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## *Product Note No 11*

# User Defined Measurement Routine for the CCMT System

The CCMT Software Version 4.01 includes a **User-Defined Measurement Routine** that can be used in all manual and automatic Load and Source Pull measurement procedures of the CCMT system. The routine can be generated and modified both outside the CCMT operation as well as 'on line'.

The User Defined Measurement Routine operates with the following measurement quantities

- Input Power - PIN
- Output Power - POUT
- DC Power - PDC
- Intermod (2 and N-tone) - IMD or mn-IMD
- Intercept - TOI
- Drain (Collector) Current - ID
- Drain (Collector) Voltage - VD
- Gate (Base) Current - IG
- Efficiency - EFF
- Frequency - FREQ
- Peak Power - PEAK

All these quantities can be defined in the USERDEF.PAR file, then be measured by the GPIB instruments configured with the CCMT system at any given tuner position and manipulated between them and with the setup's (including test fixture and tuner) losses
both on the input and output side of the DUT.
The mathematical manipulations included in the User Defined Routine operation include *, /, +, -, LIN, LOG, ^n, SQRT and up to 3 levels of parenthesis ( ).

The following measurement procedures can address the User Defined Routine:

- Load/Source Pull at Tuner calibration points
- Peak Search
- Mouse Operation (Tuning and Measuring)
- Input Power Sweep (Transfer Characteristic)
- Pattern Load/Source Pull operation
- Cursor Tuning and Measurement

## Operation

The User Defined Routine operates as follows:

1- The user writes a text file which carries the name USERDEF.PAR and includes information on which parameters to measure and how to combine them with eachother and the setup loss.
This file can be created either before the measurement starts or 'on line' from the menu keys using 'Alt-U' and Edit.

2- The user activates the 'User Routine' with 'Alt-U' and Activate. Once activated the letter 'U' is permanently displayed on top of the Status segment

3- The user selects the measurement to carry through, ie. Load Pull, Peak Search, Mouse etc.

4- Each time the systems is requested to measure now, either automatically or by clicking the right mouse button or pressing the 'Home' key in Cursor operation, the measurement actions defined in the file USERDEF.PAR will be carried through and the mathematical manipulations executed. The routine will return either the last or the two last defined values, depending if it is for Contour or Transfer file genaration or for display on the screen (Mouse, Cursors).

5- Once terminated the user has to deactivate the User Defined Routine with 'Alt-U' and De-Activate.

An example of e USERDEF.PAR file is given below: