BILL'S HOME TECH
Home & Small Business Tech Solutions

BILL'S COMPLETE MANUALS · NO. 19

Internet & Modems Explained

Where your internet comes from, what all the equipment does, and how to stop overpaying — in plain English

Understand your bill, save real money

No jargon — just straight answers

Written for you by Bill — Bill's Home Tech

(330) 200-8042 · BillsHomeTech.com

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What's Inside

This is your plain-English guide to the internet itself — not the Wi-Fi inside your home (that's a companion manual), but the service that comes *into* your home, the equipment it uses, and the bill you pay for it. Read it in any order. It will help you understand what you're paying for, spot where money leaks out, and talk to your provider from a position of knowledge.

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PART 1

Where Your Internet Comes From

What the internet actually is, how it reaches your house, and the handful of plain words — ISP, modem, broadband — that make your bill and your equipment finally make sense.

CHAPTER 1

A Note from Bill

Hello, and welcome. Whoever is holding this book — this is for **you**. The internet is one of those things we all pay for every month and few of us truly understand. The bill is full of mystery words and creeping charges, the equipment is a jumble of boxes with blinking lights, and asking questions can feel embarrassing. It shouldn't. By the end of this little guide, none of it will be a mystery to you.

I'm Bill. For more than 30 years I've helped folks feel at home with their technology, and I've sat with a great many people puzzling over an internet bill that quietly crept up on them. I wrote this the way I'd explain it at your kitchen table: plainly, honestly, and with your interests — not a provider's — at heart.

WHAT THIS DOES FOR YOU

What this guide does for you

By the end you'll understand exactly what you're paying for, what your equipment does, how much speed you actually need (usually less than you're sold), and the honest ways to lower your bill. Understanding this can put real money back in your pocket every single month.

And you're never stuck alone. If you'd like a hand making sense of a bill or choosing a plan, call me at **(330) 200-8042** — no judgment, and no sales pitch.

— Bill

CHAPTER 2

The Internet in Plain Words

Let's start at the very beginning, with no assumptions.

What the internet is

The **internet** is a giant worldwide network — millions of computers, all able to talk to one another. When you watch a show, check email, or look something up, your device is fetching that information from a computer somewhere else in the world and bringing it back to your screen, usually in a fraction of a second. To do that, your home needs a *connection* to this network — and that connection is what you pay for every month.

Who you pay: the ISP

The company you pay for internet is called an **Internet Service Provider**, or **ISP** for short. It's the outfit whose line runs to your house — often the same company that provides your cable TV or phone, or a fiber or cellular company. The ISP's whole job is to carry the internet the "last mile" from the wider world to your front door.

The word 'broadband'

You'll see the word **broadband** on bills and ads. It just means "fast, always-on internet" — as opposed to the slow, screechy dial-up of decades past. Any modern home internet — cable, fiber, and the rest — is broadband. When a bill says "broadband," it simply means "your internet service." Nothing fancier than that.

> **GOOD TO KNOW**
>
> **Internet vs. Wi-Fi — a crucial difference**
>
> These two get muddled constantly. **The internet** is the service that comes *into* your home from your ISP. **Wi-Fi** is the wireless signal that spreads that connection *around* your home. Either can have a problem while the other is fine. This guide is about the internet coming in; its companion, *Home Wi-Fi & Routers*, covers the Wi-Fi inside. Knowing which is which is half of every fix — and every bill conversation.

CHAPTER 3

How It Reaches Your House

The internet gets to your home through some kind of physical line or signal, and which one you have shapes your speed, your reliability, and your options. Here are the types, in plain terms.

