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# The Seventh Signal

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## Introduction

Maya Cruz liked the hour when the city went quiet. The streets thinned to a whisper, a few late buses stitched their routes across empty intersections, and the towers at the edge of the industrial district blinked their red warning lights in slow, patient pulses. In the quiet, the air was full of sound—just not the kind people could hear. She tilted the rooftop hatch back with a gloved hand and climbed into the wind, backpack first, then the case with her spectrum analyzer, then the small Yagi antenna she'd built on a Sunday when the soldering iron felt better than sleep.

Tonight's job didn't pay much. A municipal contract had sent her to confirm interference reports around a cluster of warehouses where forklifts spoke to routers and shipping manifests rode the air like dandelion seeds. She took the jobs that kept her independent: auditing radio links for hospitals, retuning backup transmitters at the public safety office, identifying a stubborn source of interference that turned out to be an aquarium pump with a cracked winding. People imagined radio as ghostly, intangible. Maya knew better. It had edges. It had fingerprints. She set the tripod, clipped the antenna in place, and exhaled into the cold until her breath became a pale banner.

The analyzer chirped to life and painted a waterfall—color unrolling down a black screen, the past fading as each new line wrote itself into the present. Normal traffic shimmered where she expected it: a wash of Wi-Fi, LTE carriers marching in their parkas of protocol, a lonely analog repeater throwing its voice into the night from a fire station two neighborhoods away. She swept low and slow, then high and quick, nudging the dial until she could feel the space between signals. It was an intimacy, the way one learned a city's RF the way one learned a friend's gait.

Her phone buzzed. A message from Izzy, her little sister, arrived with a string of off-center emojis and the question she'd been bracing for all week: Can you spot me rent until the nursing job starts? Maya tapped out a reply—of course, we'll figure it out—and then tucked the phone away, guilt blooming in her ribs like a bruise. Izzy would never ask if she had any other choice. Their mother had been the asking one, swallowing pride and favor after their father left, inventing ways to stretch money and calm. Maya had learned early that what you could not afford you compensated for with skill. It was a simple truth. Radio obeyed its rules even when people didn't.

She had believed Helios Systems obeyed rules, too. The company had been her first real client after she left the state utility, a sleek composite of philanthropy and innovation. Their lobby was sunlight and reclaimed wood. Their brochures showed smiling linemen, green hills, a city skyline unfurled beneath a slogan about resilience.

Back then, the work felt urgent and good: designing test harnesses for grid monitors, joining night crews when substation upgrades needed an extra pair of hands who understood both silicon and steel. In meetings, the Helios people called her by her last name and told her she was indispensable. It took longer than it should have for the word indispensable to turn into leverage.

Maya didn't call what happened a betrayal. Betrayal implied surprise. Looking back, there had been careful phrases in the contract and a clause she should have negotiated harder. There had been a project manager who avoided specifics and a finance person who smiled while widening the gap between deliverables and reality. The last straw was a white paper she'd coauthored with a colleague about latency tolerances in a monitoring protocol—a boring subject unless you cared about, say, whether a signal was received in time to keep a breaker from tripping. Helios wanted the thresholds softer. They wanted pretty charts. When she wouldn't sign the revision, they offered a supplemental fee for “expedited alignment.” She refused the money. They stopped returning her calls.

She adjusted the preamp gain and dialed in a notch filter, keeping the cellular carriers from washing out the quieter voices. The night carried the smell of cold metal and distant river water. A train horn bled into the air with a low, mournful vowel. Somewhere below, a forklift beeped its backing litany. Her antenna angled toward the south where the municipal complaint had originated, a hiccup in the 400 MHz band that could have been a bad cordless mic or a rogue telemetry unit. She took a bearing, swung the beam, and marked the direction with a tiny arrow on a paper map because she trusted a pen to be immune from firmware updates.

This was her ordinary world: the soft weight of equipment in her hands, the discipline of logging times and frequencies, small victories against invisible chaos. People called her when they needed order coaxed out of noise. She liked being needed by systems more than by people. Equations didn't sulk. Wires didn't lie. When she soldered, the joint either wet and shone or it didn't. If a link failed, there was a reason. Find the reason, fix it, move on.

