

Garmin BIN Firmware

File Format

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Garmin BIN Firmware File Format

Filename extension *.bin

This type of firmware files is encountered only embedded in GCD and RGN firmware update files.

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
byte	1	8 bit unsigned integer (range 0 .. 255)
ushort	2	16 bit unsigned integer (range 0 .. 65535)
int	4	32 bit signed integer (range -2147483648 .. 2147483647)
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

In the following, Offset means the distance from the beginning of the file to where something is located. Address means the address of something in memory in the device, after the file content has been loaded starting with the LoadAddress. So to find out where an address points to with regard to the file, one has to subtract the LoadAddress to get an offset. Problem: The LoadAddress is not explicitly stated in the file. See below for an heuristic to find out the LoadAddress. The LoadAddress is normally an “even” address, i.e. a multiple of 0x10000.

General file structure

Type	Content
uint	ARM branch instruction (four possible), see [5].
uint	End address. Points to the end pattern, but not to the first byte. It points to the third byte, the 0x5A.
uint	HWID address. Points to the ushort containing the hardware identification (see below).
uint	SWVersion address. Points to the ushort containing the software version.
Zero to two additional int/uint values, depending on the exact branch instruction.	
Code ...	
8 byte	End pattern: 0xFF 0xFF 0x5A 0xA5 0xFF 0xFF 0xFF 0xFF
Optional: Filler ... (usually 0x00 or 0xFF up to the next multiple of 0x100). The last byte is a checksum byte, so that the 8-bit sum over all bytes of the firmware file (including the checksum byte itself) results in 0x00.	

Jump variant 1a

Type	Content
uint	0xE59FF008 = ldr pc, [pc, #8]
uint	End address
uint	HWID address
uint	SWVersion address

Type	Content
uint	Entrypoint (address of first instruction, which is directly following this field)

Jump variant 1b

Type	Content
uint	0xE59FF008 = ldr pc, [pc, #8]
uint	HWID address
uint	SWVersion address
uint	End address
uint	Entrypoint (address of first instruction, which is directly following this field)

If the first two addresses are only different by 2 (HWID and SWVersion are adjacent), I detect variant 1b, else 1a.

Jump variant 2

Type	Content
uint	0xE59FF00C = ldr pc, [pc, #12]
uint	End address
uint	HWID address
uint	SWVersion address
int	if <0, it is the negative value of the LoadAddress else, it is an offset to the string 'LEND'
uint	Entrypoint (address of first instruction, which is directly following this field)

Jump variant 3

Type	Content
uint	0xEA000002 = b +8
uint	End address
uint	HWID address
uint	SWVersion address

Jump variant 4

Type	Content
uint	0xEA000003 = b +12
uint	End address
uint	HWID address
uint	SWVersion address
uint	Unknown offset or length

How to determine the LoadAddress:

For jump variants 1 or 2, take the EntryPoint address and subtract the offset of the byte directly following it, i.e. subtract 20 for jump variant 1 and 24 for jump variant 2.

For jump variants 2 or 3, search for the end pattern backwards from the end. Subtract the offset of the byte 0xA5 from the End address to receive the LoadAddress.

HWID (hardware identification) values (see [3] and [4])

Value	Device
849	Marine Software - OTA
1014	
1218	
1454	
1610	
1634	
1666	
1668	
1998	
2096	
2101	
2426	
2427	
2428	
0	?
111	eMap
128	GPSMAP 295
130	eTrex
136	GPSMAP 176
141	eTrex Summit
144	GPSMAP 176C
145	GPSMAP 196
151	StreetPilot III
154	eTrex Venture/Mariner
155	GPS V
156	eTrex Camo/Euro
168	Navtalk GSM
169	eTrex Vista, rev A
173	GPS 76 Rev A
177	GPSMAP 76 Rev. A
179	eTrex Legend Rev A
194	GPSMAP 76S Rev. A
197	Rino 110
209	Rino 120
210	StreetPilot 26xx
231	Quest
247	GPS 72 Rev A
248	Geko 201
256	Geko 301
260	GPSMAP 296
264	Rino 130/120/110
273	GPS 18
282	Forerunner 201
283	Forerunner 301
285	GPSMAP 276C
289	GPS 60
291	GPSMAP 60C/60CS/76C/76CS
292	GPSMAP 60Cx/60CSx/76Cx/76CSx
294	?
308	GPSMAP 60
314	Foretrex 101/201