Type	In plain terms
Cable	Comes in over the same line as cable TV. Very common, widely available, good speeds. What most suburban homes have.
Fiber	The newest and best — glass threads carrying light. Fastest and most reliable, with equal upload and download. Wonderful where it's offered, but not everywhere yet.
DSL	Older technology over telephone lines. Slower, being phased out, but still the only wired option in some areas.
5G / fixed-wireless home internet	Newer — comes through the air from a cell tower to a small box in your home. Easy to self-install, no line to bury; speed depends on how close the tower is. A good option where wired choices are poor.
Satellite	Comes from space. The fallback for rural homes with no wires. Works almost anywhere, but usually pricier and can be affected by weather.

Which do you have?

You can usually tell by who you pay and what the line looks like: a cable company means cable; a phone company's "fiber" plan means fiber; a small dish on the roof means satellite; a little box in the window with no wire to the street often means 5G home internet. If you're unsure, it's printed on your bill, or a quick call to me will sort it.

TIP

See what's actually available at your address

Before you assume you're stuck with what you have, it's worth checking what else reaches your specific address — a new fiber line may have arrived on your street without your knowing. The government's official **FCC Broadband Map** (at broadbandmap.fcc.gov) lets you type in your address and see which providers serve it. It's a free, unbiased place to start, and sometimes it turns up a better, cheaper option you didn't know existed.

PART 2

Your Equipment

The modem, the router, the all-in-one gateway — what each box does, which you own, and the rental fee that may be quietly costing you hundreds a year.

CHAPTER 4

Modem, Router & Gateway

The boxes your ISP gives you have specific jobs. Understanding them clears up both your troubleshooting and your bill.

The two jobs

- **The modem** connects your home to your ISP's line and translates that outside signal into something your home can use. One modem, one internet connection. By itself it gives internet to just one device by cable and makes no Wi-Fi.
- **The router** takes that one connection and shares it around your home over Wi-Fi. It's what all your devices actually connect to.

The all-in-one 'gateway'

Many ISPs now give you a **single box that is both a modem and a router combined** — the industry calls it a **gateway**, though your provider may just say "your equipment" or "the modem." If you have one box from your ISP with Wi-Fi coming out of it, it's a gateway. Perfectly normal, and one less thing to think about.

GOOD TO KNOW

Count your boxes

One box with Wi-Fi = an all-in-one gateway. **Two boxes** (one on the wall line, a second plugged into it) = a separate modem and router. Knowing which you have tells you how many things to restart when the internet drops — and, as the next chapter shows, whether you're renting more than you need to.

CHAPTER 5

Rent vs. Buy: The Hidden Fee

Here's one of the biggest quiet money-leaks in the whole house, and almost nobody notices it: the **equipment rental fee**.

The rental fee on your bill

Most ISPs rent you their modem or gateway for a monthly fee — often somewhere around ten to fifteen dollars a month — tucked quietly into your bill under a line like "equipment," "gateway," or "Wi-Fi service." It feels small. But over a few years it adds up to far more than buying your own equipment would cost — you can end up *renting a box several times over* and still not owning it.

Buying your own

With many cable and DSL providers, you're allowed to **buy your own modem/router** that works on their network, return theirs, and stop the rental fee for good. A good one often pays for itself within a year or so, and everything after that is savings. But there are real catches to check first:

- **It must be compatible** with your specific provider — they publish a list of approved models.
- **Fiber and 5G home internet often require the provider's own box**, so buying may not be an option there.
- **You handle your own support** — if your bought modem fails years later, you replace it (though they rarely fail).

FROM BILL

Let me check if buying makes sense for you

Whether buying your own equipment will truly save you money — and whether your provider even allows it — depends on your plan and your setup. It's exactly the sort of thing I help folks sort out, and getting the right compatible box the first time matters. If you'd like me to look at your bill and your equipment and give you a straight answer, call (330) 200-8042. No pressure either way.

PART 3

Speed Demystified

What those speed numbers mean, how much you genuinely need (usually far less than you're sold), and how to check what you're actually getting.

CHAPTER 6

What the Speed Numbers Mean

Speed is the number providers advertise loudest and explain least. Let's make it simple so you can't be upsold on a number you don't need.

