method."

1. Used in communicating the sound by a beam of a laser.
2. The idea came by optical fibre communication.
3. Used in mainly for transferring of sound by a "1 CNY 70 optical sensor".
4. The 1cny 70optical sensor is the main part to transmitter end and receiver end of the device.
5. The Connection is simpler doing in laser pointer communication.
6. The connections are very simple to connect.

"Result Analysis."

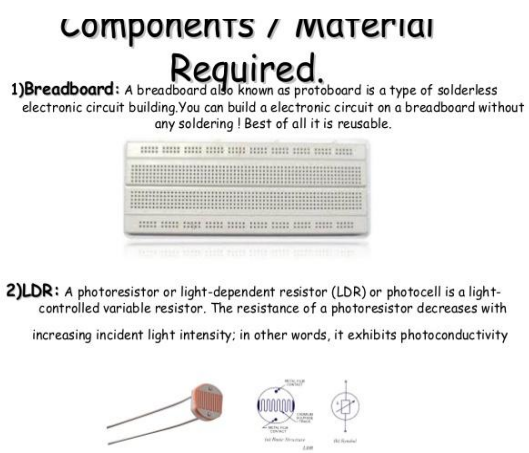
Sending a signal from transmitting end or any channel of laser acting towards the sensor converts or sends the sound wave to receiver end as an output and sound is produced by a laser beam at the receiver end of laser pointer communication.

"Conclusion."

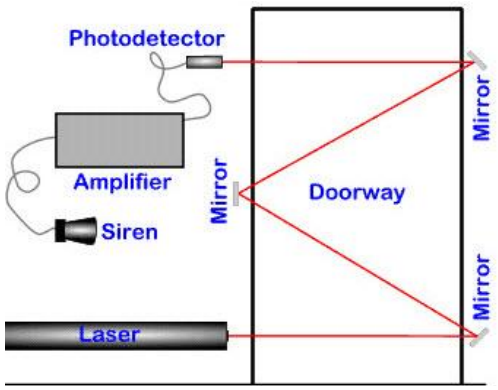
"Optical Sensor" plays a main role in the laser pointer communication circuit. If there is no sensor the receiver end will not be giving an output by a laser beam of light, Laser communication in space has a long goal for NASA in which data transmission rates are enabled of 10 to 1,000 times higher than traditional radio waves. Laser and radio transmission will travel in a light-speed, the laser can enhance more data.

Safety everyone's responsibility.

- ***How to transfer sound using laser pointer***
- ***Laser pointer.***



"Figure-1"



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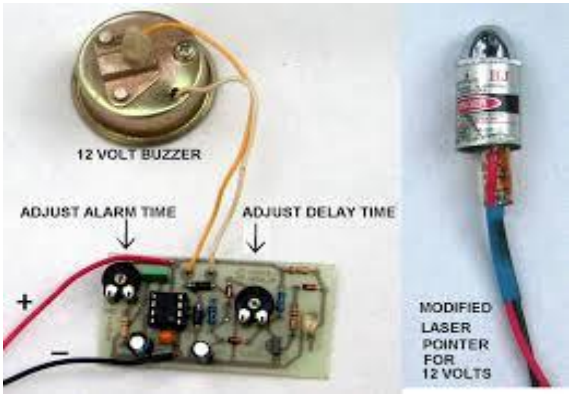

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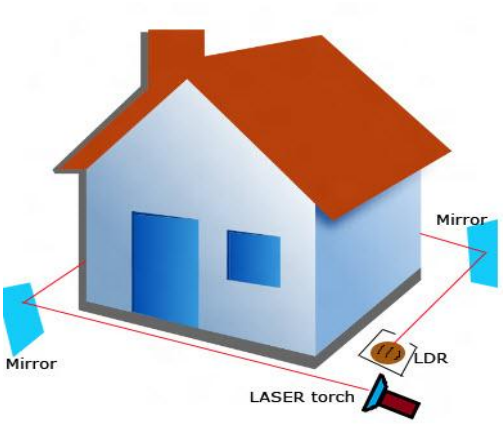

"Figure-4"

"Figure-5"

"Figure-1"-the basic components of experiment

"Figures-2&4"-Transmission of laser communications

"Figure-3"-outer parts of circuit

"Figure-5"-output transmission of laser

"References"

[1]McGraw Hill Education (India), Gerd Keiser, Optical Fibre Communications, Edition 2013.

[2]Google Searching.

"Conclusion and future enhancement."-

NASA has a long goal of sending two-way laser communication in space and it enables data transmission rates higher of 10 to 1,000-times traditional radio waves. Radio and lasers can pack more data. Dial-up internet connection is to the broadband.

Lasers are used as the refine the basic principles of fundamental physics.

Microwave have a limited number of 2 distances in meters such as a laser has a potential of getting down into well beyond of centimetre range.

When we can make a planetary scale measurement at the centimetre or millimetre levels, then you can able to understand some of the relativistic physics in which it can be only tested at very extreme accuracies of very large or more distances.

"References."-

[1]Optical Fibre Communications, Gerd Keiser, Volume-5e, INDIA, Edition-2013.

[2]Google Searching on some journal.