

ERCES Submittal Review Checklist

For DCSORS / AHJ Reviewer Use

Based on DCSORS Policy: ERCES Implementation Guidelines, Rev. 2.0 (effective for submittals received on/after 8/1/2025)

Project Name	
Site Address	
Unique Site ID	
Owner / Owner's Agent	
Design / Installation Contractor	
AHJ	
Reviewer Name	
Date of Review	

Submittal stage under review (check all that apply):

☐ Initial Coverage Test
 ☐ Design Submittal
 ☐ Installation / As-Built
 ☐ Acceptance Test & Final Approval
 ☐ Annual Test
 ☐ Five-Year Test

How to use this checklist: Work through the stage(s) applicable to the current submittal. Each item cites the policy section it comes from — consult that section for full detail on any item marked deficient. Record an outcome (Approved / Approved with Comments / Rejected) at the end of each stage.

STAGE 1 — Initial (Baseline) Coverage Test Review

Reference: Step 1, pp. 5–6

- ☐ Owner submitted Coverage Test Request Form to DCSORS
- ☐ DCSORS-provided frequency list and donor site(s) match what was tested
- ☐ Grid size follows Fire Code (or smaller, if Owner elected); minimum 12 samples per grid
- ☐ All floors of the facility were tested
- ☐ Pass/fail threshold applied correctly: SINR > 20 dB and FER < 2.0% across 95% of non-critical areas / 99% of critical areas
- ☐ If ERCES anticipated: over-air donor site DL control channel power, SINR, and FBER measured/documented at each candidate donor antenna (roof) location
- ☐ Test results and supporting documents uploaded to Central workspace
- ☐ Report states building completeness status and includes photos of all sides of the building
- ☐ DCSORS validated grid test results against test parameters
- ☐ AHJ ERCES-required determination documented and communicated to Owner

Stage 1 Outcome

☐ Approved	☐ Approved with Comments	☐ Rejected / Resubmit
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Reviewer notes / required corrections:

STAGE 2 — ERCES Design Submittal Review

Reference: Step 2 p.7; Appendix B (Common Submittal Requirements); Appendix C (Minimum Design Submittal Requirements)

A. Format & Common Submittal Requirements (App. B)

- ☐ All pages show project name, drawing set revision, page identifier & description
- ☐ Floor plans / elevations / area drawings include legend, graduated-ruler scale, and compass orientation
- ☐ All pages are a consistent size, per AHJ requirement
- ☐ Submittal is in PDF form; filenames include project name and filing date
- ☐ File resolution is clear (text/images legible); individual files generally under 100MB
- ☐ Any supporting source files (spreadsheets, heatmap source, etc.) are accompanied by a PDF representation
- ☐ Submittal uploaded to Central workspace

B. Cover Sheet — Project Information (App. C)

- ☐ Project name and street address
- ☐ Vicinity map showing property location
- ☐ Building description: usage, construction type, floors above/below grade, proposed square footage
- ☐ Scope of work for the ERCES project stated
- ☐ Stakeholder contacts: Property Owner, Contractor, AHJ organization name
- ☐ Proposed start/finish dates; phased or future-growth connections identified if applicable
- ☐ Document index (table of contents) included
- ☐ Submittal checklist with acknowledgement of applicable Fire Code / amendments / policies

C. Cover Sheet — Technical Information (App. C)

- ☐ Applicable public safety radio system name and band identified; full list of frequencies to be amplified
- ☐ BDA Class stated as Class A
- ☐ Donor site signal path shown on area map with both topographical (elevation) and aerial views
- ☐ Designer qualifications provided: full name, FCC GROL copy w/ signature, manufacturer design-software certification (iBwave/RANPlan/etc.), manufacturer BDA product certification, NICET Designer certification
- ☐ Installer qualifications provided: full name of lead installer, FCC GROL copy w/ signature, manufacturer BDA certification, NICET I (currently required), and note NICET II required by 1/1/2027 and NICET III by 1/1/2028 for future submittals

D. Calculations (App. C)

- ☐ Battery backup runtime calculation provided in tabular format per powered device, vs. proposed BBU capacity
- ☐ RF Link Budget — UL far-field (indoor portable → donor antenna → Donor Site)
- ☐ RF Link Budget — UL near-field (indoor portable → donor antenna → Donor Site)
- ☐ RF Link Budget — UL noise (service port antenna → Donor Site, 10kHz bandwidth)

- ☐ RF Link Budget — DL signal (rooftop donor antenna → indoor portable, near & far field); DL value based on Step 1 measured data
- ☐ RF power calculation table for each service antenna (DL power to each output)
- ☐ Composite power (multi-channel combining effect) accounted for in BDA selection

