

## E-Band Frequency Extender

60-90GHz /WR-12

Model: TLSE-060090-1330-12

TLSE-060090-1330-12 frequency extenders are a dedicated Test & Measurement solution for extending the range of your signal source to 60-90 GHz.

### Features:

- Ultra Wide Band: 60-90 GHz
- Output Power : 9 dBm Typ
- Low power consumption

### Applications:

- Frequency Extension
- Antenna measurements
- Material characterisation

### Electrical Characteristics:

| Parameter                                         | Min | Typ   | Max | Units |
|---------------------------------------------------|-----|-------|-----|-------|
| Frequency range                                   | 60  |       | 90  | GHz   |
| Output Power                                      |     | 9     |     | dBm   |
| Dynamic Range<br>(Optional mechanical Attenuator) |     | 30    |     | dB    |
| Input Frequency                                   | 10  |       | 15  | GHz   |
| Input Power                                       | 3   | 5     | 7   | dBm   |
| Multiplication Factor                             |     | 6     |     |       |
| Harmonic Suppression                              | 32  |       |     | dBc   |
| Input VSWR                                        |     | 2     |     | :1    |
| Output VSWR                                       |     | 2     |     | :1    |
| power stability                                   |     | ±0.25 |     | dB    |

## Mechanical Specifications:

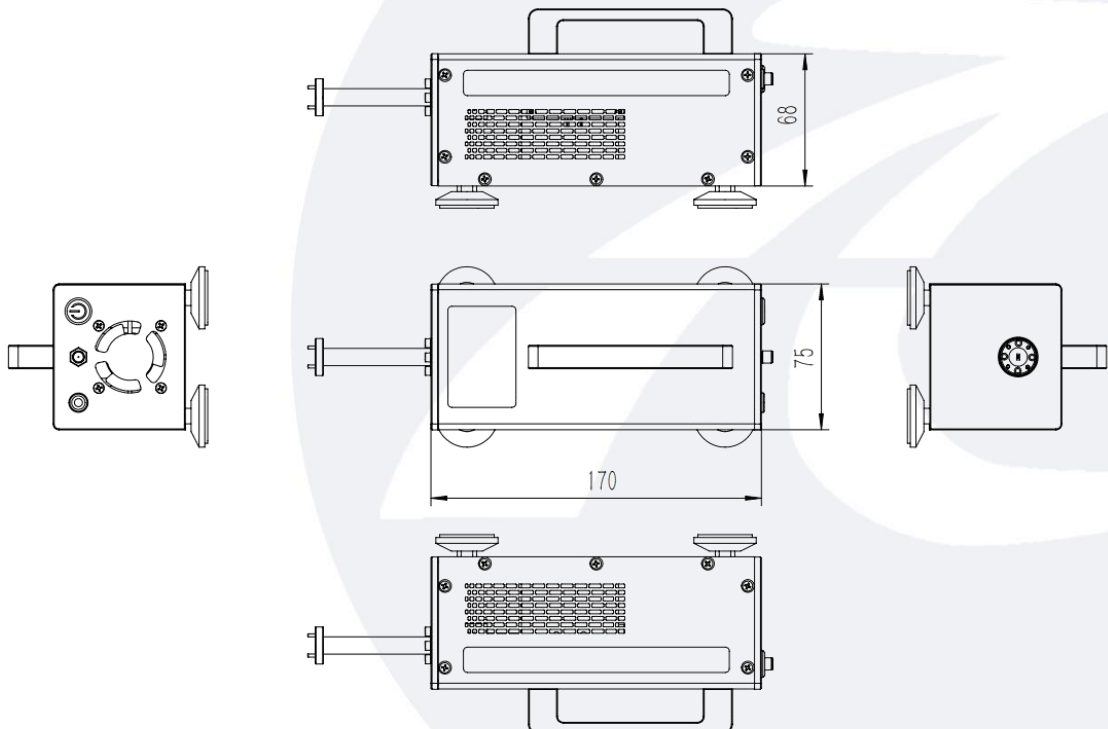
| Parameter        | Value          | Units |
|------------------|----------------|-------|
| Input Connector  | SMA Female     |       |
| Output Connector | WR-12/UG-387/U |       |
| Power Supply Pin | FGG 0B 4 Core  |       |
| Size             | 170*75*68      | mm    |