“Still awake?” a voice had asked, months ago, sliding through her memory now as clearly as if the rooftop had summoned it. That had been Jonah Park, the investigative reporter who'd called her after she left Helios, looking to confirm whether the company's glowing press release about a new grid assurance program matched what engineers were saying off the record. She hadn't given him what he wanted. She wasn't a source. She wasn't a crusader. She was an engineer with rent and a sister and a soldering iron. The feeling of having bitten her tongue had become its own quiet ache.

The analyzer murmured. She changed the sweep, widening the window to a band she rarely checked at this hour. Emergency broadcast tests lived there, along with

maintenance pings and the occasional conspiracy theorist with a pirate transmitter. People imagined those frequencies as sacred. In truth, they were as mundane as any other pipeline—unless something tried to mimic them. Maya put a finger on the trackpad and slowed the waterfall to watch. The screen resolved a familiar shape: an orthogonal grid of energy, power distributed across subcarriers like an apartment complex full of tenants. OFDM, fine. Modulations every city breathes now. But behind it, faint as a watermark, she saw a second pattern laid over the first like a hidden mural bleeding through cheap paint.

Her heartbeat did what it did when a new problem presented itself—a quick thud, a quiet focus. She took a capture. She switched antennas. The second pattern remained, half a decibel over the noise floor, as if someone had sketched a ladder across the spectrum and dared her to climb it. It wasn't a ghost. Ghosts didn't repeat at precise intervals. She thought of tricks, artifacts her own equipment could create, and ran through the checklist: ground the analyzer, calibrate the preamp, swap the coax. The pattern kept breathing in the chart, patient, unafraid of scrutiny.

That was when she allowed herself to think of Helios again, not the brochure company, but the house where engineers whispered. She remembered a hallway conversation near a coffee machine where a colleague had used the word cascade too casually. She remembered a memo she never saw, referred to by someone who laughed and said legal had promised it didn't exist. She remembered a meeting in which the head of infrastructure used the phrase market confidence in the same breath as grid reliability and the way her friend Sam had met her eyes across the table, expression blanked into professionalism. She had walked away that afternoon, telling herself everyone compromised sometimes. Compromise was the price of contact with the world.

She knew better. Signals didn't compromise. They spread according to physics until someone stopped them. In their purity, they were amoral. She was the one who gave them meaning, pointed them, shaped them. She cranked down the squelch and let the hiss fill her headphones, a sea-sound that held its own kind of comfort. Voices hid in that, and telemetry, and sometimes the uninvited. Power systems were full of radios now—smart meters chattering in mesh networks, substations reporting their status with cheerful beeps, programmable logic controllers whispering between cabinets. The future had taught everything to listen. It hadn't taught everything to be cautious about what it heard.

Her mind ran ahead of her hands, sketching possibilities. A layered signal like this could be a test pattern, a company checking readiness in the off-hours. It could be a prank dressed as sophistication. Or something worse: a piggybacked instruction designed to slip past filters because it looked so mundane. Most devices didn't parse content the way people did. They responded to shapes, to timings, to "if this, then that." A tone in the right place, a checksum designed to fail in a way that meant pass to a single manufacturer's firmware—she could imagine many doors hiding in plain

sight. You didn't need to shout to trigger a reflex. Sometimes a whisper did the job.

She adjusted the gain and tapped a bookmark on her screen. The pattern was climbing, faintly, into a frequency block that belonged to a utility telemetry channel. She changed the view to a waterfall that plotted not just frequency but time on a logarithmic scale, watching the echo of it in the past as if a shadow could tell the future. Streetlights below painted the asphalt in dull amber. A dog barked twice and stopped. The wind snagged her hair and snuck cold into the gap between glove and sleeve. She leaned toward the antenna, as if proximity could sharpen the math.