Value	Device
315	eTrex Legend C/Vista C
381	Rino 520/530
382	StreetPilot c320/c330
384	?
402	GPSMAP 396
404	StreetPilot 27xx
406	GPSMAP 376C
410	GPSMAP 276C Plus
411	eTrex Legend Rev B
412	StreetPilot 7200/7500
420	eTrex Vista, rev B
421	eTrex Legend Cx/Vista Cx/Venture Cx
426	Firmware Update for GXM30 Receiver
429	StreetPilot i3
430	GPS 72 Rev B
439	GPSMAP 76 Rev. B
444	GPS 76 Rev B
450	Edge 205/305
463	Quest2
476	nuvi 300/350
478	GPS Chipset Type G
481	StreetPilot c340
484	Forerunner 205/305
497	StreetPilot c310/c320/c330
505	StreetPilot i3/i5
520	StreetPilot 2820
529	?
530	?
532	StreetPilot i2
537	?
539	StreetPilot c5xx
550	KNAG 520
553	Firmware Update for c550 Bluetooth Module (GCD file)
557	GPSMAP 378
558	GPSMAP 478
566	nuvi 310/360/370
570	Astro 220
574	Geko 201/301
577	Rino 520HCx/530HCx
580	zumo 4xx/5xx (GCD File)
583	Firmware Update for STP2820 / BMW Navigator III Bluetooth Module
584	GPSMAP 76S Rev. B
585	GPSMAP 278
595	GPSMAP 496
596	nuvi 6xx
601	StreetPilot c5xx, Smart
602	StreetPilot c5xx, Mopar
603	StreetPilot c5xx, Mercedes
604	?
605	?
606	?
607	?

Value	Device
609	Rino 520 Australia
617	GPS Chipset Type G2
625	Edge 605/705
651	DNX 7100
654	?
660	nuvi 2xx
661	Colorado
665	?
666	?
670	?
672	nuvi 350 Toyota DIO
673	nuvi 360 MINI
675	nuvi 360 BMW3
680	GPS Chipset Type B
681	nuvi 350 Honda Access
682	nuvi 360 Honda Access (WebUpdater)
683	nuvi 350 Toyota PIO
689	DC20, DC30, DC40
694	eTrex Legend HCx/Vista HCx
695	eTrex Summit HC/Venture HC
696	eTrex H
697	BMW Motorrad Navigator III plus
698	Zumo BMW
711	Zumo Honda (WebUpdater)
721	?
723	nuvi 5xx
725	?
726	nuvi 8xx
732	StreetPilot c5xx, Mercedes Phase2
733	GPS Chipset Type M
737	nuvi 2xxW
739	GPS Chipset Type M2 (Region File)
743	Nuvi 5000
745	GPSMAP 695/696
751	KNAG 520
754	nuvi 7xx (GCD file)
757	?
774	?
775	GPS Chipset Type B (Region File)
781	GPS 17x HVS
786	eTrex Venture HC/Summit HC
788	nuvi 7x0, Mercedes/Smart (GCD File)
793	?
794	?
795	Oregon
796	GPS 18x PC/LVC, GPS 16x
800	DNX 5, DNX 7X20, DNX 8X20
811	GPS 18x USB, GPS 20x USB
814	nuvi 900T (update.rgn file)
815	?
827	nuvi 2x5W (GCD File)
832	GPSMAP 6x0 (WebUpdater)

