RC COMMUNICATOR

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the Great & Wonderful Wi-fi

Wi-Fi can be a mystery and somewhat complex concept to grasp. Learning some basics about Wi-Fi, like what it is, its history, who standardizes it, and other tidbits, can bring some understanding about it and how in-home Wi-Fi works with various devices.

Just as Dorothy and the yellow-brick-road gang pulled back the curtain on Oz, let RC be *your* Dorothy and lead you down the road to understanding great and wonderful Wi-Fi! Let's begin...

What Is Wi-Fi

Wi-Fi is radio wave technology. A Wi-Fi network allows devices to connect and communicate with internet and other devices with a router which has wireless capability.

History of Wi-Fi

No one person but many individuals and organizations, over several decades, have contributed to the innovation and the success of wireless communication technology, how it has evolved and improved and how we refer to it as Wi-Fi today.

People like tinkering engineer, Guglielmo Marconi (1874-1937), who experimented with invisible radio waves as early as the late1800s.

In 1941, actress and inventor, Hedy Lamarr (1914-2000) with co-inventor George Athiel, pioneered and patented Frequency Hopping Spread-Spectrum (FHSS) technology, which was later was adopted by the U.S. Navy in 1957 to guide torpedoes in WWII. She and Athiel later was credited for the development of FHSS, a technology that layed the foundation of what Bluetooth and Wi-Fi is today.

In 1968, engineers at the University of Hawaii began to investigate ways to connect their campus computers together on various islands. In 1971, they debuted ALOHAnet, the first system to transmit data into a computer using radio waves. A protocol that is now widely used in nearly all forms of wireless communications.

Another step forward in the fruition of Wi-Fi was a 1985 ruling of the Federal Communications Commission releasing a portion of ISM (industrial, scientific, and medical) radio frequencies 2.4 GHz for unlicensed use to transport data.

NCR Corporation/AT&T (now Nokia Labs/LSI Corporation) invented WaveLan in 1988 using for cashier system- which will be the predecessor to Wi-Fi's standard.

Vic Hayes was one person responsible for establishing 802.11 Working Group for Wireless Lans and chaired the IEEE 802.11 Wireless Communications Standards Committee for 10 years.

> The Institute of Electrical and Electronics Engineers (IEEE) is the world's largest association of technical professionals that creates standards in technology.
>
> The roots of IEEE (International Electrical and Electronics Engineers) are deep, going back to two original associations, the American Institute of Electrical Engineers (AIEE) formed in 1884, and Institute of Radio Engineers (IRE) formed in 1912. The two merged in 1963, creating IEEE after both recognize their overlapping interests.

In 1999, six forward-thinking companies would form, the Wireless Ethernet Compatibility Alliance (WECA). In 2000, the organization would become the Wi-Fi Alliance and introduced term and trademarked "Wi-Fi" used around the world today! (Trademark only need for "Wi-Fi Certified".)

Wi-Fi Alliance today, is a global non-profit association with a worldwide membership of more than 800 companies from a wide array of industries. The organization's role is between IEEE and consumer. In 2018, they came up with simplified generational names which may appear on product names and descriptions to help consumers in identifying the latest Wi-Fi experience. (https://www.wi-fi.org)

