



AURUSGATE RELEASE 16 5G Wi-Fi 6 RESIDENTIAL GATEWAY

CFW-4221 & CFW-4222

PRODUCT SUMMARY

- › Easy to install 5G / LTE Wi-Fi 6 Indoor residential gateway
- › Installed by the consumer allowing fast time to customer fulfilment
- › Supporting a wide range of 3GPP Frequency Bands from 600MHz up to 4.2GHz, it is suitable for deployment in the majority of regions globally
- › Includes an integrated 4x4 MIMO Low-Gain OMNI Directional Antenna
- › Remotely manageable (FM, CM, PM, SM) via BBF TR-069, SSH and HTTP/S
- › Supporting the Linux based customisable OpenWrt operating system for embedded devices, it allows both the carrier and the consumer to add / remove 3rd party applications through a package management system
- › Additional consumer smartphone application available to provide efficient installation process suitable for a non-technical consumer audience



TECHNICAL SPECIFICATIONS

MODEL NUMBERS

- › CFW-4221 (Global, excluding North America)
- › CFW-4222 (North America)

3GPP RELEASE

- › Release 16

TECHNOLOGIES SUPPORTED

- › LTE, 5G NSA (EN-DC), 5G SA
- › 3GPP CN Options 1, 3x, 2
- › NSA Mode: PDCP UL & DL

FREQUENCY BANDS – CFW-4221

LTE

- › B1, B3, B5, B7, B8, B20, B28, B32, B38, B40, B41, B42, B43

5G NR

- › n1, n3, n5, n7, n8, n20, n28, n38, n40, n41, n75, n76, n77, n78

FREQUENCY BANDS – CFW-4222

LTE

- › B2, B4, B5, B7, B12, B13, B14, B17, B25, B26, B29, B30, B38, B41, B42, B43, B48 B66, B71

5G NR

- › n2, n5, n7, n12, n13, n14, n25, n26, n29, n30, n38, n41, n48, n66, n70, n71, n77, n78

DEVICE CATEGORY

LTE

- › Uplink: 2CA Single TX, 256QAM
- › Downlink: 5CA MIMO 4x4, 256QAM

NR

- › Uplink: MIMO 2x2 Single Carrier Up to 100MHz, 256QAM
- › Downlink: MIMO 4x4 Dual Carrier Up to 120MHz, 256QAM

5G SUBCARRIER SPACING (SCS)

- › 15kHz FDD Bands only
- › 30kHz TDD Bands only

CELLULAR ANTENNAS

- › 4x4 Internal OMNI directional antennas
 - › 600 - 1000MHz 1T4R
 - › 1000MHz - 4200MHz 2T4R

See the ANTENNA PERFORMANCE section for more details

CBRS SUPPORT (CFW-4222 ONLY)

- › CBRS End User Device (EUD)
- › Max 23dBm / 10MHz EIRP

CELLULAR CONDUCTED

RF OUTPUT POWER (PRE-ANTENNA)

LTE

- › 23dBm single TX UL
- › 26dBm single TX UL (B41, B42, B43 only)

NR

- › NSA:
 - › 23dBm single TX UL
- › SA:
 - › 29dBm single TX UL (n41, n77, n78)
 - › 26dBm single TX UL (n38)
 - › 23dBm single TX UL all other bands
 - › 2x26dBm MIMO 2x2 UL (n41, n77, n78)
 - › 2x23dBm MIMO 2x2 UL (n38, n40)

WI-FI

- › IEEE802.11ax / ac / n / g / b / a
- › EasyMesh
- › 2.4GHz MIMO 2x2, 40MHz, 1024 QAM
 - › Max throughput 574Mbps
- › 5GHz MIMO 4x4, 160MHz, 1024 QAM
 - › Max throughput 4,804Mbps

INTERFACES

Ports

- › 1 x 1Gbit Base-T Ethernet RJ45 LAN port
- › 1 x 2.5Gbit Base-T Ethernet RJ45 WAN / LAN port
- › 1 x USB port (on base, for debug purposes only)