## Absolute Maximum Ratings:

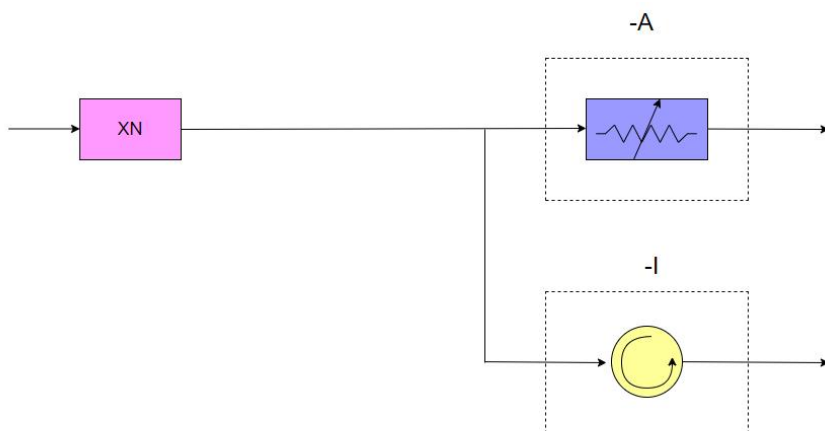
| Parameter             | Value                |
|-----------------------|----------------------|
| Supply Bias Voltage   | +240 V AC            |
| RF Input Power        | +10 dBm              |
| ESD sensitivity (HBM) | Class 0, passed 150V |

## Outline Drawing:

Unit:mm



## Block Diagrams:



## Environmental Conditions:

| Parameter                       | Min                                                 | Typ | Max | Units |
|---------------------------------|-----------------------------------------------------|-----|-----|-------|
| Operating Temperature           | -10                                                 |     | +65 | °C    |
| Non-operating Temperature       | -45                                                 |     | +85 | °C    |
| Relative humidity               |                                                     | 95  |     | %     |
| Altitude                        | 10,000                                              |     |     | feet  |
| Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis |     |     |       |
| Shock(non operating)            | 20G for 11msc half sin wave,3 axis both directions  |     |     |       |

## Ordering Information:

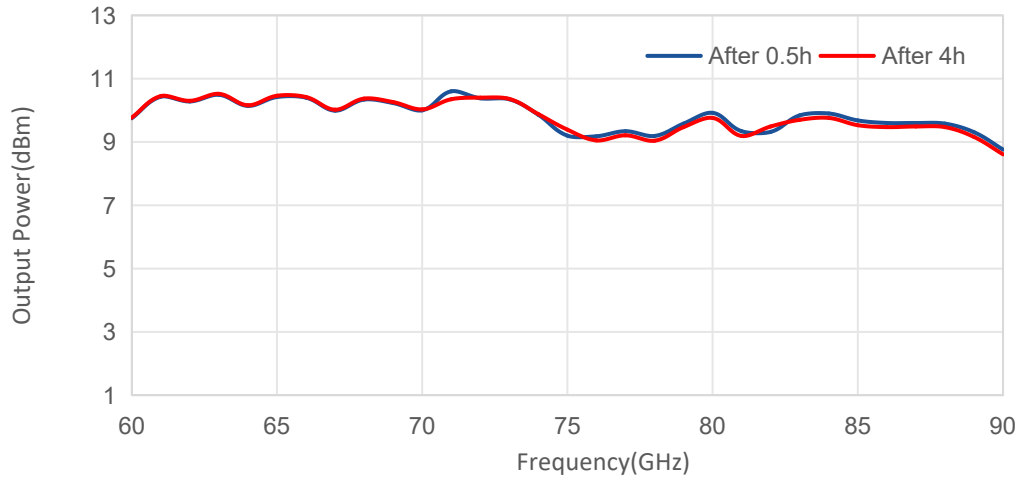
| Part Number         | Description                                                | Option                         |           | Revision |
|---------------------|------------------------------------------------------------|--------------------------------|-----------|----------|
|                     |                                                            | Optional Mechanical Attenuator | Isolation |          |
| TLSE-060090-1330-12 | E-Band Frequency Extender,X6,60-90GHz, Output Power: 9 dBm | -A                             | -I        | Rev.1.2  |