Value	Device
834	nuvi 2xx (WebUpdater)
835	nuvi 2xxWide
836	nuvi 760 TWN (WebUpdater GCD file)
851	nuvi 2x5 (GCD File)
853	StreetPilot C5XX Cendant-Avis Australia
855	nuvi 300/350 (region file only - MLC)
856	nuvi 310/360/370 (region file only - MLC)
861	GolfLogix Black
862	GXM40 Software
865	GPS 18x 5Hz
869	?
870	nuvi 7x5 (GCD File)
887	GPSMAP 495
896	Oregon x50 (WebUpdater)
897	Colorado TWN (Webupdater GCD file)
901	Firmware Update for GTMxx Traffic Receiver Type 3
903	?
913	Aera GPS Software
917	?
918	?
919	?
920	?
921	?
923	?
924	zumo 660 (GCD File)
932	nuvi 2x5W TWN (WebUpdater GCD file)
936	?
937	?
943	nuvi 465T (GCD File)
951	?
954	?
955	?
956	Honda Navi Gen 3
960	Dakota (WebUpdater)
969	Firmware Update for FMI Cables with Traffic
970	Mount Software
971	nuvi 12xx (GCD File)
972	nuvi 13xx and 14xx series (GCD File)
974	?
977	Firmware Update for Bluetooth
978	nuvi 7x5 DSP Software
979	GPS Chipset Type M3
983	Oregon TWN (Webupdater GCD file)
988	FR60
1005	Approach G5 (WebUpdater)
1007	nuvi 765 TWN (WebUpdater GCD file)
1015	?
1018	Forerunner 310XT
1020	Foretrex 301/401 (WebUpdater)
1033	zumo 66x Echo Cancellation Software
1036	Edge 500
1046	nuvi 16xx NA

Value	Device
1058	Nuvi 5xx TWN (Webupdater GCD file)
1059	GPS Chipset Type M3 (Region File)
1073	Firmware Update for ecoRoute HD
1074	nuvi 2x5 (GCD File - MTK)
1091	nuvi 2x5W (GCD File - MTK)
1095	GPS 72H (for WebUpdater)
1096	?
1101	nuvi 37xx (GCD File)
1103	Nuvi 13xx, TWN (GCD file only)
1104	nuvi 13xx and 14xx series (GCD File - MTK)
1106	nuvi 12xx (GCD File - MTK)
1113	GPSMAP 62/78 (WebUpdater)
1114	?
1120	Oregon x50 TWN (Webupdater GCD file)
1124	Forerunner 110
1128	Aera DSP Software
1136	Approach G3 (WebUpdater)
1137	Nuvi 1480 TWN (Webupdater GCD file)
1138	zumo 2x0 (GCD File)
1142	Oregon 550,Thai (GCD file)
1147	zumo 665 (GCD File)
1155	DNX 7x60
1156	nuvi 16xx AU
1157	nuvi 16xx CA
1161	Nuvi 16xx TWN (GCD file only)
1169	Edge 800
1186	nuvi 22xx (GCD File)
1187	nuvi 23xx (GCD File)
1188	nuLink 1695 (GCD file only)
1159	GPSMAP 585
1196	nuvi 1490TV (GCD File)
1201	GTU 10 US
1204	Dakota TWN (Webupdater GCD file)
1209	Oregon 550,Korea (GCD file)
1211	Firmware Update for Touchscreen Module - Nuvi 37xx
1213	Edge 500, JPN (GCD file)
1247	Rino 6xx (WebUpdater)
1250	Forerunner 410
1252	Oregon 450tc, Japan (GCD file)
1254	nuLink 23xx (GCD File)
1258	nuvi 35xx (GCD File)
1259	Nuvi 37xx, Taiwan (GCD file only)
1264	Forerunner 210
1266	Nuvi 2585 TWN
1269	dezl 560 (GCD file)
1271	Approach S1 (WebUpdater)
1273	nuvi 24xx (GCD File)
1275	Montana (WebUpdater)
1301	GPSMAP 62SJ, Japan (GCD file)
1304	eTrex 10 (Webupdater)
1305	eTrex 20/30 (Webupdater)
1318	?

