

Exhibit A to the Super Audio CD Player Patent License Agreement

Essential PH Patents relevant to Super Audio CD Player / SACD Part

<i>COUNTRY</i>	<i>REFERENCE</i>	<i>FILING NR</i>	<i>FILING DATE</i>	<i>PUBLICATION NR</i>	<i>GRANT DATE</i>	<i>GRANT NR</i>	<i>EXPIRY DATE</i>	<i>TITLE</i>
AR	N 014746 -	331023	15-Feb-95		27-Jul-00	254412	27-Jul-15	EFM+
AR	N 014752 -	331070	17-Feb-95		21-Nov-01	255358	21-Nov-16	Interleaving ("fast header out")
AR	N 015093 -	334224	14-Nov-95		31-Oct-01	AR000131	14-Nov-15	Disc size on disc
AR	N 015110 -	P950100339	28-Nov-95		24-Aug-00	AR000492	28-Nov-15	Buffering/speed control
AR	N 015678 -	P970100444	05-Feb-97		17-Oct-05	AR006969	05-Feb-17	7 channel backwards compatible coding
AR	N 016405 -	P970105070	31-Oct-97		04-Apr-05	AR009834	31-Oct-17	Lossless audio bitstream compression
AR	N 016405 A	P990104953	31-Oct-97		18-Oct-05	AR020550	31-Oct-17	Lossless audio bitstream compression
AR	N 016452 -	P970104631	07-Oct-97		25-Jun-04	AR009826	07-Oct-17	1 bit ADC + lossless coding of audio
AR	N 016650 -	P980106046	30-Nov-98		29-Nov-05	AR014937	30-Nov-18	Variable rate audio disk header at block start
AR	N 016657 -	P980106045	30-Nov-98		29-Nov-05	AR016426	30-Nov-18	Audio accessible via TOC and file system
AR	N 016805 -	P990100972	08-Mar-99		13-Jun-05	AR014685	08-Mar-19	Multichannel arithmetic encoding
AR	N 016822 -	P990101130	16-Mar-99		02-Dec-05	AR014729	16-Mar-19	Efficient arithmetic coding of bitstream signals
AR	N 016831 -	P990101131	16-Mar-99		01-Dec-04	AR018758	16-Mar-19	Overruling probabilities in arithmetic coding
AR	N 017244 -	P990101012	10-Mar-99		30-Nov-04	AR014697	10-Mar-19	Prediction on data
AT	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	E173110	01-Feb-15	EFM+
AT	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	E195033	14-Feb-15	Interleaving ("fast header out")
AT	N 015087 -	95934799.8	08-Nov-95	0740832-B1	07-Jun-00	E193782	08-Nov-15	Application code in block header
AT	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	E192878	31-Oct-15	Disc size on disc
AT	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	E202233	16-Nov-15	Buffering/speed control
AT	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	E201527	26-Aug-16	Improved DC control (of EFM+)
AT	N 015471 -	95938001.5	06-Dec-95	0745255-A1	23-Oct-02	E226750	06-Dec-15	Multilayer disc and player
AT	N 015603 -	96935295.4	21-Nov-96	0811295-A1	10-Oct-01	E206859	21-Nov-16	Lowered granularity in multichannel DVD-interface
AT	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	E263458	24-Jan-17	7 channel backwards compatible coding
AT	N 015812 -	97916614.7	30-Apr-97	0843933-A1	27-Oct-04	E280979	30-Apr-17	Audio frequency scalability on DVD
AT	N 015812 A	04100933.3	30-Apr-97		30-Aug-06	E338317	30-Apr-17	Audio frequency scalability on DVD

Essential PH Patents relevant to Super Audio CD Player / SACD Part

<i>COUNTRY</i>	<i>REFERENCE</i>	<i>FILING NR</i>	<i>FILING DATE</i>	<i>PUBLICATION NR</i>	<i>GRANT DATE</i>	<i>GRANT NR</i>	<i>EXPIRY DATE</i>	<i>TITLE</i>
AT	N 016405 -	97943108.7	20-Oct-97		16-Nov-05	0879465	20-Oct-17	Lossless audio bitstream compression
AT	N 016405 A	05106730.4	20-Oct-97		22-Aug-07	E371298	20-Oct-17	Lossless audio bitstream compression
AT	N 016452 -	97940276.5	26-Sep-97		07-Dec-05	E312435	26-Sep-17	1 bit ADC + lossless coding of audio
AT	N 016655 -	98952980.5	24-Nov-98	0956557-A1	03-Nov-04	E281690	24-Nov-18	Store audio with master TOC and sub-TOCs
AT	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	E 308790	24-Nov-18	Audio accessible via TOC and file system
AT	N 016831 -	99902767.5	22-Feb-99		11-Oct-06	E342612	22-Feb-19	Overruling probabilities in arithmetic coding
AT	N 016831 A	05106390.7	22-Feb-99		12-Dec-07	E381151	22-Feb-19	Overruling probabilities in arithmetic coding
AT	N 017244 -	99902777.4	22-Feb-99	0983636-A1	26-Jan-05	E288150	22-Feb-19	Prediction on data
AT	N 017270 -	99961072.8	21-Dec-99		05-Sep-07	1070322	21-Dec-19	Access list for SACD
AT	Q 098017 -	99923779.5	09-Jun-99		07-Sep-05	E304206	09-Jun-19	Store audio with master TOC and paired sub-TOCs
AT-EP	N 016194 A	03102217.1	07-Jan-98	1363283-A3			07-Jan-18	Merging plm channels in lossless coders
AT-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
AT-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
AT-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
AU	N 014746 -	95-14240	01-Feb-95	95-14240 692822	05-Nov-98	692822	01-Feb-15	EFM+
AU	N 014752 -	95-15449	14-Feb-95	95-15449 689203	09-Jul-98	689203	14-Feb-15	Interleaving ("fast header out")
AU	N 015087 -	95-37081	08-Nov-95	95-37081 690751	13-Aug-98	690751	08-Nov-15	Application code in block header
AU	N 015093 -	95-36720	31-Oct-95	698869	25-Feb-99	698869	31-Oct-15	Disc size on disc
AU	N 015110 -	95-38134	16-Nov-95	199538134- 57 703389	08-Jul-99	703389	16-Nov-15	Buffering/speed control
AU	N 015452 -	96-66667	26-Aug-96	70391	15-Jul-99	703791	26-Aug-16	Improved DC control (of EFM+)
AU	N 016657 -	99-10497	24-Nov-98	99-10497 762489	09-Oct-03	762489	24-Nov-18	Audio accessible via TOC and file system
AU	N 016805 -	99-22954	22-Feb-99	99-22954 763060	23-Oct-03	763060	22-Feb-19	Multichannel arithmetic encoding
AU	N 016822 -	99-22953	22-Feb-99	99-22953 757911	26-Jun-03	757911	22-Feb-19	Efficient arithmetic coding of bitstream signals
AU	N 016831 -	99-22952	22-Feb-99	757097	15-May-03	757097	22-Feb-19	Overruling probabilities in arithmetic coding
BE	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
BE	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
BE	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header