The headset went dead quiet for half a second, which was the kind of silence that made her check if a cable had snapped. It hadn't. The silence wasn't nothing; it was shape, something switching on or off somewhere upstream. Her analyzer drew a neat row of teeth across the display and then, with an almost polite certainty, the pattern aligned. Layer on layer, subtle but crisp: a counterfeit mask on a familiar face. Her fingers, on their own, hit record. The field recorder's tiny red light stared back at her like an unblinking pupil.

Maya thought of calling someone—Hale, the detective she sometimes consulted for radio questions; or Jonah, with his habit of arriving at the heart of a thing and refusing to leave; or Sam, whose number she had deleted but whose voice she could hear saying, Easy, Cruz, it's just a glitch. But calling was a step. Naming what you saw to someone else turned observation into responsibility. Once, at Helios, she had been told, gently, kindly, that she didn't see the whole picture. It had been meant as wisdom. It had felt like erasure.

A breeze lifted the treeline of mitigation plantings that tried and failed to make the warehouse district feel humane. The city hummed. Somewhere, a transformer complained in its sleep. Maya shifted the headset, willing her ears to be better than they were. Her pen hovered above the logbook, date already written: 11:57 p.m. She would note the frequency, the observed shape, the event, the conditions. She would write it like she wrote everything, a breadcrumb path through a forest of noise.

Under the hiss, something rose. Not signal in the mathematical sense but the human kind—compressed, encoded, then breathed back into air by a function that didn't care about content. Most of what passed for messages in these channels wasn't meant for ears. This one had no right to be there. It arrived with a slight phase wobble and a warble that said the source wasn't where it pretended to be. It sounded like a phone call routed through a tunnel and stripped of everything familiar until only intention remained.

"Ready on seven," a man's voice murmured, flat and practiced, as if he were reading off a checklist he had read a hundred times before. Then, as if the whisper itself were shy of being overheard, the noise folded back over the words and the waterfall

resumed its polite descent down the screen.

Maya didn't move. She didn't breathe. The rooftop felt suddenly smaller, the night closer, the distance between herself and the grid below measured not in streets but in milliseconds. She marked the time. She marked the frequency. She listened to the city's invisible weather change shape in her headphones and, for the first time in a long time, felt the old certainty collapse into something sharper and more dangerous.

She had heard it.

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## CHAPTER ONE: The Night Field Test

A cold front had slipped under the city's skin, turning the air into something sharp and tasting faintly of ozone. Maya Cruz felt it most on the rooftop, where nothing interrupted the wind but the lip of the hatch and the safety rail she'd learned to keep in her periphery after a late-night misstep three years ago had taught her humility. She clipped the final coaxial connector into the spectrum analyzer and twisted until the lock-down ring gave her the satisfying click that meant a solid ground. The little Yagi antenna, built with a kit and a long Sunday afternoon, pointed its arrowhead of elements toward the cluster of warehouses where the complaint had originated. The client—a municipal office with too many responsibilities and too few radios—had asked her to sniff out an interference source driving their handhelds into static. She had said yes because the job paid and because the word interference had always been more invitation than obstacle.

She took a sip of lukewarm coffee from a thermos that had survived two different jobs and one ex-boyfriend. The city below had dimmed to its third-shift glow: sodium lamps tracing highways like dull gold threads, windows in high-rises reduced to pinpricks where someone else was awake worrying about rent or test scores or whether the door had been locked. On the spectrum analyzer's screen, the waterfall cascaded in a way that made the invisible feel like weather—broad fronts of cellular LTE, the ripples of a passing drone controller, the steady whisper of a utility mesh network, and a bright constellation of Wi-Fi blooms from apartments that had forgotten to flip their routers to nighttime mode. It was an ecosystem, as crowded as a forest at dusk, and she knew its paths the way a tracker knows mud.