Value	Device
1320	?
1325	Edge 200
1328	Forerunner 910XT
1331	GTU 10 EU
1334	Edge 800,JPN (GCD file)
1339	Astro 320
1340	GPSMAP 62sc/62stc (WebUpdater)
1343	GDL 39
1344	GTU 10 CA
1345	Forerunner 610
1349	nuvi 30 (GCD file)
1350	nuvi 40 and 50 (GCD file)
1353	GPSMAP 62S, Korea (GCD file)
1354	GPSMAP 62S/78S, Thai/Indonesia (GCD file)
1371	nuvi 24x5 and 25x5 (GCD File)
1376	nuvi 34xx (GCD File)
1379	GPS Chipset Type M3 (Aviation)
1381	Vector
1389	Nuvi 2585LT EU
1392	GPS 19x HVS
1400	DC20, DC30, DC40
1405	Approach G10
1412	?
1413	?
1422	Edge 500, Korea (GCD file)
1429	Montana 650t, Taiwan (GCD file)
1431	Montana Korea (GCD file)
1441	nuvi 3595,JPN
1443	Nuvi 40/50 CHN (Webupdater GCD file)
1445	nuvi 2495 LT GLONASS (GCD File)
1446	Forerunner_310XT
1452	Approach G6
1461	UAT 163
1463	Nuvi 2585 Russia (.rgn file)
1469	Approach S3
1471	eTrex 20/30 JPN, System (GCD file)
1472	eTrex 10 JPN, System (GCD file)
1473	zumo 3x0 (GCD File)
1475	fleet 590 U.S.
1482	Forerunner 10
1484	GPS Chipset Type M4
1485	GPS Chipset Type M4 (Fitness Region File)
1490	GLO
1497	Edge 800,KOR (GCD file)
1498	eTrex 20/30 SEA, System (GCD file)
1499	Garmin Swim
1504	eTrex 10 SEA, System (GCD file)
1506	Nordic Rino 650 (WebUpdater)
1510	Nuvi 40/50, Taiwan (GCD file only)
1516	dezl 760 (GCD file)
1517	nuvi 27x7 and 27x8 (GCD File)
1525	Oregon 550 CHN Recreation (GCD file)

Value	Device
1532	GPSMAP62sc CHN Recreation (GCD file)
1533	GPSMAP62sc Japan, System (GCD file)
1535	Nuvi2580 South America (GCD file only)
1536	Oregon550tc, Japan (GCD file)
1537	Forerunner 910XT, China
1541	BMW Motorrad Navigator V
1545	TT 10
1546	Firmware Update for GTMxx Digital Radio Type S
1550	Zumo 660 Taiwan (GCD file only)
1551	fenix/D2/tactix
1555	Edge 200 Taiwan
1556	eTrex 20/30 China (GCD file)
1561	Edge 510
1562	Alpha 100
1563	Nuvi 3595 TWN
1566	Garmin Swim Strings
1567	Edge 810
1582	nuvi 2xx7 and 2xx8
1587	Rino 6xx, China (GCD file)
1594	eTrex 20/30 Taiwan (GCD file)
1595	nuvi 140/150 (GCD File)
1597	Approach S3, APAC (GCD file)
1599	GPSmap 62stc System, Taiwan (GCD file)
1600	ForeAthlete 910XTJ, Japan
1603	nuvi 35x7 and 35x8 (GCD File)
1611	?
1613	nuvi x2 and x4 (GCD File)
1617	Nuvi c155/c165/c175, China (GCD file only)
1619	GPS Chipset Type M5
1620	GPS Chipset Type M5 (Fitness Region File)
1621	GPS Chipset Type M5 (1621)
1623	Forerunner 620
1624	GPS Chipset Type M426 (Rec)
1628	Garmin HUD
1630	Forerunner 620/920, Wi-Fi
1632	Forerunner 220
1635	Montana 650t, China (GCD file)
1649	Approach S2
1651	Oregon 6x0 (WebUpdater)
1664	Forerunner 910XT, Korea
1665	?
1667	?
1676	Fenix China (GCD file)
1677	Fenix System, Japan (GCD file)
1678	Fenix System, Korea (GCD file)
1679	Fenix Taiwan (GCD file)
1688	ForeAthlete10J
1689	GPS Chipset Type M426 (Fitness Region File)
1692	quatix
1696	DC 50
1697	nuvi 55/56
1708	fleet 590 EU