LEDS

- › 3 x Multi-Colour LEDs
 - › 1 x 4G / 5G indicator
 - › 1 x Cellular Signal Strength
 - › 1 x Wi-Fi

Buttons

- › 1 x Reset button (on base)
- › 1 x Power button (on base)
- › 1 x WPS button (on front)

SIM CARD READER

- › Supports 4FF SIM card

MEMORY / STORAGE

- › RAM 512MB
- › Flash 256MB

TEMPERATURE

- › Operating temperature: 0°C to 40°C
- › Operating humidity: 10 to 95% non-condensing
- › Storage temperature: -20°C to +70°C
- › Storage humidity: 5 to 95% non-condensing

ENCLOSURE

- › IP32 rated

DIMENSIONS & WEIGHT

Dimensions

- › 100 x 100 x 205 mm (3.9 x 3.9 x 8")

Weight

- › 938g (33.1oz)

MOUNTING OPTIONS

- › Desk mount

POWER

Supply

- › DC Input Voltage: 12V / 2A

Power adaptor

- › Supports 240 / 220 / 110V

OPERATING SYSTEM

- › OpenWrt

CELLULAR WAN NETWORKING

- › Failover support (Failover to 4G / 5G when primary ethernet WAN connection is down)
- › Multiple APN support
- › PIN / PUK lock
- › PIN save function
- › Manual connect / Auto connect
- › Roaming
- › Manual network search
- › SIM status
- › Network selection - 4G / 5G / Auto

ETHERNET WAN INTERFACE

- › Dynamic IP connection
- › Static IP connection
- › PPPoE connection
- › Bridge

WI-FI FEATURES

- › BroadCast SSID
- › Unique SSID / Key per device
- › 20 / 40 / 80 / 160MHz Bandwidth selection
- › Auto Channelling
- › WPA2-PSK and WPA3 encryption
- › Mixed WPA2 / WPA3 encryption
- › Supports TKIP / AES
- › Guest SSID
- › MAC Access / Deny list
- › WPS push button connect
- › WiFi Client list
- › Band Steering
- › Max users
- › Beamforming
- › Easy Mesh R1 & R2
- › Country code selection

TECHNICAL SPECIFICATIONS CONT.

DEVICE MANAGEMENT

- › SSH remote management
- › HTTP remote management
- › Upgrade firmware via HTTP
- › Upgrade & download configuration files via HTTP
- › System Log
- › NTP System time
- › Reset to factory default
- › Connected device list
- › Module firmware upgrade
- › Data usage
- › TR-069 (TR-181 model)
- › Supports multiple login accounts - Differentiated user access and settings

LAN NETWORK & ROUTING

- › UPnP
- › NAT function
- › IP routing
- › Port forwarding
- › DMZ
- › IGMP
- › Dynamic DNS
- › IPv4, IPv6, IPv4 / IPv6
- › DHCP Server
- › ALG (FTP, PPTP, RTSP, SIP, SNMP, TFTP, H323)
- › DNSv4 / DNSv6
- › DNS Proxy
- › VLAN tagging
- › VPN passthrough supporting PPTP, L2TP, IPSec

- › Security features: Double firewall Protection (SPI and NAT firewall)
- › DoS attack prevention
- › Static route
- › QoS
- › DSCP Marking (Ethernet WAN only)
- › Bandwidth limitation
- › IP QoS
- › IEEE 802.1p (Ethernet WAN only)
- › Security firewall
- › SPI firewall
- › NAT firewall
- › Packet filter
- › MAC address control
- › Domain filters
- › Parental control



ANTENNA PERFORMANCE

CFW-4221 3GPP Low Bands (Sub 6GHz)

