

Multiple Choice Exam Objectives

The following chart provides the breakdown of the exam as to the distribution of questions within each knowledge domain.



Knowledge Domain	Percentage
Ekahau Tools & Methodology	3
Standards & Regulations	3
RF Fundamentals	8
Modulations & Spectrum	3
Wi-Fi Channels & Power Levels	5
Association & Roaming	5
Contention	9
Wi-Fi Security	3
Wi-Fi Predictive Design	30
Wi-Fi Validation Surveys	28
Ekahau Reporting	3

Ekahau Tools & Methodology - 3%

- ✔ Identify and use Ekahau Tools
 - + Ekahau AI Pro Online (AIPO)
 - + Ekahau Connect Suite
 - + Ekahau Sidekick 2
 - + File formats (ESX)

- ✔ Explain Ekahau Guide to Wi-Fi: Design & Optimize

Standards & Regulations - 3%

- ✔ Explain the role of industry organizations
 - + IEEE & Wi-Fi Alliance

- + Regulatory Domains & Bodies

- + OSI & TCP / IP layer models

- ✔ Explain IEEE 802.11-2024 PHYs

- + 802.11 Prime

- + 802.11a

- + 802.11b

- + 802.11g

- + 802.11n

- + 802.11ac

- + 802.11ax

- + 802.11be

RF Fundamentals - 8%

- ✔ Explain RF fundamentals

- + Sine waves

- + Wavelength & frequency

- + Amplitude & Phase

- + Noise, Interference & SNR

- + Inverse Square Law (ISL)

- + Free Space Path Loss (FSPL)

- ✔ Understand how to measure wall attenuation

- ✔ Understand units used in Wi-Fi and dB math
 - + dB vs mW
 - + Rules of 3s and 10s

Modulations & Spectrum - 3%

- ✔ Understand modulation types
 - + Amplitude & Phase Based
- ✔ Understand modulation constellations
 - + BPSK
 - + QPSK
 - + QAM
 - + EVM
- ✔ Understand Air Time
- ✔ Understand spread spectrum
 - + DSSS
 - + OFDM
 - + OFDMA
 - + FHSS

Wi-Fi Channels & Power Levels - 5%

- ✔ Explain Multiple Input Multiple Output (MIMO) operations
 - + Spatial Multiplexing
 - + TxBF
 - + MRC
- ✔ Understand channels aggregation
- ✔ Explain Modulation and Coding Schemes (MCS) table
- ✔ Understand Wi-Fi channels & power levels
 - + 2.4, 5 & 6 GHz channels allocation
 - + 5 GHz DFS
 - + 6 GHz devices classification
 - + 6 GHz AFC
 - + 6 GHz PSD

- ✔ Explain channel planning across all 3 bands
 - + CCI
 - + ACI

Association & Roaming - 5%

- ✔ Explain association basics
 - + 802.11 MAC frame types
 - + Association vs re-association
- ✔ Understand Wi-Fi Discovery
 - + Passive & active
 - + In-band & out of band
 - + Wi-Fi discovery in 2.4, 5 and 6 GHz bands
- ✔ Explain association and reassociation decision making process
- ✔ Explain association / reassociation process and improvements
 - + Association process
 - + 802.11r
 - + 802.11k
 - + 802.11v

Contention - 9%

- ✔ Explain channel contention
 - + Channel co-location & frequency reuse
 - + Radio Tx power impact on channel contention
 - + Distributed Coordination Function (DCF) aka "The Game"
 - + Design for Least Capable Most Important (LCMI) device
- ✔ Explain interference impact on channel contention
 - + Cross-Channel Interference (CCI)
 - + Adjacent-Channel Interference (ACI)
 - + Non-Wi-Fi interference
 - + Noise

- + Attenuation
- + Reflection
- + Multipath
- + Refraction
- + Scattering
- + Diffraction
- ✔ Explain network load impact on contention
 - + Calculate capacity requirements realistically