Her phone vibrated against her thigh. She peeled off a glove and fished it out, squinting at the screen. A text from Izzy had popped up above the calendar reminder for her quarterly certification: *Can you spot me rent until the nursing job starts? We'll pay you back as soon as I get my first check. I swear.* Maya tapped out, *Of course. We'll figure it out.* She added a thumbs-up emoji, which felt like using a bandage for a broken bone. The guilt came on cue, a familiar weight pressing just below her ribs. Izzy wouldn't have asked if she'd had any other route. Their mother had perfected the art of asking without letting it sound like a burden, weaving favors into a tapestry that somehow kept them fed and warm and a little bit hopeful. Maya had learned the counterbalance early: skill instead of pride, estimates instead of promises, precision instead of apologies.

A diesel generator coughed to life in a nearby parking lot, and its harmonics painted bright lines across the lower frequencies. Maya ran a sweep from 400 to 500 MHz, watched for anything that didn't match the expected shapes. She nudged the gain up

a notch, then dropped the reference level, making faint signals stand out like a figure moving at the edge of a dark room. The handheld radios used by the warehouse staff had been complaining of intermittent drops and bursts of noise whenever a forklift backed up beneath certain LED fixtures. The fix would probably be a new power supply on the lamps or a better shield on the motor's control leads. It was a simple problem wrapped in the usual corporate indifference to radio etiquette.

On the third sweep, something flickered at the top of the screen—a faint parallel of lines that did not belong to any common device in the band. It was thin, almost polite, the sort of signal you would dismiss as a harmonic if it weren't for the way it layered itself over a more conventional OFDM pilot. Maya paused, one finger hovering over the trackpad. She reduced the noise floor threshold and watched the shape resolve. A digital modulation, she could tell that much, but it had an extra texture, a second rhythm laid across the first like a heartbeat on top of a metronome. She toggled the demodulator to look at the constellations. QPSK in the main channel, nothing unusual. Behind it, something else tugged, like a reflection in a window that only appeared when you stood at a particular angle.

She adjusted the Yagi's heading by a degree and re-centered the band. The shape remained, repeating on a precise interval that she clocked against her wristwatch. Not random. Not drifting. She took a capture file, noting the time and the frequency in her logbook with her usual economy of words. The wind carried the smell of rain though no clouds hung above, a trick of cold air moving over warmer pavement. The city hummed and clicked and sang. She felt the familiar start of a puzzle settling into place, like tumblers in a lock announcing they're ready to turn.

The voice came first as a seam in the hiss, a brief pucker in the noise that might have been a squelch tail. Then, layered behind it and too clean to be mistaken, the words: "Ready on seven." A man's voice, flat, practiced. It carried no emotion, the way a test pattern carries no music. Maya froze, the coffee forgotten. The signal didn't have the cadence of a walkie-talkie or the clipped phrasing of a dispatcher. It was a confirmation, a box being ticked. She looked at the screen, at the time stamp stamped in the top corner: 11:57 p.m. She reached for the record button on the analyzer and also on the field recorder tucked into her pack. The little red light on the recorder blinked once and then held steady, a tiny sentinel.

She tilted her head, listening as if she could pull more from it by force of will. The words didn't repeat. They were swallowed back into the pattern, and the layered waveform resumed its quiet dance. She stared at the waterfall display, trying to reassemble what she'd just heard with what she was seeing. The shape didn't match any standard protocol she knew for emergency broadcasts or industrial telemetry. It looked deliberately constructed, a carrier carrying two conversations at once. She ran a quick cross-correlation, subtracting the primary modulation from the composite. The remainder wasn't random noise. It was structured, periodic, and buried under the main

signal so that anyone looking at a basic scan would see only the innocuous occupant.

Maya touched the record switch again, as if to make sure it had truly captured the moment. Her mind skipped ahead through possibilities. A test by a vendor that hadn't bothered to tell anyone? A pirate station with an oddly professional message? A glitch in the analyzer itself, some artifact of the preamp interacting with a nearby strong signal? She powered the preamp down, then up again. The faint ladder reappeared exactly where it had been, as if it had never left. She looked out at the warehouse roofs, at the blinking red aviation lights on towers in the distance. The city felt suddenly larger than it had a minute ago, like a room whose walls had been pulled outward while she wasn't looking.