FREQUENCY (MHZ)	ANTENNA 1		ANTENNA 2		ANTENNA 3		ANTENNA 4	
	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)
600	34%	0.22	34%	-0.22	28%	0.11	30%	0.40
660	45%	-0.61	33%	0.41	39%	0.19	29%	1.33
700	42%	0.46	33%	0.35	31%	0.62	45%	1.02
760	43%	-1.34	43%	0.88	37%	-0.10	45%	0.05
800	40%	0.64	41%	0.87	37%	0.55	43%	0.48
860	34%	1.57	38%	2.05	36%	1.34	42%	2.02
900	41%	1.90	41%	1.07	36%	1.53	49%	1.37
960	47%	1.62	44%	0.13	45%	1.66	49%	2.45

CFW-4222 3GPP Low Bands (Sub 6GHz)

FREQUENCY (MHZ)	ANTENNA 1		ANTENNA 2		ANTENNA 3		ANTENNA 4	
	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)
600	34%	0.22	34%	-0.22	28%	0.11	30%	0.36
660	45%	-0.61	33%	0.41	39%	0.19	28%	0.25
700	42%	0.46	33%	0.35	31%	0.62	43%	0.55
760	43%	-1.34	43%	0.88	37%	-0.10	43%	-0.05
800	40%	0.64	41%	0.87	37%	0.55	42%	0.38
860	34%	1.57	38%	2.05	36%	1.34	42%	1.33
900	41%	1.90	41%	1.07	36%	1.53	47%	0.55
960	47%	1.62	44%	0.13	45%	1.66	47%	1.32



ANTENNA PERFORMANCE

CFW-4221 3GPP Mid Bands (Sub 6GHz)

FREQUENCY (MHZ)	ANTENNA 1		ANTENNA 2		ANTENNA 3		ANTENNA 4	
	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)
1400	30%	0.91	33%	2.45	41%	2.89	31%	1.21
1450	24%	0.34	21%	1.51	32%	2.76	35%	0.77
1500	21%	-0.70	21%	0.99	23%	0.86	36%	1.65
1700	46%	0.53	35%	1.27	52%	0.17	47%	2.63
1760	48%	1.66	40%	1.83	60%	1.56	54%	2.94
1800	55%	2.24	49%	2.08	63%	1.82	57%	2.50
1860	56%	1.48	55%	1.25	58%	1.87	60%	2.59
1900	57%	2.29	50%	1.98	54%	1.92	60%	2.77
1960	59%	2.61	58%	2.51	58%	1.73	62%	3.32
2000	60%	3.12	55%	2.27	55%	2.26	56%	3.64
2060	57%	2.79	56%	2.64	57%	2.05	59%	2.96
2100	58%	3.15	54%	2.40	60%	2.21	61%	3.41
2160	59%	2.15	56%	1.69	56%	2.79	60%	3.70
2300	55%	2.40	54%	2.03	61%	2.14	64%	2.23
2360	55%	2.05	55%	2.24	59%	2.52	55%	2.84
2400	54%	2.35	54%	1.50	54%	1.23	58%	2.73
2460	52%	2.85	54%	2.11	55%	1.79	63%	1.41
2500	58%	1.52	58%	1.29	58%	1.84	60%	3.02
2560	55%	1.96	57%	2.06	57%	1.99	62%	2.74
2600	53%	2.12	53%	1.87	54%	1.49	60%	3.57
2660	58%	1.81	54%	1.61	63%	1.93	57%	2.87
2700	54%	2.26	61%	0.63	59%	1.57	61%	2.05

CFW-4222 3GPP Mid Bands (Sub 6GHz)