Wi-Fi Security - 3%

- ✔ Explain Wi-Fi security options and identify which ones should not be used in enterprise Wi-Fi
 - + Open
 - + WEP
 - + WPA
 - + WPA2
 - + WPA3
 - + OWE
 - + MFP
- ✔ Understand Ekahau Survey Security Visualizations
 - + Locate and remove rogue and interfering APs
 - + Locate and remove RF interferers
 - + Identify weak security

Wi-Fi Predictive Design - 30%

- ✔ Understand steps required to prepare the project for Wi-Fi design using Ekahau AI Pro
 - + Set regulatory domain
 - + Import floor plans
 - + Scale
 - + Draw and manipulate walls and attenuation areas
 - + Create building
 - + Align floors

- + Specify inclusion and exclusion areas
- + Use areas nesting
- + Use holes in the floors
- ✔ Understand design visualizations
 - + Primary coverage
 - + Secondary coverage
 - + SNR
 - + Channel interference
 - + Data rate
 - + Throughput
- ✔ Understand antenna fundamentals
 - + Gain
 - + Beamwidth
 - + Polarization
 - + Frequency response
 - + Coverage pattern
 - + Reading antenna data sheets / charts
 - + EIRP
 - + Isotropic Radiator
- ✔ Use Ekahau AIPO for manual predictive design
 - + Choosing relevant AP and antenna type
 - + Using omnidirectional and directional antennas
 - + Setting antennas height, direction and tilt
 - + Setting radio Tx power
- ✔ Use Ekahau AIPO Auto-Planner for automatic predictive design
 - + AIPO AP Auto-Planner
 - + Channel Planner

- ✔ Understand how to capture business and technical requirements and translate them into RF requirements to design or survey against
 - + Business requirements
 - + Technical requirements
 - + RF requirements
- ✔ Design Wi-Fi against different requirements
 - + Small office
 - + Hospitality
 - + Large office - coverage
 - + Large office - high capacity
 - + Warehouse

Wi-Fi Validation Surveys - 28%

- ✔ Explain when and how to use different types of surveys
 - + Wi-Fi Design Survey
 - + Pre-Deployment Survey (AP on a Stick)
 - + Post-Deployment Survey
 - + Periodic Health Survey
 - + TShooting / Assessment Survey
- ✔ Explain when and how to use different types of survey data collection with both Ekahau AIPO and Ekahau Survey
 - + Stop and Go
 - + Continuous
 - + Autopilot
 - + Just Go
 - + GPS
- ✔ Understand the difference between active and passive surveys
 - + Passive site survey
 - + Active site survey

- ✔ Demonstrate ability to perform Wi-Fi site surveys
 - + Ekahau 5 Tips for Super-Accurate Wi-Fi Site Surveys
- ✔ Understand Ekahau Cloud
 - + Ekahau Optimizer
 - + Optimize Existing Wi-Fi Superflow: Just Go + Optimizer
- ✔ Use advanced Ekahau AIPO features
 - + 3D model
 - + Sloped floors / steps / seats
- ✔ Demonstrate ability to analyze survey and live 802.11 data
 - + Analyzing survey data with Ekahau AIPO
 - + BSSID
 - + Analyzing survey data with Ekahau Optimizer
- ✔ Demonstrate ability to use analyze spectrum data
 - + Types of RF interferers
 - + Analyzing live RF conditions with Ekahau AIPO and Sidekick 2
 - + Analyzing live RF conditions with Ekahau Analyzer and Sidekick 2
 - + Channel utilization measured by a spectrum analyser vs reported by a Wi-Fi network card
 - + Spectrum analysis density vs waterfall views
- ✔ Understand packet capture
 - + 4-channels capture with Sidekick 2 and Ekahau Analyzer

Ekahau Reporting - 3%

- ✔ Demonstrate ability to use AIPO reporting tools
 - + template reporting
 - + guest sharing