Author: Deterous 2025/12/07

Structure of XGD3 Security Sector

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
10	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 – 0x0F3	CPR_MAI Key							
12	0x0F4 – 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** (GUID ?)							
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** (Mastering GUID ?)							
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 – 0x72D	21 Security Sector Ranges (9 bytes each)							
207	0x72E – 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.

Author: Deterous 2025/12/07

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 = 0x02							
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							
1508	0x050 – 0x633	Reserved = 0x00							
28	0x634 – 0x64F	**Unknown 28 bytes**							
7	0x650 – 0x656	**Unknown 7 bytes** (Identical for each PFI variant)							
81	0x657 – 0x6A7	**Unknown 81 bytes** (contains multiple fields)							
20	0x6A8 – 0x6BB	**Unknown 20 bytes** (Identical for each PFI variant)							
100	0x6BC – 0x71F	**Unknown 100 bytes**							
160	0x720 – 0x7BF	**Unknown 160 bytes** (Identical for each PFI variant)							
28	0x7C0 – 0x7DB	**Unknown 28 bytes** (Identical for each PFI variant, two variants for Wave 1)							
8	0x7DC – 0x7E3	**Unknown 8 bytes** (Identical for each PFI variant)							
12	0x7E4 – 0x7EF	Xbox Signature = 0002 0000 5842 4F58 0000 0000 (....XBOX....)							
16	0x7F0 – 0x7FF	**Unknown 16 bytes** (Likely a checksum?)							

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

Note: The “trailer” data from 0x634 onwards is also present on some PC DVDs with ....DVDT.... signature

Map of DMI values 0x7DC – 0x7E3s to PFI.bin CRC32 hash: **Note**: “Wave” is a term for PFI variant

```
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)
```