IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

COMMWORKS SOLUTIONS, LLC, Plaintiff, v. DRAYTEK CORPORATION, Defendant.	Civil Action No. 2:25-cv-00024 **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff CommWorks Solutions, LLC ("CommWorks" or "Plaintiff") files this complaint against Defendant DrayTek Corporation ("DrayTek" or "Defendant"), alleging, based on its own knowledge as to itself and its own actions, and based on information and belief as to all other matters, as follows:

NATURE OF THE ACTION

1. This is a patent infringement action for Defendant's infringement of the following United States Patents (collectively, the "Asserted Patents"), issued by the United States Patent and Trademark Office ("USPTO"):

	Patent No.	Reference
1.	7,177,285	https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7177285, https://patentcenter.uspto.gov/applications/10961959
2.	7,463,596	https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7463596, https://patentcenter.uspto.gov/applications/11673513
3.	7,911,979	https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7911979, https://patentcenter.uspto.gov/applications/12323399

	Patent No.	Reference
4.	RE44,904	https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/RE44904 , https://patentcenter.uspto.gov/applications/13171882
5.	7,027,465	https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7027465, https://patentcenter.uspto.gov/applications/10167986
6.	6,891,patent	https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/6891807, https://patentcenter.uspto.gov/applications/10341847

2. Plaintiff seeks monetary damages.

PARTIES

3. CommWorks is a limited liability company formed under the laws of the State of Georgia with its registered office address located in Alpharetta, Georgia (Fulton County).

4. On information and belief, Defendant DrayTek Corporation is a Taiwan-based corporation with a principal place of business at No. 26 Fushing Road, Hukou, Hsinchu Industrial Park, Hsinchu, 30352, Taiwan.

5. DrayTek Corporation may be served at No. 26 Fushing Road, Hukou, Hsinchu Industrial Park, Hsinchu, 30352, Taiwan *via* an officer, a managing or general agent, or any other agent authorized by appointment or by law to receive service of process.

6. On information and belief, Defendant has directly and/or indirectly developed, designed, manufactured, distributed, marketed, offered to sell and/or sold infringing products and services in the United States, including in the Eastern District of Texas, and otherwise direct infringing activities to this District in connection with their products and services as set forth in this Complaint.

JURISDICTION AND VENUE

7. CommWorks repeats and re-alleges the allegations in the paragraphs above as though fully set forth in their entirety.

8. This is an action for infringement of a United States patent arising under 35 U.S.C. §§ 271, 281, and 284–85, among others. This Court has subject matter jurisdiction of the action under 28 U.S.C. § 1331 and § 1338(a).

9. Defendant is subject to this Court's specific and general personal jurisdiction under due process due at least to Defendant's substantial business in this judicial district, in the State of Texas and in the United States, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly transacting, doing, and/or soliciting business, engaging in other persistent courses of conduct, or deriving substantial revenue from goods and services provided to individuals in Texas and in this District.

10. Specifically, Defendant intends to do and does business in, and has committed acts of infringement in this District, in this State of Texas, and in the United States, directly, through intermediaries, by contributing to and through its inducement of third parties, and offering its products or services, including those accused of infringement here, to customers and potential customers located in this District. *See DrayTekUSA Home Page*, DRAYTEK, *available at* https://draytekusa.com/ (last visited Jan. 7, 2025) (stating that DrayTek USA, which "is managed and maintained by ABPTech, ***a Texas-based master distributor*** . . . is in charge of DrayTek's ***distribution in the North American market***.") (emphasis added).

11. Defendant has purposefully directed infringing activities at residents of the State of Texas, and this litigation results from those infringing activities. Defendant regularly sells (either directly or indirectly), its products within this District. For example, upon information and belief, Defendant has placed its products into the stream of commerce *via* an established distribution

channel, *see* ¶ 9, *supra*, with the knowledge or understanding that such products are being sold in this Judicial District and the State of Texas. Defendant is subject to this Court's specific and/or general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due to its substantial and pervasive business in this State and District, including its infringing activities alleged herein, from which Defendant derives substantial revenue from goods sold to residents and consumers.

12. Defendant sells, offers for sale, uses, makes and/or imports products that are and have been used, offered for sale, sold, and purchased in the Eastern District of Texas, and Defendant has committed acts of infringement in the Eastern District of Texas, has conducted business in the Eastern District of Texas, and/or has engaged in continuous and systematic activities in the Eastern District of Texas.

13. Venus is proper in this District pursuant to 28 U.S.C. § 1391 because, among other things, Defendant is not a resident of the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). See also *In re: HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (holding that "[t]he Court's recent decision in *TC Heartland* does not alter" the alien-venue rule).

THE ACCUSED PRODUCTS

14. CommWorks repeats and re-alleges the allegations in the paragraphs above as though fully set forth in their entirety.

15. Defendant use, cause to be used, manufacture, provide, supply, or distribute one or more DrayTek Systems-on-Chips (SoCs), and/or devices, including, but not limited to the "Accused Products," set forth below:

- DrayTek SoCs, and/or devices supporting **Wi-Fi Multimedia and 802.11-2007+**

functionality, including:

- **VigorAP 962C**

What is WMM?

August 30th, 2019 | Wireless LAN

WMM is an abbreviation for **Wi-Fi Multimedia**. It is a Wi-Fi Alliance interoperability certification, based on the IEEE 802.11e standard. It provides basic Quality of service (QoS) features to IEEE 802.11 networks.

WMM prioritizes traffic according to four Access Categories (AC) – best effort, background, video and voice (AC_BE, AC_BK, AC_VI and AC_VO).

WMM does not provide guaranteed throughput. It is suitable for applications that require QoS, such as Voice over IP (VoIP) on Wi-Fi phones.

Figure 1A (*What is WMM?*, DRAYTEK, *available at* https://faq.draytek.com.au/2019/08/30/what-is-wmm/ (last visited Jan. 7, 2025)).

Figure 1B (*VigorAP 962C: AX3000 2,5G Dual Band Ceiling AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-962c (last visited Jan. 7, 2025)).

^ WLAN

Band Type	Dual-Band
WiFi 6	✔
2.4GHz WLAN	802.11 b/g/n/ax
5GHz WLAN	802.11 a/n/ac Wave 2/ax
Antennas	5x Internal PIFA DB
2.4GHz Antenna Gain (dBi)	4.5
5GHz Antenna Gain (dBi)	4.9
2.4GHz Max. Link Rate (Mbps)	600
5GHz Max. Link Rate (Mbps)	2400
Max. Clients	256
Operating Mode	AP Mesh Root Mesh Node Range Extender
Max. Number of SSIDs (per band)	16 (8)
Roaming	AP-Assisted Roaming Pre-Authentication 802.11r 802.11v 802.11k
AirTime Fairness	✔
Band Steering	✔
OFDMA	✔
WDS	Repeater
WMM	✔

Figure 1C (*VigorAP 962C*, DRAYTEK, *available at* https://www.draytek.com/products/vigorap-962c#nav-Specs (last visited Jan. 7, 2025)).

- **VigorAP 903**

Figure 2A (*VigorAP 903: 11ac Dual-Band Wireless Mesh AP + 5-Port GbE Switch*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-903 (last visited Oct. 18, 2024)).

WLAN	
Band Type	Dual-Band
2.4GHz WLAN	802.11 b/g/n
5GHz WLAN	802.11 a/n/ac Wave 2
Antennas	2x External dipole DB
2.4GHz Antenna Gain (dBi)	2
5GHz Antenna Gain (dBi)	4
2.4GHz Max. Link Rate (Mbps)	400
5GHz Max. Link Rate (Mbps)	867
Max. Clients	128
Operating Mode	AP Mesh Root Mesh Node Range Extender
Max. Number of SSIDs (per band)	8 (4)
Roaming	AP-Assisted Roaming PMK-Caching Pre-Authentication 802.11r
AirTime Fairness	✓
Band Steering	✓
WDS	Repeater (5GHz only)
WMM	✓

Figure 2B (*VigorAP 903*, DRAYTEK, *available at* https://www.draytek.com/products/vigorap-903/#nav-Specs (last visited Jan. 7, 2025)).

- **VigorAP 906**

VigorAP 906

2x2 Dual Band WiFi 6 AP

- WiFi 6 Dual-Band
- Maximum Data Rate: 3 Gbps
- Wall / Desktop

WLAN	
2.4GHz Standard	IEEE 802.11b/g/n/ax 2x2 MIMO
5GHz Standard	IEEE 802.11a/n/ac Wave 2/ax 2x2 MU-MIMO
Operating Mode	AP, Mesh Root, Mesh Node.
Roaming	AP-Assisted Roaming, PMK-Caching, Pre-Authentication
AirTime Fairness	Yes
Band Steering	Yes
OFDMA	Yes
Max. Number of SSID	8 (4 per radio band)
WDS	Yes Repeater
Client Numer Limit	Per radio, Per SSID
WMM	Yes

Figure 3 (*VigorAP 906 2x2 Dual Band WiFi 6 AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-906 (last visited Jan. 7, 2025)).

- **VigorAP 918R**

VigorAP 918R Series

802.11ac Wave 2 Dual-Band PoE Outdoor Access Point

- 11ac Wave 2 Dual Band
- Maximum Data Rate: 1.3 Gbps
- Wall/Pole Mount
- IP67 Rated Waterproof

WLAN	
2.4GHz Standard	IEEE 802.11b/g/n 2x2 MIMO
5GHz Standard	IEEE 802.11a/n/ac Wave 2 2x2 MU-MIMO
Operating Mode	AP, Mesh Root, Mesh Node, Range Extender
Roaming	AP-Assisted Roaming, PMK-Caching, Pre-Authentication
Airtime Fairness	
Band Steering	
Auto Channel Selection	
Max. Number of SSID	8 (4 per radio band)
WDS	
Bandwidth Limit per Station	
Client Number Limit	Per radio, Per SSID
Connection Time Control	
WMM	

Model	AP 918R	AP 918RPD
	PMK-Caching Pre-Authentication	
AirTime Fairness	✓	
Band Steering	✓	
WDS	Repeater	
WMM	✓	

Figure 4 (*VigorAP 918R Series*, DRAYTEK, *available at* https://www.draytek.com/product/vigorap-918r-series (last visited Jan. 7, 2025)).

