Green Passport Lab

Telecommunication Engineering Centre (TEC), New Delhi has set up a state-of-art Green Passport Lab which is conceptualized as a test bed for a host of devices and test equipments offered by clients.

2. **Scope of the Lab:** Green Passport division has been set up with the objective of setting up Green Passport Lab for Standardization of Test Procedure and Certification of Telecom Equipment for Green Passport (GP) . This Lab is conceptualized as a test bed created for testing of telecom devices referred as Device Under Test (DUTs) offered by Telecom Equipment vendors connected in a network configuration for Energy Efficiency Testing of IP related equipment (viz. IP Routers, Edge Routers, GPON, GEPON).

3. The GP Lab will accept equipment/devices offered by different vendors/manufacturers/ developers etc. and subject them to Energy Efficiency Testing in accordance with the standards, set by TEC i.e. ECR document issued by TEC vide no. **TEC/GL/TX/ GT-001/01/MAR-15 (FA Division),** having guidelines on measurement metrics and measurement methodology. The labelling will be issued at a later date as per TEC guideline issued vide no. TEC 74046:2020.

4. On completion of tests, TEC shall release test results and issue necessary certifications on the basis of Energy Consumption Rating (ECR) that will facilitate Green Passport certifications of such tested equipment and deployed of more and more Green Telecom Products in Indian Telecom Network.

5. CS Wing, *DoT* has issued a letter vide No. 16-06/2011-CS-III dated 7th January 2019, addressed to all TSPs on the subject, titled *"Approach towards Sustainable Telecommunications".* Para 2(ix) & 2(x) are reproduced below:
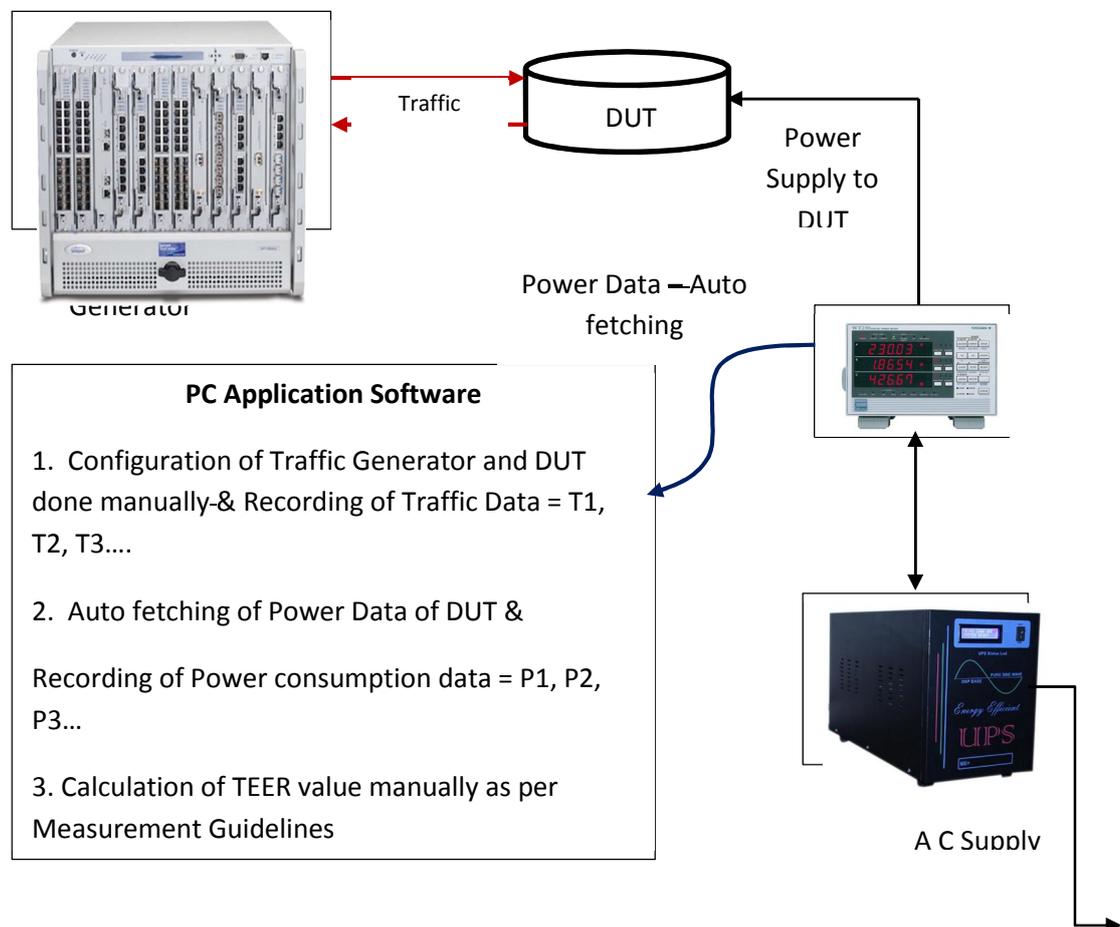
> *2(ix) :- TEC should set up the model lab facility for certification of telecom products, equipments and services on the basis of ECR ratings. TEC should also finalize the ECR document delineating the test procedures and the measurement methodologies utilized. Public/private agencies may be accredited for conducting such certification.*
>
> *2 (x) TEC should also make necessary provisions mandating that all telecom products, equipments and services in the telecom networks should be Energy and performance*

assessed and certified "Green Passport" utilizing the ECR rating and Energy Passport determined. The recommendation (ix) and this recommendation should be implemented in two phases. In first phase, TEC set-up the lab and finalise the test procedures and subsequently in the second phase the assessment, testing and certification should be made mandatory.

6. TEC has completed the first phase of setting up of the lab and finalized the test procedures. The second phase will be implemented in due course.

7. Typical test set-up :-

Traffic

DUT

Power Supply to DUT

Power Data ─ Auto fetching

Generator

PC Application Software

1. Configuration of Traffic Generator and DUT done manually & Recording of Traffic Data = T1, T2, T3….

2. Auto fetching of Power Data of DUT &

Recording of Power consumption data = P1, P2, P3…

3. Calculation of TEER value manually as per Measurement Guidelines

A C Supply

8. TEC invites OEMs and/or their Channel Partners/Developers/R&D Institutes/Students/Research Scholars/Startups etc to avail the test facilities of the Green Passport test lab. All the further queries may be addressed to Director (GP) through the email address _dirgp.tec-dot@gov.in_.

GLOSSARY

ECR (Energy consumption Rating) :- Energy conservation rating is the measure of energy efficiency of DUT under prescribed conditions and throughput .

DUT (Device under test): A DUT is a Telecom device that is tested to determine energy consumption performance.

GPON (Gigabit Passive Optical Network) :- GPON is a point-to-multipoint access network. Its main characteristic is the use of passive splitters in the fiber distribution network, enabling one single feeding fiber from the provider to serve multiple homes and small businesses.

GEPON   (Gigabit Ethernet Passive Optical Network) :- EPON/GEPON is a fast Ethernet over passive optical networks which are point to multipoint to the premises (FTTP) or fiber to the home (FTTH) architecture in which single optical fiber is used to serve multiple premises or users.