

Translations

Charge

مشاراځې

Off

اخاموض

On

روڼ

Tuning

ميژن كړدن

Volume

سدا

Team 626, has built an effective miniature radio that can aid the United States' efforts against the Taliban army. The receiver is compact, durable, and reliable.



Solar panels used to recharge the battery



**Senior Design Project
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Short Wave AM Receiver

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15 MHz Short Wave AM Receiver



**The first day you meet, you are friends. The
next day you meet, you are brothers.**
Afghan Proverb

15 MHz AM Short Wave Receiver

Team 626 is a small, private organization that was founded on innovation, creativity, and electronic ingenuity.

The latest project from Team 626 is a compact, durable, solar-rechargeable radio receiver. The



This miniature radio is compact and durable.

States government's effort, simply because the majority of the Afghan people are illiterate, making pamphlet circulation ineffective.

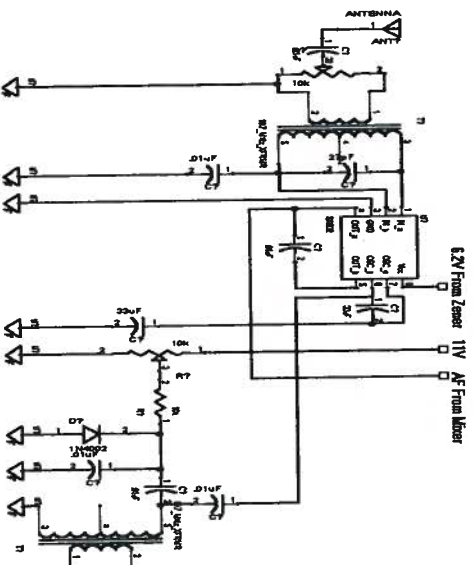
The short wave receiver uses a direct conversion design. The receiver is able to process an incoming signal with no need to mix or transform it with additional internal oscillators running at intermediate frequencies. This allows for a much simpler circuit design, utilizing Signetics' NE602 IC double-balanced mixer and oscillator. This receiver permits tuning of CW, AM, and SSB signals with no need for a separate beat frequency oscillator.

Team 626 efficiently utilizes innovations in electronics that allow for a simple, compact, efficient, and durable AM receiver that is equivalent in its effectiveness to a complicated superhetrodyne receiver.

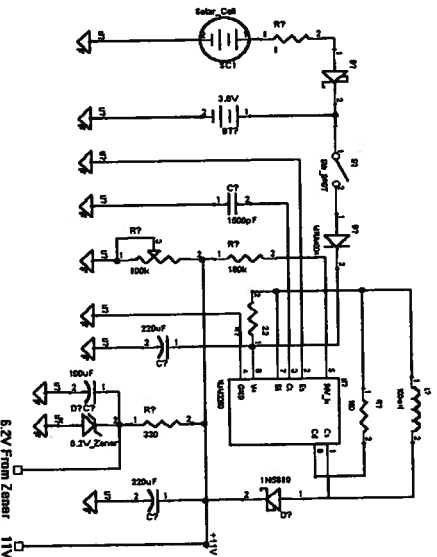
purpose of this receiver is to broadcast messages from the United States of America to the Afghan people, notifying them of U.S. intentions in Afghanistan. Communication via radio is vital to the United States government's

Schematics

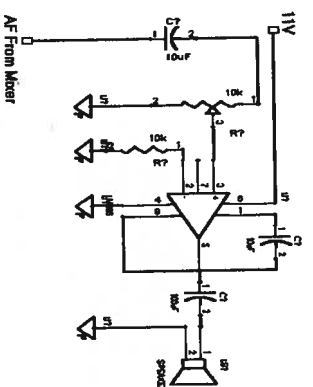
The sections of the receiver circuitry are outlined below.



The direct conversion receiver using the NE602 Mixer/Oscillator is simple and effective.

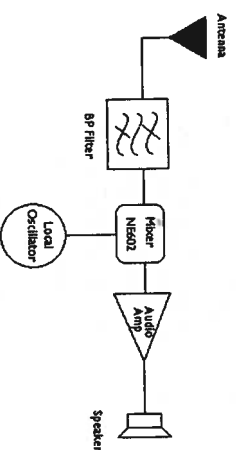


Team 626's innovative power supply design steps up the voltage from three 1.2V batteries to provide an 11V supply to the circuit. The battery is recharged using a 4.5V 100 mA solar charger. For 6 hours of charge time, the radio can operate for 1 hour.