Megabits — the pipe-width picture

Internet speed is measured in **megabits per second**, written **Mbps**. The bigger the number, the more can flow at once. Picture it as the width of a water pipe: a wider pipe lets more faucets run at the same time without the pressure dropping. Your plan buys a pipe of a certain width, and everything in your home shares it. (A **gigabit**, or 1,000 Mbps, is simply a very wide pipe.)

Download and upload

- **Download** — how fast things come *to* you: web pages, streaming, email. The big advertised number, and what matters most day to day.
- **Upload** — how fast things go *from* you: sending photos, your face on a video call, backing up. Usually smaller, which is normal — except on fiber, where the two often match.

GOOD TO KNOW

More speed doesn't fix bad Wi-Fi

The costliest mistake I see: paying for a faster plan hoping to fix a weak signal in the back bedroom. A wider pipe into the house does nothing if your Wi-Fi can't carry it to where you sit. If your trouble is a dead zone, the answer is better Wi-Fi coverage (see the *Home Wi-Fi* manual), not a pricier plan. Don't let anyone sell you speed to solve a coverage problem.

CHAPTER 7

How Much Speed You Actually Need

Providers love to sell you the biggest plan. The honest truth is that most households — and especially most couples or single folks — need far less than they're paying for.

What you do	Speed that's plenty
Email, web, Facebook	A little goes a long way — even a modest plan handles these with ease.
Streaming a show in HD	Roughly 5 to 10 Mbps while it plays.
A video call	Roughly 3 to 5 Mbps.
A typical couple or single person	A plan in the 100–200 Mbps range is comfortable for nearly everything, often with room to spare.
A busy household, many screens at once	The 300–500 Mbps range handles a full, active house.
Gigabit (1,000 Mbps) plans	Exist and are heavily marketed, but most homes never come close to using them. Rarely worth the premium unless you have a specific heavy need.

TIP

Right-size, don't super-size

If you're a household of one or two doing email, Facebook, and a bit of streaming, you very likely do not need a gigabit plan — and may be paying for two or three times the speed you ever use. Dropping to a right-sized plan can save real money every month with no change you'd ever notice. Checking this is one of the easiest wins there is.

CHAPTER 8

Checking What You're Really Getting

You pay for a certain speed — but are you getting it? A free, two-minute **speed test** tells you, and it's a powerful tool when something feels slow or when you call your provider.

Running a speed test

1. On a device connected to your internet, open a web browser and search for **speed test**, or use your provider's or router's built-in one.
2. Tap the big **Go** button and wait about thirty seconds.
3. Note the **download** and **upload** numbers in Mbps.

Making the number mean something

- **Test near the router, ideally with a device plugged in by cable** if you can — that shows what your *internet* is delivering, with Wi-Fi taken out of the picture.
- **Compare it to the speed you pay for** (on your bill). Getting far less than you pay for, even up close, is worth a call to your provider.
- **Test at a quiet hour and a busy evening.** If evenings crawl, the neighborhood may be congested — another provider conversation.

GOOD TO KNOW

A little less than advertised is normal

Don't panic if a speed test reads somewhat below your plan's number — advertised speeds are "up to" figures, and a bit of loss is normal, especially over Wi-Fi. But getting *far* below what you pay for, consistently and even on a wired test, is a real issue worth raising with your provider. Keep a note of a "good day" reading to compare against later.

PART 4

Your Bill & Saving Money

Reading your bill, understanding the broadband label, catching the sneaky price creep, and the honest ways to pay less for the same internet.

CHAPTER 9

Reading Your Internet Bill

An internet bill can look like a wall of codes and charges. Let's decode the parts that matter, so nothing hides from you.

What the lines usually mean

Line on the bill	What it is
Internet / broadband service	The core charge for your plan and its speed.
Equipment / gateway / Wi-Fi rental	The fee for renting their box — the one you may be able to stop (Chapter 5).
Promotional discount	A temporary price break. Note when it *ends* — that's when your bill jumps.
Taxes & fees	Government and provider surcharges. Some are unavoidable; some 'fees' are really just the provider's own charges with an official-sounding name.
Bundle / package	If internet is lumped with TV or phone, the pieces may be hard to separate — worth asking for the internet-only price.