- **VigorAP 1000C**

VigorAP 1000C

Tri-Band 11ac Ceiling-Mount Wireless AP

- 11ac Wave 2 Tri-Band
- Maximum Data Rate: 2.2 Gbps
- Wall/Ceiling Mount

WLAN	
2.4GHz Standard	IIEEE 802.11b/g/n/ax 4x4 MIMO, up to 1024-QAM
5GHz Standard	IEEE 802.11a/n/ac Wave 2/ax 4x4 MU-MIMO, up to 1024-QAM
2.4GHz Link Rate	Up to 1200 Mbps
5GHz Link Rate	Up to 2400 Mbps
Max. Number of Concurrent Active Clients	256 (128 per radio band)
Operating Mode	AP, Mesh Root, Mesh Node, Range Extender
Roaming	AP-Assisted Roaming, PMK-Caching, Pre-Authentication, 802.11r
AirTime Fairness	Yes
Band Steering	Yes
Auto Channel Selection	Yes
OFDMA	Yes
Max. Number of SSID	16 (8 per radio band)
WDS	Yes
Client Numer Limit	Per radio, Per SSID
Connection Time Control	Yes
WMM	Yes

Figure 5 (*VigorAP 1000C: Tri-Band 11ac Ceiling-Mount Wireless AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-1000c (last visited Oct. 18, 2024)).

- **VigorAP 912C**

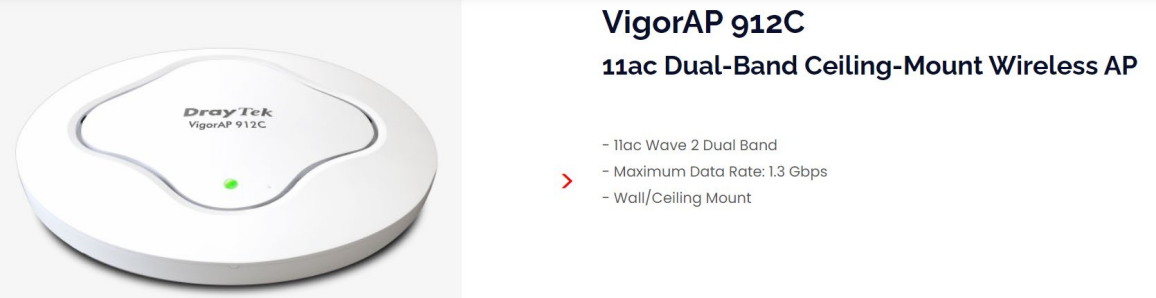


Figure 6A (*VigorAP 912: 11ac Dual-Band Ceiling-Mount Wireless AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-912c (last visited Jan. 7, 2025)).

^ WLAN

Band Type	Dual-Band
2.4GHz WLAN	802.11 b/g/n
5GHz WLAN	802.11 a/n/ac Wave 2
Antennas	2x Internal PiFA DB
2.4GHz Antenna Gain (dBi)	3
5GHz Antenna Gain (dBi)	5
2.4GHz Max. Link Rate (Mbps)	300
5GHz Max. Link Rate (Mbps)	867
Max. Clients	256
Operating Mode	AP Mesh Root Mesh Node Range Extender
Max. Number of SSIDs (per band)	8 (4)
Roaming	AP-Assisted Roaming PMK-Caching Pre-Authentication 802.11r
AirTime Fairness	✓
Band Steering	✓
WDS	Repeater
WMM	✓

Figure 6B (*VigorAP 912*, DRAYTEK, *available at* https://www.draytek.com/products/vigorap-912c/#nav-Specs (last visited Jan. 7, 2025)).

- **VigorAP 1060C**

WLAN	
2.4GHz Standard	IIEEE 802.11b/g/n/ax 4x4 MIMO, up to 1024-QAM
5GHz Standard	IEEE 802.11a/n/ac Wave 2/ax 4x4 MU-MIMO, up to 1024-QAM
2.4GHz Link Rate	Up to 1200 Mbps
5GHz Link Rate	Up to 2400 Mbps
Max. Number of Concurrent Active Clients	256 (128 per radio band)
Operating Mode	AP, Mesh Root, Mesh Node, Range Extender
Roaming	AP-Assisted Roaming, PMK-Caching, Pre-Authentication, 802.11r
AirTime Fairness	Yes
Band Steering	Yes
Auto Channel Selection	Yes
OFDMA	Yes
Max. Number of SSID	16 (8 per radio band)
WDS	Yes
Client Numer Limit	Per radio, Per SSID
Connection Time Control	Yes
WMM	Yes
IGMP Snooping	Yes

Figure 7 (*VigorAP 1060C: 4x4 Dual Band WiFi 6 Ceiling AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-1060c (last visited Oct. 18, 2024)).

- **Vigor2862 Series**

Products

Vigor2862 Series

VDSL2/ADSL + GbE Dual-WAN VPN Router

Model	2862	2862ac	2862B	2862Bn	2862n	2862Vac
2.4GHz WLAN		802.11n 2x2 MIMO		802.11n 2x2 MIMO		
5GHz WLAN		802.11ac Wave 2 4x4 MU-MIMO				802.11ac Wave 2 4x4 MU-MIMO
Antennas		4		2		4
Antenna Type		External Dipole		External Dipole		
2.4GHz Antenna Gain (dBi)		2		2		
5GHz Antenna Gain (dBi)		4				4
2.4GHz Max. Link Rate (Mbps)		300		300		
5GHz Max. Link Rate (Mbps)		1700				1700
Max. Number of SSIDs per band		4		4		
Security Mode		WEP WPA WPA2 Mixed(WPA+WPA2)		WEP WPA WPA2 Mixed(WPA+WPA2)		
Authentication		Pre-Shared Key, 802.1X		Pre-Shared Key, 802.1X		
WPS		PIN, PBC		PIN, PBC		
WDS		Bridge, Repeater		Bridge, Repeater		
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling		Access List Client Isolation Hide SSID WLAN Scheduling		
AirTime Fairness		✓		✓		
Band Steering		✓				✓
WMM		✓		✓		

Figure 8 (*VigorAP 2862 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2862/#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2927 Series**

Vigor 2927 Series

Dual-WAN VPN Firewall Router

- 2 Gigabit Ethernet WAN ports for Load Balancing or Failover
- 2 USB ports for 3G/4G modem or extra storage
- Built-in 802.11ac Wave 2 dual-band Wi-Fi, delivers speed up to 1.7Gbps (ac/Vac model)
- 50 simultaneous VPN Tunnels
- SPI Firewall with Content Filtering by URL Keyword, Category, and Apps
- Central Management for Vigor AP and Vigor Switch
- Supports DrayDDNS
- Supports IPTECHVIEW

Figure 9A (*Vigor 2927 Series: Dual-WAN VPN Firewall Router*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigor-2927-series (last visited Jan. 7, 2025)).

Model	2927	2927ac	2927ax	2927F	2927Vac
WiFi 6			✓		
OFDMA			✓		
WPS		PIN, PBC			PIN, PBC
WDS		Repeater (5GHz only)			Repeater (5GHz only)
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling			Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✓			✓
Band Steering		✓			✓
WMM		✓			✓

Figure 9B (*Vigor 2927 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2927/#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2927 LTE**

Vigor 2927 LTE

4G LTE Embedded Dual-WAN VPN Firewall Router

- 2 Gigabit Ethernet WAN ports for Load Balancing or Failover
- 4G/LTE Connectivity with Built-In sim card slot.
- 2 USB ports for 3G/4G modem or extra storage
- Built-in 802.11ac Wave 2 dual-band Wi-Fi, delivers speed up to 1.7Gbps (ac/Vac model)
- 50 simultaneous VPN Tunnels
- SPI Firewall with Content Filtering by URL Keyword, Category, and Apps
- Central Management for Vigor AP and Vigor Switch
- Supports DrayDDNS
- Supports IPTECHVIEW

Wireless LAN (Ac Model)	
Number of SSID	4 per radio band
Security Mode	WEP, WPA, WPA2, Mixed(WPA+WPA2), WPA3
Authentication	Pre-Shared Key, 802.1X
WPS	PIN, PBC
WDS	Repeater (5GHz only)
Access Control	Access List, Client Isolation, Hide SSID, WLAN Scheduling
AirTime Fairness	
Band Steering	(ac model)
MU-MIMO	(5GHz Only) (ac model)
WMM	

Figure 10A (*Vigor 2927 LTE: 4G LTE Embedded Dual-WAN VPN Firewall Router*, DRAYTEK, *available at* https://www.draytekusa.com/index.php/product/vigor2927-lte-series (last visited Jan. 7, 2025)).

Model	2927L	2927Lac
VoIP Prioritization	✓	
APP QoS	✓	
^ WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2.5
5GHz Antenna Gain (dBi)		3
2.4GHz Max. Link Rate (Mbps)		400
5GHz Max. Link Rate (Mbps)		867
Max. Number of SSIDs per band		4
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Repeater (5GHz only)
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✓
Band Steering		✓
WMM		✓

Figure 10B (*Vigor 2927 LTE Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2927-lte/#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2135 Series**

Figure 11A (*Vigor 2135 Series: Gigabit Broadband Single-WAN Router for Home/SOHO*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigor2135-series (last visited Jan. 7, 2025)).

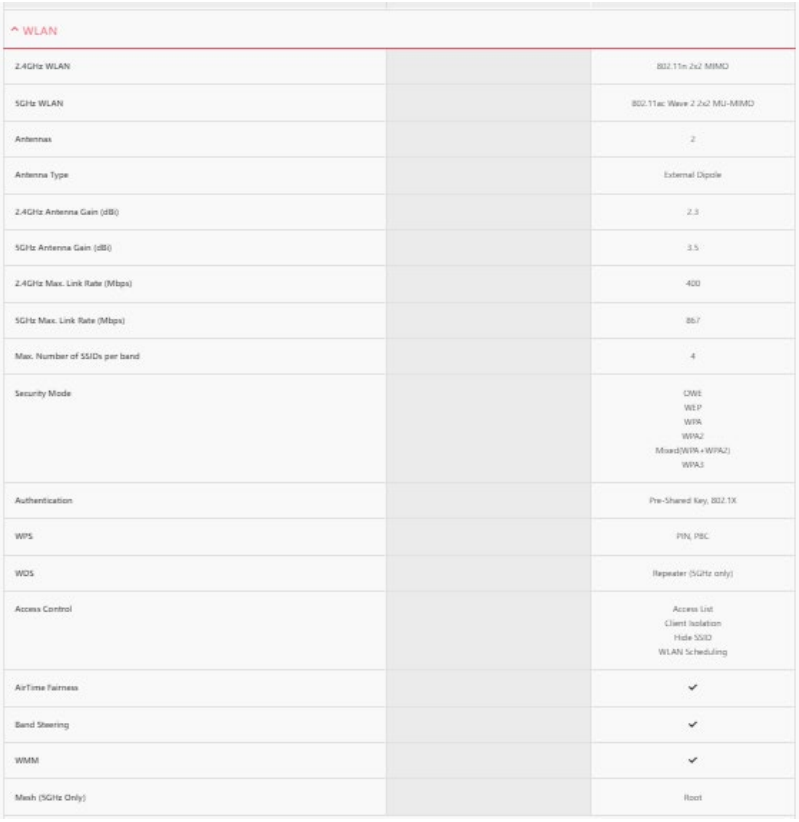
Model	2135	2135ac	2135ax	2135FVac	2135Vac
WiFi 6			✓		
OFDMA			✓		
WPS		PIN, PBC			
WDS		Repeater (5GHz only)			
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling			
AirTime Fairness		✓			
Band Steering		✓			
WMM		✓			
Mesh (5GHz Only)		Root			

Figure 11B (*Vigor 2135 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2135/#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2866 Series**

Model	2866	2866ac	2866ax	2866Vac
WiFi 6			✓	
OFDMA			✓	
WPS		PIN, PBC		
WDS		Repeater (5GHz only)		
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling		
AirTime Fairness		✓		
Band Steering		✓		
WMM		✓		

Figure 12A (*Vigor 2866 Series: G.Fast Dual-WAN VPN Firewall Router*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigor2866-series (last visited Jan. 7, 2025)).



WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2.3
5GHz Antenna Gain (dBi)		3.5
2.4GHz Max. Link Rate (Mbps)		400
5GHz Max. Link Rate (Mbps)		867
Max. Number of SSIDs per band		4
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Repeater (5GHz only)
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✔
Band Steering		✔
WMM		✔
Mesh (5GHz Only)		Root

Figure 12B (*Vigor 2866 LTE Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2866-lte#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2766 Series**

Model	2766	2766ac	2766ax	2766Vac
^ WLAN				
2.4GHz WLAN		802.11n 2x2 MIMO	802.11ax 2x2 MIMO	802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO	802.11ax 2x2 MU-MIMO	802.11ac Wave 2 2x2 MU-MIMO
Antennas		2		
Antenna Type		External Dipole		
2.4GHz Antenna Gain (dBi)		2	2.7	2
5GHz Antenna Gain (dBi)		4	2.5	4
2.4GHz Max. Link Rate (Mbps)		400	574	400
5GHz Max. Link Rate (Mbps)		867	2402	867
Max. Number of SSIDs per band		4		
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3		
Authentication		Pre-Shared Key, 802.1X		
WiFi 6			✔	
OFDMA			✔	
WPS		PIN, PBC		
WDS		Repeater (5GHz only)		
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling		
AirTime Fairness		✔		
Band Steering		✔		
WMM		✔		

Figure 13 (*Vigor 2766 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2766#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2865L-5G Series**

Model	Vigor2865L-5G	Vigor2865Lax-5G
2.4GHz WLAN		802.11ax 2x2 MIMO
5GHz WLAN		802.11ax 2x2 MU-MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2.3
5GHz Antenna Gain (dBi)		3.5
2.4GHz Max. Link Rate (Mbps)		574
5GHz Max. Link Rate (Mbps)		2402
Max. Number of SSIDs per band		4
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3
Authentication		Pre-Shared Key, 802.1X
WiFi 6		✓
OFDMA		✓
WPS		PIN, PBC
WDS		Repeater (5GHz only)
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✓
Band Steering		✓
WMM		✓

Figure 14 (*Vigor 2865L-5G Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2865-lte-5g#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor2765 Series**

Model	2765	2765ac	2765ax	2765Vac
WLAN				
2.4GHz WLAN		802.11n 2x2 MIMO	802.11ax 2x2 MIMO	802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO	802.11ax 2x2 MU-MIMO	802.11ac Wave 2 2x2 MU-MIMO
Antennas		2		
Antenna Type		External Dipole		
2.4GHz Antenna Gain (dBi)		2	2.7	2
5GHz Antenna Gain (dBi)		4	2.5	4
2.4GHz Max. Link Rate (Mbps)		400	574	400
5GHz Max. Link Rate (Mbps)		867	2402	867
Max. Number of SSIDs per band		4		
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3		
Authentication		Pre-Shared Key, 802.1X		
WiFi 6			✓	
OFDMA			✓	
WPS		PIN, PBC		
WDS		Repeater (5GHz only)		
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling		
AirTime Fairness		✓		
Band Steering		✓		
WMM		✓		

Figure 15 (*Vigor 2765 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2765#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor2763 Series**

Model	2763	2763ac
^ WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2
5GHz Antenna Gain (dBi)		4
2.4GHz Max. Link Rate (Mbps)		400
5GHz Max. Link Rate (Mbps)		867
Max. Number of SSIDs per band		4
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Repeater (5GHz only)
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✓
Band Steering		✓
WMM		✓

Figure 16 (*Vigor 2763 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2763#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor2620 LTE Series**

Model	2620L	2620Ln
VoIP Prioritization		✓
^ WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
Antennas		2
Antenna Type		Internal PIFA
2.4GHz Antenna Gain (dBi)		2
2.4GHz Max. Link Rate (Mbps)		300
Max. Number of SSIDs per band		4
Security Mode		WEP WPA WPA2 Mixed(WPA+WPA2)
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Bridge, Repeater
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
WMM		✓

Figure 17 (*Vigor2620 LTE Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2620-lte#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2832 Series**

Model	2832	2832n
APP QoS	✓	
^ WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2
2.4GHz Max. Link Rate (Mbps)		300
Max. Number of SSIDs per band		4
Security Mode		WEP WPA WPA2 Mixed(WPA+WPA2)
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Bridge, Repeater
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✓
WMM		✓

Figure 18 (*Vigor2832 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2832#nav-Specs (last visited Jan. 7, 2025)).

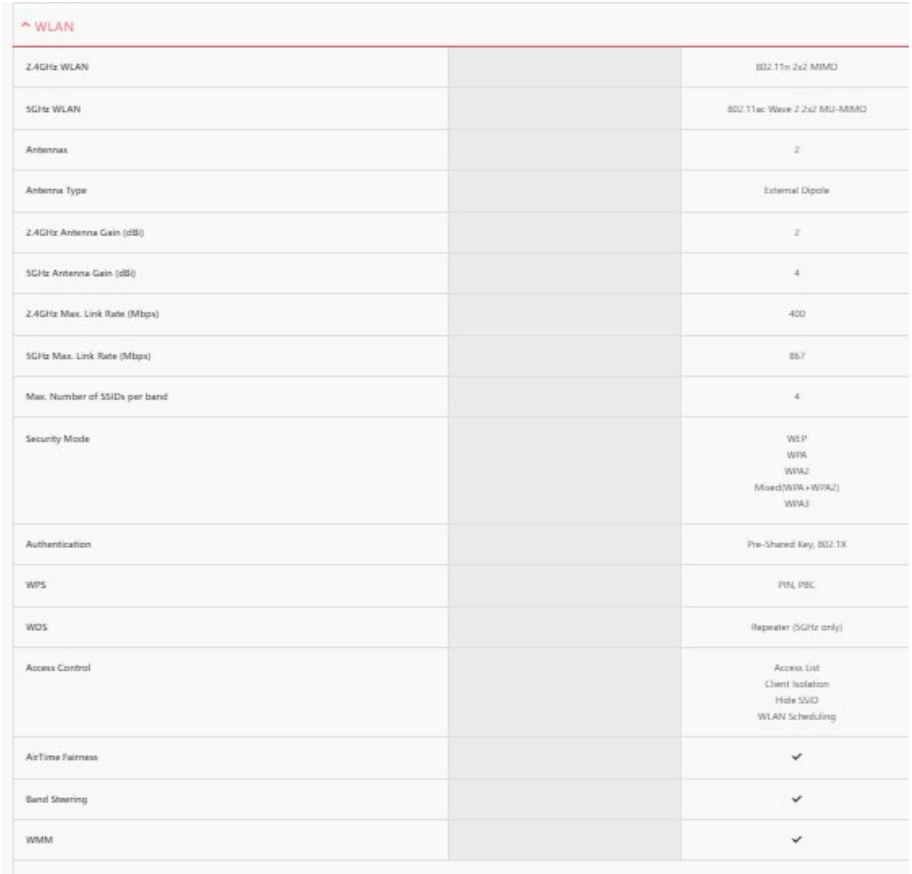
- **Vigor LTE 200n**

WLAN

2.4GHz WLAN	802.11n 2x2 MIMO
Antennas	2
Antenna Type	Internal PIFA
2.4GHz Antenna Gain (dBi)	2
2.4GHz Max. Link Rate (Mbps)	300
Max. Number of SSIDs per band	4
Security Mode	WEP WPA WPA2 Mixed(WPA+WPA2)
Authentication	Pre-Shared Key, 802.1X
WPS	PIN, PBC
WDS	Bridge, Repeater
Access Control	Access List Client Isolation Hide SSID WLAN Scheduling
WMM	✓

Figure 19 (*VigorLTE 200n*, DRAYTEK, *available at* https://www.draytek.com/products/vigorlte-200#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2915 Series**



WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2
5GHz Antenna Gain (dBi)		4
2.4GHz Max. Link Rate (Mbps)		400
5GHz Max. Link Rate (Mbps)		867
Max. Number of SSIDs per band		4
Security Mode		WEP WPA WPA2 Mixed(WPA+WPA2) WPA3
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Repeater (5GHz only)
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✓
Band Steering		✓
WMM		✓

Figure 20 (*Vigor2915 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2915#nav-Specs (last visited Jan. 7, 2025)).

- **VigorAP 1062C**

WLAN

Band Type	Dual-Band
WiFi 6	✔
2.4GHz WLAN	802.11 b/g/n/ax
5GHz WLAN	802.11 a/n/ac Wave 2/ax
Antennas	4x Internal PIFA DB
2.4GHz Antenna Gain (dBi)	4.2
5GHz Antenna Gain (dBi)	4.9
2.4GHz Max. Link Rate (Mbps)	1200
5GHz Max. Link Rate (Mbps)	4800
Max. Clients	256
Operating Mode	AP Mesh Root Mesh Node Range Extender
Max. Number of SSIDs (per band)	16 (8)
Roaming	AP-Assisted Roaming PMK-Caching Pre-Authentication 802.11r 802.11k
AirTime Fairness	✔
Band Steering	✔
OFDMA	✔
WDS	Repeater
WMM	✔

Figure 21 (*VigorAP 1062C*, DRAYTEK, *available at* https://www.draytek.com/products/vigorap-1062c#nav-Specs (last visited Jan. 7, 2025)).

- DrayTek devices supporting **Wi-Fi Protected Setup (WPS)** functionality, including:
    - **VigorAP 962C**

VigorAP 962C

AX3000 2,5G Dual Band Ceiling AP

- WiFi 6 Dual-Band
- Mesh
- Wall/Ceiling Mount

Security	
Security Mode	WPA3, WPA3/WPA2, WPA2, WPA2/WPA, OWE, WPA, WEP, None
Authentication	Personal, Enterprise
WPS	PIN, PBC
Hidden SSIDs	
MAC Address Filter	Up to 256 entries
Wireless Client Isolation	

Figure 22 (*VigorAP 962C: AX3000 2,5G Dual Band Ceiling AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-962c (last visited Jan. 7, 2025)).