FREQUENCY (MHZ)	ANTENNA 1		ANTENNA 2		ANTENNA 3		ANTENNA 4	
	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)
1400	-	-	-	-	-	-	-	-
1450	-	-	-	-	-	-	-	-
1500	-	-	-	-	-	-	-	-
1700	46%	0.53	35%	1.27	52%	0.17	46%	1.83
1760	48%	1.66	40%	1.83	60%	1.56	52%	2.09
1800	55%	2.24	49%	2.08	63%	1.82	56%	2.27
1860	56%	1.48	55%	1.25	58%	1.87	58%	2.35
1900	57%	2.29	50%	1.98	54%	1.92	59%	2.10
1960	59%	2.61	58%	2.51	58%	1.73	58%	2.90
2000	60%	3.12	55%	2.27	55%	2.26	56%	2.59
2060	57%	2.79	56%	2.64	57%	2.05	56%	2.82
2100	58%	3.15	54%	2.40	60%	2.21	57%	3.20
2160	59%	2.15	56%	1.69	56%	2.79	56%	2.51
2300	55%	2.40	54%	2.03	61%	2.14	61%	2.08
2360	55%	2.05	55%	2.24	59%	2.52	55%	1.75
2400	54%	2.35	54%	1.50	54%	1.23	55%	1.48
2460	52%	2.85	54%	2.11	55%	1.79	59%	1.32
2500	58%	1.52	58%	1.29	58%	1.84	60%	1.66
2560	55%	1.96	57%	2.06	57%	1.99	58%	2.13
2600	53%	2.12	53%	1.87	54%	1.49	57%	2.18
2660	58%	1.81	54%	1.61	63%	1.93	57%	1.40
2700	54%	2.26	61%	0.63	59%	1.57	60%	1.55

ANTENNA PERFORMANCE

CFW-4221 3GPP High Bands (Sub 6GHz)

FREQUENCY (MHZ)	ANTENNA 1		ANTENNA 2		ANTENNA 3		ANTENNA 4	
	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)
3300	54%	2.36	52%	1.35	56%	1.21	59%	2.12
3360	59%	2.37	54%	2.28	58%	1.28	65%	2.53
3400	62%	2.18	56%	2.48	58%	1.60	69%	2.27
3460	60%	2.08	53%	1.48	55%	1.35	65%	2.48
3500	61%	1.99	55%	0.10	58%	0.40	65%	1.71
3560	55%	2.83	51%	1.94	52%	0.79	61%	2.96
3600	60%	2.56	54%	2.33	55%	1.72	65%	2.84
3660	58%	2.36	52%	1.72	53%	1.52	59%	3.10
3700	53%	1.62	49%	1.14	51%	1.83	53%	1.49
3760	59%	2.21	48%	1.16	53%	0.43	58%	2.41
3800	54%	2.55	47%	1.43	54%	1.18	52%	2.61
3860	52%	2.06	53%	2.23	57%	1.64	58%	2.80
3900	50%	2.45	52%	2.57	53%	2.19	54%	2.77
3960	61%	2.30	53%	1.81	56%	2.70	60%	2.86
4000	56%	2.03	49%	2.29	55%	2.72	58%	1.60
4060	58%	3.36	56%	2.96	55%	3.51	55%	1.73
4100	60%	2.61	56%	2.90	56%	2.75	59%	2.11
4160	63%	1.53	63%	1.70	57%	0.31	63%	0.19
4200	61%	1.69	61%	2.22	54%	1.82	63%	1.67

CFW-4222 3GPP High Bands (Sub 6GHz)

FREQUENCY (MHZ)	ANTENNA 1		ANTENNA 2		ANTENNA 3		ANTENNA 4	
	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)
3300	54%	2.36	52%	1.35	56%	1.21	58%	1.16
3360	59%	2.37	54%	2.28	58%	1.28	63%	1.50
3400	62%	2.18	56%	2.48	58%	1.60	65%	1.74
3460	60%	2.08	53%	1.48	55%	1.35	60%	1.98
3500	61%	1.99	55%	0.10	58%	0.40	61%	1.16
3560	55%	2.83	51%	1.94	52%	0.79	57%	2.70
3600	60%	2.56	54%	2.33	55%	1.72	61%	2.05
3660	58%	2.36	52%	1.72	53%	1.52	56%	1.76
3700	53%	1.62	49%	1.14	51%	1.83	51%	1.33
3760	59%	2.21	48%	1.16	53%	0.43	53%	1.98
3800	54%	2.55	47%	1.43	54%	1.18	52%	1.77
3860	52%	2.06	53%	2.23	57%	1.64	53%	1.68
3900	50%	2.45	52%	2.57	53%	2.19	50%	1.29
3960	61%	2.30	53%	1.81	56%	2.70	59%	1.60
4000	56%	2.03	49%	2.29	55%	2.72	54%	0.92
4060	58%	3.36	56%	2.96	55%	3.51	55%	1.37
4100	60%	2.61	56%	2.90	56%	2.75	58%	1.44
4160	63%	1.53	63%	1.70	57%	0.31	63%	-0.47
4200	61%	1.69	61%	2.22	54%	1.82	63%	0.93

ANTENNA

PERFORMANCE CONT.

