

Structure of XGD3 Security Sector (SSv2)

Length	Offset(s)	b ₀	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇
1	0x000	Version Number = 0x1				Book Type = 0xE			
1	0x001	Maximum Rate = 0xF				Disc Size = 0x0			
1	0x002	Layer Type = 0x1				Path = 1	Layer Count = 01		0
1	0x003	Track Density = 0x0				Linear Density = 0x1			
4	0x004 – 0x007	Data Start Physical Sector							
4	0x008 – 0x00A	Data End Physical Sector							
4	0x00C – 0x00F	Layer0 End Physical Sector							
1	0x010	Reserved = 0000000							BCA = 0
11	0x011 – 0x01A	Reserved = 0x00							
1	0x01B	Unknown = 0x06							
4	0x01C – 0x01F	Reserved = 0x00							
207	0x020 – 0x0EE	Up to 23 Challenge Response data (9 bytes each), usually only 8							
1	0x0EF	Reserved = 0x00							
4	0x0F0 – 0x0F4	CPR_MAI Key							
12	0x0F5 – 0x0FF	Reserved = 0x00							
4	0x100 – 0x103	Unknown1 = 4 bytes							
4	0x104 – 0x107	Unknown2 = 0x00, 0x00, 0x06, 0xE0							
506	0x108 – 0x2FF	Unknown 506 bytes							
1	0x300	enCrypted Challenge Response Table – Version = 0x02							
1	0x301	enCrypted Challenge Response Table – Entries = 0x15							
2	0x302 – 0x303	Reserved = 0x00							
252	0x304 – 0x3FF	21 enCrypted Challenge Responses (12 bytes each)							
96	0x400 – 0x45F	Reserved = 0x00							
16	0x460 – 0x46F	Media ID							
46	0x470 – 0x49D	Reserved = 0x00							
1	0x49E	Unknown = 0x04							
8	0x49F – 0x4A6	FILETIME – Authoring Timestamp							
19	0x4A7 – 0x4B9	Reserved = 0x00							
1	0x4BA	Unknown (Version?) = 0x02							
16	0x4BB – 0x4CA	Unknown 16 bytes (MD5? Unique for each ISO)							
20	0x4CB – 0x4DE	SHA-1 hash A							
256	0x4DF – 0x5DE	Signature A							
8	0x5DF – 0x5E6	FILETIME – Mastering Timestamp							
4	0x5E7 – 0x5EA	Reserved = 0x00 (meant to be a time_t ?)							
15	0x5EB – 0x5F9	Reserved = 0x00							
1	0x5FA	Unknown = 0x02							
16	0x5FB – 0x60A	Unknown 16 bytes (Something to do with mastering?)							
20	0x60B – 0x61E	SHA-1 hash B							
64	0x61F – 0x65E	Signature B							
1	0x65F	SS Version = 0x02							
1	0x660	Number of Security Sector Ranges = 0x15 (21 entries)							
207	0x661 – 0x72F	21 Security Sector Ranges (9 bytes each)							
207	0x730 – 0x7FE	Duplicated 21 Security Sector Ranges (9 bytes each)							
1	0x7FF	Reserved = 0x00							

White = Fixed values, Green = Identical for same ISO, Red = Differs across mastering of same ISO, Highlight = Type

Note: Security Sector obtained from Kreon firmware drives are an invalid mixture of XGD2 and XGD3 structure.
Use an OEM Xbox drive to obtain the true XGD3 Security Sector that matches the structure defined above.

Structure of XGD3 Disc Manufacturing Information

Length	Offset(s)	b ₀	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇
1	0x000	XGD Version = 0x01							
15	0x001 – 0x00F	Reserved = 0x00							
8	0x010 – 0x017	FILETIME – Timestamp							
1	0x018	XOR Key ID = (0x01 for Beta discs, 0x02 for Retail discs)							
7	0x19 – 0x1F	Reserved = 0x00							
16	0x20 – 0x2F	Media ID							
16	0x30 – 0x3F	Reserved = 0x00							
14	0x40 – 0x4F	XeMID							
1563	0x050 – 0x633	Reserved = 0x00							
28	0x634 – 0x64F	Unknown 28 bytes							
7	0x650 – 0x656	Unknown 7 bytes							
81	0x657 – 0x6A7	Unknown 81 bytes							
20	0x6A8 – 0x6BB	Unknown 20 bytes (SHA1 signature?)							
100	0x6BC – 0x71F	Unknown 100 bytes							
160	0x720 – 0x7BF	Unknown 160 bytes (8x SHA1 signatures?)							
28	0x7C0 – 0x7DB	Unknown 28 bytes							
8	0x7DC – 0x7E3	Wave, maps to PFI / Video Partition Size							
12	0x7E4 – 0x7EF	Xbox Signature = 0002 0000 5842 4F58 0000 0000 (....XBOX....)							
16	0x7F0 – 0x7FF	Unknown 16 bytes (Likely a checksum)							

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Map of DMI Wave value (0x7DC – 0x7E3) to PFI.bin CRC32 hash:

```

F56BBBAF9A986A27: '8FC52135' # XGD1
E771E4509B321F36: 'E9B8ECFE' # Wave 0 (Experience Disc 1.0)
724EA8F848083A81: '739CEAB3' # Wave 1
7F287181B884AC0E: 'A4CFB59C' # Wave 2
B92884797F24F5B8: '2A4CCBD3' # Wave 3
313DE4782F5E9C87: '05C6C409' # Wave 4-7
5075273CA9308344: '0441D6A5' # Wave 8-9
6E719E5B66481ECA: 'E18BC70B' # Wave 10-12
008EDE9B6F8144F6: '40DCB18F' # Wave 13
180DD029D791F116: '23A198FC' # Wave 14-15
18EB8B92E60935F5: 'AB25DB47' # Wave 16
6F926559C10CD2DC: '169EF597' # Wave 17-18
07E9C4770C916366: '032CCF37' # Wave 19
0C0BA0C912F3C56D: 'F48D24B8' # Wave 20
FA4BE3C4BDD34C19: 'E1647069' # XGD3 #1 (Halo Reach Preview / Kinect Rush)
26FB858A0FC5ED02: '26AF4C58' # XGD3 #2
CFE8ADB9B0D59CD1: '26675ADB' # XGD2 Hybrid (Xbox 360 Trial Disc)

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