- **VigorAP 903**

VigorAP 903

11ac Dual-Band Wireless Mesh AP + 5-Port GbE Switch

- 11ac Wave 2 Dual Band
- Maximum Data Rate: 1.3 Gbps
- Wall/Desktop Mount

Interface	
LAN Port	5x 10/100/1000M Base-T, RJ-45 (1x PoE)
USB Port	1x USB 2.0
Antenna	2x Detachable Dual-Band Gain: 4 dBi for 5GHz, 2 dBi for 2.4GHz
Button	1x Factory Reset 1x Wireless On/Off/WPS 1x Power On/Off

Security	
Security Mode	WPA3, WPA3/WPA2, WPA2, WPA2/WPA, OWE, WPA, WEP, None
Authentication	Personal, Enterprise
WPS	PIN, PBC
Hidden SSIDs	
MAC Address Filter	Up to 128 entries
Wireless Client Isolation	

Figure 23 (*VigorAP 903: 11ac Dual-Band Wireless Mesh AP + 5-Port GbE Switch*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-903 (last visited Oct. 19, 2024)).

- **VigorAP 1000C**

VigorAP 1000C

Tri-Band 11ac Ceiling-Mount Wireless AP

- 11ac Wave 2 Tri-Band
- Maximum Data Rate: 2.2 Gbps
- Wall/Ceiling Mount

Security	
Security Mode	WPA3, WPA3/WPA2, WPA2, WPA2/WPA, OWE, WPA, WEP, None
Authentication	Personal, Enterprise
WPS	PIN, PBC
Hidden SSIDs	Yes
MAC Address Filter	Up to 256 entries
Wireless Client Isolation	Yes
Mobile Device Management	Yes

Figure 24 (*VigorAP 1000C: Tri-Band 11ac Ceiling-Mount Wireless AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-1000c (last visited Oct. 19, 2024)).

- **VigorAP 906**

VigorAP 906

2x2 Dual Band WiFi 6 AP

- WiFi 6 Dual-Band
- Maximum Data Rate: 3 Gbps
- Wall / Desktop

Security	
Security Mode	WPA3, WPA3/WPA2, WPA2, WPA2/WPA, OWE, WPA, WEP, None
Authentication	Personal, Enterprise
WPS	PIN, PBC
Hidden SSIDs	Yes
MAC Address Filter	Up to 256 entries
Wireless Client Isolation	Yes
Mobile Device Management	Yes

Figure 25 (*VigorAP 906: 2x2 Dual Band WiFi 6 AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-906 (last visited Jan. 7, 2025)).

- **VigorAP 912C**

VigorAP 912C

11ac Dual-Band Ceiling-Mount Wireless AP

- 11ac Wave 2 Dual Band
- Maximum Data Rate: 1.3 Gbps
- Wall/Ceiling Mount

Security	
Security Mode	WPA3, WPA3/WPA2, WPA2, WPA2/WPA, OWE, WPA, WEP, None
Authentication	Personal, Enterprise
WPS	PIN, PBC
Hidden SSIDs	
MAC Address Filter	Up to 256 entries
Wireless Client Isolation	
Mobile Device Management	

Figure 26 (*VigorAP 912C: 11ac Dual-Band Ceiling-Mount Wireless AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-912c (last visited Jan. 7, 2025)).

- **VigorAP 918R**

VigorAP 918R Series

802.11ac Wave 2 Dual-Band PoE Outdoor Access Point

- 11ac Wave 2 Dual Band
- Maximum Data Rate: 1.3 Gbps
- Wall/Pole Mount
- IP67 Rated Waterproof

Security	
Security Mode	WPA3, WPA3/WPA2, WPA2, WPA2/WPA, OWE, WPA, WEP, None
Authentication	Personal, Enterprise
WPS	PIN, PBC
Hidden SSIDs	
MAC Address Filter	Up to 256 entries
Wireless Client Isolation	

Figure 27 (*VigorAP 918R Series: 802.11ac Wave 2 Dual-Band PoE Outdoor Access Point*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-918r-series (last visited Jan. 7, 2025)).

- **Vigor 2927 Series**

Vigor 2927 Series

Dual-WAN VPN Firewall Router

- 2 Gigabit Ethernet WAN ports for Load Balancing or Failover
- 2 USB ports for 3G/4G modem or extra storage
- Built-in 802.11ac Wave 2 dual-band Wi-Fi, delivers speed up to 1.7Gbps (ac/Vac model)
- 50 simultaneous VPN Tunnels
- SPI Firewall with Content Filtering by URL Keyword, Category, and Apps
- Central Management for Vigor AP and Vigor Switch
- Supports DrayDDNS
- Supports IPTECHVIEW

Wireless LAN (Ac Model)	
Number of SSID	4 per radio band
Security Mode	WEP, WPA, WPA2, Mixed(WPA+WPA2), WPA3
Authentication	Pre-Shared Key, 802.1X
WPS	PIN, PBC
WDS	Repeater (5GHz only)
Access Control	Access List, Client Isolation, Hide SSID, WLAN Scheduling
AirTime Fairness	
Band Steering	(ac model)
MU-MIMO	(5GHz Only) (ac model)
WMM	

Figure 28 (*Vigor 2927 Series: Dual-WAN VPN Firewall Router*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigor-2927-series (last visited Jan. 7, 2025)).

- **Vigor 2927 LTE Series**

Vigor 2927 LTE

4G LTE Embedded Dual-WAN VPN Firewall Router

- 2 Gigabit Ethernet WAN ports for Load Balancing or Failover
- 4G/LTE Connectivity with Built-In sim card slot.
- 2 USB ports for 3G/4G modem or extra storage
- Built-in 802.11ac Wave 2 dual-band Wi-Fi, delivers speed up to 1.7Gbps (ac/Vac model)
- 50 simultaneous VPN Tunnels
- SPI Firewall with Content Filtering by URL Keyword, Category, and Apps
- Central Management for Vigor AP and Vigor Switch
- Supports DrayDDNS
- Supports IPTECHVIEW

Wireless LAN (Ac Model)	
Number of SSID	4 per radio band
Security Mode	WEP, WPA, WPA2, Mixed(WPA+WPA2), WPA3
Authentication	Pre-Shared Key, 802.1X
WPS	PIN, PBC
WDS	Repeater (5GHz only)
Access Control	Access List, Client Isolation, Hide SSID, WLAN Scheduling
AirTime Fairness	
Band Steering	(ac model)
MU-MIMO	(5GHz Only) (ac model)
WMM	

Figure 29 (*Vigor 2927 LTE: 4G LTE Embedded Dual-WAN VPN Firewall Router*, DRAYTEK, *available at* https://www.draytekusa.com/index.php/product/vigor2927-lte-series (last visited Jan. 7, 2025)).

- **Vigor 2135 Series**

Vigor 2135 Series

Gigabit Broadband Single-WAN Router For Home/SOHO

- Gigabit Ethernet WAN
- 50K NAT Sessions
- 2 Concurrent VPN
- Built-in 11ac Wave 2 WLAN (optional)

Wireless LAN (Ac Model)	
Number of SSID	4 per radio band
Security Mode	WEP, WPA, WPA2, Mixed(WPA+WPA2)
Authentication	Pre-Shared Key, 802.1X
WPS	PIN, PBC
WDS	Repeater (5GHz Only)
Access Control	Access List, Client Isolation, Hide SSID, WLAN Scheduling
AirTime Fairness	
Band Steering	(ac model)
MU-MIMO	(5GHz Only) (ac model)
WMM	

Figure 30 (*Vigor 2135 Series: Gigabit Broadband Single-WAN Router For Home/SOHO*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigor2135-series (last visited Jan. 7, 2025)).

- **Vigor 2866 Series**

Wireless LAN (Ac Model)	
Number of SSID	4 per radio band
Security Mode	WEP, WPA, WPA2, Mixed(WPA+WPA2), WPA3
Authentication	Pre-Shared Key, 802.1X
WPS	PIN, PBC
WDS	Repeater (5GHz only)
Access Control	Access List, Client Isolation, Hide SSID, WLAN Scheduling
AirTime Fairness	
Band Steering	(ac model)
MU-MIMO	(5GHz Only) (ac model)
WMM	

Figure 31 (*Vigor 2866 Series: G.Fast Dual-WAN VPN Firewall Router*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigor2866-series (last visited Jan. 7, 2025)).

- **Vigor 2862 Series**

Products

Vigor2862 Series

VDSL2/ADSL + GbE Dual-WAN VPN Router

Model	2862	2862ac	2862B	2862Bn	2862n	2862Vac
VoIP Prioritization			✔			
APP QoS			✔			
^ WLAN						
2.4GHz WLAN		802.11n 2x2 MIMO		802.11n 2x2 MIMO		
5GHz WLAN		802.11ac Wave 2 4x4 MU-MIMO				802.11ac Wave 2 4x4 MU-MIMO
Antennas		4		2		4
Antenna Type		External Dipole		External Dipole		
2.4GHz Antenna Gain (dBi)		2		2		
5GHz Antenna Gain (dBi)		4				4
2.4GHz Max. Link Rate (Mbps)		300		300		
5GHz Max. Link Rate (Mbps)		1700				1700
Max. Number of SSIDs per band		4		4		
Security Mode		WEP WPA WPA2 Mixed(WPA+WPA2)		WEP WPA WPA2 Mixed(WPA+WPA2)		
Authentication		Pre-Shared Key, 802.1X		Pre-Shared Key, 802.1X		
WPS		PIN, PBC		PIN, PBC		

Figure 32 (*Vigor 2862 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vig62/#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor2766 Series**

Model	2766	2766ac	2766ax	2766Vac
^ WLAN				
2.4GHz WLAN		802.11n 2x2 MIMO	802.11ax 2x2 MIMO	802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO	802.11ax 2x2 MU-MIMO	802.11ac Wave 2 2x2 MU-MIMO
Antennas		2		
Antenna Type		External Dipole		
2.4GHz Antenna Gain (dBi)		2	2.7	2
5GHz Antenna Gain (dBi)		4	2.5	4
2.4GHz Max. Link Rate (Mbps)		400	574	400
5GHz Max. Link Rate (Mbps)		867	2402	867
Max. Number of SSIDs per band		4		
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3		
Authentication		Pre-Shared Key, 802.1X		
WiFi 6			✓	
OFDMA			✓	
WPS		PIN, PBC		
WDS		Repeater (5GHz only)		
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling		
AirTime Fairness		✓		
Band Steering		✓		
WMM		✓		

Figure 33 (*Vigor2766 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2766#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2865L-5G Series**