Essential PH Patents relevant to Super Audio CD Player / SACD Part

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BE	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	0740831	31-Oct-15	Disc size on disc
BE	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
BE	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	0820663	24-Jan-17	7 channel backwards compatible coding
BE	N 015812 -	97916614.7	30-Apr-97	0843933-A1	27-Oct-04	0843933	30-Apr-17	Audio frequency scalability on DVD
BE	N 015812 A	04100933.3	30-Apr-97		30-Aug-06	1471465	30-Apr-17	Audio frequency scalability on DVD
BE	N 016405 -	97943108.7	20-Oct-97		16-Nov-05	0879465	20-Oct-17	Lossless audio bitstream compression
BE	N 016405 A	05106730.4	20-Oct-97		22-Aug-07	1603244	20-Oct-17	Lossless audio bitstream compression
BE	N 016452 -	97940276.5	26-Sep-97		07-Dec-05	0865685	26-Sep-17	1 bit ADC + lossless coding of audio
BE	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
BE	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system
BE	N 016831 -	99902767.5	22-Feb-99		11-Oct-06	0983634	22-Feb-19	Overruling probabilities in arithmetic coding
BE	N 016831 A	05106390.7	22-Feb-99		12-Dec-07	1605596	22-Feb-19	Overruling probabilities in arithmetic coding
BE	Q 098017 -	99923779.5	09-Jun-99		07-Sep-05	1027706	09-Jun-19	Store audio with master TOC and paired sub-TOCs
BE-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
BE-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
BG	N 014746 -	100774	01-Feb-95		21-Jul-99	62106	01-Feb-15	EFM+
BG	N 015093 -	100723	31-Oct-95		30-Jul-99	62105	31-Oct-15	Disc size on disc
BG	N 016657 -	103602	24-Nov-98	103602	30-Mar-04	64242	24-Nov-18	Audio accessible via TOC and file system
BR	N 014746 -	PI9506787.6	01-Feb-95	PI9506787.6	07-Aug-01	PI9506787.6	01-Feb-15	EFM+
BR	N 014746 A	PI9510740.1	01-Feb-95	PI9510740.1	11-Nov-08	UNKNOWN	01-Feb-15	EFM+
BR	N 014746 B	PI9510741.0	01-Feb-95		27-Apr-04	PI9510741.0	01-Feb-15	EFM+
BR	N 015093 -	PI9506626.8	31-Oct-95	PI9506626.8	17-Feb-04	PI9506626.8	31-Oct-15	Disc size on disc
BR	N 015110 -	PI9506587.3	16-Nov-95	PI9506587	25-May-04	PI9506587	16-Nov-15	Buffering/speed control
BR	N 015678 -	PI9702067.2	24-Jan-97	PI9702067.2			24-Jan-17	7 channel backwards compatible coding
BR	N 016405 -	PI9706918.3	20-Oct-97				20-Oct-17	Lossless audio bitstream compression
BR	N 016452 -	PI9706828.4	26-Sep-97				26-Sep-17	1 bit ADC + lossless coding of audio
BR	N 016650 -	PI9807013.4	24-Nov-98				24-Nov-18	Variable rate audio disk header at block start

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BR	N 016655 -	PI9807017.7	24-Nov-98				24-Nov-18	Store audio with master TOC and sub-TOCs
BR	N 016657 -	PI9807016.9	24-Nov-98				24-Nov-18	Audio accessible via TOC and file system
BR	N 016805 -	PI9906321.2	22-Feb-99				22-Feb-19	Multichannel arithmetic encoding
BR	N 016822 -	PI9904879.5	22-Feb-99				22-Feb-19	Efficient arithmetic coding of bitstream signals
BR	N 016831 -	PI9906331.0	22-Feb-99				22-Feb-19	Overruling probabilities in arithmetic coding
BR	N 017216 -	PI9906328.0	02-Mar-99				02-Mar-19	Choosing between lossless and not-lossless signals
BR	N 017244 -	PI9904877.9	22-Feb-99				22-Feb-19	Prediction on data
BR	N 017270 -	PI9908611.5	21-Dec-99				21-Dec-19	Access list for SACD
BR	N 017358 -	PI9906497.9	03-Jun-99				03-Jun-19	Extra file contain also pauses SACD
BW	N 014746 -	98-00054	22-Apr-98		01-Dec-99	BW/P/99/00022	22-Apr-18	EFM+
BW	N 014752 -	98-00046	21-Apr-98		01-Dec-99	BW/P99/000	21-Apr-18	Interleaving ("fast header out")
BW	N 015452 -	98-00063	22-Apr-98		01-Dec-99	BW/P/99/00022	22-Apr-18	Improved DC control (of EFM+)
CA	N 014746 -	2183355	01-Feb-95		30-May-06	2183355	01-Feb-15	EFM+
CA	N 014746 A	2456968	01-Feb-95		25-Jan-05	2456968	01-Feb-15	EFM+
CA	N 014752 -	2160572	14-Feb-95		16-Dec-03	2160572	14-Feb-15	Interleaving ("fast header out")
CA	N 015087 -	2181460	08-Nov-95		26-Apr-05	2181460	08-Nov-15	Application code in block header
CA	N 015452 -	2205565	26-Aug-96		09-Jan-07	2205565	26-Aug-16	Improved DC control (of EFM+)
CA	N 016650 -	2278646	24-Nov-98		17-Apr-07	2278646	24-Nov-18	Variable rate audio disk header at block start
CA	N 016655 -	2278772	24-Nov-98		15-Jan-08	2278772	24-Nov-18	Store audio with master TOC and sub-TOCs
CA	N 016657 -	2278642	24-Nov-98		20-Mar-07	2278642	24-Nov-18	Audio accessible via TOC and file system
CA	N 017216 -	2290644	02-Mar-99				02-Mar-19	Choosing between lossless and not-lossless signals
CA	N 017270 -	2322580	21-Dec-99				21-Dec-19	Access list for SACD
CA	Q 098017 -	2300304	09-Jun-99		29-May-07	2300304	09-Jun-19	Store audio with master TOC and paired sub-TOCs
CH	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
CH	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
CH	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
CH	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	0740831	31-Oct-15	Disc size on disc

Essential PH Patents relevant to Super Audio CD Player / SACD Part

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CH	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
CH	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system
CH-EP	N 016194 A	03102217.1	07-Jan-98	1363283-A3			07-Jan-18	Merging plm channels in lossless coders
CH-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
CH-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
CN	N 014746 -	95192574.1	01-Feb-95	1155349-A			01-Feb-15	EFM+
CN	N 014746 A	200310102653.2	01-Feb-95	1722283-A			01-Feb-15	EFM+
CN	N 014746 B	unknown	01-Feb-95				01-Feb-15	EFM+
CN	N 014746 C	unknown	01-Feb-95				01-Feb-15	EFM+
CN	N 014746 D		01-Feb-95				01-Feb-15	EFM+
CN	N 014752 -	95190261.X	14-Feb-95	1125994-A	09-Jun-04	95190261.X	14-Feb-15	Interleaving ("fast header out")
CN	N 014752 A	02122058.1	14-Feb-95	1389867-A	09-Apr-08	02122058.1	14-Feb-15	Interleaving ("fast header out")
CN	N 014752 B	200610095942.8	14-Feb-95	101093701A			14-Feb-15	Interleaving ("fast header out")
CN	N 014752 C	200610093455.8	14-Feb-95	101083105-A			14-Feb-15	Interleaving ("fast header out")
CN	N 015087 -	95191995.4	08-Nov-95	1143423-A			08-Nov-15	Application code in block header
CN	N 015087 A	200310123905.X	08-Nov-95	1534663-A	02-May-07	2003101239	08-Nov-15	Application code in block header
CN	N 015093 -	95191258.5	31-Oct-95	1138917-A	25-Dec-02	95191258.5	31-Oct-15	Disc size on disc
CN	N 015110 -	95192153.3	16-Nov-95	1144010-A	11-Sep-02	95192153.3	16-Nov-15	Buffering/speed control
CN	N 015452 -	96191244.8	26-Aug-96	1166225-A	14-Apr-04	96191244.8	26-Aug-16	Improved DC control (of EFM+)
CN	N 015452 A	02160474.6	26-Aug-96	1516175-A	08-Aug-07	02160474.6	26-Aug-16	Improved DC control (of EFM+)
CN	N 015452 B	200610101665.7	26-Aug-96	1909097A			26-Aug-16	Improved DC control (of EFM+)
CN	N 015471 -	95192103.7	06-Dec-95	1144011-A	24-Dec-03	95192103.7	06-Dec-15	Multilayer disc and player
CN	N 015603 -	96192855.7	21-Nov-96	1179870-A	18-May-05	96192855.7	21-Nov-16	Lowered granularity in multichannel DVD-interface
CN	N 015678 -	97190310.7	24-Jan-97	1188571-A	11-Aug-04	97190310.7	24-Jan-17	7 channel backwards compatible coding
CN	N 015787 -	97190318.2	31-Jan-97	1188572-A	04-Feb-04	97190318.2	31-Jan-17	Compatible N-channel transmission
CN	N 015808 -	97190633.5	02-Apr-97	1194737-A	01-Jun-05	97190633.5	02-Apr-17	Selection of masked thresholds
CN	N 015812 -	97190804.4	30-Apr-97	1206528-A	12-Apr-06	97190804.4	30-Apr-17	Audio frequency scalability on DVD