Genealogy of Wi-Fi Standards

IEEE Standard 802.11 series	Wi-Fi Alliance Generational Names Given	Frequency	Max Data Rate	Year Adopted	Notable Computers and Electronics (The Age of a Device is part of the Wi-Fi Experience equation.)
802.11ax	Wi-Fi 6	2.4 GHz & 5 GHz	10-12 Gbps	2019	**Phones:** Samsung Galaxy S10 and S10E, Galaxy Note10, Galaxy S20, Galaxy Fold; iPhone11, 11 Pro, 11 Pro Max, iPhone SE, iPhone 12, 12 Pro, 12 Pro Max,12 Mini; LG V60 ThinQ; Motorola Edge Plus **Laptops:** Asus Chromebook Flip c436, Dell XPS 13 (2020), HP Sectre x360, (high end Dell Laptops) Lenovo Yoga c940, LG Gram17, Microsoft Surface Laptop Go **Other Devices:** Eighth-gen iPad and fourth-gen iPad Air
802.11ac	Wi-Fi 5	2.4 GHz & 5 GHz	1.3 Gbps	2013	**Phones:** Galaxy S6, S7, S8, S9; iPhone 6, 6s, 7, 8, X; **Other Devices:** Fire TV, Dell Laptops (high & low end), PlayStation4 (PS4) (2013, 8 yrs ago), Lenovo ThinkPad X240 (8 yrs ago)
802.11n	Wi-Fi 4	2.4 GHz & 5 GHz	600 Mbps	2009	**Devices:** iPad,1st Gen (2010, 11yrs ago) iPad, 2nd Gen (2012), Xbox 360 (2005,16 yrs ago)
802.11g	(Essentially 3rd generation)	2.4 GHz	54 Mbps	2003	Really old computers, laptops, and phones
802.11b	(Essentially 2nd generation)	2.4 GHz	11 Mbps	1999	Really old computers and laptops
802.11a	(Essentially 1st generation)	5 GHz	1.3 Gbps	1999	Really old computers and laptops

Seeing Is Part of Understanding

Because wi-fi is invisible to the naked eye and seeing is part of understanding, download the Command**IQ** app!

Command**IQ** is a tool that works with RC's **BLAST** router. This free wi-fi app gives you a view of your connected equipment and devices while being able to control and customize settings of in-home wifi network with just a couple of taps of the phone!
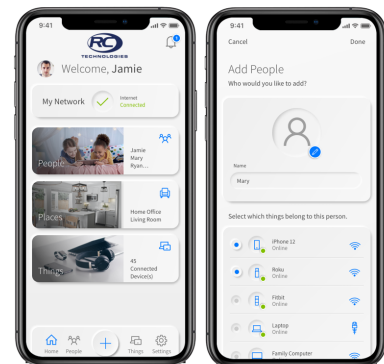
https://www.aps.org/publications/apsnews/201106/physicshistory.cfm
https://www.womenshistory.org/education-resources/biographies/hedy-lamarr
https://www.ieee.org/about/ieee-history.html
https://www.wi-fi.org/who-we-are
https://en.wikipedia.org/wiki/IEEE_802.11

GET FREE WI-FI APP FROM APPLE APP STORE OR GOOGLE PLAY STORE.

Command**IQ**®

- VIEW CONNECTED DEVICES ON YOUR WI-FI NETWORK
- SET PROFILES
- RESET PASSWORD
- RUN SPEED TESTS AND MORE!

https://spectrum.ieee.org/alohanet-introduced-random-access-protocols-to-the-computing-world
https://www.computer.org/profiles/victor-hayes

RC Technologies 2022 Directory Cover Photo Contest

"Fall In South Dakota"

will be this year's theme!

Be thinking about what photos/images, you'll want to capture and submit for your chance at a $50 credit on your RC bill, some greeting cards, and Directory Cover Photo bragging rights.

2021 Directory Cover Winning Photo taken by Connie Brandenburger, New Effington

- Photo/images must be portrait (Tall) only. This enables the entire directory cover to be a photograph.
- Guidelines for judging, in order of importance, are: reproducible quality, general appearance, and subject matter
- Lowest resolution accepted is 300 dpi
- Photo/images <u>cannot</u> include people.
- Limit of five (5) entries per person
- Mail photos to:

    RC Technologies
    c/o Directory Cover Photo Contest
    PO Box 197
    New Effington, SD 57255

- Digital images can be emailed to:

