BITT POLYTECHNIC, RANCHI

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

EXPERIMENT NO.

AIM:-To study the specifications and working of a DVD Player.

APPARATUS: - DVD player trainer kit, TV, DSO, Multimeter.

THEORY:- A **DVD player** is very similar to a CD player. It has a laser assembly that shines the laser beam onto the surface of the disc to read the pattern of bumps . The DVD player decodes the MPEG-2 encoded movie, turning it into a standard composite video signal. The player also decodes the audio stream and sends it to a Dolby decoder, where it is amplified and sent to the speakers.

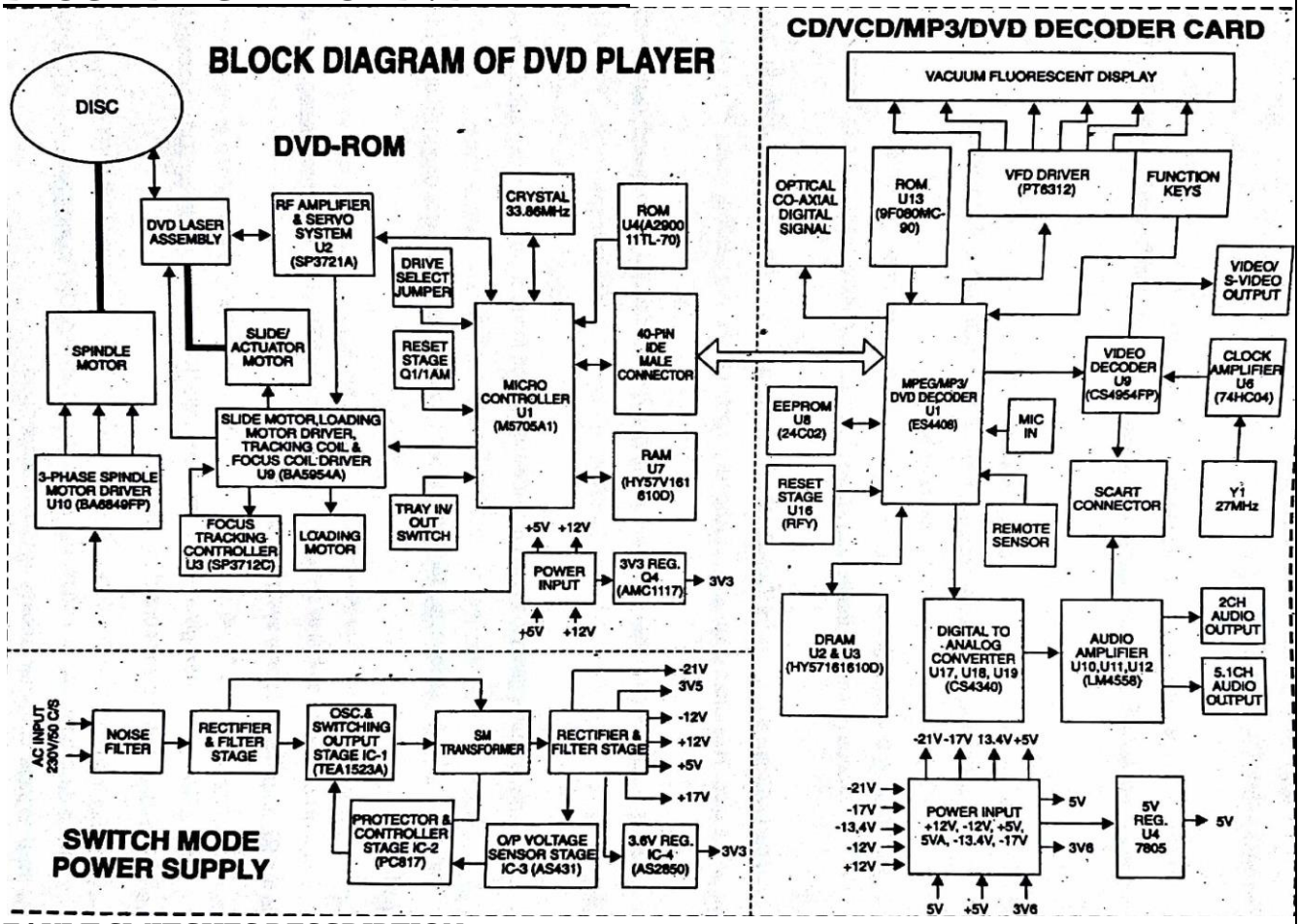
The drive consists of three fundamental components:

