

FCC RF EXPOSURE REPORT

FCC ID: TVE-24100045

Project No. : 1611C131
Equipment : Wireless Access Point
Model Name : FAP-C24JE
Series Model : FORTIAP-C24JExxxxxx, FortiAP C24JEXXXXXX,
FAP-C24JExxxxxx(where "x" can be used as "A-Z", or
"0-9", or "-", or blank for software changes or marketing
purposes only)
Applicant : Fortinet, Inc.
Address : 899 Kifer Road, Sunnyvale, CA 94086 USA

B T L I N C .

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MPE CALCULATION METHOD:

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi^2} = \frac{EIRP}{4\pi^2}$$

where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Table for Filed Antenna

2.4G/5G:

| Ant. | Brand / Mfr | Model Name | Antenna Type | Connector | Gain (dBi) |
|------|-------------|--------------------|--------------|-----------|------------|
| 1 | ACX | AT3216-T2R4PAAT/LF | Chip | N/A | 2 |
| 2 | ACX | AT3216-T2R4PAAT/LF | Chip | N/A | 2 |

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).

2.4G:

| Operating Mode | 2TX |
|-----------------|-----------------|
| TX Mode | |
| 802.11b | V (ANT 1+ANT 2) |
| 802.11g | V (ANT 1+ANT 2) |
| 802.11n (20MHz) | V (ANT 1+ANT 2) |
| 802.11n (40MHz) | V (ANT 1+ANT 2) |

5G:

| Operating Mode | 2TX |
|------------------|-----------------|
| TX Mode | |
| 802.11a | V (ANT 1+ANT 2) |
| 802.11n (20MHz) | V (ANT 1+ANT 2) |
| 802.11n (40MHz) | V (ANT 1+ANT 2) |
| 802.11ac (20MHz) | V (ANT 1+ANT 2) |
| 802.11ac (40MHz) | V (ANT 1+ANT 2) |
| 802.11ac (80MHz) | V (ANT 1+ANT 2) |

TEST RESULTS

2.4G:

| | | | |
|----------------|----------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature : | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | TX B Mode_CH01/06/11_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 18.59 | 72.2770 | 0.02280 | 1 | Complies |
| 2 | 1.5849 | 18.96 | 78.7046 | 0.02483 | 1 | Complies |
| 2 | 1.5849 | 18.66 | 73.4514 | 0.02317 | 1 | Complies |

| | | | |
|----------------|----------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature : | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | TX G Mode_CH01/06/11_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 25.5 | 354.8134 | 0.11193 | 1 | Complies |
| 2 | 1.5849 | 25.92 | 390.8409 | 0.12330 | 1 | Complies |
| 2 | 1.5849 | 25.4 | 346.7369 | 0.10938 | 1 | Complies |

| | | | |
|----------------|------------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | TX N20 Mode_CH01/06/11_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 24.08 | 255.8586 | 0.08071 | 1 | Complies |
| 2 | 1.5849 | 24.03 | 252.9298 | 0.07979 | 1 | Complies |
| 2 | 1.5849 | 23.94 | 247.7422 | 0.07815 | 1 | Complies |

| | | | |
|----------------|------------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | TX N40 Mode_CH03/06/09_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 23.48 | 222.8435 | 0.07030 | 1 | Complies |
| 2 | 1.5849 | 23.68 | 233.3458 | 0.07361 | 1 | Complies |
| 2 | 1.5849 | 23.51 | 224.3882 | 0.07079 | 1 | Complies |

UNII-1

| | | | |
|----------------|-------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-1/TX A Mode _Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 13.67 | 23.2809 | 0.00734 | 1 | Complies |
| 2 | 1.5849 | 13.82 | 24.0991 | 0.00760 | 1 | Complies |
| 2 | 1.5849 | 13.82 | 24.0991 | 0.00760 | 1 | Complies |

| | | | |
|----------------|---------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-1/TX N20 Mode _Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.81 | 30.2691 | 0.00955 | 1 | Complies |
| 2 | 1.5849 | 14.74 | 29.7852 | 0.00940 | 1 | Complies |
| 2 | 1.5849 | 14.92 | 31.0456 | 0.00979 | 1 | Complies |

| | | | |
|----------------|---------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-1/TX N40 Mode _Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.72 | 29.6483 | 0.00935 | 1 | Complies |
| 2 | 1.5849 | 14.77 | 29.9916 | 0.00946 | 1 | Complies |

| | | | |
|----------------|----------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-1/TX AC20 Mode _Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.73 | 29.7167 | 0.00937 | 1 | Complies |
| 2 | 1.5849 | 14.89 | 30.8319 | 0.00973 | 1 | Complies |
| 2 | 1.5849 | 14.65 | 29.1743 | 0.00920 | 1 | Complies |

| | | | |
|----------------|----------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-1/TX AC40 Mode _Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.67 | 29.3089 | 0.00925 | 1 | Complies |
| 2 | 1.5849 | 14.68 | 29.3765 | 0.00927 | 1 | Complies |

| | | | |
|----------------|----------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-1/TX AC80 Mode _Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.74 | 29.7852 | 0.00940 | 1 | Complies |

UNII-3

| | | | |
|----------------|-------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-3/ TX A Mode_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 13.78 | 23.8781 | 0.00753 | 1 | Complies |
| 2 | 1.5849 | 13.71 | 23.4963 | 0.00741 | 1 | Complies |
| 2 | 1.5849 | 13.8 | 23.9883 | 0.00757 | 1 | Complies |

| | | | |
|----------------|--------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-3/TX N20 Mode_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.78 | 30.0608 | 0.00948 | 1 | Complies |
| 2 | 1.5849 | 14.58 | 28.7078 | 0.00906 | 1 | Complies |
| 2 | 1.5849 | 14.84 | 30.4789 | 0.00962 | 1 | Complies |

| | | | |
|----------------|---------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-3/ TX N40 Mode_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.78 | 30.0608 | 0.00948 | 1 | Complies |
| 2 | 1.5849 | 14.58 | 28.7078 | 0.00906 | 1 | Complies |

| | | | |
|----------------|---------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-3/TX AC20 Mode_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.73 | 29.7167 | 0.00937 | 1 | Complies |
| 2 | 1.5849 | 14.56 | 28.5759 | 0.00901 | 1 | Complies |
| 2 | 1.5849 | 14.86 | 30.6196 | 0.00966 | 1 | Complies |

| | | | |
|----------------|---------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-3/TX AC40 Mode_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.72 | 29.6483 | 0.00935 | 1 | Complies |
| 2 | 1.5849 | 14.8 | 30.1995 | 0.00953 | 1 | Complies |

| | | | |
|----------------|---------------------------|--------------------|-----------|
| EUT : | Wireless Access Point | Model Name : | FAP-C24JE |
| Temperature: | 25 °C | Relative Humidity: | 55 % |
| Test Voltage : | AC 120V/60Hz | | |
| Test Mode : | UNII-3/TX AC80 Mode_Total | | |

| Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm ²) | Limit of Power Density (S) (mW/cm ²) | Test Result |
|--------------------|------------------------|-------------------------|------------------------|---|--|-------------|
| 2 | 1.5849 | 14.74 | 29.7852 | 0.00940 | 1 | Complies |

For 2.4G+5G simultaneous transmission MPE:

$$0.1233/1+0.00979/1=0.13309<1$$

Note: the calculated distance is 20 cm.