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CN	N 015812 A	200410038572.5	30-Apr-97	1551191-A			30-Apr-17	Audio frequency scalability on DVD
CN	N 016194 -	98800034.2	07-Jan-98	1216178-A	28-Apr-04	98800034.2	07-Jan-18	Merging plm channels in lossless coders
CN	N 016194 A	03140973.3	07-Jan-98	1480940-A			07-Jan-18	Merging plm channels in lossless coders
CN	N 016405 -	97192838.X	20-Oct-97	1212782-A	08-Dec-04	97192838.X	20-Oct-17	Lossless audio bitstream compression
CN	N 016405 A	200410001219.X	20-Oct-97	1545085-A	25-Oct-06	2004100012	20-Oct-17	Lossless audio bitstream compression
CN	N 016452 -	97191963.1	26-Sep-97	1209917-A	29-Oct-03	97191963.1	26-Sep-17	1 bit ADC + lossless coding of audio
CN	N 016650 -	98802103.X	24-Nov-98	1244944-A			24-Nov-18	Variable rate audio disk header at block start
CN	N 016655 -	98802110.2	24-Nov-98	1246197-A			24-Nov-18	Store audio with master TOC and sub-TOCs
CN	N 016805 -	99800742.0	22-Feb-99	1275263-A	18-May-05	99800742.0	22-Feb-19	Multichannel arithmetic encoding
CN	N 016822 -	99800351.4	22-Feb-99	1262816-A	14-Jan-04	99800351.4	22-Feb-19	Efficient arithmetic coding of bitstream signals
CN	N 016831 -	99800791.9	22-Feb-99	1272249-A	09-Feb-05	99800791.9	22-Feb-19	Overruling probabilities in arithmetic coding
CN	N 016831 A	200410036825.5	22-Feb-99	1555134-A			22-Feb-19	Overruling probabilities in arithmetic coding
CN	N 017216 -	99800722.6	02-Mar-99	1269070-A	14-Jul-04	99800722.6	02-Mar-19	Choosing between lossless and not-lossless signals
CN	N 017244 -	99800696.3	22-Feb-99	1269069-A	23-Jul-03	99800696.3	22-Feb-19	Prediction on data
CN	N 017270 -	99805947.1	21-Dec-99	1300429-A	11-Jan-06	99805947.1	21-Dec-19	Access list for SACD
CN	N 017358 -	99801326.9	03-Jun-99	1275235-A			03-Jun-19	Extra file contain also pauses SACD
CN	Q 098017 -	99801321.8	09-Jun-99	1275236-A	08-Aug-07	CN1331151-	09-Jun-19	Store audio with master TOC and paired sub-TOCs
CN	Q 098017 A	200510052569.3	09-Jun-99	1658293-A			09-Jun-19	Store audio with master TOC and paired sub-TOCs
CN	Q 098017 B	200610139878.9	09-Jun-99	1967696-A			09-Jun-19	Store audio with master TOC and paired sub-TOCs
CZ	N 014746 -	96-PV2389	01-Feb-95		01-Aug-02	290751	01-Feb-15	EFM+
CZ	N 015093 -	96-PV2044	31-Oct-95		18-Jun-01	288682	31-Oct-15	Disc size on disc
CZ	N 015110 -	96-PV2167	16-Nov-95		21-May-01	288585	16-Nov-15	Buffering/speed control
CZ	N 015678 -	97-PV3154	24-Jan-97		02-Dec-03	293070	24-Jan-17	7 channel backwards compatible coding
CZ	N 016657 -	99-PV2685	24-Nov-98				24-Nov-18	Audio accessible via TOC and file system
DE	N 013146 -	90203049.3	19-Nov-90	0429139-A1	11-Jun-97	69030913.9	19-Nov-10	Buffering/speed control
DE	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	69505794.4	01-Feb-15	EFM+
DE	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	69518126.2	14-Feb-15	Interleaving ("fast header out")

Essential PH Patents relevant to Super Audio CD Player / SACD Part

<i>COUNTRY</i>	<i>REFERENCE</i>	<i>FILING NR</i>	<i>FILING DATE</i>	<i>PUBLICATION NR</i>	<i>GRANT DATE</i>	<i>GRANT NR</i>	<i>EXPIRY DATE</i>	<i>TITLE</i>
DE	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	69517413.4	08-Nov-15	Application code in block header
DE	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	69516845.2	31-Oct-15	Disc size on disc
DE	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	69521297.4	16-Nov-15	Buffering/speed control
DE	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	69612955.8	26-Aug-16	Improved DC control (of EFM+)
DE	N 015471 -	95938001.5	06-Dec-95	0745255-A1	23-Oct-02	69528636.6	06-Dec-15	Multilayer disc and player
DE	N 015603 -	96935295.4	21-Nov-96	0811295-A1	10-Oct-01	69615826.4	21-Nov-16	Lowered granularity in multichannel DVD-interface
DE	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	69728330.5	24-Jan-17	7 channel backwards compatible coding
DE	N 015760 -	97908427.4	01-Apr-97	0853842-A1	09-Jul-03	69723412.6	01-Apr-17	Multichannel encoding
DE	N 015787 -	97900704.4	31-Jan-97		09-Nov-05	69734543.2	31-Jan-17	Compatible N-channel transmission
DE	N 015808 -	97908434.0	02-Apr-97	0832519-A1	29-Jan-03	69718735.7	02-Apr-17	Selection of masked thresholds
DE	N 015812 -	97916614.7	30-Apr-97	0843933-A1	27-Oct-04	69731355.7	30-Apr-17	Audio frequency scalability on DVD
DE	N 015812 A	04100933.3	30-Apr-97		30-Aug-06	69736619.7	30-Apr-17	Audio frequency scalability on DVD
DE	N 016405 -	97943108.7	20-Oct-97		16-Nov-05	69734645.5	20-Oct-17	Lossless audio bitstream compression
DE	N 016405 A	05106730.4	20-Oct-97		22-Aug-07	69738056.4	20-Oct-17	Lossless audio bitstream compression
DE	N 016452 -	97940276.5	26-Sep-97		07-Dec-05	69734816.4	26-Sep-17	1 bit ADC + lossless coding of audio
DE	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	69831396.8	24-Nov-18	Variable rate audio disk header at block start
DE	N 016655 -	98952980.5	24-Nov-98	0956557-A1	03-Nov-04	69827364.8	24-Nov-18	Store audio with master TOC and sub-TOCs
DE	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	69832151.0	24-Nov-18	Audio accessible via TOC and file system
DE	N 016831 -	99902767.5	22-Feb-99		11-Oct-06	69933519.1	22-Feb-19	Overruling probabilities in arithmetic coding
DE	N 016831 A	05106390.7	22-Feb-99		12-Dec-07	69937761.7	22-Feb-19	Overruling probabilities in arithmetic coding
DE	N 017244 -	99902777.4	22-Feb-99	0983636-A1	26-Jan-05	69923394.1	22-Feb-19	Prediction on data
DE	N 017270 -	99961072.8	21-Dec-99	DE69937047-5A	07-Sep-07	69937047.7	21-Dec-19	Access list for SACD
DE	N 017358 -	99921084.2	03-Jun-99		28-Feb-07	69935308.4	03-Jun-19	Extra file contain also pauses SACD
DE	Q 098017 -	99923779.5	09-Jun-99		07-Sep-05	69927129.0	09-Jun-19	Store audio with master TOC and paired sub-TOCs
DE-EP	N 016194 A	03102217.1	07-Jan-98	1363283-A3			07-Jan-18	Merging plm channels in lossless coders
DE-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
DE-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals

Essential PH Patents relevant to Super Audio CD Player / SACD Part

<i>COUNTRY</i>	<i>REFERENCE</i>	<i>FILING NR</i>	<i>FILING DATE</i>	<i>PUBLICATION NR</i>	<i>GRANT DATE</i>	<i>GRANT NR</i>	<i>EXPIRY DATE</i>	<i>TITLE</i>
DE-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
DK	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
DK	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
DK	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
DK	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
DK	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
DK	N 016655 -	98952980.5	24-Nov-98	0956557-A1	03-Nov-04	0956557	24-Nov-18	Store audio with master TOC and sub-TOCs
DK	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system
DK	N 017270 -	99961072.8	21-Dec-99		05-Sep-07	1070322	21-Dec-19	Access list for SACD
DK-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
DK-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
EG	N 016822 -	99-292	21-Mar-99		23-Jun-02	22052	20-Mar-19	Efficient arithmetic coding of bitstream signals
EP	N 016405 A	05106730.4	20-Oct-97	1603244-A2	22-Aug-07	1603244	20-Oct-17	Lossless audio bitstream compression
EP	N 016831 A	05106390.7	22-Feb-99	1605596-A2	12-Dec-07	1605596	22-Feb-19	Overruling probabilities in arithmetic coding
ES	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	2126877	01-Feb-15	EFM+
ES	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	2150551	14-Feb-15	Interleaving ("fast header out")
ES	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
ES	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	0740831	31-Oct-15	Disc size on disc
ES	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	2158955	16-Nov-15	Buffering/speed control
ES	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
ES	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	0820663	24-Jan-17	7 channel backwards compatible coding
ES	N 016405 -	97943108.7	20-Oct-97		16-Nov-05	0879465	20-Oct-17	Lossless audio bitstream compression
ES	N 016405 A	05106730.4	20-Oct-97		22-Aug-07	1603244	20-Oct-17	Lossless audio bitstream compression
ES	N 016452 -	97940276.5	26-Sep-97		07-Dec-05	0865685	26-Sep-17	1 bit ADC + lossless coding of audio
ES	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
ES	N 016655 -	98952980.5	24-Nov-98	0956557-A1	03-Nov-04	0956557	24-Nov-18	Store audio with master TOC and sub-TOCs
ES	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system

Essential PH Patents relevant to Super Audio CD Player / SACD Part

<i>COUNTRY</i>	<i>REFERENCE</i>	<i>FILING NR</i>	<i>FILING DATE</i>	<i>PUBLICATION NR</i>	<i>GRANT DATE</i>	<i>GRANT NR</i>	<i>EXPIRY DATE</i>	<i>TITLE</i>
ES	N 016831 -	99902767.5	22-Feb-99		11-Oct-06	0983634	22-Feb-19	Overruling probabilities in arithmetic coding
ES	N 016831 A	05106390.7	22-Feb-99		12-Dec-07	1605596	22-Feb-19	Overruling probabilities in arithmetic coding
ES	N 017244 -	99902777.4	22-Feb-99	0983636-A1	26-Jan-05	0983636	22-Feb-19	Prediction on data
ES	N 017270 -	99961072.8	21-Dec-99		05-Sep-07	1070322	21-Dec-19	Access list for SACD
ES-EP	N 016194 A	03102217.1	07-Jan-98	1363283-A3			07-Jan-18	Merging plm channels in lossless coders
ES-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
ES-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
ES-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
FI	N 014746 -	963151	01-Feb-95		31-Aug-06	117311	01-Feb-15	EFM+
FI	N 014746 A	20060169	01-Feb-95				01-Feb-15	EFM+
FI	N 014746 B	20060170	01-Feb-95				01-Feb-15	EFM+
FI-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
FR	N 013146 -	90203049.3	19-Nov-90	0429139-A1	11-Jun-97	0429139	19-Nov-10	Buffering/speed control
FR	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
FR	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
FR	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
FR	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	0740831	31-Oct-15	Disc size on disc
FR	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
FR	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
FR	N 015471 -	95938001.5	06-Dec-95	0745255-A1	23-Oct-02	0745255	06-Dec-15	Multilayer disc and player
FR	N 015603 -	96935295.4	21-Nov-96	0811295-A1	10-Oct-01	0811295	21-Nov-16	Lowered granularity in multichannel DVD-interface
FR	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	0820663	24-Jan-17	7 channel backwards compatible coding
FR	N 015760 -	97908427.4	01-Apr-97	0853842-A1	09-Jul-03	0853842	01-Apr-17	Multichannel encoding
FR	N 015787 -	97900704.4	31-Jan-97		09-Nov-05	0820664	31-Jan-17	Compatible N-channel transmission
FR	N 015808 -	97908434.0	02-Apr-97	0832519-A1	29-Jan-03	0832519	02-Apr-17	Selection of masked thresholds
FR	N 015812 -	97916614.7	30-Apr-97	0843933-A1	27-Oct-04	0843933	30-Apr-17	Audio frequency scalability on DVD
FR	N 015812 A	04100933.3	30-Apr-97		30-Aug-06	1471465	30-Apr-17	Audio frequency scalability on DVD