E. One-Line Drawing (App. C)

- ☐ Unique identifiers shown for active devices, antennas, RF power dividers, coax segments, and fiber layout
- ☐ Cable lengths shown for all segments
- ☐ UL and DL RF power computations shown at BDA ports and all antennas
- ☐ BDA UL & DL gains shown
- ☐ Tabular list of all unique identifiers (components and major cable segments) included

F. Layout Plan Drawings (App. C)

- ☐ Floor plans/equipment layout provided for all levels, including levels not covered by ERCES
- ☐ Active devices, service antennas, and donor antenna (location, azimuth, elevation) identified with unique IDs
- ☐ RF power dividers, coax cable routes, and fiber layout/interconnect shown
- ☐ UL and DL RF power computations shown at BDA ports and all antennas

G. RF Coverage Heatmaps (App. C)

- ☐ Computer-model-generated (iBwave or RANplan) heatmaps provided for all levels ERCES intends to cover
- ☐ Gradient in 10dB increments between -45dBm and -105dBm (wider range acceptable)
- ☐ Legend present on each page; strongest = magenta/red; below -105dBm = dark blue
- ☐ Heatmap opacity allows room numbers / area identifiers to remain legible underneath

H. Installation Details (App. C)

- ☐ Donor antenna surge protector shown, mounted as close to 24 inches of building entry point as possible
- ☐ Mounting structures shown grounded to master building ground bus
- ☐ Feed line bonding to building ground via coaxial ground kit shown at vertical-to-horizontal transition or building entry
- ☐ BDA/BBU rack- or wall-mount elevation and attachment method shown
- ☐ Typical electrical, ground, alarm, and remote-annunciator cabling details shown

I. ERCES Materials List (App. C)

- ☐ Materials list provided (manufacturer, full model number, description, quantities) for all active/passive components
- ☐ Manufacturer cutsheets/datasheets included: active components (with FCC ID#), antennas, RF dividers, coax cable, coax connectors, fiber cable/connections, contractor-provided enclosures
- ☐ Applicable part number highlighted on datasheets covering multiple part numbers
- ☐ Campus buildings: confirmed single fiber-optic-based BDA with one donor antenna and fiber-connected remote units (no multiple discrete BDAs)

J. Design & Operating Requirements Compliance (Appendix A)

- ☐ Radio Tx power assumptions correct: portable ERP +34dBm; Donor Site ERP +51dBm (130W)
- ☐ BDA operates on both 700MHz and 800MHz Public Safety bands, on the frequencies/sites DCSORS assigned

- ☐ FirstNet 700MHz channels filtered out; no unauthorized commercial wireless (cellular) use of the ERCES
- ☐ BDA is Class A (30 channels 700MHz / 30 channels 800MHz capable; filter channel delay < 20μs)
- ☐ BDA RF controls: independent gain adjustment & UL squelch per band; anti-oscillation circuitry (auto-reset up to 3x/24hr, auto-disable on 4th event, or documented manual-reset capability); adequate isolation designed; AGC present on uplink
- ☐ DL system gain designed to minimize gain while achieving -50 to -95dBm control channel target; worst-case (doors/windows closed) scenario used; no DL leakage greater than -95dBm at/near building interior perimeter
- ☐ UL system gain ≤ +65dB (or DCSORS pre-approval on file); ≤ +27dBm at BDA donor port / ≤ +37dBm ERP; signal reaches Donor Site between -100dBm and -80dBm per channel; noise ERP ≤ -43dBm/10kHz; calculated noise at Donor Site ≤ -145dBm/10kHz
- ☐ Service (DAS) antennas carry unique IDs per convention shown in drawings; UL power variation into BDA ≤ 50dB (Class A); DL power variation across antennas ≤ 6dB
- ☐ Donor antenna: 700/800MHz only; max 48° horizontal beamwidth (unless DCSORS-approved exception); placed at/near building edge facing Donor Site; approved directional design (outdoor enclosed panel, welded Yagi, or DCSORS-approved alternative)
- ☐ RF power splitters rated for maximum possible system power; unique IDs assigned
- ☐ Coax/fiber cable segments and jumpers over 6 feet carry unique identifiers
- ☐ BDA RF EPO control implemented: exterior ERFPO switch in labeled Knox Box near Fire Dept. entrance Knox Box, OR remote network-accessible control (e.g., ERRCS Response Linq) meeting 47 CFR §90.219(b)
- ☐ BDA/BBU-to-FACP alarm signaling plan covers all required alarms (donor antenna disconnect/malfunction, active RF device malfunction, system component malfunction, AC input normal, loss of AC power, loss of battery capacity, battery charger failure) with DCSORS on the notification call list
- ☐ Programming/error-log access via Ethernet supported (web browser interface preferred)
- ☐ ERCES signage plan addresses: building entrance/Knox Box notice, BDA room door notice, donor antenna mount notice

Stage 2 (Design) Outcome

☐ Approved	☐ Approved with Comments	☐ Rejected / Resubmit
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Reviewer notes / required corrections:

If approved: confirm AHJ design approval issued AND DCSORS Letter of Authorization for Provisional Retransmission issued (with Unique Site ID; expires 6 months from issue unless extended) before Owner begins construction.