Model	Vigor2865L-5G	Vigor2865Lax-5G
2.4GHz WLAN		802.11ax 2x2 MIMO
5GHz WLAN		802.11ax 2x2 MU-MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2.3
5GHz Antenna Gain (dBi)		3.5
2.4GHz Max. Link Rate (Mbps)		574
5GHz Max. Link Rate (Mbps)		2402
Max. Number of SSIDs per band		4
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3
Authentication		Pre-Shared Key, 802.1X
WiFi 6		✔
OFDMA		✔
WPS		PIN, PBC
WDS		Repeater (5GHz only)
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✔
Band Steering		✔
WMM		✔

Figure 34 (*Vigor2865L-5G Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2865-lte-5g#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2765 Series**

Model	2765	2765ac	2765ax	2765Vac
WLAN				
2.4GHz WLAN		802.11n 2x2 MIMO	802.11ax 2x2 MIMO	802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO	802.11ax 2x2 MU-MIMO	802.11ac Wave 2 2x2 MU-MIMO
Antennas		2		
Antenna Type		External Dipole		
2.4GHz Antenna Gain (dBi)		2	2.7	2
5GHz Antenna Gain (dBi)		4	2.5	4
2.4GHz Max. Link Rate (Mbps)		400	574	400
5GHz Max. Link Rate (Mbps)		867	2402	867
Max. Number of SSIDs per band		4		
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3		
Authentication		Pre-Shared Key, 802.1X		
WiFi 6			✓	
OFDMA			✓	
WPS		PIN, PBC		
WDS		Repeater (5GHz only)		
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling		
AirTime Fairness		✓		
Band Steering		✓		
WMM		✓		

Figure 35 (*Vigor2765 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2765#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2763 Series**

Model	2763	2763ac
^ WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2
5GHz Antenna Gain (dBi)		4
2.4GHz Max. Link Rate (Mbps)		400
5GHz Max. Link Rate (Mbps)		867
Max. Number of SSIDs per band		4
Security Mode		OWE WEP WPA WPA2 Mixed(WPA+WPA2) WPA3
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Repeater (5GHz only)
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✓
Band Steering		✓
WMM		✓

Figure 36 (*Vigor2763 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2763#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2620 LTE Series**

Model	2620L	2620Ln
VoIP Prioritization		✓
^ WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
Antennas		2
Antenna Type		Internal PIFA
2.4GHz Antenna Gain (dBi)		2
2.4GHz Max. Link Rate (Mbps)		300
Max. Number of SSIDs per band		4
Security Mode		WEP WPA WPA2 Mixed(WPA+WPA2)
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Bridge, Repeater
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
WMM		✓

Figure 37 (*Vigor2620 LTE Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2620-lte#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2832 Series**

Model	2832	2832n
APP QoS	✓	
^ WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2
2.4GHz Max. Link Rate (Mbps)		300
Max. Number of SSIDs per band		4
Security Mode		WEP WPA WPA2 Mixed(WPA+WPA2)
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Bridge, Repeater
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✓
WMM		✓

Figure 38 (*Vigor2832 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2832#nav-Specs (last visited Jan. 7, 2025)).

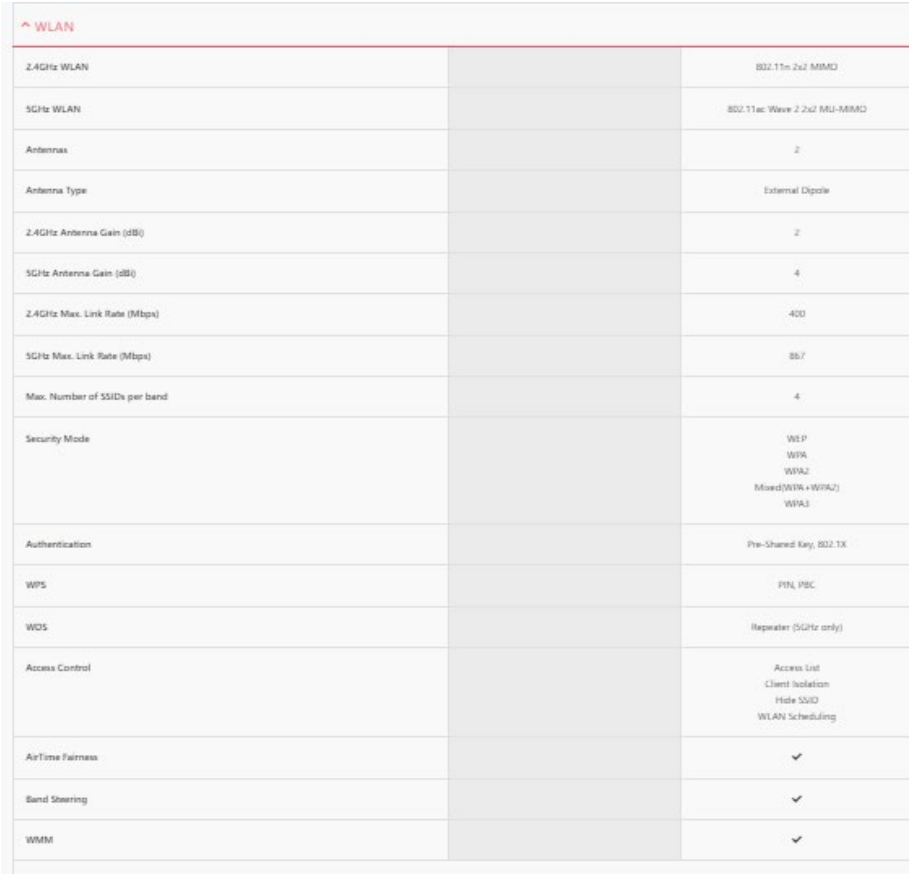
- **Vigor LTE 200n**

WLAN

2.4GHz WLAN	802.11n 2x2 MIMO
Antennas	2
Antenna Type	Internal PIFA
2.4GHz Antenna Gain (dBi)	2
2.4GHz Max. Link Rate (Mbps)	300
Max. Number of SSIDs per band	4
Security Mode	WEP WPA WPA2 Mixed(WPA+WPA2)
Authentication	Pre-Shared Key, 802.1X
WPS	PIN, PBC
WDS	Bridge, Repeater
Access Control	Access List Client Isolation Hide SSID WLAN Scheduling
WMM	✓

Figure 39 (*VigorLTE 200n*, DRAYTEK, *available at* https://www.draytek.com/products/vigorlte-200#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor 2915 Series**



WLAN		
2.4GHz WLAN		802.11n 2x2 MIMO
5GHz WLAN		802.11ac Wave 2 2x2 MU-MIMO
Antennas		2
Antenna Type		External Dipole
2.4GHz Antenna Gain (dBi)		2
5GHz Antenna Gain (dBi)		4
2.4GHz Max. Link Rate (Mbps)		400
5GHz Max. Link Rate (Mbps)		867
Max. Number of SSIDs per band		4
Security Mode		WEP WPA WPA2 Mixed(WPA+WPA2) WPA3
Authentication		Pre-Shared Key, 802.1X
WPS		PIN, PBC
WDS		Repeater (5GHz only)
Access Control		Access List Client Isolation Hide SSID WLAN Scheduling
AirTime Fairness		✓
Band Steering		✓
WMM		✓

Figure 40 (*Vigor2915 Series*, DRAYTEK, *available at* https://www.draytek.com/products/vigor2915#nav-Specs (last visited Jan. 7, 2025)).

- **Vigor AP 1062C**

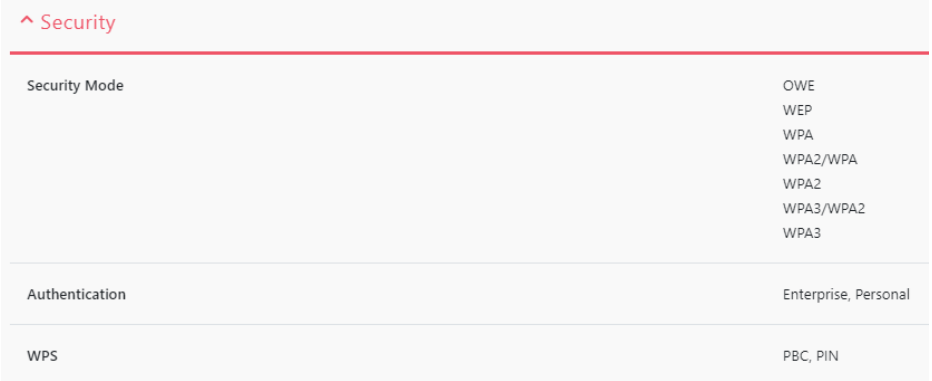


Figure 41 (*VigorAP 1062C*, DRAYTEK, *available at* https://www.draytek.com/products/vigorap-1062c#nav-Specs (last visited Jan. 7, 2025)).

- **VigorAP 1060C**

Security	
Security Mode	WPA3, WPA3/WPA2, WPA2, WPA2/WPA, OWE, WPA, WEP, None
Authentication	Personal, Enterprise
WPS	PIN, PBC
Hidden SSIDs	Yes
MAC Address Filter	Up to 256 entries
Wireless Client Isolation	Yes
Mobile Device Management	Yes

Figure 42 (*VigorAP 1060C: 4x4 Dual Band WiFi 6 Ceiling AP*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigorap-1060c (last visited Oct. 19, 2024)).

- **VigorACS 3**

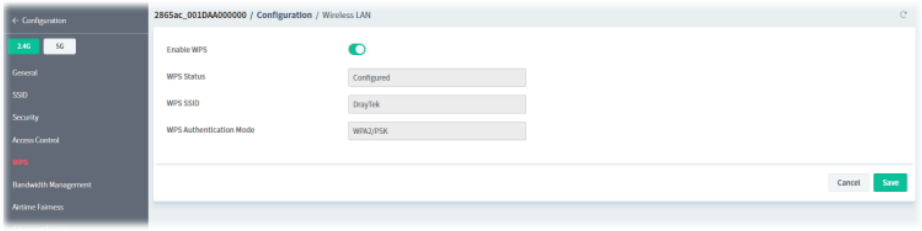
Figure 43A (*VigorACS 3: DrayTek Network Management System*, DRAYTEK, *available at* https://www.draytekusa.com/product/vigoracs-3 (last visited Jan. 7, 2025)).

VigorACS3

Unified Management System

9.4.14.5 WPS

It provides an easy way to connect wireless to wireless access points and routers with WPA or WPA2 encryption.



These parameters are explained as follows:

Item	Description
Enable WPS	Click to enable or disable the WPS function.
WPS Status	Displays system information related to WPS. The message "Configured" means that the wireless security (encryption) function of the router is properly configured and functioning properly.
WPS SSID	Displays the name of SSID1. WPS is supported on SSID1 only.
WPS Authentication Mode	Displays the current authentication mode of the router.
Cancel	Discard current modification and return to previous page.
Save	Save the current settings and return to previous page.

