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# 82401/82406 Series Millimeter-Wave Source Module

50GHz~75GHz/60GHz~90GHz/75GHz~110GHz/90GHz~140GHz/110GHz~  
170GHz/170GHz~220GHz/170GHz~260GHz/220GHz~325GHz/325~500GHz



## Product Overview

The 82401/82406 series millimeter-wave source modules excel in terms of output power and application convenience. This series source module can work together with a microwave signal generator to build up a millimeter-wave signal generation system. The module is fed and controlled by the RF signal and software through corresponding special cables, respectively. The output frequency and power are controlled by the synthesized signal source. A special power adapter provides the DC drive for the modules.

## Main Characteristics

- Output Frequency range: 50GHz ~ 500GHz
- Power supply: 15V adapter
- Input frequency: < 20GHz
- Compact and portable, low consumption, low heating volume, standard waveguide output
- Direct display: when the signal source is working, it can directly show the state of the source module's output port
- Built-in high-gain microwave amplifier which lowers the requirement on signal generator

## Typical Applications

The 82401/82406 series source modules can realize the frequency extension of microwave signal source to cover 50GHz ~ 500GHz, which can satisfy the measurement requirements of high-frequency signal in the fields of millimeter-wave radar, communications, and RCS (Radar Cross-Section).



## Technical Specifications

| Model  | 82406           | 82401N    | 82406A      | 82401QA   | 82406B     | 82406C      | 82401SA     | 82406D     | 82406E     |
|--|-----------------|-----------|-------------|-----------|------------|-------------|-------------|------------|------------|
| Output Frequency range (GHz)                 | 50~75           | 60~90     | 75~110      | 90~140    | 110~170    | 170~220     | 170~260     | 220~325    | 325~500    |
| Output power (dBm)                           | ≥+13            | ≥+11      | ≥+10        | ≥+5       | ≥+2        | ≥-2         | ≥-6         | ≥-8        | ≥-18       |
|  | 16(typ.)        | 13(typ.)  | 15(typ.)    | 10(typ.)  | 10(typ.)   | 2(typ.)     | 0(typ.)     | -3(typ.)   | -10(typ.)  |
| Multiplication counts                        | 4               | 6         | 6           | 6         | 12         | 12          | 12          | 18         | 36         |
| Amplitude-stabilized options                 | Y               | Y         | Y           | Y         | Y          | N           | N           | N          | N          |
| Input frequency range(GHz)                   | 12.5~18.75      | 10.0~15.0 | 12.50~18.33 | 15.0~23.3 | 9.17~14.17 | 14.17~18.33 | 14.17~21.67 | 12.2~18.06 | 9.02~13.89 |
| Dimension (mm) (W×H×D) (without protrusions) | 120×85×240      |           |             |           |            |             |             |            |            |
| Power type                                   | 15V-16V adapter |           |             |           |            |             |             |            |            |
| Power consumption                            | <20W            |           |             |           |            |             |             |            |            |
| RF input connector type                      | 3.5mm (f)       |           |             |           |            |             |             |            |            |
| Output connector type                        | WR15            | WR12      | WR10        | WR8.0     | WR6.5      | WR5.1       | WR4.3       | WR3.4      | WR2.2      |

## Ordering Information

### ● Main Unit

| Model   | Designation   | Frequency range |
|---------|---------------|-----------------|
| 82406   | Source module | 50GHz~75GHz     |
| 82401N  |               | 60GHz~90GHz     |
| 82406A  |               | 75GHz~110GHz    |
| 82401QA |               | 90GHz~140GHz    |
| 82406B  |               | 110GHz~170GHz   |
| 82406C  |               | 170GHz~220GHz   |
| 82401SA |               | 170GHz~260GHz   |
| 82406D  |               | 220GHz~325GHz   |
| 82406E  |               | 325GHz~500GHz   |

### ● Standard Package

| No. | Designation               | Remarks  |
|-----|---------------------------|--|
| 1   | Power cord                | Standard tri-prong power cord: 1 pc  |
| 2   | User manual               | 2 copies   |
| 3   | Control cable             | Used for information interchange between the main unit and the source module: 1 pc |
| 4   | Certificate of conformity | 1 copy   |
| 5   | Power adapter             | 15V-16V DC output, 1 pc  |

● Options

| No.         | Designation                  | Function  | Remarks  |
|-------------|------------------------------|---|--|
| 82406-001   | Amplitude-stabilized options | Realize stable output power in 50GHz ~ 75GHz frequency band | With BNC cable, only suitable for Ceyear 1464/1465 series signal generator |
|             |                              | Output power adjustable range: 0dBm ~ 9dBm                  |  |
| 82401N-001  | Amplitude-stabilized options | Realize stable output power in 60GHz~90GHz frequency band   | With BNC cable, only suitable for Ceyear 1464/1465 series signal generator |
|             |                              | Output power adjustable range: 0dBm~9dBm                    |  |
| 82406A-001  | Amplitude-stabilized options | Realize stable output power in 75GHz~110GHz frequency band  | With BNC cable, only suitable for Ceyear 1464/1465 series signal generator |
|             |                              | Output power adjustable range: 0dBm~9dBm                    |  |
| 82401QA-001 | Amplitude-stabilized options | Realize stable output power in 90GHz~140GHz frequency band  | With BNC cable, only suitable for Ceyear 1464/1465 series signal generator |
|             |                              | Output power adjustable range: -5dBm~+5dBm                  |  |
| 82406B-001  | Amplitude-stabilized options | Realize stable output power in 110GHz~170GHz frequency band | With BNC cable, only suitable for Ceyear 1464/1465 series signal generator |
|             |                              | Output power adjustable range: -5dBm~+5dBm                  |  |