    marketing@rctechteam.com

    with "Directory Cover" in the subject line
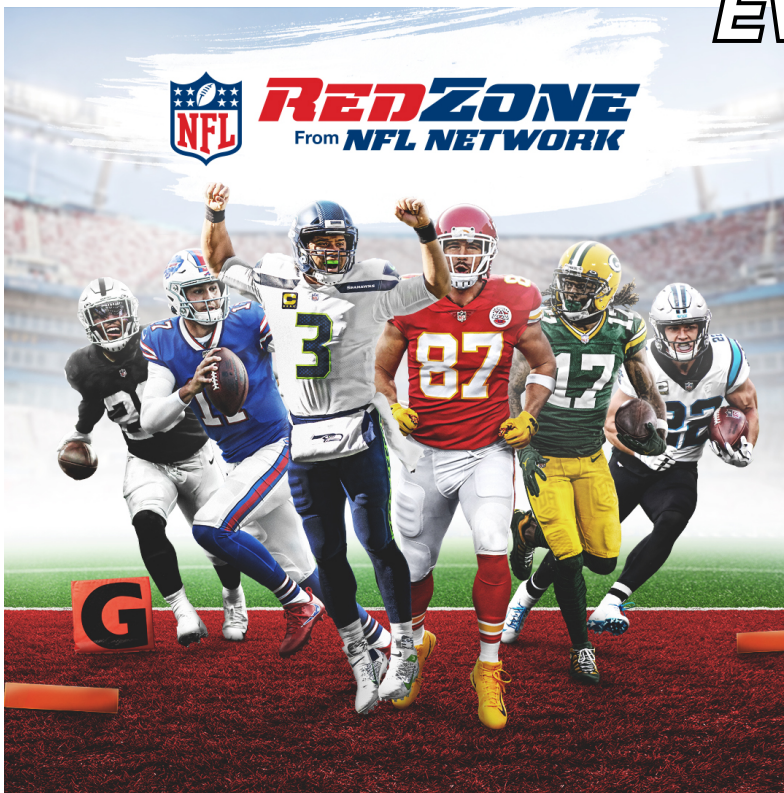
- **Deadline for all entries is November 19, 2021**

Fall 2021 TV & Premieres

Friday, September 17th
**Stream Anytime – Everyone's Talking About Jamie, Amazon Prime
**Stream Anytime – The Mad Women's Ball (Le bal del folles) Amazon Prime
** Stream Anytime – The Morning Show: Season 2, Apple TV+
** Stream AnyTime – Sex Education - Netflix
** Stream Anytime – Cry Macho – HBO Max

Sunday, September 19th
7:00 pm - 73rd Annual Emmys, CBS (3)

Monday, September 20th
7:00 pm - The Voice, NBC (5)
7:00 pm - Neighborhood, CBS (3)
7:00 pm - Dancing with the Stars, ABC (9)
7:30 pm - Bob Hearts Abishola, CBS (3)
9:00 pm - **Ordinary Joe**, NBC (5)
8:00 pm - NCIS, CBS (3)
9:00 pm - NCIS: Hawi'i, CBS (3)

Tuesday, September 21st
7:00 pm - **FBI** (new time), CBS (3)
8:00 pm - FBI: Most Wanted, CBS (3)
9:00 pm - **FBI: International**, CBS (3
9:00 pm - New Amsterdam**,** NBC (5)
9:00 pm - NCIS: New Orleans, CBS (3)

Wednesday, September 22nd
7:00 pm - Survivor, CBS (3)

7:00 pm - The Goldbergs, ABC (9)
7:00 pm - Chicago Med, NBC (5)
7:30 pm - **Wonder Years**, ABC (9
8:00 pm - Chicago Fire, NBC (5)
8:00 pm - The Conners, ABC (9)
8:30 pm - Home Economics, ABC (9)
(new time)
9:00 pm - Chicago P.D., NBC (5)
9:00 pm - Big Brother, CBS (3)
9:00 pm - A Million Little Things ABC (9)

(Schedules are subject to change)

Sunday, September 26th
7:00 pm - Celebrity Wheel of Fortune
(Season 2, new time), ABC (9)
7:00 pm - 60 minutes CBS (3)
7:00 pm - Big Brother, CBS (3)
8:00 pm - Supermarket Sweep,
 (new time) ABC (9)
9:00 pm - The Rookie, ABC (9)

Monday, September 27th
9:00 pm - The Good Doctor, ABC (9)

Tuesday, September 28th
8:00 pm - La Brea, NBC (5)
8:00 pm - FBI: International, CBS (3)
9:00 pm - FBI: Most Wanted, CBS (3)

Wednesday, September 29th
8:00 pm - Survivor, NBC (5)
9:00 pm - Big Brother, CBS (3)

Thursday, September 30th
7:00 pm, Station 19, ABC (9)
8:00 pm, Grey's Anatomy, ABC (9)
9:00 pm, Big Sky, ABC (9)