The audio amplifier boosts the output from the mixer, to provide strong, clear sound.

Block Diagram



Simple Block Diagram of direct conversion receiver.

Specifications

Direct Conversion Receiver, 3 ft. earphone with internal antenna.	
Frequency Range	14.5 MHz - 15.5 MHz
Bandwidth	10 KHz
Dimensions	4.38" x 3.25" x 1.51"
Battery	3.6 Volt Battery w/ Solar Charger
Durability	Parachute Included
	Waterproof to 10 ft. ABS plastic casing. Sealed from dirt, dust and water.

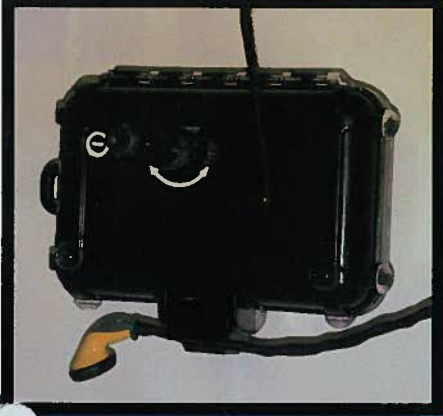
Extra Information

The Ken Kaiser Anti-Taliban Super Commando Radio supplies the demanding Afghani consumer with a virtually impenetrable outer shell at an affordable price. The radio is equipped with universal symbols for on/off functions and tuning.

P.H.U. Enterprises believes that this product can be effectively marketed to military units around the world. The immediate goal is to market the product to the United States Government for help with the war against terrorism.

Each KKATSCR is manufactured to the stringent and exacting standards that you have come to expect from P.H.U. Enterprises. The only name you need to know in radios is Ken Kaiser.

P.H.U. ENTERPRISES



Got Afghani Radios?



EE 490 Capstone Design
Professor Kenneth Kaiser

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Radio Interior



The Man, the Myth,
the Legend.
Ken Kaiser



Organization

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Commando Radio Features

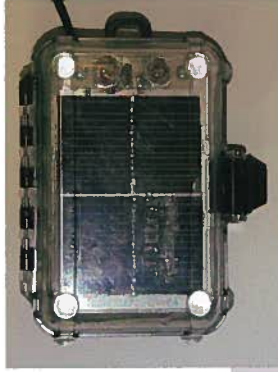
The Ken Kaiser Anti-Taliban Super Commando Radio (KKATSCR) was developed under the supreme guidance and financial backing of its namesake. The 2001 edition offers many exciting upgrades and features new to the world of the already advanced Afghanistan radio technology.

A partial list of the mind-boggling features appears below:

- Impervious to water
- Parachute for air drop possibilities
- Extreme temperature functionality
- Solar charge capabilities
- Self-contained compact design
- Custom radio interior
- Adjustable tuner
- Compact earpiece
- Impact resistant

Company Information

P.H.U. Enterprises was formed in 1998 when 4 highly motivated Kettering University students decided to put their engineering knowledge to use for the benefit of mankind. P.H.U. Enterprises continues to strive for global equality while maintaining a multi-billion dollar international business. When the recent terrorist events unfolded, P.H.U. Enterprises was challenged to build an informational radio designed to deliver critical news to Afghani refugees without unwanted intrusion. The KKATSCR not only meets these requirements but sets the benchmark for future mobile radio technology.

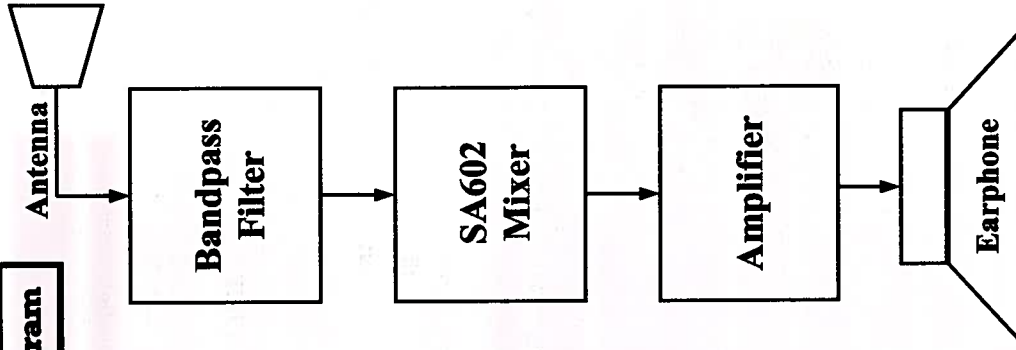


Front face of the radio

Radio Purpose and Usage

This radio was designed as a medium to deliver pertinent information to Afghani civilians. The radio features a small tuning range so that messages can be delivered on pre-selected frequencies assuring proper reception. High efficiency solar panels enable this device to fully recharge within a few hours eliminating the need for battery replacement.