Helios Systems had a way of creeping into her thoughts when she saw the phrase "grid reliability." She remembered the lobby—sunlight, reclaimed wood, a mural of wind turbines rendered in optimistic blues—and the way the people in it had called her by her last name, making it sound like a title. Back when she still wore their badge, she had worked on test harnesses for grid monitors, attended site visits to substations where the air buzzed with the gossipy chatter of smart devices. She remembered the white paper she had coauthored with Sam, the one about latency tolerances in the monitoring protocol, the one where they had insisted the timing budget could not be padded without risking delayed trip signals. The company wanted soft numbers. They wanted pretty charts. She had refused to sign the revision, and a week later the project manager asked if she would be "more flexible" if they offered an alignment fee. She had said no. They had smiled and stopped calling.

She forced the memory aside and returned to the screen. The composite signal held its shape. She took the Yagi down and switched to a dipole, curious whether the pattern would change with a different field. It didn't. The mathematics were indifferent to hardware. She pulled up a reference library on her tablet and searched for known emissions in the band. Nothing matched. She thought of Sam, who had left Helios a month after her and hadn't replied to her last two texts. She thought of Detective Aaron Hale, who had once asked her to explain the difference between encryption and encoding over a plate of diner eggs, and how she had enjoyed the way his brow furrowed when she used the word orthogonal. She thought of calling someone. But calling turned observation into testimony. Once, a Helios executive had told her gently that she didn't see the whole picture. It had sounded like wisdom. It had felt like erasure.

She set the dipole aside and returned to the analyzer's capture, peeling back layers like the skin of an onion. The composite consisted of a primary signal and a subcarrier, faint but distinct. The subcarrier was modulated with what looked like a series of short data packets. She had seen similar techniques used in telemetry to piggyback status updates on a larger broadcast. This was different. The packets were arranged with an algorithmic precision that felt too deliberate for simple diagnostics. She took a

screenshot and saved it under a temporary name, not wanting to bias her future self with a label like “suspicious.” Her stomach growled. She ignored it.

A gust of wind hit the hatch, rattling it lightly in its frame. She glanced down at the door, suddenly aware of the city’s emptiness. Below, a car rolled through an intersection and turned left, its headlights sweeping across the concrete. She told herself the feeling was a product of the hour, of standing alone on a roof with an idea that might be nothing. She turned back to the signal. If it was a test, it would end. If it was a fluke, it would drift. She reset the timer and waited, watching for the next repetition.

A minute passed. Two. The warehouses below were quiet except for the faint whine of a ventilation fan. The red lights on the distant towers blinked their steady rhythm. Her phone buzzed again—this time a notification from a financial app she hadn’t opened in months, a stock index updating after hours. She dismissed it and focused on the analyzer. On the screen, the composite signal pulsed again, exactly on schedule. It carried its secret with it like a coin in a seam.

Maya felt her pulse sync with the sweep. She tapped the trackpad and opened the capture file, scrolling through the raw bytes in hexadecimal. She didn’t need to decode it to recognize structure. Patterns clustered where they shouldn’t if the data were random. The field recorder, oblivious to her rising tension, faithfully captured the audio feed, its red eye blinking to indicate the input level was within range. She reached for her logbook again and wrote, *12:01 a.m. Secondary layer stable. QPSK primary with apparent covert payload. Message, possibly verbal, occurred once at 11:57. No repeat. Will attempt to isolate subcarrier.*

She keyed in a filter and narrowed the bandwidth to isolate the subcarrier. The signal responded like a fish on a line, giving her a cleaner view of its structure. It was smaller than the primary but dense. She ran a quick autocorrelation and saw the telltale spike that indicated a repeating header. She felt the familiar thrill of a problem yielding its first secret. Her ear caught another whisper beneath the noise floor, the ghost of a modulation. She closed her eyes for a second and listened without looking, letting the shape form in her head. The air tasted metallic.

