

Garmin MDX Map Index

File Format

Herbert Oppmann

herby@memotech.franken.de

<http://www.memotech.franken.de/FileFormats/>

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Garmin MDX Map Index File Format

Filename extension *.mdx

Mdx is a translation table between internal map ID and *.img file names (taken from [1]).

Mdx files tell Mapsource / Basecamp which img files to use (taken from [2]).

This documentation is based on own research and the sources listed in the references section.

Basic data types

All values are serialized in little-endian byte order (least significant byte first).

Type	Length	Description
char	1	ASCII character, see [5]
byte	1	8 bit unsigned integer (range 0 .. 255)
ushort	2	16 bit unsigned integer (range 0 .. 65535)
uint	4	32 bit unsigned integer (range 0 .. 4294967295)

Version:

A byte or ushort where the value is calculated as major version x 100 + minor version.

E.g. 0x0064 = 100 = V1.0

General file structure

Header
List of Records (without holes)

Header

Type	Content
char[4]	Signature = "Midx"
ushort	Format version Seen value: V1.0
uint	Fixed length of each Record Seen value: 12
uint	Number of following Records

Record structure

Type	Content
uint	Map ID
ushort	Product ID
ushort	Family ID
uint	Map name (file or directory name)

References

Used sources of information

- [1] <https://www.gpspower.net/garmin-tutorials/129303-garmin-mapsource-app-mdr-img-app-img-app-mdx-app-tdb.html>
- [2] <https://www.pinns.co.uk/osm/garmin.html>
- [3] <https://www.pinns.co.uk/osm/docs/MDX%20File%20Structure.pdf>
- [4] <http://www.mkgmap.org.uk/download/mkgmap.html>, source directory
src\uk\me\parabola\imgfmt\mdxfmt

Standards and specifications

- [5] ISO/IEC 646:1991, Information technology – ISO 7-bit coded character set for information interchange

Sources of sample files

- [6] Arizona Topo Map <https://www.gpsfiledepot.com/maps/view/1/>
- [7] Desert Southwest Map <http://www.gpsfiledepot.com/maps/view/518/>
- [8] Moscow routing map <http://garminmap.narod.ru/>