Value	Device
1711	Nuvi2795 South America (GCD file)
1712	Nuvi 42/52, SGMY (GCD file)
1714	Nuvi 42/52, Taiwan (GCD file only)
1716	Monterra
1719	GPSMAP 62sc System, SEA (GCD file)
1721	Edge 810, Japan (GCD file)
1723	Nuvi 3590 CHN
1724	Nuvi 3592,SG/MY
1725	Nuvi 3592 THAI
1726	Monterra Outdoor Software
1730	RV and Camper 760
1731	Nuvi 3590 TWN
1735	VIRB
1736	Edge Touring (GCD file)
1739	GPSMAP 629sc System, CHN (GCD file)
1740	Nuvi 1690 lite, Taiwan (GCD file only)
1741	eTrex 20S, System, SG (GCD file)
1742	Edge 510, Japan (GCD file)
1744	?
1749	nuvi 65/66
1758	nuvi 25x9
1765	Forerunner 920XT
1766	Nuvi 42/52, India (GCD file only)
1769	SIRIUS/XM Weather Support File
1772	nuvi 26x9
1786	GPS 18x PC/LVC, GPS 16x 1786
1796	zumo 590
1798	?
1811	Approach S4
1817	UAT-1817
1820	eTrex 209/309 System, China (GCD file)
1821	Edge 510 China & Taiwan (GCD file)
1822	Edge 810 China (GCD file)
1823	Edge 810, Taiwan (GCD file)
1829	?
1836	Edge 1000
1837	vivofit
1842	Approach G7 / UAT-1842
1843	Oregon6xx System, SEA (GCD file)
1850	Forerunner 620/220, Display
1851	Forerunner 620/220, ANT
1854	?
1857	Oregon6xx System, JPN (GCD file)
1859	GPSMAP 64 (WebUpdater)
1875	?
1876	Rino 6xx, Korea (GCD file)
1884	nuvi 2798
1885	vivoki
1888	?
1891	Approach S2J (GCD file)
1895	Monterra, GPS/BeiDou, CHN
1903	Forerunner 15

Value	Device
1907	Vivoactive
1908	vivoactive, Display
1909	ANT/BLE N4 Firmware
1917	Approach G8
1918	Edge 510, Korea (GCD file)
1925	Approach S6, Display
1928	ForeAthlete 620J
1929	Forerunner 620 China
1930	ForeAthlete 220J
1931	Forerunner 220 China
1932	nuvi 27x9
1936	Approach S6
1939	Virb CHN (GCD file)
1940	Virb System ASIA (GCD file)
1942	Forerunner 920XT, Display
1947	nuvi 25x9 C4
1948	nuvi 26x9 C4
1955	vivosmart, ANT
1956	vivosmart
1960	?
1966	nuvi 55TV, Brazil (GCD file only)
1967	fenix2
1969	Forerunner 15, ANT
1987	Epix, Display
1988	Epix System (WebUpdater)
1999	Approach S2 APAC (GCD file)
2002	dezl 770
2003	dezl 570
2005	vivosmart, PSOC
2022	?
2024	Quatix China (GCD file)
2032	T 5, TT 15
2035	Approach S4 APAC (GCD file)
2043	nuviCam
2044	nuviCam Camera Firmware
2047	ANT/BLE N1 Firmware (Region File)
2050	fenix 3/tactix Bravo/quatix 3
2051	fenix 3/tactix Bravo/quatix 3, Display
2052	Edge 1000, Taiwan (GCD file)
2053	Edge 1000, Japan (GCD file)
2054	Fenix2 China (GCD file)
2061	ForeAthlete 15J
2062	fleet 660, GPS
2063	fleet 670, GPS
2067	Edge 520
2068	SW, Honda PH
2070	Edge 1000, China (GCD file)
2076	?
2077	nuvi 2xx7 and 2xx8 C4
2079	Vector S
2087	nuvi 57/58
2088	nuvi 67/68