Figure 43B (*VigorACS3: Unified Management System*, DRAYTEK, *available at* https://fw.draytek.com.tw/ACS%203/Manual/DrayTek_UG_VigorACS%203_V1.5.pdf, at p. 499 (last visited Jan. 7, 2025)).

16. On information and belief, Defendant provides information and assistance to their customers to enable them to use the Accused Products in an infringing manner as described below.

17. For these reasons and the additional reasons detailed below, the Accused Products practice at least one claim of each of the Asserted Patents.

18. By letter dated February 2, 2022, addressed to Calvin Ma, Chief Executive Officer of DrayTek Corporation (the "Notice Letter"), Defendant received notice of its infringement of

CommWorks' patents.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 7,177,285

19. CommWorks repeats and re-alleges the allegations in the paragraphs above as though fully set forth in their entirety.

20. The USPTO duly issued U.S. Patent No. 7,177,285 (the "'285 patent") on February 13, 2007, after full and fair examination of Application No. 10/961,959 which was filed October 8, 2004. The '285 patent is entitled "Time Based Wireless Access Provisioning."

21. CommWorks owns all substantial rights, interest, and title in and to the '285 patent, including the sole and exclusive right to prosecute this action and enforce the '285 patent against infringers and to collect damages for all relevant times.

22. CommWorks or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '285 patent.

23. The claims of the '285 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that improve upon the function and operation of preexisting network provisioning systems. The written description of the '285 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.

24. For example, at the time of the invention, wireless access to data networks was not yet conventional. Then existent systems for provisioning access to a network were impractical, such

as for wireless devices which lacked a user interface configured for communicating provisioning information, or for simple home-based intranets, such as a wireless picture frame device lacking a control interface to read or extract identification information, such as a MAC address, to facilitate wireless access provisioning. '285 patent at col. 3:13-26. Further, wireless devices that did have a dedicated user interface were incapable of, or cumbersome in, communicating device identification and exchanging provisioning information, still requiring a user to be technically proficient to properly initiate and complete a provisioning process. *Id.* at col. 3:27-36.

25. The invention of the '285 patent improved upon existent network provisioning systems by enabling provisioning without requiring a user interface for the initiation of a provisioning process—"a major technological advance." *Id.* at col. 3:37-41. The invention of the '285 patent further improved upon existent provisioning systems by providing a wireless access provisioning structure and process with minimal device requirements and/or user proficiency, whereby a wireless device is readily provisioned by the provisioning system, and whereby other unauthorized devices within an access region are prevented from being provisioned by the provisioning system. *Id.* at col. 3:42-49. The invention of the '285 patent further improved upon existent provisioning systems by providing a time-based wireless access provisioning system integrated with easily monitored parameters of a wireless device, such as the time monitoring of power on and/or start of signal transmission, for provisioning secure encrypted communication. *Id.* at col. 3:50-58. Moreover, the structure of the devices described in the '285 patent was not conventional at the time of the invention. Specifically, a device such as an access point, comprising a provisioning activation button, time-based provisioning logic, access control list, wired network logic, a wired network connection and a transceiver were not conventional (or even available) at the time of the invention.

26. Defendant has directly infringed the '285 patent by making, using, offering to sell, selling, and/or importing the Accused Products identified above.

27. Defendant has directly infringed, either literally or under the doctrine of equivalents, at least claim 1 of the '285 patent, as detailed in **Exhibit A** to this Complaint (Evidence of Use Regarding U.S. Patent No. 7,177,285).

28. On information and belief, Defendant has infringed the '285 patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering for sale, selling, and/or importing into the United States Wi-Fi Protected Setup ("WPS") compatible devices, such as, for example, the DrayTek VigorAP 962C (included in the "Accused Products").

29. For example, Defendant has infringed at least claim 1 of the '285 patent by making, using, offering to sell, selling, and/or importing the Accused Products, which perform a process for provisioning between a wireless device and a network. *See* Exhibit A. The process for provisioning comprises the step of tracking an operating parameter of the wireless device within a service area, wherein the operating parameter of the wireless device comprises an onset of a signal transmission of the wireless device. *Id.* The process for provisioning further comprises the step of initiating provisioning of the wireless device if the tracked operating parameter occurs within a time interval. *Id.*

30. Defendant has also indirectly infringed the '285 patent by inducing others to directly infringe the '285 patent. Defendant has induced distributors and end-users, including, but not limited to, Defendant's employees, partners, contractors, or customers, to directly infringe, either literally or under the doctrine of equivalents, the '285 patent by providing or requiring use of the Accused Products. Defendant has taken active steps, directly or through contractual relationships with others, with the specific intent to cause them to use the Accused Products in a manner that

infringes one or more claims of the ’285 patent, including, for example, claim 1 of the ’285 patent. Such steps by Defendant includes, among other things, advising or directing personnel, contractors, or end-users to use the Accused Products in an infringing manner; advertising and promoting the use of the Accused Products in an infringing manner; or distributing instructions that guide users to use the Accused Products in an infringing manner. Defendant has performed these steps, which constitute induced infringement with the knowledge of the ’285 patent and with the knowledge that the induced acts constitute infringement. Defendant has been aware that the normal and customary use of the Accused Products by others would infringe the ’285 patent.

31. Defendant has also indirectly infringed by contributing to the infringement of the ’285 patent. Defendant has contributed to the direct infringement of the ’285 patent by its personnel, contractors, distributors, and customers. The Accused Products have special features that are specially designed to be used in an infringing way and that have no substantial uses other than ones that infringe one or more claims of the ’285 patent, including, for example, claim 1 of the ’285 patent. The special features constitute a material part of the invention of one or more of the claims of the ’285 patent and are not staple articles of commerce suitable for substantial non-infringing use.

32. Defendant had knowledge of the ’285 patent when it received the Notice Letter in February of 2022.

33. Furthermore, on information and belief, Defendant has a policy or practice of not reviewing the patents of others, including instructing its employees to not review the patents of others, and thus has been willfully blind of CommWorks’ patent rights.

34. Defendant’s actions are at least objectively reckless as to the risk of infringing a valid patent and this objective risk was either known or should have been known by Defendant.

35. Defendant's direct infringement of one or more claims of the '285 patent is, has been, and continues to be willful, intentional, deliberate, or in conscious disregard of CommWorks' rights under the patent.

36. Defendant's direct infringement of one or more claims of the '285 patent is, has been, and continues to be willful, intentional, deliberate, or in conscious disregard of CommWorks' rights under the patent.

37. CommWorks has been damaged as a result of the infringing conduct by Defendant alleged above. Thus, Defendant is liable to CommWorks in an amount that compensates it for such infringements, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 7,463,596

38. CommWorks repeats and re-alleges the allegations in the paragraphs above as though fully set forth in their entirety.

39. The USPTO duly issued U.S. Patent No. 7,463,596 (the "'596 patent") on December 9, 2008, after full and fair examination of Application No. 11/673,513, which was filed on February 9, 2007. The '596 patent is entitled "Time Based Wireless Access Provisioning."

40. CommWorks owns all substantial rights, interest, and title in and to the '596 patent, including the sole and exclusive right to prosecute this action and enforce the '596 patent against infringers and to collect damages for all relevant times.

41. CommWorks or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '596 patent.

42. The claims of the '596 patent are not directed to an abstract idea and are not limited to

well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that improve upon the function and operation of preexisting network provisioning systems.

43. The written description of the '596 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.

44. For example, at the time of the invention, wireless access to data networks was not yet conventional. Then existent systems for provisioning access to a network were impractical, such as for wireless devices which lacked a user interface configured for communicating provisioning information, or for simple home-based intranets, such as a wireless picture frame device lacking a control interface to read or extract identification information, such as a MAC address, to facilitate wireless access provisioning. '596 patent at col. 3:13-26. Further, wireless devices that did have a dedicated user interface were incapable of, or cumbersome in, communicating device identification and exchanging provisioning information, still requiring a user to be technically proficient to properly initiate and complete a provisioning process. *Id.* at col. 3:27-36.

45. The invention of the '596 patent improved upon existent network provisioning systems by enabling provisioning without requiring a user interface for the initiation of a provisioning process—"a major technological advance." *Id.* at col. 3:37-41. The invention of the '596 patent further improved upon existent provisioning systems by providing a wireless access provisioning structure and process with minimal device requirements and/or user proficiency, whereby a wireless device is readily provisioned by the provisioning system, and whereby other unauthorized

devices within an access region are prevented from being provisioned by the provisioning system. *Id.* at col. 3:42-49. The invention of the '596 patent further improved upon existent provisioning systems by providing a time-based wireless access provisioning system integrated with easily monitored parameters of a wireless device, such as the time monitoring of power on and/or start of signal transmission, for provisioning secure encrypted communication. *Id.* at col. 3:50-58. Moreover, the structure of the devices described in the '596 patent was not conventional at the time of the invention. Specifically, a device such as an access point, comprising a provisioning activation button, time-based provisioning logic, access control list, wired network logic, a wired network connection and a transceiver were not conventional (or even available) at the time of the invention.

46. Defendant has directly infringed the '596 patent by making, using, offering to sell, selling, and/or importing the Accused Products identified above.

47. Defendant has directly infringed, either literally or under the doctrine of equivalents, at least claim 1 of the '596 patent, as detailed in **Exhibit B** to this Complaint (Evidence of Use Regarding U.S. Patent No. 7,463,596).

48. On information and belief, Defendant has infringed the '596 patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering for sale, selling, and/or importing into the United States Wi-Fi Protected Setup ("WPS") compatible devices, such as, for example, the DrayTek VigorAP 962C (included in the "Accused Products").

49. For example, Defendant, using the Accused Products, has infringed at least claim 1 of the '596 patent by making, using, offering to sell, selling, and/or importing the Accused Products, which perform a process for associating devices. *See* Exhibit B. The process for associating devices comprises the step of tracking an operating parameter of a first device, wherein the

operating parameter of the first device comprises any of a power on of the first device, and an onset of a signal transmission of the first device. *Id.* The process for associating devices further comprises the step of automatically associating the first device with at least one other device if the tracked operating parameter occurs within a time interval. *Id.*

50. Defendant has also indirectly infringed the '596 patent by inducing others to directly infringe the '596 patent. Defendant has induced distributors and end-users, including, but not limited to, Defendant's employees, partners, contractors, or customers, to directly infringe, either literally or under the doctrine of equivalents, the '596 patent by providing or requiring use of the Accused Products. Defendant has taken active steps, directly or through contractual relationships with others, with the specific intent to cause them to use the Accused Products in a manner that infringes one or more claims of the '596 patent, including, for example, claim 1 of the '596 patent. Such steps by Defendant include, among other things, advising or directing personnel, contractors, or end-users to use the Accused Products in an infringing manner; advertising and promoting the use of the Accused Products in an infringing manner; or distributing instructions that guide users to use the Accused Products in an infringing manner. Defendant has performed these steps, which constitute induced infringement with the knowledge of the '596 patent and with the knowledge that the induced acts constitute infringement. Defendant has been aware that the normal and customary use of the Accused Products by others would infringe the '596 patent.

