|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ANALOG MULTIPLIER- in case of AC INPUT( SINE WAVE )** | | | | | | |
| **Various Detected Faults in Analog Multiplier in the presence of faults with deviations ( >5%)** | | | | | | |
| **Injected Faults** | **=500, = 0.0098**  **Optimal Order – 18th** | | **=1000, = 0.0097**  **Optimal Order – 18th** | | **=2000, = 0.0097**  **Optimal Order – 22nd** | |
| **No. of Coefficients Out of Bound** | **Fault Detection Status** | **No. of Coefficients Out of Bound** | **Fault Detection Status** | **No. of Coefficients Out of Bound** | **Fault Detection Status** |
| R11 1%**↓** | 0 | **X** | 0 | **X** | 1 | **√** |
| R11 3% **↑** | 5 | **√** | 5 | **√** | 0 | **X** |
| R12 2% **↑** | 1 | **√** | 0 | **X** | 0 | **X** |
| R12 1% **↓** | 5 | **√** | 5 | **√** | 5 | **√** |
| R21 3% **↑** | 0 | **X** | 1 | **√** | 0 | **X** |
| R21 2.5%**↓** | 0 | **X** | 0 | **X** | 0 | **X** |
| R22 2%**↑** | 1 | **√** | 0 | **X** | 0 | **X** |
| R22 3% **↓** | 3 | **√** | 1 | **√** | 0 | **X** |
| R31 4% **↑** | 0 | **X** | 0 | **X** | 0 | **X** |
| R31 3.5% **↓** | 3 | **√** | 0 | **X** | 0 | **X** |
| R32 1% **↑** | 1 | **√** | 0 | **X** | 0 | **X** |
| R32 3% **↓** | 7 | **√** | 5 | **√** | 3 | **√** |
| R41 2%**↑** | 0 | **X** | 0 | **X** | 0 | **X** |
| R41 1%**↓** | 0 | **X** | 0 | **X** | 0 | **X** |
| R42 3%**↑** | 3 | **√** | 1 | **√** | 0 | **X** |
| R42 1%**↓** | 1 | **√** | 1 | **√** | 0 | **X** |
| R51 1.5% **↑** | 0 | **X** | 2 | **√** | 1 | **√** |
| R51 1.8% **↓** | 2 | **√** | 0 | **X** | 0 | **X** |
| R52 2.3% **↑** | 0 | **X** | 0 | **X** | 0 | **X** |
| R52 2.9%**↓** | 0 | **X** | 0 | **X** | 0 | **X** |