## Components Included:

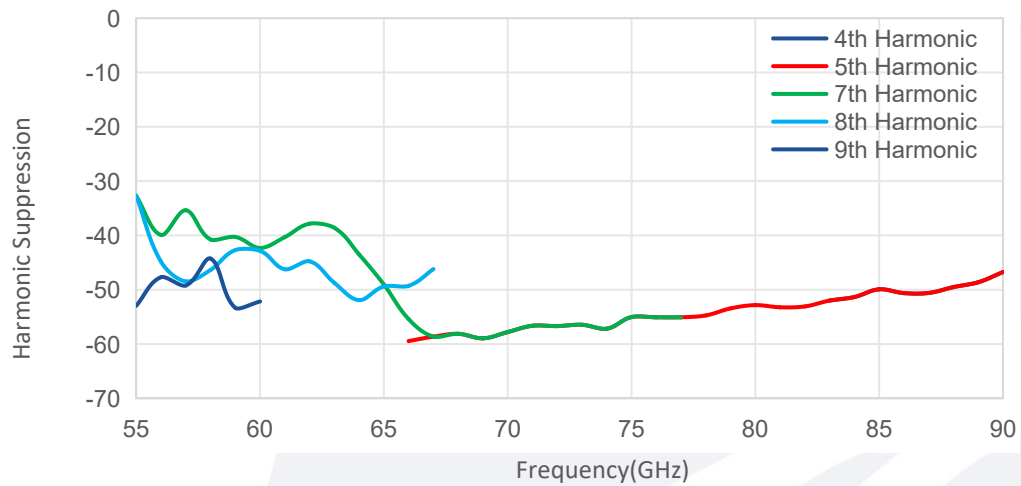
| Part Number   | Description            | Quantity |
|---------------|------------------------|----------|
| TLACTDC-22012 | AC-to-DC Power Adapter | 1 PCS    |

## Typical Performance Data:

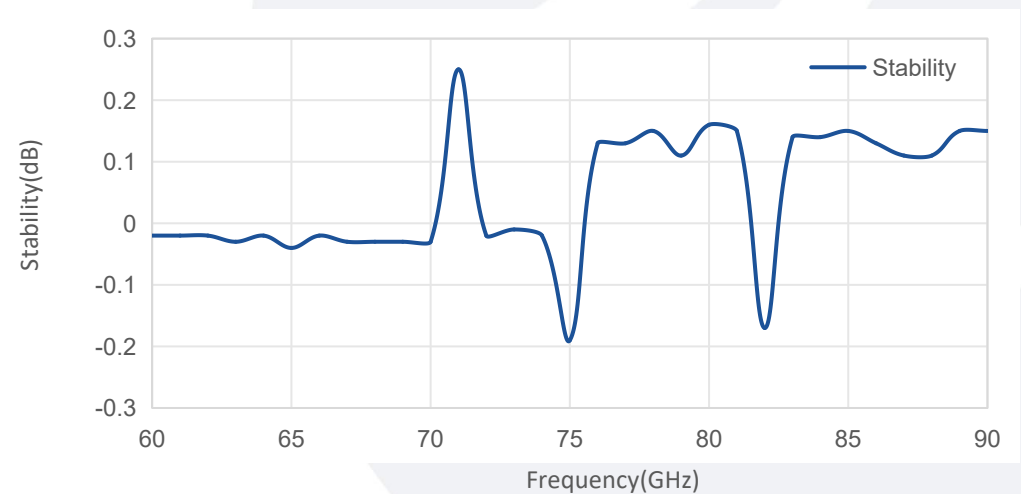
### Output Power vs Frequency



### Harmonic Suppression vs Frequency



### Power Stability vs Frequency



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc, P1dB test points are taken at intervals of 5 GHz for curve testing..