51. Defendant has also indirectly infringed by contributing to the infringement of the '596 patent. Defendant has contributed to the direct infringement of the '596 patent by its personnel, contractors, distributors, and customers. The Accused Products have special features that are specially designed to be used in an infringing way and that have no substantial uses other than ones that infringe one or more claims of the '596 patent, including, for example, claim 1 of the

'596 patent. The special features constitute a material part of the invention of one or more of the claims of the '596 patent and are not staple articles of commerce suitable for substantial non-infringing use.

52. Defendant had knowledge of the '596 patent when it received the Notice Letter in February of 2022.

53. Furthermore, on information and belief, Defendant has a policy or practice of not reviewing the patents of others, including instructing its employees to not review the patents of others, and thus have been willfully blind of CommWorks' patent rights.

54. Defendant's actions are at least objectively reckless as to the risk of infringing a valid patent and this objective risk was either known or should have been known by Defendant.

55. Defendant's direct infringement of one or more claims of the '596 patent is, has been, and continues to be willful, intentional, deliberate, or in conscious disregard of CommWorks' rights under the patent.

56. CommWorks has been damaged as a result of the infringing conduct by Defendant alleged above. Thus, Defendant is liable to CommWorks in an amount that compensates it for such infringements, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III: INFRINGEMENT OF U.S. PATENT NO. 7,911,979

57. CommWorks repeats and re-alleges the allegations in the paragraphs above as though fully set forth in their entirety.

58. The USPTO duly issued U.S. Patent No. 7,911,979 (the "'979 patent") on March 22, 2011, after full and fair examination of Application No. 12/323,399 which was filed on November 25, 2008. The '979 patent is entitled "Time Based Access Provisioning System And Process." A

Certificate of Correction was issued on July 19, 2011.

59. CommWorks owns all substantial rights, interest, and title in and to the '979 patent, including the sole and exclusive right to prosecute this action and enforce the '979 patent against infringers and to collect damages for all relevant times.

60. CommWorks or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '979 patent.

61. The claims of the '979 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that improve upon the function and operation of preexisting network provisioning systems.

62. The written description of the '979 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.

63. For example, at the time of the invention wireless access to data networks was not yet conventional. Then existent systems for provisioning access to a network were impractical, such as for wireless devices which lacked a user interface configured for communicating provisioning information, or for simple home-based intranets, such as a wireless picture frame device lacking a control interface to read or extract identification information, such as a MAC address, to facilitate wireless access provisioning. '979 patent at col. 3:19-31. Further, wireless devices that did have a dedicated user interface were incapable of, or cumbersome in, communicating device

identification and exchanging provisioning information, still requiring a user to be technically proficient to properly initiate and complete a provisioning process. *Id.* at col. 3:32-41.

64. The invention of the '979 patent improved upon existent network provisioning systems by enabling provisioning without requiring a user interface for the initiation of a provisioning process—"a major technological advance." *Id.* at col. 3:42-46. The invention of the '979 patent further improved upon existent provisioning systems by providing a wireless access provisioning structure and process with minimal device requirements and/or user proficiency, whereby a wireless device is readily provisioned by the provisioning system, and whereby other unauthorized devices within an access region are prevented from being provisioned by the provisioning system. *Id.* at col. 3:47-53. The invention of the '979 patent further improved upon existent provisioning systems by providing a time-based wireless access provisioning system integrated with easily monitored parameters of a wireless device, such as the time monitoring of power on and/or start of signal transmission, for provisioning secure encrypted communication. *Id.* at col. 3:54-62. Moreover, the structure of the devices described in the '979 patent was not conventional at the time of the invention. Specifically, a device such as an access point, comprising a provisioning activation button, time-based provisioning logic, access control list, wired network logic, a wired network connection and a transceiver were not conventional (or even available) at the time of the invention.

65. Defendant has directly infringed the '979 patent by importing, selling, manufacturing, offering to sell, using, providing, supplying, or distributing the Accused Products identified above.

66. Defendant has directly infringed either literally or under the doctrine of equivalents, at least claim 1 of the '979 patent, as detailed in **Exhibit C** to this Complaint (Evidence of Use Regarding U.S. Patent No. 7,911,979).

67. On information and belief, Defendant has infringed the '979 patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering for sale, selling, and/or importing into the United States Wi-Fi Protected Setup ("WPS") compatible devices, such as, for example, the DrayTek VigorAP 962C (included in the "Accused Products").

68. For example, Defendant, using the Accused Products, has infringed at least claim 1 of the '979 patent by making, using, offering to sell, selling, and/or importing the Accused Products, which perform a provisioning process performed by a provisioning system having provisioning logic. *See* Exhibit C. The provisioning process performed comprises tracking, by the provisioning logic, an operating parameter of a first device, wherein the operating parameter of the first device comprises any of a power on of the first device, and an onset of a signal transmission of the first device. *Id.* The provisioning process performed in the Accused Products further comprises sending a signal to initiate provisioning of the first device with a network if the tracked operating parameter occurs within a designated time interval. *Id.*

69. Defendant has also indirectly infringed the '979 patent by inducing others to directly infringe the '979 patent. Defendant has induced distributors and end-users, including, but not limited to, Defendant's employees, partners, contractors, or customers, to directly infringe, either literally or under the doctrine of equivalents, the '979 patent by providing or requiring use of the Accused Products. Defendant has taken active steps, directly or through contractual relationships with others, with the specific intent to cause them to use the Accused Products in a manner that infringes one or more claims of the '979 patent, including, for example, claim 1 of the '979 patent. Such steps by Defendant include, among other things, advising or directing personnel, contractors, or end-users to use the Accused Products in an infringing manner; advertising and promoting the use of the Accused Products in an infringing manner; or distributing instructions that guide users

to use the Accused Products in an infringing manner. Defendant has performed these steps, which constitute induced infringement with the knowledge of the '979 patent and with the knowledge that the induced acts constitute infringement. Defendant has been aware that the normal and customary use of the Accused Products by others would infringe the '979 patent.

70. Defendant has also indirectly infringed by contributing to the infringement of the '979 patent. Defendant has contributed to the direct infringement of the '979 patent by its personnel, contractors, distributors, and customers. The Accused Products have special features that are specially designed to be used in an infringing way and that have no substantial uses other than ones that infringe one or more claims of the '979 patent, including, for example, claim 1 of the '979 patent. The special features constitute a material part of the invention of one or more of the claims of the '979 patent and are not staple articles of commerce suitable for substantial non-infringing use.

71. Defendant had knowledge of the '979 patent when it received the Notice Letter in February of 2022.

72. Furthermore, on information and belief, Defendant has a policy or practice of not reviewing the patents of others, including instructing its employees to not review the patents of others, and thus has been willfully blind of CommWorks' patent rights.

73. Defendant's actions are at least objectively reckless as to the risk of infringing a valid patent and this objective risk was either known or should have been known by Defendant.

74. Defendant's direct infringement of one or more claims of the '979 patent is, has been, and continues to be willful, intentional, deliberate, or in conscious disregard of CommWorks' rights under the patent.

75. CommWorks has been damaged as a result of the infringing conduct by Defendant

alleged above. Thus, Defendant is liable to CommWorks in an amount that compensates it for such infringements, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT IV: INFRINGEMENT OF U.S. PATENT NO. RE44,904

76. CommWorks repeats and re-alleges the allegations in the paragraphs above as though fully set forth in their entirety.

77. The USPTO duly and lawfully reissued U.S. Patent No. RE44,904 (the "'904 patent") on May 20, 2014. The '904 patent is entitled "Method For Contention Free Traffic Detection."

78. CommWorks owns all substantial rights, interest, and title in and to the '904 patent, including the sole and exclusive right to prosecute this action and enforce the '904 patent against infringers and to collect damages for all relevant times.

79. CommWorks or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '904 patent.

80. The claims of the '904 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that improve upon the function and operation of preexisting network provisioning systems.

81. The written description of the '904 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.

82. For example, at the time of the invention, "conventionally … transmission differentiation based on priority was not conducted at all." '904 patent at col. 2:9-10. Obtaining priority information for traffic transmitted through an Access Point (AP) required searching all fields in all frames for indications of the priority state of the actual data frame, resulting in all fields in all frames being checked and all headers being analyzed, starting from the outer most headers, until the right field in the header had been found. *Id.* at col. 1:63-2:2. This measure was very complex, took a long time, and required a large amount of processing, especially for complex tunneling protocols. *Id.* at col. 2:5-8. All the frame headers and protocols which can be included in the data frames transmitted via the network had to be known, hence, the amount of information needed for identifying the data was huge. *Id.* at col. 2:8-14. Such a huge amount of information was typically too heavy to handle in small and low price equipment like WLAN access points (AP). *Id.* Further, then existing systems according to the IEEE 802.11 standard did not separate traffic based on priority. *Id.* at col. 2:20-25.

83. The invention of the '904 patent improved upon conventional network traffic routing systems by providing methods by which priority traffic can easily be distinguished from normal traffic without the need of complex processing making it possible to execute in a low cost and possibly low performance AP. *Id.* at col. 2:29-32, 3:2-4, 3:52-53. The methods of the invention of the '904 patent further improved upon conventional network traffic routing systems by easily finding higher priority traffic from the stream of MAC layer frames without necessarily requiring knowledge of the upper layer protocols. *Id.* at col. 2:62-65. The methods of the invention of the '904 patent further improved upon conventional network traffic routing systems by being protocol-independent and flexible such that their configuration may be done in an external configuration program; with the Access Point not needing to know anything about the processed traffic; further

alleviating the need of complex structure of the device. *Id.* at col. 3:5-8, 3:14-21. A further advantage over conventional network traffic routing systems is that installation of new software or hardware in the network element would not be required when new protocols or modified protocols are introduced in the network. *Id.* at col. 3:22-31.

84. Defendant has directly infringed the '904 patent by importing, selling, manufacturing, offering to sell, using, providing, supplying, or distributing the Accused Products identified above.

85. Defendant has directly infringed either literally or under the doctrine of equivalents, at least claim 1 of the '904 patent, as detailed in **Exhibit D** to this Complaint (Evidence of Use Regarding U.S. Patent No. RE44,904).

86. On information and belief, Defendant, using the Accused Products, has infringed the '904 patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by performing methods for contention free traffic detection using Wi-Fi Multimedia ("WMM") and/or 802.11-2007+ compatible chips, such as, for example, the DrayTek VigorAP 962C (included in the "Accused Products").

