

# MeshCom Command System Manual

## 🎯 Target Syntax

`!COMMAND TARGET`

Examples: `!WX DK9AAA-1` or `!TIME 2050`

No target = local execution

## 🚀 Execution Types

Local: Execute on your node, send result

Remote: Send command to target node

Group: Send to numbered group (1-99999) or TEST

## 🔥 Admin Override

Node admin (YOUR-CALL base) can always execute group commands

Example: DK9AAA-99 can override group response settings

Others need group responses enabled

## 🌟 Basic Commands

### `!wx / !weather`

Get current weather data from server location (configured in config.json)

`!wx` - Local weather  
`!wx DK9AAA-1` - Request DK9AAA-1's weather  
`!weather 2050` - Send weather to group 2050

### `!time`

Show current date and time in German format

`!time` - Local time  
`!time OE8BBB-5` - Request OE8BBB-5's time  
`!time TEST` - Send time to TEST group

### `!dice`

Roll two dice with Mäxchen (21) rules and sorting

`!dice` - Local dice roll  
`!dice W1CCC-12` - Request W1CCC-12's dice  
`!dice 1234` - Send dice to group 1234

🕒 **Throttled: 5 seconds**

### `!help`

Show available commands summary

`!help` - Local help  
`!help DK9AAA-1` - Request DK9AAA-1's help

### `!userinfo`

Display node information from server config (USER\_INFO\_TEXT)

`!userinfo` - Local info  
`!userinfo OE8BBB-5` - Request OE8BBB-5's info

## 👑 Admin Commands

⚠️ **Admin Only: Only node admin (YOUR-CALL base) can use these commands**

### `!group on|off`

Control whether node responds to group commands from non-admins

`!group on` - Enable group responses  
`!group off` - Disable group responses  
`!group` - Show current status

🕒 **Throttled: 5 seconds**

### `!kb [callsign] [action]`

Manage blocked callsigns (kick/ban system)

`!kb` or `!kb list` - Show blocked callsigns  
`!kb OE8BBB-5` - Block callsign OE8BBB-5  
`!kb OE8BBB-5 del` - Unblock OE8BBB-5  
`!kb delall` - Clear all blocked callsigns

### `!topic [group] [text] [interval]`

Manage automatic beacon messages to groups

`!topic` - List active beacons  
`!topic 2050 "Net every Sunday 20:00" interval:60`  
`!topic delete 2050` - Stop beacon for group 2050

📡 *Beacon interval: 1-1440 minutes (actual = interval - 10s)*

## 🔧 Network & Advanced Commands

### `!ctcping [target] call:TARGET [payload:N] [repeat:N]`

Technical ping test with roundtrip time measurement

🐛 How it works:

- Echo Detection: Outgoing message gets `{123}` suffix
- ACK Response: Target responds with `CALL :ack123`
- RTT Calculation: Time from echo to ACK reception
- Timeout: 30 seconds per ping
- Wait Time: 20 seconds between consecutive pings

`!ctcping call:DK9AAA-1` - Simple ping test  
`!ctcping call:OE8BBB-5 payload:80 repeat:3`  
`!ctcping target:W1CCC-12 call:DK9AAA-1` - Delegate to W1CCC-12

Parameters:

- `call:` Target to ping (required)
- `payload:` Message size 1-140 bytes (default: 20)
- `repeat:` Number of pings 1-5 (default: 1)
- `target:` Delegate execution to another node

### `!search call:CALL [days:N]`

Search message history by callsign and timeframe

`!search call:DK9AAA` - Search DK9AAA-\* (7 days)  
`!search call:OE8BBB-5 days:3` - Exact match, 3 days  
`!s call:W1CCC days:1` - Short form, 1 day

### `!stats [hours:N]`

Show message and position statistics

`!stats` - Last 24 hours  
`!stats hours:12` - Last 12 hours  
`!stats hours:168` - Last week

### `!mheard [type:all|msg|pos] [limit:N]`

Show recently heard stations with timestamps

`!mheard` - Last 5 stations (all types)  
`!mheard type:msg limit:10` - Messages only  
`!mh type:pos limit:3` - Positions only

### `!pos call:CALL [days:N]`

Show position data for specific callsign

`!pos call:DK9AAA-1` - Last 7 days  
`!pos call:OE8BBB days:3` - Last 3 days  
`!pos call:W1CCC-12 days:1` - Last 24 hours

## 🚫 Prohibited Actions

- Commands to `*` (ALL) - always blocked
- Commands to `ALL` - always blocked
- Commands to empty destination
- Self-blocking via `!kb`
- Beacon text over 120 characters
- CTCPING payload over 140 bytes

## 🕒 Throttling Rules

- Fast commands: `!dice`, `!time`, `!group` - 5 seconds
- Standard commands: All others - 5 minutes
- Same command + args: Content-based throttling
- Message deduplication: 5 minutes by `msg_id`

## 🛡️ Abuse Control

- Failed attempts: 3 within 5 minutes
- Penalty: 25 minutes timeout
- Triggers: Invalid commands, parsing errors
- Notification: One-time timeout message
- Reset: Automatic after timeout expires

## 💡 Tips:

- Commands are case-insensitive when sent
- Group responses can be controlled by admin
- Use `!help` for quick command reference