STAGE 3 — Installation Review

Reference: Appendix D

- ☐ Construction matches the approved design submittal; any variance is red-lined and explained in the as-built package
- ☐ All labels are moisture-proof, indelible, legible, and properly affixed
- ☐ BDA, BBU, and ancillary enclosures show: Unique Site ID (BDA only), power panel ID & circuit branch/breaker ID, installer contact info, 24/7 building-access contact info

- ☐ Power distribution panel breaker labeled "ERCES BDA" or "ERCES BBU" as applicable
- ☐ Service antennas labeled with unique alpha-numeric ID, visible from below the antenna
- ☐ RF power dividers labeled with unique alpha-numeric ID
- ☐ Coaxial cable segments (excluding short jumpers) labeled with unique ID within 18 inches of each end
- ☐ On-site documentation location established (with main BDA, or in metallic/rigid plastic holder nearby) — to eventually contain final submittal docs, acceptance report, DCSORS Letter of Authorization, and annual test reports

Stage 3 (Installation) Outcome

☐ Approved	☐ Approved with Comments	☐ Rejected / Resubmit
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Reviewer notes / required corrections:

STAGE 4 — As-Built Submittal Review

Reference: Appendix E; Appendix B (Common Submittal Requirements apply)

- ☐ Online DCSORS ERCES As-built Form completed: project name, site address, Unique Site ID, BDA location (floor & room), make/model/serial number of all active components (BDA, BBU, remote units)
- ☐ BDA actual configuration recorded: Class A, number of filters & bandwidth(s) used per band, FCC Site Registration Number
- ☐ 24/7 building owner/manager contact and installation contractor contact provided (name, address, phone, email)
- ☐ As-built digital images provided: active components; AC power service disconnect(s); donor and service antennas; LOS path photo from donor antenna to donor site; passive coupling devices (taps/couplers/dividers); coax cable and sweep-test screenshots; fiber cable/connections (if used); contractor-provided enclosures (if used); BDA signage; BDA gain & filter settings screenshot; BDA UL noise level screenshot (10kHz resolution bandwidth, at as-built UL gain)
- ☐ All component labels are readable in the submitted images
- ☐ Full design submittal resubmitted with all changes/variances red-lined and noted
- ☐ RF calculations updated and based on actual as-built values
- ☐ Acceptance Test Report included (see Stage 5)
- ☐ Package uploaded to Central workspace

Stage 4 (As-Built) Outcome

☐ Approved	☐ Approved with Comments	☐ Rejected / Resubmit
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Reviewer notes / required corrections:

STAGE 5 — Acceptance Testing & Final Approval Review

Reference: Appendix F

Test Administration

- ☐ Test date/time coordinated in advance with both AHJ and DCSORS
- ☐ Testing performed by DCSORS, or a PCTel-certified vendor approved by DCSORS using a currently calibrated IBflex test set and DCSORS-provided portable radio
- ☐ DCSORS notified before BDA enabled / before any UL tests or tests transmitting within licensed channels
- ☐ BDA UL & DL gains set and documented (minimized while meeting signal-level requirements)
- ☐ BDA RF filter ranges per band (UL & DL) set and documented

RF Downlink (DL) Tests

- ☐ Donor Signal Verification: DL control channel signal level and SINR measured/documented at donor antenna location
- ☐ Antenna Verification with Live Signal Test performed across the DAS; any passive DAS issues noted and remediated
- ☐ Antenna Isolation test: donor-to-service antenna isolation $\geq 20\text{dB}$ or greater than BDA's max gain setting (unless DCSORS-approved otherwise)
- ☐ Exterior RF Leakage Test: measured at ground level and 3 feet from building perimeter at 4 locations (one per side); ERCES signal not less than 15dB below Donor signal at each location

RF Uplink (UL) Tests

- ☐ Uplink Noise and Channel Power Test: UL channel power & SINR recorded at Donor Site's Monitor (BDA powered on, no radio operating)
- ☐ Near/Far Test performed per floor (near-field and far-field); signal level & SINR recorded at Monitor