Radio Diagram



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Kettering University

15 MHZ SHORT-WAVE RADIO



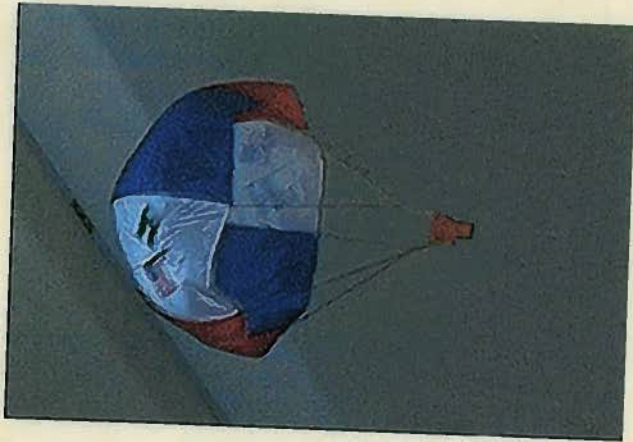
Specifications

Mass	1.2 Kg
Dimensions	7 cm x 11 cm x 5 cm

This small and light weight design allows for easy mobility and allows for units to be distributed per unit area at a low cost to the producer.



The power source of this radio is a 3.6 Volt battery, which is charged by a solar cell. This type of technology ideally eliminates the dependency on standard alkaline batteries, which may be difficult to come across in Afghanistan. The solar cell provides a reliable power source that does not need replacement.



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Dr. K. Kaiser**



Our thoughts and prayers are with our great nation.

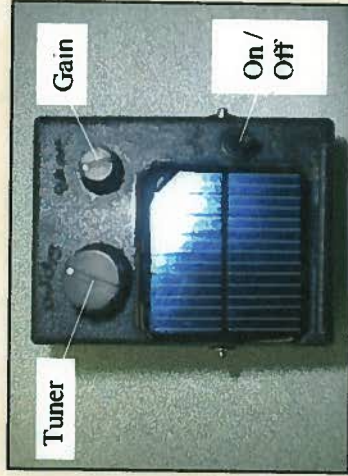


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After the tragic events of September 11, 2001 the importance of communication became evident. From the relief workers at the World Trade Center site to the students glued to their television sets at their elementary schools, updated information on loved ones and rescue efforts were broadcasted nation wide. However, not all countries are as fortunate as the United States when it comes to communication technologies. The people of Afghanistan have virtually been cut off from the civilized world, and they need a means of communication. To keep the citizens of Afghanistan up to date with local news and relief efforts, a small solar powered 15 MHz short-wave am radio was developed. It can be parachuted from airplanes for delivery.



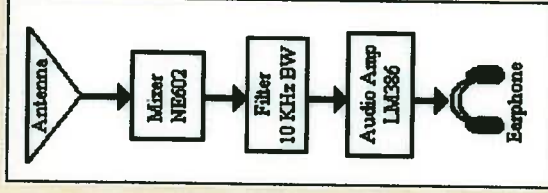
Features



The following are some important features of the 15 MHz shortwave radio.

- 10 kHz bandwidth that allows for a tuning range between 14.5 MHz and 15.5 MHz
- Compact design
- Ear piece for listening
- Direct Conversion Receiver
- Double sided PC board
- Solar powered circuit to energize rechargeable NIMH battery
- Arabic labeling
- Parachute for safe landing

Block Diagram



The antenna receives transmitted radio signals. The mixer converts the wave into an analog signal. The filter eliminates any frequencies outside the desired bandwidth. The amplifier increases the volume of the signal to an audible level and directs the final signal to the earphone.

Parachute Design

The rugged desert environment of Afghanistan demands both durability and quality in the delivery process.



To ensure that all criteria are met, the radio is equipped with a nylon parachute. The nylon resists snagging and is relatively immune to the harsh environments that Afghanistan presents.