Value	Device
2094	fenix2J (GCD file)
2100	Edge 1000, Korea (GCD file)
2108	fenix 3/tactix Bravo/quatix 3, Wi-Fi
2112	Firmware Update for the BC30 RX
2120	?
2121	?
2123	GPSMAP64S, SEA (GCD file)
2124	GPSMAP64SJ, Japan (GCD file)
2127	Touchscreen E1 Firmware
2130	Forerunner 920XT Taiwan
2131	Forerunner 920XT China
2132	Forerunner 920XT Japan
2134	VIRB X
2135	vivosmart APAC
2140	eTrex Touch 25/35 (Webupdater)
2141	dezlCam
2147	Edge 25
2148	Forerunner 25
2150	vivofit2
2151	Forerunner 225, OHR
2153	Forerunner 225
2156	Forerunner 630
2157	Forerunner 230
2158	Forerunner 735XT
2159	Forerunner Display A1 Firmware
2160	vivoactive APAC
2161	Vector 2
2162	Vector 2S
2172	VIRB XE
2173	Forerunner 620, Taiwan
2175	TruSwing
2182	Approach S5
2188	fenix 3, K65, China
2189	fenix 3, Taiwan
2190	T5/TT15 Mini
2192	Varia Headlight
2194	Approach S6 APAC (GCD file)
2196	Wi-Fi A1 Firmware
2197	Forerunner 630 Touchscreen
2198	Dash Cam 30 (2198-00)
2199	Dash Cam 35 (2199-00)
2200	GPS 73
2201	GPS 12H (GCD file)
2204	Edge Explore 1000
2219	Forerunner 225 Asia
2220	ForeAthlete 225J
2225	Varia Radar Tail Light
2226	Varia Radar Display Unit
2228	Forerunner 225, Display
2231	Oregon650TCJ2, JPN (GCD file)
2232	SW, Captain
2235	SW, Storm

Value	Device
2237	Camper/RV 660
2238	Edge 20
2239	?
2250	eTrex 20x/30x (Webupdater)
2260	Edge 520 Asia (GCD file)
2261	Edge 520 Japan (GCD file)
2262	D2 Bravo
2266	Approach S20
2267	Drive and DriveSmart 40/50
2268	Drive, DriveSmart 60/70, and DriveTrack 70
2269	DriveLuxe 50
2270	DriveAssist 50
2273	ANT/BLE N2 Firmware
2274	Edge 1000, Thai (GCD file)
2281	GPSMAP 64s,KOR (GCD file)
2285	GPSMAP 64st, TWN (GCD file)
2288	Edge 25 Asia
2289	Edge 25 Japan
2290	Edge 20 Asia
2292	Approach X40
2293	fenix 3, K65, Japan
2296	nuviCam, APAC (GCD file only)
2297	nuvi 57, APAC (GCD file only)
2298	nuvi67, APAC (GCD file only)
2299	Montana 610/680
2302	eTrex 20x/30x China OPM & TWN (GCD File)
2310	Forerunner 630 APAC (GCD File)
2311	ForeAthlete 630J (GCD file)
2313	ForeAthlete 230J (GCD file)
2316	eTrex 20x/30x JPN, System (GCD file)
2317	eTrex 20x/30x SEA (GCD file)
2325	UAT-B2325
2329	VIRBXE APAC System (GCD file)
2332	Epix JPN (GCD file)
2337	vivoactive HR
2338	vivoactive HR Sensor Hub
2339	vivoactive HR Cap Touch
2340	vivoactive HR Display
2347	vivosmart HR plus
2348	vivosmart HR
2361	vivosmart HR APAC
2362	vivosmart HR plus APAC
2368	Vivomove
2369	Forerunner 235 Sensor Hub
2379	Varia Tail Light
2392	fenix Chronos, Display
2393	fenix Chronos, Sensor Hub
2396	Forerunner 235 APAC (GCD file)
2397	ForeAthlete 235J (GCD file)
2398	Varia Vision
2405	Approach X40 BLE Firmware
2406	vivofit3