Non-Radio Tests

- ☐ ERCES Alarm Tests: DCSORS confirms receipt of all required FACP supervisory alarms
- ☐ BBU load test and other Fire Code-required tests performed
- ☐ All test results uploaded to Central workspace

DCSORS Validation & Final Grid Test

- ☐ BDA administrator login credentials provided to DCSORS
- ☐ DCSORS validated BDA settings, UL test results, and sample final grid test results on-site (as necessary)
- ☐ Owner performed final RF coverage grid test per Step 1 methodology

Final Approval

- ☐ AHJ review of as-built submittal complete; any required modifications/corrections noted
- ☐ DCSORS review of as-built submittal complete; any required modifications/corrections noted
- ☐ AHJ final approval document issued to Owner
- ☐ DCSORS final Letter of Authorization for Retransmission issued, including Unique Site ID (valid 1 year from grant; renewal via compliant annual inspection)
- ☐ Owner uploaded letters of approval to Central workspace
- ☐ Owner registered the Class A BDA with the FCC at signalboosters.fcc.gov

Stage 5 (Acceptance & Final Approval) Outcome

☐ Approved	☐ Approved with Comments	☐ Rejected / Resubmit
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Reviewer notes / required corrections:

STAGE 6 — Annual Testing Review

Reference: Appendix G

- ☐ Test date/time coordinated in advance with AHJ and DCSORS
- ☐ Testing performed by DCSORS, or a PCTel-certified vendor approved by DCSORS using calibrated IBflex equipment and DCSORS-provided radio

Report Format

- ☐ Cover page includes: site name/address/Site ID, inspection date(s), Owner contact info, testing company name/address, tester's name/contact/FCC GROL number, BDA manufacturer certification, applicable NICET/ETA certification, test equipment make/model/software version/calibration date, applicable Fire Code reference
- ☐ Test results pages included

Testing Performed

- ☐ Testing performed per the "Owner Performs the Tests" procedures in Appendix F (Acceptance Testing)
- ☐ DL power and DAQ (SINR) test performed under each service antenna; compared to original acceptance grid results; any antenna differing by more than 3dB SINR flagged
- ☐ Visual inspection of visible passive components performed; unusual conditions or repair needs noted
- ☐ BDA configuration observed and recorded (UL & DL gains, center channels, transmit power, passbands, RF filters) and compared to original results; differences noted
- ☐ Grid tests performed if instructed by Fire Code
- ☐ Test results uploaded to Central workspace and submitted to AHJ per AHJ requirements

Acceptance

- ☐ AHJ and DCSORS evaluated results for compliance; any deficiencies addressed by Owner
- ☐ DCSORS final Letter of Authorization for Retransmission issued (Unique Site ID; valid 5 years from grant, renewable via 5-year inspection)
- ☐ Noted: DCSORS retains right to request annual inspection reports at any time; non-compliance may result in revocation
- ☐ On-site documentation records updated with DCSORS approval letter

Stage 6 (Annual) Outcome

☐ Approved	☐ Approved with Comments	☐ Rejected / Resubmit
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Reviewer notes / required corrections:

STAGE 7 — Five-Year Testing Review

Reference: Appendix H

- ☐ All Annual ERCES Testing requirements (Appendix G) followed, including report format
- ☐ Testing performed per "Owner Performs the Tests" (Appendix F)
- ☐ RF coverage grid test performed per Step 1 methodology WITH the BDA powered ON
- ☐ RF coverage grid test performed per Step 1 methodology WITH the BDA powered OFF; report specifically notes whether the building meets signal level, SINR, and BER acceptance criteria without ERCES
- ☐ AHJ evaluated test results and communicated acceptance decision to Owner via Central workspace
- ☐ AHJ letter of approval issued
- ☐ DCSORS final Letter of Authorization for Retransmission issued (valid 1 year from grant; subsequent renewal via compliant annual inspection)
- ☐ On-site documentation records updated with DCSORS approval letter

Stage 7 (Five-Year) Outcome

☐ Approved	☐ Approved with Comments	☐ Rejected / Resubmit
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Reviewer notes / required corrections:

Cross-Cutting Reminders (All Stages)

- ☐ System is not left powered-on with donor antenna connected outside of testing hours until final approval is issued (except for testing during regular business hours)
- ☐ All ERCES-related correspondence directed to ERCES@dcsheriff.net
- ☐ Any discrepancy between Fire Code and this policy is raised with both AHJ and DCSORS rather than resolved unilaterally
- ☐ Confirm whether the AHJ for this project requires additional permits or an additional plan-submittal portal beyond Central