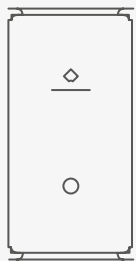
CFW-4221 & CFW-4222 IEEE WiFi 2.4GHz

FREQUENCY (MHZ)	ANTENNA 1		ANTENNA 2	
	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)
2400	59%	1.68	59%	2.27
2410	61%	1.91	62%	2.26
2420	61%	2.24	62%	2.29
2430	62%	2.59	62%	1.72
2440	66%	2.92	62%	2.10
2450	63%	2.43	59%	1.89
2460	60%	2.46	59%	1.67
2470	55%	1.95	55%	1.04
2480	52%	1.70	52%	1.36
2490	52%	1.53	54%	1.61
2500	50%	1.35	53%	2.18

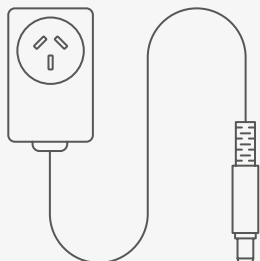
CFW-4221 & CFW-4222 IEEE WiFi 5GHz

FREQUENCY (MHZ)	ANTENNA 1		ANTENNA 2		ANTENNA 3		ANTENNA 4	
	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)	Efficiency	Gain (dBi)
5150	58%	2.16	62%	1.97	53%	1.24	59%	1.26
5200	52%	0.51	50%	1.42	47%	0.79	55%	1.24
5250	49%	0.33	48%	1.42	47%	0.94	56%	1.15
5300	54%	0.69	51%	1.16	51%	0.58	58%	1.49
5350	55%	0.90	51%	1.16	54%	0.29	58%	1.59
5400	53%	1.60	51%	1.05	51%	1.10	52%	1.58
5450	59%	1.59	52%	1.13	54%	0.31	55%	1.65
5500	54%	1.18	49%	0.87	50%	0.90	51%	0.84
5550	53%	1.04	54%	1.01	50%	1.02	51%	0.53
5600	66%	1.44	61%	1.68	59%	2.01	56%	0.79
5650	66%	1.43	61%	2.04	62%	1.79	57%	0.69
5700	69%	2.27	61%	1.45	64%	1.70	60%	1.85
5750	68%	2.12	63%	2.25	65%	2.70	70%	2.20
5800	66%	2.08	64%	2.47	61%	1.88	65%	2.01
5850	72%	2.29	65%	2.39	60%	1.62	67%	2.38

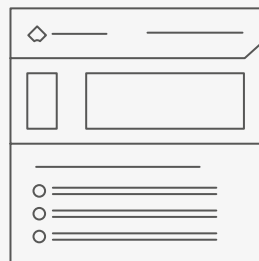
WHAT'S IN THE BOX



1 x 5G / LTE WiFi 6 Indoor
Residential Gateway



1 x Power Adapter



1 x Welcome Card



1 x Safety Card

OPTIONAL ACCESSORIES



AURORA SMARTPHONE INSTALLATION APPLICATION

The Android and iOS Smartphone application (freely available on appropriate app stores) is designed to aid the consumer through the installation process.

From unboxing, through site survey measurements around the home, and the final installation, the Smartphone application provides all the guidance required to the end consumer.

Utilising easy to understand terminology and graphics, combined with non technical language and performance indicators, the application is suitable for non technical audiences, and can be translated into additional languages upon request.

NetComm CFW-4221 & CFW-4222 Spec Sheet Rev 8

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