MODULE 07 FIELD EXERCISE

Baseline Your Own Home and Block

TASK: Assess the place you live and its block across every domain this module reads (power, meter, panel, antennas, and RF spectrum), then turn the readings into a baseline: a dated record of what is normal for the site.

CONDITION: Given the home, apartment, or block where you live, open sources (a mapping service, the serving utility's outage map, and the local assessor's records), a clamp meter and a multimeter, and a receiver with an antenna. Work only where you have every right to be.

STANDARD: Every stage complete and dated on this sheet, photographed as you go, and the readings consolidated into one baseline of the site: the utility and feed named from open sources; the service, meter, and service point read and photographed from outside; the main disconnect rating and one circuit's headroom read at the panel with the cover on; the antennas identified to a band by form and photographed; and the spectrum inventoried with three or more signals identified against the resources below and an occupancy capture of at least 24 to 48 hours recorded.

> **SAFETY FIRST**
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> Read only. This is your own home or block, but the rules do not change: do not open, unseal, or remove any panel cover, meter, or enclosure, and do not touch service-side conductors, since everything ahead of the main disconnect is lethal. Read the clamp meter only around a single insulated conductor that is already exposed at an open working point; if reaching it means opening a cover or defeating a seal, skip the current reading and record the rating alone. Photograph from where you stand; do not open or reach into anything for a better picture.

RESOURCES

OpenStreetMap / Overpass Turbo: the mapped power infrastructure near an address (poles, substations, transformers) as a lead to confirm on the ground (overpass-turbo.eu)

Street-level imagery: a look at the block before you go, to spot the weatherhead, meter, service drop, and antennas: Google Street View, or the open Mapillary and Bing Streetside (google.com/maps, mapillary.com)

Assessor and permit records: the county or city portal for the assessor record (year built, sometimes the service size and inspection history) and any electrical-permit and plan-set filings; availability varies by jurisdiction

Sanborn fire-insurance maps: a building's footprint and construction from the public-domain Library of Congress collection; drawn for underwriting and predating electrification in many editions, so they do not reliably show electrical service (loc.gov/collections/sanborn-maps)

RadioReference: the licensed and in-use radio systems near you, from businesses to public safety; look the area up first, then match what you hear against it (radioreference.com)

Signal Identification Wiki: an unknown signal worked back to a name, with waterfall images and audio clips of each (sigidwiki.com)

Artemis: the same signal database held offline, over 520 signals tagged with frequency, bandwidth, and modulation (github.com/AresValley/Artemis)

Task 1 · The power, from open sources

1. Name the serving utility. Cross your address against the utility's published service-territory map or its outage map; an outage map resolves to an area, not one address, so read it as territory, not a pin on your roof.
2. Trace the feed. From satellite imagery and street-level views (Google Street View, or the open Mapillary and Bing Streetside), note whether the block is fed overhead (poles and spans) or underground (pad transformers and pedestals), and find the nearest transformer serving it.
3. Pull the records. Search your county or city portal for the assessor record (year built, sometimes the service size) and any electrical-permit and plan-set filings, and add the public-domain Sanborn map if one covers the block. Screenshot each, and record the utility, the feed type, and the nearest transformer.

Task 2 · The service, meter, and service point

1. Call the service. From outside your home, confirm overhead or underground: overhead lands at a weatherhead and drops to the meter; underground rises from a pad transformer or pedestal with no visible span.
2. Read your meter. Note the type (analog dial or smart) and read its face: the class and form, the service rating, and its state (energized, and for a smart meter any displayed status).
3. Locate the service point, where the utility's conductors meet the premises wiring. Photograph the meter face and the service point from the ground, and record the service type, the meter type and state, and where the service point sits.

Task 3 · The panel: rating and headroom

1. Read the main disconnect rating. At your panel, with the cover on, read the ampere figure stamped on the main disconnect: the service size, the ceiling on what the home can draw.
2. Read one branch circuit's load. At an exposed working point, close the clamp meter's jaw around one insulated conductor of a single branch circuit and read the current it carries.
3. Compute the headroom. Subtract the measured current from that circuit's breaker rating; the difference is the spare capacity. Photograph the panel face and the circuit directory, and record the main rating, the breaker rating, the measured current, and the headroom.

Task 4 · Antennas and spectrum

1. Identify the antennas. Walk your block and photograph every antenna on the structure and nearby: for each, read its form (whip, panel, dish, patch) to a rough band, since a long element is low frequency and a hand-sized one is high. Form gives the band; RadioReference settles which service in that band is licensed near you.
2. Inventory the bands. With the receiver and antenna, sweep the ranges the module lists and note which bands carry traffic at the site and which are quiet. Screenshot the waterfall for any band you call occupied.
3. Identify at least three signals. For each, record its center frequency, its bandwidth (narrow or wide), and its behavior (constant or bursting), and read the three together into a call: a narrow constant carrier is a control channel, a narrow burst is voice, a wide constant is broadcast or data. Confirm the call against RadioReference for the area, or work an unknown one back to a name on the Signal Identification Wiki or Artemis.

Task 5 · Build the baseline

1. Run an occupancy capture. Record the spectrum over at least 24 to 48 hours so the daily cycle is caught, and state the window it covers rather than generalizing past it; a week is what shows weekday against weekend.
2. Consolidate. Bring every stage onto one dated record, with its photographs and screenshots attached: the power, the meter, the panel, the antennas, the signals, and the occupancy window. This is the baseline.
3. Note what a change would look like. For one item (a new signal, a load that climbs, an antenna added), write what a later reading would have to differ by to count as a change against this baseline.

Task 6 · Field notes

Keep the whole baseline together: the serving utility and feed, the meter type and state, the service point, the main disconnect rating with one circuit's breaker rating, measured current, and headroom, each identified antenna and signal with its frequency, bandwidth, and behavior, and the occupancy window with its dates. Keep any imagery, screenshots, or capture files with this sheet.

#	Task	Setting	Expected	Your Result	Pass / Fail
1	Power, open sources	Open data	utility named feed + transformer located		
2	Service + meter	From outside	service called meter read, service point located		
3	The panel	Cover on	main rating read one circuit's headroom computed		
4	Antennas + spectrum	Receiver	antennas identified to a band 3+ signals identified		
5	The baseline	Compile	24 to 48 h capture recorded one dated baseline built		