Essential PH Patents relevant to Super Audio CD Player / SACD Part

<i>COUNTRY</i>	<i>REFERENCE</i>	<i>FILING NR</i>	<i>FILING DATE</i>	<i>PUBLICATION NR</i>	<i>GRANT DATE</i>	<i>GRANT NR</i>	<i>EXPIRY DATE</i>	<i>TITLE</i>
FR	N 016405 -	97943108.7	20-Oct-97		16-Nov-05	0879465	20-Oct-17	Lossless audio bitstream compression
FR	N 016405 A	05106730.4	20-Oct-97		22-Aug-07	1603244	20-Oct-17	Lossless audio bitstream compression
FR	N 016452 -	97940276.5	26-Sep-97		07-Dec-05	0865685	26-Sep-17	1 bit ADC + lossless coding of audio
FR	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
FR	N 016655 -	98952980.5	24-Nov-98	0956557-A1	03-Nov-04	0956557	24-Nov-18	Store audio with master TOC and sub-TOCs
FR	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system
FR	N 016831 -	99902767.5	22-Feb-99		11-Oct-06	0983634	22-Feb-19	Overruling probabilities in arithmetic coding
FR	N 016831 A	05106390.7	22-Feb-99		12-Dec-07	1605596	22-Feb-19	Overruling probabilities in arithmetic coding
FR	N 017244 -	99902777.4	22-Feb-99	0983636-A1	26-Jan-05	0983636	22-Feb-19	Prediction on data
FR	N 017270 -	99961072.8	21-Dec-99		05-Sep-07	1070322	21-Dec-19	Access list for SACD
FR	N 017358 -	99921084.2	03-Jun-99		28-Feb-07	1034540	03-Jun-19	Extra file contain also pauses SACD
FR	Q 098017 -	99923779.5	09-Jun-99		07-Sep-05	1027706	09-Jun-19	Store audio with master TOC and paired sub-TOCs
FR-EP	N 016194 A	03102217.1	07-Jan-98	1363283-A3			07-Jan-18	Merging plm channels in lossless coders
FR-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
FR-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
FR-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
GB	N 013146 -	90203049.3	19-Nov-90	0429139-A1	11-Jun-97	0429139	19-Nov-10	Buffering/speed control
GB	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
GB	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
GB	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
GB	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	0740831	31-Oct-15	Disc size on disc
GB	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
GB	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
GB	N 015471 -	95938001.5	06-Dec-95	0745255-A1	23-Oct-02	0745255	06-Dec-15	Multilayer disc and player
GB	N 015603 -	96935295.4	21-Nov-96	0811295-A1	10-Oct-01	0811295	21-Nov-16	Lowered granularity in multichannel DVD-interface
GB	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	0820663	24-Jan-17	7 channel backwards compatible coding
GB	N 015760 -	97908427.4	01-Apr-97	0853842-A1	09-Jul-03	0853842	01-Apr-17	Multichannel encoding

Essential PH Patents relevant to Super Audio CD Player / SACD Part

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GB	N 015787 -	97900704.4	31-Jan-97		09-Nov-05	0820664	31-Jan-17	Compatible N-channel transmission
GB	N 015808 -	97908434.0	02-Apr-97	0832519-A1	29-Jan-03	0832519	02-Apr-17	Selection of masked thresholds
GB	N 015812 -	97916614.7	30-Apr-97	0843933-A1	27-Oct-04	0843933	30-Apr-17	Audio frequency scalability on DVD
GB	N 015812 A	04100933.3	30-Apr-97		30-Aug-06	1471465	30-Apr-17	Audio frequency scalability on DVD
GB	N 016405 -	97943108.7	20-Oct-97		16-Nov-05	0879465	20-Oct-17	Lossless audio bitstream compression
GB	N 016405 A	05106730.4	20-Oct-97		22-Aug-07	1603244	20-Oct-17	Lossless audio bitstream compression
GB	N 016452 -	97940276.5	26-Sep-97		07-Dec-05	0865685	26-Sep-17	1 bit ADC + lossless coding of audio
GB	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
GB	N 016655 -	98952980.5	24-Nov-98	0956557-A1	03-Nov-04	0956557	24-Nov-18	Store audio with master TOC and sub-TOCs
GB	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system
GB	N 016831 -	99902767.5	22-Feb-99		11-Oct-06	0983634	22-Feb-19	Overruling probabilities in arithmetic coding
GB	N 016831 A	05106390.7	22-Feb-99		12-Dec-07	1605596	22-Feb-19	Overruling probabilities in arithmetic coding
GB	N 017244 -	99902777.4	22-Feb-99	0983636-A1	26-Jan-05	0983636	22-Feb-19	Prediction on data
GB	N 017270 -	99961072.8	21-Dec-99		05-Sep-07	1070322	21-Dec-19	Access list for SACD
GB	N 017358 -	99921084.2	03-Jun-99		28-Feb-07	1034540	03-Jun-19	Extra file contain also pauses SACD
GB-EP	N 016194 A	03102217.1	07-Jan-98	1363283-A3			07-Jan-18	Merging plm channels in lossless coders
GB-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
GB-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
GB-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
GR	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
GR	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
GR	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
GR	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	0740831	31-Oct-15	Disc size on disc
GR	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
GR	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
GR	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	0820663	24-Jan-17	7 channel backwards compatible coding
GR	N 016405 -	97943108.7	20-Oct-97		16-Nov-05	0879465	20-Oct-17	Lossless audio bitstream compression

Essential PH Patents relevant to Super Audio CD Player / SACD Part

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GR	N 016405 A	05106730.4	20-Oct-97		22-Aug-07	1603244	20-Oct-17	Lossless audio bitstream compression
GR	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
GR	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system
GR-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
GR-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
HK	N 014746 -	98114079.8	01-Feb-95	1012767-B1 1012767-B3	1012767-B1	HK1012767	31-Jan-15	EFM+
HK	N 014752 -	98114633.7	14-Feb-95	1013358-A 1013358-B2	1013358-B2	HK1013358	13-Feb-15	Interleaving ("fast header out")
HK	N 015087 -	98114932.5	08-Nov-95	1013719-A 1013719-B3	1013719-B3	HK1013719	07-Nov-15	Application code in block header
HK	N 015093 -	98114948.7	31-Oct-95	1013722-A 1013722-B4	1013722-B4	HK1013722	30-Oct-15	Disc size on disc
HK	N 015110 -	98114935.2	16-Nov-95	1013721-A 1013721-A15	1013721-A15	HK1013721	16-Nov-15	Buffering/speed control
HK	N 015452 -	98103966.7	26-Aug-96	1004699-A 1004699-A17	1004699-A17	HK1004699	26-Aug-16	Improved DC control (of EFM+)
HK	N 016655 -	00102700.7	24-Nov-98	1023836-A 1023836-A22	1023836-A22	HK1023836	24-Nov-18	Store audio with master TOC and sub-TOCs
HK	N 016657 -	00102699.0	24-Nov-98	1023835-A 1023835-A13	1023835-A13	HK1023835	24-Nov-18	Audio accessible via TOC and file system
HK	N 016805 -	00105210.3	22-Feb-99	1027445-A 1027445-A			22-Feb-19	Multichannel arithmetic encoding
HK	N 017216 -	00105211.2	02-Mar-99	1027446-A 1027446-A			02-Mar-19	Choosing between lossless and not-lossless signals
HK-GB	Q 098017 -	99923779.5	09-Jun-99		07-Sep-05	1027706	09-Jun-19	Store audio with master TOC and paired sub-TOCs
HU	N 014746 -	P9602247	01-Feb-95		16-May-02	221085	01-Feb-15	EFM+
HU	N 015093 -	P9601955	31-Oct-95		12-Jun-02	221214	31-Oct-15	Disc size on disc
HU	N 015110 -	P9602368	16-Nov-95		12-Nov-98	215622	16-Nov-15	Buffering/speed control
HU	N 015452 -	P9801354	26-Aug-96		23-Jul-02	221391	26-Aug-16	Improved DC control (of EFM+)
HU	N 015603 -	P9801262	21-Nov-96	9801262			21-Nov-16	Lowered granularity in multichannel DVD-interface
HU	N 016452 -	P9902037	26-Sep-97		15-Jul-03	222636	26-Sep-17	1 bit ADC + lossless coding of audio
ID	N 014746 -	P-950245	15-Feb-95		20-Jul-00	ID0005313	15-Feb-15	EFM+
ID	N 014752 -	P-950251	16-Feb-95		19-Aug-04	ID0010921	16-Feb-15	Interleaving ("fast header out")
ID	N 014752 A	P00200400402	16-Feb-95	042897-A	28-Nov-06	ID0018422	16-Feb-15	Interleaving ("fast header out")
ID	N 015110 -	P-952501	27-Nov-95		30-Jun-03	ID0011122	27-Nov-15	Buffering/speed control
ID	N 015452 -	P-962496	02-Sep-96	016.164A	16-Aug-00	ID0005386	02-Sep-16	Improved DC control (of EFM+)

