Industrial Visit Report

1. Visit Place (Address): All India Radio (Akashvani), Hadapsar, Pune.
2. Visit Date: 14/02/2020 Course and Year:- SE- E & TC
3. Contact Person Details: Mr. Ravindra Ranjekar, Assistant Engineer, for Dy. Director General (E).
4. Organized By:- Prof. Sharad S. Jagtap
5. Industrial Visit under subject: Analog Communication
6. Brief Report:-

On 14 Feb 2020 all SE E & TC students are gathered at college. After giving instructions regarding All India Radio visit students reached on 2 pm at Visit Place. Mr. D.V. Patwardhan who is working as broadcast engineer explained in brief about Amplitude Modulation (AM) Transmitter and safety precautions like earthening, shielding , insulation of wires, insulating mats and shoes required in Industries to students. Frequency used for AM Transmitter at Hadapsar is 792kHz AM, Bitrate: 64 Kbps. Studio of Akashvani is located at Shivajinagar and AM Transmitter at hadapsar. In visit broadcast engineer explained about AM Transmitter from 2 pm to 4:30 pm. Radio broadcasting by All India Radio started under Ministry of Information and Broadcasting by Government of India. Total there are 220 radio stations which covers 99% of area by radio coverage. The programs are live or recorded and announcements are routed through control room to Studio Transmission Links (STL). STL delivers the audio signal to Transmitters. At transmitter this signal amplified or processed and then audio is given to the transmitter. AM range has frequency from 526.5 kHz to 1606.5 kHz. Students visited to different sections available at All India Radio transmitter as follows.

a) 100kW Medium wave Transmitter:-

Before sending signal to transmitter the audio signal modulates the carrier frequency of the transmitter (AM or FM). AM at Hadapsar and FM at Sinhagad Fort. This modulated carrier is fed to antenna system which emits electromagnetic(EM) waves. EM waves are received by the receiver of the listener. The listener listens to his favorite channel by tuning to the particular frequency of the channel. For this transmitter carrier frequency is in between 3 Mhz to 6 Mhz. Different electrolytic capacitors are used for varying the frequency (Tuning) of the crystal oscillator. Transmitter receives power of 12 watt at 75 Ohm from oscillator.

b) AF Chain and Modulators. (Analog and Digital Modulators):-

The AF stage supply the audio power required to amplitude modulates the final RF stage. The output of AF stage is superimposed upon the DC voltage to RF PA tube via modulation transformer. The modulator stage consists of two tetrode valves working in push pull class B configuration. Special high power varistor is provided across the secondary winding of the modulation transformer to prevent transformer over voltages.

c) Digital Radio Mandiale (DRM) MW Transmitter.

In order to meet need for a digital transmission system suitable for use in all of the bands below 30 MHz, the Digital Radio Mondiale (DRM) consortium was formed in 1998. The DRM is nonprofit making body which seeks to develop and promote the use of the DRM system worldwide. Mr. Patwardhan said about DRM that it includes broadcasters, network providers, receiver, transmitter manufactures and research Institutes. More details are available at www.drm.org for DRM consortium.

DRM range includes-

47 MHz to 68 MHz allocated to analog television broadcasting.

65.8 MHz to 74 MHz FM band

76 MHz to 90 MHz Japanese FM band

87.5 to 107.9MHz for FM radio Broadcasting.

d) Emergency Broadcast Studio.

Studio is place where recording of programmes takes place in recording studios.The announcements and programmers are given from the announcer booth. These recorded programmers and announcements are routed through control room. In the control room source of program such as news, announcements, outside broadcasts etc. are selected from the switching consoles and routed to STL for delivery at transmitter side.

When there is any disaster at studio available at Shivajinagar then emergency studio at Hadapsar is available for announcements. At rainy reason AM transmitter is working on its 100 kWatt power.

e) **Antenna Section:-**

Actual antenna height according to theory is in multiple of lambda.

Lambda= Velocity of Light/ Frequency of transmitter. So it is expected to get 94 meters of height but actual height was 70 meter and remaining increased virtually. There are two antennas primary and secondary antennas. Secondary antenna is working as reflector for main antenna and mostly covers remote area near pune.

7. Visit Schedule:
   Departure from College: 01.00 pm.
   Visit Time: 2.00 pm to 4.30 pm.

8. No. of Students attended the Visit : - 12

9. Name of the staff attended the visit :- Prof. S.S. Jagtap (Subject Teacher) and Prof. S.S. Salvekar

Course Outcome:

CO1: Understand and identify the fundamental concepts and various components of analogcommunication systems

By this visit CO1 of Analog Communication for class SE E & TC is achieved.

	Akhil Bharatiya Maratha Shikshan Parishad's Anantrao Pawar College of Engineering & Research	
	Record No.: ACA/D/008B Revision: 00	DoI: 21/01/2019

Industrial Visit Report

Visit Group Photographs at Akashvani, Pune

APCOER, Parvati, Pune-9.

Inward No.	28379
Date	25/02/2020
Received by Name & Sign	Vaishnavi Sasane
Remark	

Date: 20/02/2020

Visit Incharge

Head of the Department

Head
Dept. Of E & TC Engineering
Anantrao Pawar College of Engineering & Research, Pune - 9

Principal

Principal