## Nonlinear Low Power active device Modeling

U R Rao Satellite Centre (URSC) of Indian Space Research Organisation (ISRO) has developed a Nonlinear Low Power active device Model to determine the behavior of the device in simulation based on HP EEs of EEHEMT and EEFET empirical analytic model.

Extraction of S-parameters and calculation of small-signal model parameters have been done analytically and these bias dependent small signal parameters are finally curve fitted to obtain non-linear model based on non-linear equations provided by EEHEMT/EEFET.
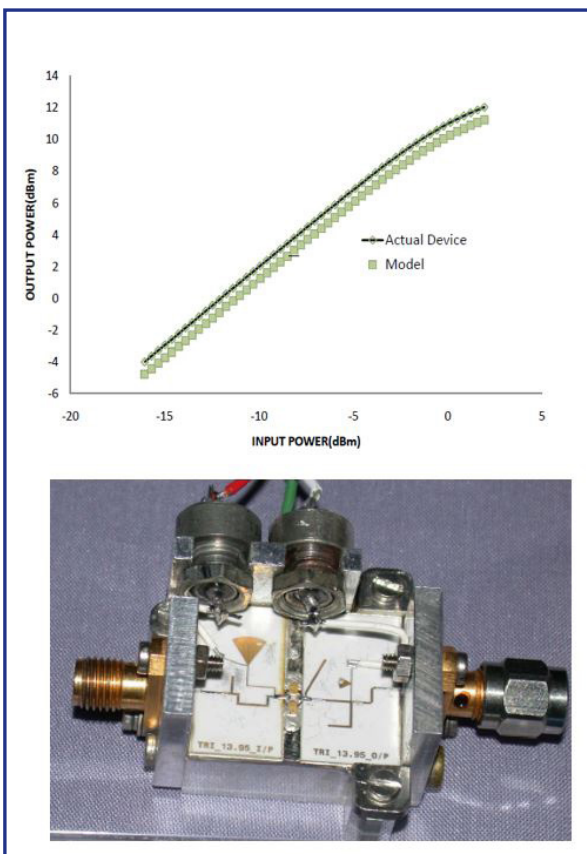


### Salient Features & Major Specifications

✦ Easy to implement with minimum tools like Test Jig, TRL calibration Kit and VNA for Characterization.

✦ With the available Model, load pull and source pull can be carried out in simulation, this may avoid expensive tuners.

✦ Capability to develop empirical model of any active device packaged in Micro-X.

- Transconductance Gm(DC)       :       573 ms
- Transcondauctance Gm(AC)      :       471 ms
- Transit time TAU              :       $4.733e^{-012}$
- Cut in voltage VGO            :       -0.1176 V
- Threshold voltage VTO         :       -0.826 V

## Technology Transfer

URSC/ISRO offers to transfer this technology of Nonlinear Low Power active device Modeling to industries in India with adequate experience and facilities. Industries interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

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