The broadband 'nutrition label'

Thanks to a rule that took effect a couple of years ago, ISPs must now show a simple, standardized **broadband label** — much like the nutrition label on food — that lays out the real monthly price, the speeds, any data limits, and the fees, all in one place. Ask to see it before signing up for any plan; comparing two labels side by side is the clearest way to see which is truly cheaper.

HEADS UP

Watch for the promo price expiring

The single most common cause of a bill that "suddenly went up" is a **promotional rate quietly ending.** You signed up at an attractive price for twelve or twenty-four months, and when it lapsed, the bill jumped to the regular (much higher) rate — with no warning you'd notice. Find your promo's end date and mark your calendar; that's your cue to call and renegotiate (Chapter 10).

CHAPTER 10

Honest Ways to Lower Your Bill

You have more power over your internet bill than you think. Here are the straightforward, honest ways to pay less — no gimmicks.

The moves that work

1. **Right-size your speed.** If you're paying for gigabit and use a fraction of it, drop to a sensible plan (Chapter 7). Easy, permanent savings.
2. **Stop renting equipment** if buying your own makes sense for your provider (Chapter 5).
3. **Call and ask for a better rate** — especially when a promo ends. Mention you're considering leaving; ask for "retention" or "loyalty" offers. Providers often have unlisted discounts for customers about to walk.
4. **Drop services you don't use** — a TV package you've replaced with streaming, a phone line you never call on, premium channels gone unwatched.
5. **Check for a better provider at your address** (Chapter 3) — competition is your friend, and a new fiber line may undercut your current bill.
6. **Ask about low-cost plans** — many providers offer reduced-price internet for those on a fixed or limited income; it's worth asking whether you qualify.

TIP

Call once a year — it pays

Put a yearly reminder on your calendar to spend twenty minutes reviewing your internet: run a speed test, check whether your promo has lapsed, and call to ask for a better rate. Folks who do this routinely save hundreds of dollars a year compared to those who let the bill ride. The companies count on you not asking.

FROM BILL

I'll make the call with you

If calling the provider and haggling over your bill fills you with dread, you're far from alone — it's one of the most common things I help with. I'll sit with you, review the bill, and we'll make the call together to right-size your plan and ask for every discount you're owed. Often the visit pays for itself many times over. Call (330) 200-8042.

PART 5

When the Internet Goes Down

A calm checklist for an outage, how to tell if it's you or the provider, and the scams that pretend to be about your internet service.

CHAPTER 11

Outages & Simple Fixes

When the internet goes out, everything seems broken at once — but the fix is usually quick, and it's often not your fault at all. Walk this calm checklist.

Step by step

1. **Look at the modem/gateway lights.** Is the internet light (often a globe, or "online") off, or red? That points to the service coming in, not your Wi-Fi.
2. **Restart your equipment.** Unplug the modem (and router, if separate) from the wall, wait a full thirty seconds, plug the modem back first, wait two or three minutes for its lights to settle, then the router. This brings most outages right back.
3. **Check whether it's just you.** On your phone's cellular connection, you can often see if an outage is reported in your area. A neighbor being down too means it's the provider, not your home.
4. **Check the cables** — a line bumped loose by a vacuum or a pet is a common, silly culprit.
5. **Call your provider** if the internet light stays dark after a restart and there's no known outage. The trouble is likely on their end or in their equipment.

TIP

Keep your provider's number reachable offline

When the internet's out, you can't look anything up — so keep your ISP's phone number and your account number written on the card at the back of this book or taped inside a cupboard. A little preparation turns an outage from a panic into a minor annoyance. Many providers also let you report an outage or check status by text or automated phone line.