Essential PH Patents relevant to Super Audio CD Player / SACD Part

<i>COUNTRY</i>	<i>REFERENCE</i>	<i>FILING NR</i>	<i>FILING DATE</i>	<i>PUBLICATION NR</i>	<i>GRANT DATE</i>	<i>GRANT NR</i>	<i>EXPIRY DATE</i>	<i>TITLE</i>
ID	N 015678 -	P-970352	05-Feb-97	015.887A	23-Dec-04	ID0014909	05-Feb-11	7 channel backwards compatible coding
ID	N 015812 -	P-971497	05-May-97	016868-A	20-Feb-02	ID0007382	05-May-17	Audio frequency scalability on DVD
ID	N 016194 -	W-980078	07-Jan-98		06-Oct-03	UNKNOWN	07-Jan-18	Merging plm channels in lossless coders
ID	N 016405 -	W-980037	20-Oct-97		31-Dec-03	0012414	20-Oct-11	Lossless audio bitstream compression
ID	N 016452 -	W-980020	26-Sep-97	020262-A			26-Sep-11	1 bit ADC + lossless coding of audio
ID	N 016650 -	W-990729	24-Nov-98		29-Aug-06	ID0018011	24-Nov-18	Variable rate audio disk header at block start
ID	N 016655 -	W-990730	24-Nov-98		13-Jan-06	ID0016900	24-Nov-18	Store audio with master TOC and sub-TOCs
ID	N 016657 -	W-990731	24-Nov-98		27-Dec-02	ID0009496	24-Nov-18	Audio accessible via TOC and file system
ID	N 016805 -	W-991389	22-Feb-99		28-Oct-02	ID0009092	22-Feb-19	Multichannel arithmetic encoding
ID	N 016822 -	W-991412	22-Feb-99		09-Sep-04	ID0014200	22-Feb-19	Efficient arithmetic coding of bitstream signals
ID	N 017270 -	W-001727	21-Dec-99	026200-A	28-Feb-06	0017043	21-Dec-19	Access list for SACD
IE	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
IE	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
IE	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
IE	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
IE	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
IE	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	0820663	24-Jan-17	7 channel backwards compatible coding
IE	N 016452 -	97940276.5	26-Sep-97		07-Dec-05	0865685	26-Sep-17	1 bit ADC + lossless coding of audio
IE	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
IE	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system
IE	N 017244 -	99902777.4	22-Feb-99	0983636-A1	26-Jan-05	0983636	22-Feb-19	Prediction on data
IE-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
IL	N 015452 -	120740	26-Aug-96		27-Oct-00	120740	26-Aug-16	Improved DC control (of EFM+)
IL	N 015678 -	121810	24-Jan-97		14-Nov-00	121810	24-Jan-17	7 channel backwards compatible coding
IL	N 016405 -	125205	20-Oct-97		30-Dec-04	125205	20-Oct-17	Lossless audio bitstream compression
IL	N 016657 -	131098	24-Nov-98		11-Jul-06	131098	24-Nov-18	Audio accessible via TOC and file system
IL	N 016822 -	133046	22-Feb-99		02-Sep-04	133046	22-Feb-19	Efficient arithmetic coding of bitstream signals

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IL	N 017216 -	132964	02-Mar-99		09-Dec-04	132964	02-Mar-19	Choosing between lossless and not-lossless signals
IL	N 017244 -	132963	22-Feb-99	132963	25-Apr-05	132963	22-Feb-19	Prediction on data
IL	N 017270 -	138252	21-Dec-99		11-Feb-05	138252	21-Dec-19	Access list for SACD
IN	N 014746 A	1577/Cal/98	13-Feb-95		27-Jul-01	185349	13-Feb-15	EFM+
IN	N 014746 B	1578/Cal/98	13-Feb-95		20-Apr-01	184753	13-Feb-15	EFM+
IN	N 014746 C	312/MAS/99	13-Feb-95		31-Mar-08	218255	13-Feb-15	EFM+
IN	N 014746 D	877/CHE/2004	13-Feb-95		23-Jun-08	221406	13-Feb-15	EFM+
IN	N 014746 E	878/CHE/2004	13-Feb-95		23-Jun-08	221405	13-Feb-15	EFM+
IN	N 014752 A	505/MAS/99	14-Feb-95		12-Dec-05	193791	14-Feb-15	Interleaving ("fast header out")
IN	N 015110 -	1488/Cal/95	21-Nov-95	184279	09-Feb-01	184279	21-Nov-15	Buffering/speed control
IN	N 015452 -	1530/Cal/96	28-Aug-96		28-May-04	191592	28-Aug-16	Improved DC control (of EFM+)
IN	N 015452 A	80/Kol/2003	28-Aug-96				28-Aug-16	Improved DC control (of EFM+)
IN	N 015678 -	189/Cal/97	03-Feb-97		17-Sep-04	192313	03-Feb-17	7 channel backwards compatible coding
IN	N 016194 -	2488/Cal/97	31-Dec-97		22-Dec-06	200312	31-Dec-17	Merging plm channels in lossless coders
IN	N 016405 -	2055/Cal/97	31-Oct-97		04-Dec-07	212589	31-Oct-17	Lossless audio bitstream compression
IN	N 016405 A	438/kol/2004	23-Jul-04		04-Dec-07	212589	23-Jul-24	Lossless audio bitstream compression
IN	N 016405 B	534/KOL/2004	31-Oct-97				31-Oct-17	Lossless audio bitstream compression
IN	N 016452 -	1805/Cal/97	26-Sep-97				26-Sep-17	1 bit ADC + lossless coding of audio
IN	N 016650 -	2082/Cal/98	26-Nov-98				26-Nov-18	Variable rate audio disk header at block start
IN	N 016650 A	720/kol/2004	26-Nov-98				26-Nov-18	Variable rate audio disk header at block start
IN	N 016655 -	2081/Cal/98	26-Nov-98		23-May-07	207165	26-Nov-18	Store audio with master TOC and sub-TOCs
IN	N 016657 -	2080/Cal/98	26-Nov-98		09-Feb-07	201648	26-Nov-18	Audio accessible via TOC and file system
IN	N 016805 -	IN/PCT/99/0008322	Feb-99		02-Mar-07	202667	22-Feb-19	Multichannel arithmetic encoding
IN	N 016822 -	IN/PCT/99/0007922	Feb-99		03-Oct-08	224202	22-Feb-19	Efficient arithmetic coding of bitstream signals
IN	N 016831 -	IN/PCT/99/0009322	Feb-99				22-Feb-19	Overruling probabilities in arithmetic coding
IN	N 017216 -	IN/PCT/99/0009402	Mar-99		10-Oct-07	210823	02-Mar-19	Choosing between lossless and not-lossless signals
IN	N 017244 -	IN/PCT/99/0008722	Feb-99		19-Mar-07	203829	22-Feb-19	Prediction on data

