Measurement of dB Loss by using TMS Kit

When a sound is transmitted from transmitter into the medium, the intensity of the sound or power level of the sound will decrease while travelling into the medium to the receiving end. Measurement of transmission loss is in decibels. TMS kit is used to measure the transmission loss.

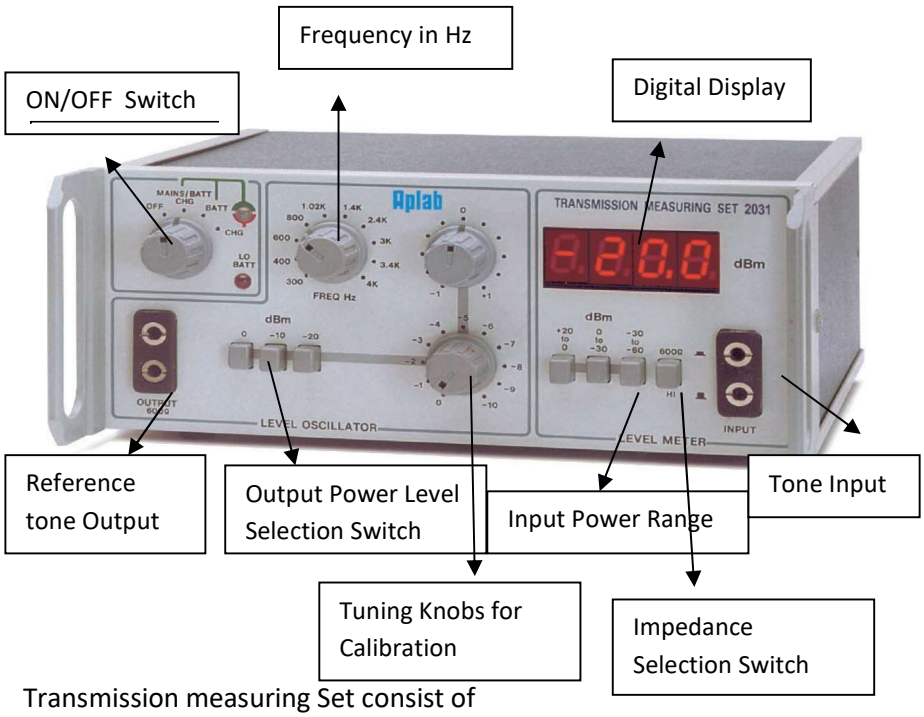
Decibel is used to measure sound level, the dB is the logarithmic way of describing the ration of power, sound pressure or voltage.

For an example, if a two loudspeakers playing the same music, the first playing with power p1 and the second playing loudly with power P2, then the difference in decibels is calculated by

10 Log P1/P2

Mostly, the term dBm is used ie., decibels in electrical power(wattage). Sometimes we used the term 0db, which means that there is measured power level is equal to the reference level. Normally for testing the transmission loss measurements, 0 db term is used and it used as a reference power.

0 dbm = 1 Milliwatt power, +30 dbm = 1 Watt Power , +27 dbm = 500 Milliwatt power, +33 dbm = 2 watt power



Transmission measuring Set consist of

a) Oscillator - Used to produce tone output with specified frequency and power level
b) Level Meter – Used to measure the power level of input tone level in db.

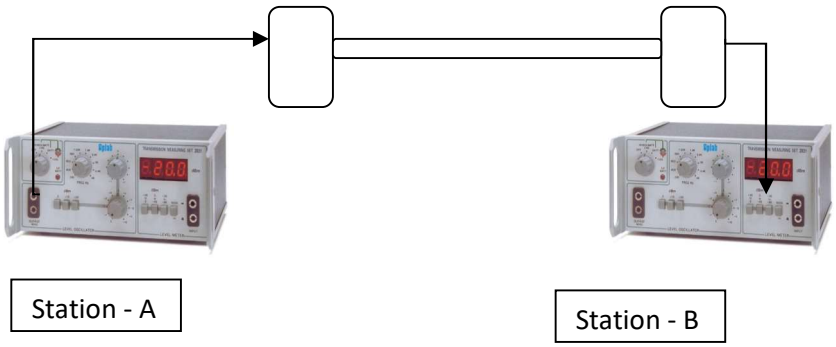
Before proceeding to the testing , Equipment should be calibrated. The steps for calibrating the equipment are given below;

1) Switch ON the instrument.
2) Select the Frequency in Hz in 800 Hz – test frequency.
3) Press the Output power level Selection Switch as 0 db.
4) Connect patch chord between Tone Output and Tone Input.
5) Select the Input power range as 0db to -30 db.
6) Press the Impedance Selection as 600 ohms.
7) Adjust the both tuning knobs to get 0 value in Digital display.

After calibration process done, Remove the patch chords and don't adjust any knobs further.

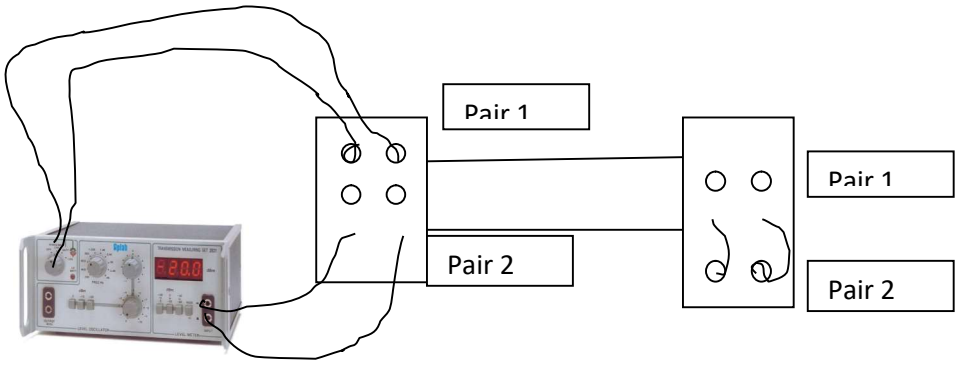
Test Setup:(For measuring Quad Cable transmission Loss in a section)

By using Two instruments at both end of the stations.



Oscillator tone output is sent from Station- A to Station-B from the first pair of quad cable. The same one will be received in the Station-B , First Pair, which is connected to the level meter Tone input. The reading will be display in the digital display. The tone output power level is 0 db, hence the measured level in the digital display will be in the -db level. Normally for quad cable transmission loss will be -0.63db/KM.

In some sections, by using one instrument is used to measure the transmission loss by providing loop between Pair 1 and Pair 2 at other end station, and the obtained value is divided by 2. But, this practice should not be followed, since , the characteristics of Pair 1 and Pair 2 may differ.



Please Note:- Obtain Disconnection permission from SM/Section Controller before disconnecting the Block circuit/BPAC Circuit from the Quad Cable CT Box for testing purpose.

Report Format:

Section : Section Length :

Date :-

Quad No.	Pair No.	Value
1	1	
	2	
2	1	
	2	
5	1	
	2	
6	1	
	2	

Quad No.3 and Quad No.4 is tapped in between the section for Magneto Phone and EMC respectively.