CHAPTER 12

Scams That Pretend to Be Your Provider

Because everyone has an internet bill, scammers love to impersonate internet companies. Knowing their tricks keeps your money and your account safe.

The common cons

- **The 'overdue bill / service will be cut off' call,** demanding immediate payment — often by gift card or an odd method — or your internet gets shut off today. Real providers don't operate this way.
- **The 'special discount, just confirm your details' call,** fishing for your account login, payment card, or a code they just texted you.
- **The 'your router is infected' call or pop-up,** urging you to call a number or allow remote access to "fix" it. Your ISP will not call you about a virus.

SCAM ALERT

The rules that defeat them

Hang up and call your provider back on the number from a real bill — never the number a caller or pop-up gives you. No real company asks for gift cards, a texted verification code, or remote access to your equipment. And anything that creates fear and rushes you ("cut off today!") is the fingerprint of a scam. When in doubt, hang up — you'll never be in trouble for it — and check, or call me.

FROM BILL

Unsure about a call? Ask me first

If someone claiming to be your internet company has you uneasy, please ring me at (330) 200-8042 before you pay anything or share any details. Two minutes of checking beats a world of regret, and I'm always glad to be that second opinion.

PART 6

When to Call Bill & Your Cheat-Sheet

How I can help, and a one-page summary to keep with your bill.

CHAPTER 13

When to Call Bill

I've written this so you can understand your internet and your bill on your own. But part of being truly helpful is being honest about when a hand saves you money or worry.

Times it's worth a call

- **Reviewing your bill** — I'll find the rental fees, lapsed promos, and unused extras, and help you right-size and renegotiate.
- **Deciding whether to buy your own equipment** and getting the right compatible box.
- **Comparing what's available at your address** — including new fiber or 5G options that might be cheaper.
- **Chronic slowness or outages** — I'll test whether it's the internet or the Wi-Fi and deal with the right one.
- **Any call or notice that smelled like a scam** — check with me before you act.

What working with me is like

I come to your home, here in Portage County, and I work for *your* budget — not a provider's. I explain everything in plain words and tell you honestly what's worth doing. That's been my way for more than 30 years, and it's saved a lot of folks a lot of money.

FROM BILL

How to reach me

Call or text **(330) 200-8042**, or book a visit at **billshometech.com/book**. Bill's Home Tech serves Portage County, Ohio. No question is too small — if your internet or your bill is bothering you, it's worth a call.

Thank you for letting me help you understand what you're paying for. A little knowledge here goes a long way — in confidence and in dollars.

— Bill

CHAPTER 14

Your Internet Cheat-Sheet

Fold this corner and keep it with your bill. The whole guide, boiled down.

Write it down once

Keep handy	
My internet provider & phone number	_____
My account number	_____
My plan's speed (Mbps) / monthly price	_____
Promo price ends on	_____ (call to renegotiate near this date)
Am I renting equipment? Fee:	_____
Speed on a 'good day' (from a test)	_____

Money-saving checklist (do yearly)

1. Run a speed test; note it.
2. Right-size your plan — don't pay for gigabit you never use.
3. Stop renting equipment if buying makes sense for your provider.
4. Check if your promo lapsed; call and ask for a loyalty/retention rate.
5. Drop unused TV, phone, or premium add-ons.
6. Check broadbandmap.fcc.gov for better options at your address.
7. Ask about low-cost plans if money is tight.

When it goes out

1. Check the modem lights (internet light off/red = the service, not your Wi-Fi).
2. Restart: unplug everything 30 seconds, modem back first, wait, then the router.
3. Check for an area outage on your phone's cellular connection.
4. Reseat loose cables.
5. Call the provider — or Bill at (330) 200-8042.

WHAT THIS DOES FOR YOU

You've got this

You now understand where your internet comes from, what every box does, how much speed you really need, and how to stop overpaying. That knowledge is worth real money, year after year. Keep this guide with your bill, and remember I'm only a phone call away.