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IN	N 017270 -	IN/PCT/00/0036121	Dec-99		05-Mar-08	215935	21-Dec-19	Access list for SACD
IN	N 017270 A	00425/CHENP/0021	Dec-99				21-Dec-19	Access list for SACD
IT	N 013146 -	90203049.3	19-Nov-90	0429139-A1	11-Jun-97	0429139	19-Nov-10	Buffering/speed control
IT	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
IT	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
IT	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
IT	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	0740831	31-Oct-15	Disc size on disc
IT	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
IT	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
IT	N 015603 -	96935295.4	21-Nov-96	0811295-A1	10-Oct-01	0811295	21-Nov-16	Lowered granularity in multichannel DVD-interface
IT	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	0820663	24-Jan-17	7 channel backwards compatible coding
IT	N 015760 -	97908427.4	01-Apr-97	0853842-A1	09-Jul-03	0853842	01-Apr-17	Multichannel encoding
IT	N 016405 -	97943108.7	20-Oct-97		16-Nov-05	0879465	20-Oct-17	Lossless audio bitstream compression
IT	N 016405 A	05106730.4	20-Oct-97		22-Aug-07	1603244	20-Oct-17	Lossless audio bitstream compression
IT	N 016452 -	97940276.5	26-Sep-97		07-Dec-05	0865685	26-Sep-17	1 bit ADC + lossless coding of audio
IT	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
IT	N 017244 -	99902777.4	22-Feb-99	0983636-A1	26-Jan-05	0983636	22-Feb-19	Prediction on data
IT-EP	N 016194 A	03102217.1	07-Jan-98	1363283-A3			07-Jan-18	Merging plm channels in lossless coders
IT-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
IT-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
IT-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
JP	N 013146 -	90-313817	19-Nov-90	91-176854	18-Feb-00	3035333	19-Nov-10	Buffering/speed control
JP	N 014746 -	95-521693	01-Feb-95	97-512392	14-Mar-03	3408256	01-Feb-15	EFM+
JP	N 014746 B	05-203695	01-Feb-95	06-024356	15-Dec-06	3892020	01-Feb-15	EFM+
JP	N 014752 -	95-521698	14-Feb-95	96-509316	24-Jun-05	3691062	14-Feb-15	Interleaving ("fast header out")
JP	N 014752 A	04-348053	14-Feb-95	05-129222	21-Sep-07	4014595	14-Feb-15	Interleaving ("fast header out")
JP	N 015087 -	96-516712	08-Nov-95	97-507947	08-Sep-06	3850031	08-Nov-15	Application code in block header

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JP	N 015087 A	06-156822	08-Nov-95	06-277931			08-Nov-15	Application code in block header
JP	N 015110 -	96-518520	16-Nov-95	97-509004	21-Apr-06	3794704	16-Nov-15	Buffering/speed control
JP	N 015452 -	97-511019	26-Aug-96	98-508456	22-Dec-05	3754080	26-Aug-16	Improved DC control (of EFM+)
JP	N 015452 A	05-276620	26-Aug-96	06-087127	20-Apr-07	3946230	26-Aug-16	Improved DC control (of EFM+)
JP	N 015471 -	96-519640	06-Dec-95	97-509776			06-Dec-15	Multilayer disc and player
JP	N 015471 A	06-202175	06-Dec-95	07-018694			06-Dec-15	Multilayer disc and player
JP	N 015471 B	08-127432	06-Dec-95				06-Dec-15	Multilayer disc and player
JP	N 015603 -	97-521104	21-Nov-96	99-500564	20-Jul-07	3986084	21-Nov-16	Lowered granularity in multichannel DVD-interface
JP	N 015603 A	06-339470	21-Nov-96	07-109397	13-Jul-07	3983268	21-Nov-16	Lowered granularity in multichannel DVD-interface
JP	N 015678 -	97-528329	24-Jan-97		07-Apr-06	3790550	24-Jan-17	7 channel backwards compatible coding
JP	N 015760 -	97-536001	01-Apr-97	99-508110	15-Sep-06	3854313	01-Apr-17	Multichannel encoding
JP	N 015787 -	97-528333	31-Jan-97	99-503897	14-Apr-06	3793235	31-Jan-17	Compatible N-channel transmission
JP	N 015808 -	97-536003	02-Apr-97	02-515204	27-Apr-07	3948752	02-Apr-17	Selection of masked thresholds
JP	N 015812 -	97-539685	30-Apr-97	99-511315			30-Apr-17	Audio frequency scalability on DVD
JP	N 016194 -	98-529165	07-Jan-98	00-508146	20-Apr-07	3945827	07-Jan-18	Merging plm channels in lossless coders
JP	N 016405 -	98-521166	20-Oct-97	00-505272	07-Dec-07	4049820	20-Oct-17	Lossless audio bitstream compression
JP	N 016452 -	98-517340	26-Sep-97	00-502539	30-Mar-07	3935215	26-Sep-17	1 bit ADC + lossless coding of audio
JP	N 016452 A	06-349335	26-Sep-97	07-181208			26-Sep-17	1 bit ADC + lossless coding of audio
JP	N 016650 -	99-530437	24-Nov-98	01-510622	28-Dec-07	4060379	24-Nov-18	Variable rate audio disk header at block start
JP	N 016655 -	99-530435	24-Nov-98	01-510620			24-Nov-18	Store audio with master TOC and sub-TOCs
JP	N 016657 -	99-530436	24-Nov-98	01-510621			24-Nov-18	Audio accessible via TOC and file system
JP	N 016805 -	99-546747	22-Feb-99	01-527733			22-Feb-19	Multichannel arithmetic encoding
JP	N 016822 -	99-547974	22-Feb-99	02-500849			22-Feb-19	Efficient arithmetic coding of bitstream signals
JP	N 016831 -	99-546746	22-Feb-99	01-527732			22-Feb-19	Overruling probabilities in arithmetic coding
JP	N 017216 -	99-546757	02-Mar-99	01-527735			02-Mar-19	Choosing between lossless and not-lossless signals
JP	N 017244 -	99-546750	22-Feb-99	01-527734	05-Sep-08	4180124	22-Feb-19	Prediction on data
JP	N 017270 -	00-592831	21-Dec-99	02-534759			21-Dec-19	Access list for SACD