Value	Device
2407	fenix 3, K65, Korea
2408	fenix 3, K65, SEA
2413	fenix 3 HR
2414	fenix 3 HR, Display
2415	fenix 3 HR, Sensor Hub
2416	?
2417	Virb Ultra 30
2423	ANT/BLE N3 Firmware
2429	Index Smart Scale
2431	Forerunner 235
2432	fenix Chronos
2435	Zumo 3x5
2436	Zumo 595
2440	GDR E350/C300 (GCD File)
2442	Astro 430/Alpha 50
2444	Rino 7xx (WebUpdater)
2449	PRO Control 2 RR
2450	Delta Smart
2463	?
2467	D2 Bravo, K65, China
2470	GDR C530 (GCD File)
2471	Varia Vision, APAC
2473	fenix 3 HR, K26, CHN
2478	zumo590, APAC (GCD file)
2479	GPSMAP 276cx
2485	GDR E350 Japan (GCD File)
2488	RV-IN801
2495	DriveAssist 50 Camera FW
2496	Garmin Nautix
2497	vivoactive HR APAC (GCD file only)
2503	Forerunner 35
2510	Forerunner 735XT, Sensor Hub
2512	Oregon 7xx (WebUpdater)
2513	GDL 5x
2517	zumo590, JPN (GCD file)
2530	Edge 820
2531	Edge Explore 820
2533	Forerunner 735XT APAC (GCD file only)
2534	ForeAthlete 735XTJ (GCD file only)
2535	?
2544	fenix 5S
2545	Dash Cam 30 (2545-00)
2546	Dash Cam 35 (2546-00)
2547	D2 Bravo Titanium
2559	Approach S20 APAC
2560	D2 Bravo Titanium, Sensor Hub
2561	DriveSmart 50, APAC (GCD file)
2563	eTrex Touch 35 APAC (GCD file)
2567	Varia UT800
2569	fleet 660 8G, GPS
2570	fleet 670 8G, GPS
2583	Delta Smart nRF51

Value	Device
2584	BMW Motorrad Navigator VI
2586	Drive and DriveSmart 51
2587	Drive 61
2588	DriveSmart 61
2589	DriveLuxe 51
2590	DriveAssist 51
2593	Running Dynamics Pod
2596	DriveAssist 50, APAC (GCD file only)
2599	Edge 820 China (GCD file)
2600	Edge 820 Japan (GCD file)
2604	fenix 5X
2605	fenix 5X, Display
2606	vivofit jr
2614	GPSMAP 64sc
2620	?
2622	vivosmart 3
2623	vivosport
2624	fenix 3 HR APAC, Sensor Hub (GCD file only)
2628	Edge 820 Taiwan (GCD file)
2629	Edge 820 Korea (GCD file)
2630	Edge 820 SEA (GCD file)
2631	?
2635	Dash Cam 45 - S
2636	Dash Cam 55
2639	vivosmart HR plus Israel
2641	Xero A1i
2650	Forerunner 35 Israel
2652	Approach G30
2653	FR235, NFC CIB (GCD file only)
2655	FR235 Sensor Hub (GCD file only)
2656	Approach S60
2657	Approach S60, Display
2659	vivosmart 3 Sensor Hub
2661	fenix 5, Sensor Hub
2662	fenix 5S, Sensor Hub
2663	fenix 5X, Sensor Hub
2665	Forerunner 935, Sensor Hub
2667	Forerunner 35 APAC
2668	Forerunner 35 JPN
2675	fenix CHRONOS APAC (GCD file only)
2680	vivosmart 3 Cap Touch Panel
2681	Oregon7xx APAC (GCD file only)
2682	?
2684	RV/Camper 770
2687	VIRB 360
2688	SW, APGC18, System Code, AOER
2689	SW, CAN uC, APGC18, AOER
2691	Forerunner 935
2697	fenix 5
2700	vivoactive 3
2702	fenix Chronos APAC Sensor Hub (GCD file only)
2705	Avtex Tourer One Plus

