

Studio Test Keno

Multi.Bingo Keno · Tier stake · Cert Pack v1

Tier	stake
Cycle	90 seconds per round
Number pool	1..80
Balls drawn	20
Player picks	1..10
Denom	100 cents

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1. Game mechanics — Studio Test Keno

Players select 1 to 10 numbers from a pool of 80. Every 90s, the engine draws 20 balls deterministically from the RGS service. Players are paid according to the per-pick-count payable based on matches (hits) between their picks and drawn balls.

2. Cycle protocol

Each cycle (round) of **90s** has 3 phases: **sale** (bet acceptance), **countdown** (10s lock), **draw + settle** (1-2s). The `cycle_id` is monotonic per room. ball-draw seed comes from `multibingo-rng:9443` with `RNG_STRICT=true`.

3. RTP & payable

Per-pick-count paytables persisted in `keno_rooms.paytable_json`. RTP varies by pick count (typical 88-92% for state lotteries, 95-98% for crypto/iGaming tiers). Full payable JSON available via `GET /api/keno/rooms/studio-test-keno/paytable`.

4. Audit chain (K.A.R. (h) compliance)

Each round records: `round_id`, `seed_hash`, `drawn_balls`, `ball_sequence_hash`, `merkle_root_of_all_bets`. Ed25519-signed (key ID `d651f1b9f793f40d`). Daily Merkle anchor spans Keno + Bingo + iLottery rounds, WORM-locked in PG + S3 Object Lock.

5. Verifier endpoints

```
GET /api/keno/rooms/studio-test-keno/state
GET /api/keno/rooms/studio-test-keno/paytable
GET /api/keno/draws/:draw_id/audit
GET /api/ilottery/audit/public-key (shared signing key)
GET /api/ilottery/merkle/proof/:bet_id (cross-vertical Merkle)
```

6. Operator Ed25519 public key

```
-----BEGIN PUBLIC KEY-----
MCowBQYDK2VwAyEAU2k0zXnm09QHduKLSEQYUAFeACAEOTUceEuirGLSiXs=
-----END PUBLIC KEY-----
```