| Revisions |  |  |  |
| :--- | :--- | :---: | :--- |
| Rev | Description | Date | Approved |
| - | DDR 6473 Initialed DWG | $6 / 27 / 94$ | C.R. |
| A | Rev Per ECN W00106 | $1 / 28 / 95$ | C.R. |
| B | Rev Per ECN W00177 | $2 / 22 / 95$ | C.R. |
| C | Rev Per ECN W00233 | $4 / 7 / 95$ | C.R. |
|  |  |  |  |
|  |  |  |  |


| Authored By: | Allan Douglas | Date: | 07/28/94 |
| :---: | :---: | :---: | :---: |
|  | Engineering |  |  |
| Prepared By: | Christina Robinson <br> Documentation Control | Date: | 10/12/94 |
| Approved By: | Steve Cousineau <br> Production Test | Date | 09/21/94 |
| Approved By: | Al Imhoff Manufacturing | Date: | 08/23/94 |
| Approved By: | Dana Crowe Quality Assurance |  | 09/20/94 |


| TITLE: |  |  |
| :--- | :--- | :--- |
| PRODUCTION TEST PROCEDURE |  |  |
| CAGE CODE | DWG. NO.: | REV.: C |
| NO.: |  |  |
| $\mathbf{9 6 3 4 1}$ | TPAM55-0001 | SHEET No. 1 OF 3 |

## Production Test Procedure



| DUT Pin <br> Number | DUT <br> Pin Name | Handler PCB DC <br> Connector | Manual PCB DC <br> Connector | Sample PCB <br> DC Connector |
| :---: | :---: | :---: | :---: | :---: |
| 1 | VGG | 2 | 12 | 2,11 |
| 2 | TR CTRL | 8 | 7 | 8,10 |
| 3 | RX OUT | N/A | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 4 | GND | Odd pins <br> $3-17$ | 1,20 | $3,7,13,17$ |
| 5 | PA OUT | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 6 | VDD PA | 1 | 2 | 1 |
| 7 | GND | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 8 | ATTN CTRL | 4 | 3 | 4,6 |
| 9 | GND | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 10 | ANT COMMON | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 11 | GND | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 12 | ANT 2 | $\mathrm{~N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 13 | ANT 1 | $\mathrm{~N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 14 | GND | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 15 | ANT CTRL | 18 | 17 | 16,18 |
| 16 | GND | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 17 | VDD 2 | GND | $\mathrm{N} / \mathrm{A}$ | 19 |
| 18 | GDD 19 | $\mathrm{~N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |  |
| 19 | VDD | GND | $\mathrm{N} / \mathrm{A}$ | 6 |
| 20 | GND | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $5,9,17,19$ |
| 21 | GND | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 22 | RF IN | GND | $\mathrm{N} / \mathrm{A}$ | $\mathrm{N} / \mathrm{A}$ |
| 23 | 14 | A | $\mathrm{~N} / \mathrm{A}$ |  |
| 24 | PA CTRL |  | $\mathrm{N} / \mathrm{A}$ |  |
|  |  |  | 12,14 |  |


| 100 Chelmsford Street Lowell, Massachusetts 01851 | $\begin{aligned} & \text { CAGE CODE NO.: } \\ & 96341 \end{aligned}$ | $\begin{aligned} & \hline \text { DWG. NO.: } \\ & \text { TPAM55-0001 } \end{aligned}$ |
| :---: | :---: | :---: |
|  | SHEET 2 OF 3 | REV.: C |