Value	Device
2713	Edge 1030
2715	?
2727	Forerunner 35 SEA
2769	Foretrex 601/701 (WebUpdater)
2772	vivomove HR
2773	vivomove HR Sensor Hub
2774	vivomove HR Sport - Cap Touch Panel
2776	Approach G30 Touchscreen Firmware
2777	Rino 700 (WebUpdater)
2778	GPS Chipset Type M4 (2778)
2779	GPS Chipset Type M426 (2779)
2786	RV-BBT600 RV HUB Remote
2787	Vector 3
2796	Fenix 5 APAC (GCD file)
2797	Fenix 5S APAC (GCD file)
2798	Fenix 5X APAC (GCD file)
2803	Drive 51, APAC (GCD File)
2806	Approach Z80
2814	Forerunner 35 KOR
2816	SW, CAN uC, ALSA18, AOER
2817	SW, ALSA18, System Code, AOER
2819	D2 Charlie
2820	D2 Charlie, Display
2825	SW, APSA18, System Code, AOER
2826	UAT-2826
2830	SW, CAN uC, APSA18, AutoOEM
2831	Vivosmart 3, APAC (GCD file)
2832	Vivosport, APAC (GCD file)
2833	Forerunner 935 APAC (GCD file)
2835	Vivosmart 3, Sensor Hub, APAC (GCD file)
2838	Dash Cam 65W
2841	nuviCam APAC Camera Firmware (GCD file)
2858	Dash Cam 45 - O
2859	Descent Mk1
2866	fenix 5, Sensor Hub, APAC (GCD file)
2867	fenix 5S, Sensor Hub, APAC (GCD file)
2868	fenix 5X, Sensor Hub, APAC (GCD file)
2872	Forerunner 935 APAC, Sensor Hub (GCD file)
2886	Forerunner 645
2888	Forerunner 645 Music
2893	Atemos 50
2894	Atemos 100
2900	Fenix 5 Plus
2907	Approach S60, Host, APAC (GCD file)
2924	Edge 1030, APAC (GCD file)
2927	Vivosmart 4
2945	Vivomove HR, APAC
2954	Varia RTL510 Light
2955	Varia RTL510 Radar
2956	Alpha 50, CHN
2960	GPS Chipset Type M426 (2960-Fitness Region File)
2976	vivoactive 3, APAC (GCD file)

Value	Device
2996	DriveSmart 61, APAC (GCD file)
3011	Edge Explore
3028	GPSMAP 66
3029	Zumo 590 TPMS Firmware, APAC (GCD file)
3033	Zumo 396
3085	Approach G80
3095	Edge 1030 Bontrager
3098	Astro 900
3112	Edge 420 Plus
3115	GPSMAP 64sc SiteSurvey
3126	Instinct
3187	Rino 7xx GMRS
3196	D2 Delta

References

Used sources of information

- [1] <https://sourceforge.net/projects/garminidaloader/>
- [2] <https://gpsunderground.com/forum/forum/gps-navigation-systems/garmin-gps-systems/garmin-general-discussions/5066-garmin-jnx-file-format-hacking?p=142575>
- [3] <https://www.gpspower.net/garmin-receivers-firmwares/329909-garmin-devices-their-related-hwid-numbers-software-update-pages-links-table.html>
- [4] <http://mirgarmin.com.ua/content/1124.html>

Standards and specifications

- [5] ARMv7-M Architecture Reference Manual <http://infocenter.arm.com/help/index.jsp?topic=/com.arm.doc.ddi0403e.b/index.html>

Sources of sample files

See the documents on GCD and RGN firmware update file format.