87. For example, Defendant, using the Accused Products, has infringed at least claim 1 of the '904 patent by performing a method comprising extracting a bit pattern from a predetermined position in a frame. *See* Exhibit D. The method further comprises comparing said extracted bit pattern with a search pattern. *Id.* The method further comprises identifying a received frame as a priority frame in case said extracted bit pattern matches with said search pattern. *Id.* The method further comprises forwarding said received frame to a high priority queue in case said frame is detected to be a high priority frame during a special period for sending priority traffic. *Id.* The method further comprises adjusting the duration of the special period for sending priority traffic according statistic information regarding sent priority frames. *Id.*

88. CommWorks has been damaged as a result of the infringing conduct by Defendant alleged above. Thus, Defendant is liable to CommWorks in an amount that compensates it for such infringements, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT V: INFRINGEMENT OF U.S. PATENT NO. 7,027,465

89. CommWorks repeats and re-alleges the allegations in the paragraphs above as though fully set forth in their entirety.

90. The USPTO duly issued U.S. Patent No. 7,027,465 (the "'465 patent") on April 11, 2006, after full and fair examination of Application No. 10/167,986 which was filed on June 11, 2002. The '465 patent is entitled "Method For Contention Free Traffic Detection."

91. CommWorks owns all substantial rights, interest, and title in and to the '465 patent, including the sole and exclusive right to prosecute this action and enforce the '465 patent against infringers and to collect damages for all relevant times.

92. CommWorks or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '465 patent.

93. The claims of the '465 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that improve upon the function and operation of preexisting network provisioning systems.

94. The written description of the '465 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patently distinct from and

improved upon what may have been considered conventional or generic in the art at the time of the invention.

95. For example, at the time of the invention, "conventionally … transmission differentiation based on priority was not conducted at all." '465 patent at col. 2:9-10. Obtaining priority information for traffic transmitted through an Access Point (AP) required searching all fields in all frames for indications of the priority state of the actual data frame, resulting in all fields in all frames being checked and all headers being analyzed, starting from the outer most headers, until the right field in the header had been found. *Id.* at col. 1:53-59. This measure was very complex, took a long time, and required a large amount of processing, especially for complex tunneling protocols. *Id.* at col. 1:62-65. All the frame headers and protocols which can be included in the data frames transmitted via the network had to be known, hence, the amount of information needed for identifying the data was huge. *Id.* at col. 1:66-2:4. Such a huge amount of information was typically too heavy to handle in small and low price equipment like WLAN access points (AP). *Id.* Further, then existing systems according to the IEEE 802.11 standard did not separate traffic based on priority. *Id.* at col. 2:11-15.

96. The invention of the '465 patent improved upon conventional network traffic routing systems by providing methods by which priority traffic can easily be distinguished from normal traffic without the need of complex processing making it possible to execute in a low cost and possibly low performance AP. *Id.* at col. 2:19-23, 2:60-62, 3:43. The methods of the invention of the '465 patent further improved upon conventional network traffic routing systems by easily finding higher priority traffic from the stream of MAC layer frames without necessarily requiring knowledge of the upper layer protocols. *Id.* at col. 2:53-56. The methods of the invention of the '465 patent further improved upon conventional network traffic routing systems by being protocol-

independent and flexible such that their configuration may be done in an external configuration program; with the Access Point not needing to know anything about the processed traffic; further alleviating the need of complex structure of the device. *Id.* at col. 2:63-66, col. 3:5-11. A further advantage over conventional network traffic routing systems is that installation of new software or hardware in the network element would not be required when new protocols or modified protocols are introduced in the network. *Id.* at col. 3:12-21.

97. Defendant has directly infringed the '465 patent by importing, selling, manufacturing, offering to sell, using, providing, supplying, or distributing the Accused Products identified above.

98. Defendant has directly infringed either literally or under the doctrine of equivalents, at least claim 1 of the '465 patent, as detailed in **Exhibit E** to this Complaint (Evidence of Use Regarding U.S. Patent No. 7,027,465).

99. On information and belief, Defendant, using the Accused Products, has infringed the '465 patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by performing methods for contention free traffic detection using Wi-Fi Multimedia (WMM) and/or 802.11-2007+ compatible chips and devices, such as, for example, the DrayTek VigorAP 962C (included in the "Accused Products").

100. For example, Defendant has infringed at least claim 1 of the '465 patent by performing a method for detecting priority of data frames in a network. *See* Exhibit E. The method for detecting priority of data frames comprises the step of extracting a bit pattern from a predetermined position in a frame. *Id.* The method for detecting priority of data frames further comprises the step of comparing said extracted bit pattern with a search pattern. *Id.* The method for detecting priority of data frames further comprises the step of identifying a received frame as a priority frame in case said extracted bit pattern matches with said search pattern. *Id.* In the method for detecting

priority of data frames, the predetermined position in said frame is defined by the offset of said bit pattern in said frame. *Id*.

101. CommWorks has been damaged as a result of the infringing conduct by Defendant alleged above. Thus, Defendant is liable to CommWorks in an amount that compensates it for such infringements, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT VI: INFRINGEMENT OF U.S. PATENT NO. 6,891,807

102. CommWorks repeats and re-alleges the allegations in the paragraphs above as though fully set forth in their entirety.

103. The USPTO duly issued U.S. Patent No. 6,891,807 (the "'807 patent") on May 10, 2005, after full and fair examination of Application No. 10/341,847 which was filed on January 13, 2003. The '807 patent is entitled "Time Based Wireless Access Provisioning."

104. CommWorks owns all substantial rights, interest, and title in and to the '807 patent, including the sole and exclusive right to prosecute this action and enforce the '807 patent against infringers and to collect damages for all relevant times.

105. CommWorks or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '807 patent.

106. The claims of the '807 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that improve upon the function and operation of preexisting network provisioning systems.

107. The written description of the '807 patent describes in technical detail each limitation

of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.

108. For example, at the time of the invention, wireless access to data networks was not yet conventional. Then existent systems for provisioning access to a network were impractical, such as for wireless devices which lacked a user interface configured for communicating provisioning information, or for simple home-based intranets, such as a wireless picture frame device lacking a control interface to read or extract identification information, such as a MAC address, to facilitate wireless access provisioning. '807 patent at col. 3:5-18. Further, wireless devices that did have a dedicated user interface were incapable of, or cumbersome in, communicating device identification and exchanging provisioning information, still requiring a user to be technically proficient to properly initiate and complete a provisioning process. *Id.* at col. 3:19-28.

109. The invention of the '807 patent improved upon existent network provisioning systems by enabling provisioning without requiring a user interface for the initiation of a provisioning process—"a major technological advance." *Id.* at col. 3:29-33. The invention of the '807 patent further improved upon existent provisioning systems by providing a wireless access provisioning structure and process with minimal device requirements and/or user proficiency, whereby a wireless device is readily provisioned by the provisioning system, and whereby other unauthorized devices within an access region are prevented from being provisioned by the provisioning system. *Id.* at col. 3:34-41. The invention of the '807 patent further improved upon existent provisioning systems by providing a time-based wireless access provisioning system integrated with easily monitored parameters of a wireless device, such as the time monitoring of power on and/or start

of signal transmission, for provisioning secure encrypted communication. *Id.* at col. 3:42-50. Moreover, the structure of the devices described in the '807 patent was not conventional at the time of the invention. Specifically, a device such as an access point, comprising a provisioning activation button, time-based provisioning logic, access control list, wired network logic, a wired network connection and a transceiver were not conventional (or even available) at the time of the invention.

110. Defendant has directly infringed either literally or under the doctrine of equivalents, at least claim 17 of the '807 patent, as detailed in **Exhibit F** to this Complaint (Evidence of Use Regarding U.S. Patent No. 6,891,807).

111. On information and belief, Defendant has infringed the '807 patent pursuant to 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering for sale, selling, and/or importing into the United States Wi-Fi Protected Setup ("WPS") compatible consumer electronics chips, such as, for example, the DrayTek VigorAP 962C (included in the "Accused Products").

112. For example, Defendant has infringed at least claim 17 of the '807 patent by making, using, offering to sell, selling, and/or importing the Accused Products, which include a time based network access provisioning system between a wireless device and a network. *See* Exhibit F. The time based network access provisioning system comprises a network access point connected to the network, the network access point comprising logic for tracking operation of the wireless device. *Id*. The time based network access provisioning system further comprises logic for provisioning the wireless device if the operation of the wireless device occurs within an activatable time interval. *Id.*

113. Defendant had notice of the '807 patent when it received the Notice Letter in February

of 2022.

114. Furthermore, on information and belief, Defendant has a policy or practice of not reviewing the patents of others, including instructing its employees to not review the patents of others, and thus have been willfully blind of CommWorks' patent rights.

115. Defendant's actions are at least objectively reckless as to the risk of infringing a valid patent and this objective risk was either known or should have been known by Defendant.

116. Defendant's direct infringement of one or more claims of the '807 patent is, has been, and continues to be willful, intentional, deliberate, or in conscious disregard of CommWorks' rights under the patent.

117. CommWorks has been damaged as a result of the infringing conduct by Defendant alleged above. Thus, Defendant is liable to CommWorks in an amount that compensates it for such infringements, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

JURY DEMAND

118. CommWorks hereby requests a trial by jury on all issues so triable by right.

PRAYER FOR RELIEF

119. CommWorks requests that the Court find in its favor and against Defendant, and that the Court grant CommWorks the following relief:

a. Judgment that one or more claims of each of the Asserted Patents has been infringed, either literally or under the doctrine of equivalents, by the Defendant or others acting in concert therewith;

b. Judgment that Defendant account for and pay to CommWorks all damages to and costs incurred by CommWorks because of Defendant's infringing activities and other

conduct complained of herein;

c. Judgment that Defendant's infringements of the '285, '596, '979, and '807 patents be found willful, and that the Court award treble damages for the period of such willful infringement pursuant to 35 U.S.C. § 284;

d. Pre-judgment interest on the damages caused by Defendant's infringing activities and other conduct complained of herein;

e. That this Court declare this an exceptional case and award CommWorks its reasonable attorneys' fees and costs in accordance with 35 U.S.C. § 285; and

f. All other and further relief as the Court may deem just and proper under the circumstances.

Dated: January 13, 2025

Respectfully submitted,

By:*/s/ James F. McDonough, III*

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List of Exhibits

A. Evidence of Use Regarding U.S. Patent No. 7,177,285
B. Evidence of Use Regarding U.S. Patent No. 7,463,596
C. Evidence of Use Regarding U.S. Patent No. 7,911,979
D. Evidence of Use Regarding U.S. Patent No. RE44,904
E. Evidence of Use Regarding U.S. Patent No. 7,027,465
F. Evidence of Use Regarding U.S. Patent No. 6,891,807

Attachments

- Civil Cover Sheet
- Proposed Summons