| Test No. | Parameter | Conditions | Min. | Max. |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Gain (HI Power) Small Signal | RF Drive $\leq-15 \mathrm{dBm}$ @ Freq $=2450 \mathrm{MHz}$ | 23.0 dB |  |
| 1 a | VGG Currect | VGG $=-5 \mathrm{~V}$ |  |  |
| 2 | Gain (Low Power) Small Signal | $\begin{aligned} & \text { RF Drive } \leq-15 \mathrm{dBm} @ \\ & \text { Freq }=2450 \mathrm{MHz} \end{aligned}$ | 12 dB |  |
| 3 | TR Switch Loss | $\begin{aligned} & \text { RF Drive }=-3 \mathrm{dBm} \pm 5 \mathrm{~dB} @ \\ & \text { Freq }=2450 \mathrm{MHz} \end{aligned}$ |  | 2.0 dB |
| 4 | TR Switch Iso. | $\begin{aligned} & \text { RF Drive }=-3 \mathrm{dBm} \pm 5 \mathrm{~dB} @ \\ & \text { Freq }=2450 \mathrm{MHz} \end{aligned}$ | 10 dB |  |
| 5 | Diversity Switch Loss (1) | $\begin{aligned} & \text { RF Drive }=+20 \mathrm{dBm} \pm 5 \mathrm{~dB} @ \\ & \text { Freq }=2450 \mathrm{MHz} \end{aligned}$ |  | 1.7 dB |
| 6 | Diversity Switch Iso. (1) | $\begin{aligned} & \text { RF Drive }=+20 \mathrm{dBm} \pm 5 \mathrm{~dB} @ \\ & \text { Freq }=2450 \mathrm{MHz} \end{aligned}$ | 10 dB |  |
| 7 | Diversity Switch Loss (2) | $\begin{aligned} & \text { RF Drive }=+20 \mathrm{dBm} \pm 5 \mathrm{~dB} @ \\ & \text { Freq }=2450 \mathrm{MHz} \end{aligned}$ |  | 1.7 dB |
| 8 | Diversity Switch Iso. (2) | $\begin{aligned} & \text { RF Drive }=+20 \mathrm{dBm} \pm 5 \mathrm{~dB} @ \\ & \text { Freq }=2450 \mathrm{MHz} \end{aligned}$ | 10 dB |  |
| 9 | P1dB <br> (HI Power) | $\begin{aligned} & \text { RF Drive }=-3 \mathrm{dBm} @ \\ & \text { Freq }=2450 \mathrm{MHz} \end{aligned}$ | 19 dBm |  |
| 9a | Current | VDD1 + VDD2 + VDDPA |  | 200 mA |
| 10 | P1dB (Low Power) | $\begin{aligned} & \text { RF Drive }=-3 \mathrm{dBm} @ \\ & \text { Freq }=2450 \mathrm{MHz} \\ & \hline \end{aligned}$ | 9 dBm |  |
| 11 | Second Harmonic (High Power) | $\begin{aligned} & \text { RF Drive }=-3 \mathrm{dBm} @ \\ & \text { Freq }=2450 \mathrm{MHz} \end{aligned}$ | -12 dBc |  |
| 12 | Third Harmonic (High Power) | $\begin{aligned} & \text { RF Drive }=-3 \mathrm{dBm} @ \\ & \text { Freq }=2450 \mathrm{MHz} \\ & \hline \end{aligned}$ | -12 dBc |  |
| 13* | Current | VDD1 + VDD2 + VDDPA |  | 5 mA |

* Create Bin \#2 for parts that fail this parameter, and pass all others.

|  |  |  | Control / Bias |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Test | RF Input | RF Output | $\begin{aligned} & \mathrm{T} / \mathrm{R} \\ & \mathrm{Crtr} \end{aligned}$ | $\begin{aligned} & \text { Attn } \\ & \text { CtrI } \end{aligned}$ | $\begin{aligned} & \hline \text { Ant } \\ & \text { Ctrl } \end{aligned}$ | $\begin{aligned} & \hline \text { PA } \\ & \text { Ctrl } \end{aligned}$ | VDD1 | VDD2 | $\begin{gathered} \hline \text { VDD } \\ \text { PA } \\ \hline \end{gathered}$ | VGG |
| 1, 9, 11 | PA In | PA Out | Gnd | Gnd | X | Gnd | +5 V | +5 V | +5 V | -5 V |
| 2, 10, 12 | PA In | PA Out | Gnd | +5 V | X | Gnd | $+5 \mathrm{~V}$ | +5 V | +5 V | -5 V |
| 3,13 | PA Out | RX Out | +5 V | X | X | -5 V | +5 V | +5 V | +5 V | -5 V |
| 4 | PA Out | RX Out | Gnd | X | X | -5 V | +5 V | +5 V | +5 V | -5 V |
| 5 | Ant Common | Ant 1 | X | X | Gnd | -5 V | +5 V | +5 V | +5 V | -5 V |
| 6 | Ant Common | Ant 1 | X | X | +5 V | -5 V | $+5 \mathrm{~V}$ | +5 V | +5 V | -5 V |
| 7 | Ant Common | Ant 2 | X | X | +5 V | -5 V | $+5 \mathrm{~V}$ | $+5 \mathrm{~V}$ | +5 V | -5 V |
| 8 | Ant Common | Ant 2 | X | X | Gnd | -5 V | +5 V | +5 V | +5 V | -5 V |

## X = Don't Care

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|  | SHEET 3 OF 3 | REV.: C |