Then the analyzer’s screen flickered. The lights on the tripod-mounted preamp blinked out. Her headphones went completely silent. The red light on the field recorder stayed on, but the feed from the analyzer had cut. Maya tapped the touch screen. Nothing. She powered the unit down and then up again. The boot sequence stuttered, as if confused, and then the display returned. The waveform she had been watching had changed. It was cleaner now, the primary stronger, the subcarrier fainter, as if something had pushed it away and pulled the rest into focus. She looked out across the rooftops. A bank of streetlights half a block away dimmed, then brightened. She had seen local interference cause that sort of voltage sag before, but never like this,

never so precisely timed.

She swept again, found the signal still there, still waiting. The power interruption had been small and localized. It would be easy to dismiss as a coincidence. Her training said not to. Radio didn't cause streetlights to dim unless it had a friend, like a poorly designed receiver or a feedback loop in a dimmer circuit. She re-aimed the Yagi and got a bearing. The signal was coming from somewhere to the southeast, possibly from the roof of Warehouse C or the small industrial park beyond it. She marked the line on her map. If she had to, she could walk it in twenty minutes. She could knock on doors. She could also call someone she trusted and start building a case.

The thought of Sam's number, deleted but not forgotten, crossed her mind. Then Jonah Park. Then Hale. She shelved them. First, evidence. Second, analysis. Third, decision. That was how she worked. She recorded another minute of the signal, turned off the preamp, and packed the Yagi into its case. The wind nudged her shoulder as if to remind her the night was not done with her. She stowed the analyzer, then the tripod, then the recorder, securing each piece with a practiced ritual of clicks and snaps. She checked the time. She wrote it down.

The walk back to the access door was short and careful. She took the stairs instead of the elevator, letting her boots thud against the metal in a steady rhythm. On the second floor, a security guard she didn't recognize glanced at her badge, then looked past it. She nodded. He nodded. They were two people doing a job at an hour that didn't ask questions. She reached the parking lot and unlocked her car, the interior light making the dash glow green. She slid the field recorder into the glove box, then buckled herself in, her hands steady, her thoughts a chessboard of next moves.

She turned the key. The engine caught. She pulled out of the lot and onto the empty street, heading home, the signal still humming in her memory like a tune she hadn't meant to learn. The city was a web, and something had plucked one of its threads. She didn't know yet whether that something was a person or a program, a mistake or a plan. She only knew that the thread was still vibrating, and that she was the one who had felt it.

She turned on the radio in the car to fill the silence and found only static between stations, as if even the airwaves were holding their breath. She thought of Izzy sleeping in a room with a poster of a mountain and a pile of textbooks. She thought of her mother's hands, how they had made a life out of small adjustments. She thought of Helios and the way the word resilience had been painted on the side of a truck she'd once ridden in, and how the driver had told her that the company had a plan for every failure. The signal had felt like a failure that wasn't a failure yet.

At a red light, she took out her phone and opened a new note. She typed the time, the frequency, the words she had heard. She added a line for the power dip and the shape

of the subcarrier. She saved it. She named the file *Seventh*, because the frequency was on the seventh band she had checked, and because it felt like a number with weight. The light turned green. She drove the rest of the way in silence, watching the shadows between buildings, listening for a ripple in the night.

At home, she set the case down by the door and stood in the kitchen, the refrigerator humming its low, steady note. She poured a glass of water and drank it, feeling the cold go down to her stomach. She opened her laptop and imported the capture from the recorder. On the screen, the waveform bloomed, her rooftop view condensed into a single image. She zoomed in on the layering, rotated the phase, pulled up a spectrogram. The signal was real. It had a name she didn't know and a purpose she intended to find. She closed the laptop and stood in the quiet of her apartment, aware that the city had changed for her in a way that wasn't reversible.

She would analyze tomorrow. She would call no one until she had something to say that wasn't just a feeling. But as she turned off the light and stood in the dark, listening to the hum of her own building and the soft, distant moan of a siren, Maya knew that what she had heard on that rooftop was not random. The signal was a message. It was waiting. And it had just told her it was ready.

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