● **Drive Motor:** It is used to spin the disc. The drive motor is precisely controlled to rotate between 200 and 500 rpm, depending on which track is being read.

● **Laser and a Lens System:** The light from this laser has a smaller wavelength (640 nanometers) than the light from the laser in a CD player (780 nanometers), which allows the DVD laser to focus on the smaller DVD pits**.**

● **Tracking Mechanism:** It can move the laser assembly so the laser beam can follow the spiral track. The tracking system has to be able to move the laser at micron resolutions.

BLOCK DIAGRAM OF DVD PLAYER



FAULT SWITCHES DESCRIPTION:-

Fault Switch	Fault	Description
F1	+V Supply Cut Down	Totally Dead
F2	Positive supply of Slide Motor Cut	DVD is not raunning after a limit. After switch on the fault switch off the power supply of demonstrator to reset it.
F3	Positive Supply of Loading Motor Cut	Loading arrangement not working.
F4	Positive Supply of Spindle Motor Cut	DVD Stop rotating & unable to run.
F5	GND terminal of Loading Limit Cut	Unable to load.
F6	Video signal of AV signal out is disconnected	TV at AV mode, no. video observed on screen, only TV speaker working. But working in RF mode.
F7	Audio output signal from AV signal out disconnected	FRONT LEFT O/P will be cut.Audio is not audiable on TV set at AV mode, but working in RF mode.
F8	+5V DC supply of RF section is cut down.	No audio or video output at TV set, but if AV signal connected TV is working on AV mode.
F9	Infrared Sensor output is disconnected.	DVD player Remote is not working with the DVD Player.
F10	Data output to display section is disconnected	Keep the LCD display on a holding position & stand on the same position until the fault switch is turned off.
F11	Display Section Supply is Disconnect	DVD Player is in working position, but data display not work.
F12	Audio output signal from AV signal out disconnected	FRONT RIGHT O/P will be cut.Audio is not audiable on TV set at AV mode, but working in RF mode.

TEST POINTS

Test Points	Observation
TP1	+12V DC SMPS Power Supply Output.

TP2	-12V DC SMPS Power Supply Output
TP3	+5V DC SMPS Power Supply Output
TP4	+5V DC SMPS Power Supply Output
TP5	+5V DC to RF Section
TP6	Video IN, observed on CRO
TP7	Audio IN, observed on CRO
TP8	RF Out, Observed on Spectrum Analyser
TP9	+5V DC supply for Display & front Panel Keyboard
TP10	IR Out signal to Display Section, observed on CRO on pressing any key on Remote will show a sequence of data bit on CRO.
TP11	Stand By Signal, observed on CRO
TP12	Data Signal, observed on CRO
TP13	Clock, observed on CRO
TP14	Spindle Motor positive signal, voltage on this point varies according to speed of rotation of CD/ DVD.
TP15	Limit Switch Signal
TP16	Slide Motor Positive Signal, voltage read when loading disc Close.
TP17	Close Signal, voltage read when loading disc Close.
TP18	Open Signal, voltage read when loading disc Open.
TP19	Loading Motor Positive Signal
TP20	Ground

RESULT:-

PRECUATION:-

1) Player should be protected from direct sunlight & magnetic field.
2) Player should be protected against vibrations, dust, heat, cold moisture.
3) Player should always keep in horizontal position.
4) Player should not be clean by thinners, benzene or any other chemicals dry cloths may be used.
5) Player should be opened when it is in ON position.
6) Front panel switches should not be pressed with excessive force.
7) Test point should not be shorted to each other or to supply.