



DON BOSCO INSTITUTE OF TECHNOLOGY
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
IEEE-DBIT MTT-S STUDENT BRANCH

Report of Day 1

“HAM Radio Workshop”

Topic: “Basic Information of a HAM Radio” and applications in real life

Date: 31st March, 2023

Time: 9:00 am to 5:00 pm

Venue: Santino Mondini Hall, Don Bosco Institute of Technology, Kurla, Mumbai 400070

Speaker: Team MARI (Mumbai Amateur Radio Institute) -Mr. Jayesh V Banatwala, Mr. Aditya Sawant, Mr. Akshay Suryarao, Mr. Sameer Pawaskar, Mr. Dhanesh Gharat, Mr. Pritesh Thakur, Mr. Suhas Naringrekar.

Participants: 15 IEEE members 53 Non-IEEE members

Objective: Informative session on HAM Radio and practical creation of a practical Antenna.

- Students will get to learn the basics of HAM Radio and the working principle behind it.
- Students will make their own practical antenna for the FOX Hunt event.

Description:

- IEEE-DBIT MTT-S Student Chapter organised a workshop of “*HAM Radio*” for the entirety of DBIT as well as other colleges on 31st March & 1st April 2023.
- The workshop commenced on 31st March at 9:00 am with an expert talk by Mr. Jayesh V Banatwala of Team MARI.
- He shared with the participants his journey of being a full time HAM Radio enthusiast.
- He also told the participants of processes executed using HAM Radio:



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1. Experimentation
 2. Self-Training
 3. Emergency Communication
 4. Private Recreation
- He explained the process of obtaining a HAM license and also the basics of Morse codes.
 - A break was provided at 1:15 pm after which the workshop commenced back again at 2:00 pm sharp with antenna making.
 - Students were provided with accurate measurements by the trainers for making of the Antenna at 145MHz.
 - Students were also provided with the tools to make their own antenna and were assisted by the volunteers as well as the Team MARI Trainers.
 - A soldering and testing station was also established where Mr. Jayesh Banatwala demonstrated the soldering of RG-58 cable with the dipole using a Copper wire in the middle to bridge the connection.
 - The first day of workshop ended at 5:00 pm with all the students making their antenna and getting them tested where the standard values were set to SWR being 1:1, Frequency of 144-146MHz, and Impedance being 50Ω which was achieved by all of the antennae prepared by the students.

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Pictures from the Day 1 session:



Team MARI being welcomed for the Workshop



Mr. Jayesh V Banatwala introducing the students to the topic of HAM Radio

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Mr. Aditya Sawant providing students with the measurements of the antenna



Students enthusiastically preparing their antenna

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Mr. Sameer Pawaskar demonstrating the students how to solder and wind their RG-58 cable for suitable impedance



Soldering demonstration and testing of the Antenna done by Mr. Jayesh V Banatwala



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Report of Day 2

“HAM Radio Workshop”

Topic: “FOX Hunt” using a Yagi antenna to find a transmitter hidden.

Date: 1st April, 2023

Time: 9:00 am to 5:00 pm

Venue: Santino Mondini Hall, Don Bosco Institute of Technology, Kurla, Mumbai 400070

Speaker: Mr. Jayesh V Banatwala, Mr. Aditya Sawant, Mr. Akshay Suryarao, Mr. Sameer Pawaskar, Mr. Dhanesh Gharat, Mr. Pritesh Thakur, Mr. Suhas Naringrekar.

Participants: 15 IEEE members 53 Non-IEEE members

Objective: Informative session on HAM Radio and practical creation of a practical Antenna.

- Students will get to learn the basic's of HAM Radio and the working principle behind it.
- Students will make their own practical antenna for the FOX Hunt event.

Description:

- On day 2 of the workshop on 1st April at 9:00 am, Team MARI provided the participants insights on how to use their YAGI antenna and FM receiver to find the FOX hidden in the college campus.
- Sir gave tips as to how to use the Antenna and Transceiver given by using the interval of sound produced by the transceiver through which one could determine the location of the FOX.



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- They also gave tips on how to use the Antenna by using the three-stage antenna which included a Director, Dipole and Reflector. Director and Reflector can be removed for better accuracy as the entire antenna is used to find the general location of the FOX and by removing the parts a much finer signal can be received by the Antenna.
- They explained as only one FOX will be used but the transmitter signal can bounce from multiple objects making the location of Antenna harder to find, for which removal of Director and Reflector were the solution.
- Mr. Jayant also explained how these system can be used for rescue purposes as the transmitter can be used to find any civilian in danger or in stranded condition.
- Students were divided into 6 groups for each round where three students were declared as the winners if they were able to find or get close to the FOX.
- Three rounds were run from which a total of 9 groups were the winners of the first rounds after which a final round decided the top 3 winners.
- 1st prize winners were awarded with a cash prize and the runner up's were given a winners certificate.
- The workshop ended by a vote of thanks by Ms. Dibyarupa Pradhan, Secretary-IEEE DBIT SB & by giving away mementos to the trainers of Team MARI.

Summary of session and Feedback analysis:

From the analysis we can determine, that the majority of the attendees were students. Most of the participants have responded that the session was relevant and well organized. The questions asked during the workshop were answered in appropriate and satisfactory manner. The attendees agree that the overall session was valuable and informative. As reflected by the feedback, 55% of attendees felt that they can now better understand the fundamentals of Amateur Radio and homebrewing an Antenna. Significant number of people are interested in participating in future workshop.

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Pictures from Day 2:



Mr. Jayesh Banatwala demonstrating students how to direct their antenna to efficiently find the FOX.

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Mr. Jayesh V Banatwala instructing the students on how to use the Transceiver and antenna in combination

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Transmitter/ FOX hidden in the campus for the FOX hunt event

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Students enthusiastically trying to find the FOX using their antenna

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Students enthusiastically finding the FOX hidden using their Antenna

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First Prize winners being awarded with a cash prize of Rs 2000/-

Team Members include: Pooja Verma (DBIT), Shivam Sharma (DBIT) and Samundeshwari

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Second Prize winners being awarded with winner's certificate

Team Members include: Satyam Shukla, Gouresh Sanke, Shivraj Shetty of DBIT

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Third Prize winners being awarded with winner's certificate

Team Members include: Rakshita Khantwal, Kshitij Bare, Nitish Chavan, Jignesh Bhandi of DBIT



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Dibyarupa Pradhan Secretary of IEEE SB giving a Thankyou Keynote to team
MARI

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Commemorative picture of all the participants with Team MARI

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Commemorative picture of the Executive team with Team MARI

Report Prepared by: Mr. Aditya Jadhav

Reporting Head , IEEE-DBIT Student Branch.

Report Approved by: Ms. Freda Carvalho

IEEE DBIT SB Counselor