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JP	N 017358	-	00-553958	03-Jun-99	02-518774	23-Feb-07	3918038	03-Jun-19	Extra file contain also pauses SACD
JP	Q 098017	-	00-553959	09-Jun-99	02-518775			09-Jun-19	Store audio with master TOC and paired sub-TOCs
KR	N 013146	-	90-18855	21-Nov-90		19-Mar-99	202354	21-Nov-10	Buffering/speed control
KR	N 014746	-	96-704550	01-Feb-95	10-1997-0701388	08-Mar-05	0477168	01-Feb-15	EFM+
KR	N 014746	A	10-2003-700492207	207-Apr-03	10-2004-0004394	11-Jan-05	0467125	01-Feb-15	EFM+
KR	N 014752	-	95-704556	14-Feb-95	96-0702152	28-Nov-02	0364332	14-Feb-15	Interleaving ("fast header out")
KR	N 015087	-	96-704010	08-Nov-95		09-Jun-03	388370	08-Nov-15	Application code in block header
KR	N 015093	-	96-703818	31-Oct-95	97-0700906	01-Dec-03	410711	31-Oct-15	Disc size on disc
KR	N 015110	-	96-704086	16-Nov-95	1997-0700907	23-Dec-02	0367192	16-Nov-15	Buffering/speed control
KR	N 015452	-	97-702860	26-Aug-96	10-1997-0707543	02-May-05	0488634	26-Aug-16	Improved DC control (of EFM+)
KR	N 015471	-	96-704517	06-Dec-95	97-0701413	24-Oct-03	404530	06-Dec-15	Multilayer disc and player
KR	N 015603	-	10-1997-070542121	21-Nov-96	98-0702026	02-Dec-04	0461211	21-Nov-16	Lowered granularity in multichannel DVD-interface
KR	N 015678	-	97-707116	24-Jan-97	10-1998-0703716	04-Mar-04	0423173	24-Jan-17	7 channel backwards compatible coding
KR	N 015760	-	97-709172	01-Apr-97	99-22730	2005-0472052	0472402	01-Apr-17	Multichannel encoding
KR	N 015808	-	97-709253	02-Apr-97		07-Oct-05	0521663	02-Apr-17	Selection of masked thresholds
KR	N 015812	-	98-700091	30-Apr-97	99-28791	21-Dec-04	0464233	30-Apr-17	Audio frequency scalability on DVD
KR	N 016194	-	98-707303	07-Jan-98	00-64612	01-Nov-05	0526942	07-Jan-18	Merging plm channels in lossless coders
KR	N 016405	-	98-705207	20-Oct-97	10-1999-0077073	12-Feb-07	10-0684051	20-Oct-17	Lossless audio bitstream compression
KR	N 016452	-	98-704329	26-Sep-97	99-72035	14-Jul-06	10-0603894	26-Sep-17	1 bit ADC + lossless coding of audio
KR	N 016650	-	10-1999-700680024	24-Nov-98	00-70554	06-0637292	10-0637292	24-Nov-18	Variable rate audio disk header at block start
KR	N 016655	-	10-1999-700680224	24-Nov-98	00-70556	02-Apr-07	10-0704733	24-Nov-18	Store audio with master TOC and sub-TOCs
KR	N 016657	-	10-1999-700680324	24-Nov-98	00-70557	09-Aug-06	10-0610161	24-Nov-18	Audio accessible via TOC and file system
KR	N 016805	-	10-1999-701052722	22-Feb-99	01-12571	06-0622590	10-2006-225	22-Feb-19	Multichannel arithmetic encoding
KR	N 016822	-	10-1999-701079722	22-Feb-99	01-12832	18-Jul-06	10-0604364	22-Feb-19	Efficient arithmetic coding of bitstream signals
KR	N 016831	-	10-1999-701062722	22-Feb-99	01-12666	06-0630942	10-0630944	22-Feb-19	Overruling probabilities in arithmetic coding
KR	N 017216	-	10-1999-701062902	30-Mar-99	01-12668	18-Jul-06	10-0604363	02-Mar-19	Choosing between lossless and not-lossless signals
KR	N 017244	-	10-1999-701062822	22-Feb-99	01-12667	22-Jan-07	10-0675392	22-Feb-19	Prediction on data

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KR	N 017270 -	10-2000-700992021	Dec-99	01-0083783	21-Nov-06	10-0650312	21-Dec-19	Access list for SACD
KR	N 017358 -	10-2000-700131603	Jun-99	01-22719	22-Mar-07	10-0701255	03-Jun-19	Extra file contain also pauses SACD
KR	Q 098017 -	10-2000-700131809	Jun-99	01-22721	07-Feb-07	10-682430	09-Jun-19	Store audio with master TOC and paired sub-TOCs
LU	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
LU	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
LU	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
LU	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
LU-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
MC	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
MC	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
MC	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
MX	N 014746 -	9603394	01-Feb-95		28-Jul-98	189493	01-Feb-15	EFM+
MX	N 015087 -	962808	08-Nov-95		17-Dec-01	205654	08-Nov-15	Application code in block header
MX	N 015452 -	973161	26-Aug-96		06-Oct-03	216755	26-Aug-16	Improved DC control (of EFM+)
MX	N 015812 -	980639	30-Apr-97		28-Oct-03	217233	30-Apr-17	Audio frequency scalability on DVD
MX	N 016074 -	98-5580	10-Nov-97		26-Sep-05	230835	10-Nov-17	Alternative calculation of rice code parameter
MX	N 016405 -	98-005510	20-Oct-97		14-May-03	214550	20-Oct-17	Lossless audio bitstream compression
MX	N 016650 -	996859	24-Nov-98		24-May-05	228637	24-Nov-18	Variable rate audio disk header at block start
MX	N 016655 -	996948	24-Nov-98				24-Nov-18	Store audio with master TOC and sub-TOCs
MX	N 016657 -	996949	24-Nov-98		28-Apr-05	227790	24-Nov-18	Audio accessible via TOC and file system
MX	N 016822 -	9910754	22-Feb-99		22-Apr-03	214278	22-Feb-19	Efficient arithmetic coding of bitstream signals
MX	N 017270 -	PA/a/00/008819	21-Dec-99		31-Aug-04	222406	21-Dec-19	Access list for SACD
MX	N 017358 -	2000-001333	03-Jun-99		10-Sep-04	222684	03-Jun-19	Extra file contain also pauses SACD
MY	N 014746 -	PI9500357	14-Feb-95		30-Apr-01	112136	30-Apr-16	EFM+
MY	N 014752 -	PI9500378	15-Feb-95		30-Jun-04	117269	30-Jun-19	Interleaving ("fast header out")
MY	N 015110 -	PI9503634	27-Nov-95		31-Mar-06	121993	31-Mar-21	Buffering/speed control
MY	N 015452 -	PI9603603	29-Aug-96		30-Sep-03	MY-115841-	30-Sep-18	Improved DC control (of EFM+)

Essential PH Patents relevant to Super Audio CD Player / SACD Part

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MY	N 015678 -	PI9700482	06-Feb-97		30-Jun-06	123845	30-Jun-21	7 channel backwards compatible coding
MY	N 015812 -	PI9701985	06-May-97		29-Sep-06	MY-126379-	29-Sep-21	Audio frequency scalability on DVD
MY	N 016194 -	PI9800152	14-Jan-98		30-Aug-05	119912-A	30-Aug-20	Merging plm channels in lossless coders
MY	N 016405 -	PI97005217	04-Nov-97		29-Jun-07	130443	29-Jun-22	Lossless audio bitstream compression
MY	N 016452 -	PI9704674	06-Oct-97		31-May-05	119457-A	31-May-20	1 bit ADC + lossless coding of audio
MY	N 016650 -	PI98005386	27-Nov-98		31-Jul-07	130772	31-Jul-22	Variable rate audio disk header at block start
MY	N 016657 -	PI9805389	27-Nov-98		30-Jun-06	124655-A	30-Jun-21	Audio accessible via TOC and file system
MY	N 016805 -	PI9900954	15-Mar-99		31-Jul-06	125292	31-Jul-21	Multichannel arithmetic encoding
MY	N 016822 -	PI9901072	22-Mar-99		30-Mar-07	MY-129270-	30-Mar-22	Efficient arithmetic coding of bitstream signals
MY	N 016831 -	PI9901004	17-Mar-99		30-Aug-06	MY-125647-	30-Aug-21	Overruling probabilities in arithmetic coding
MY	N 017216 -	PI9901000	17-Mar-99		31-May-06	123270-A	31-May-21	Choosing between lossless and not-lossless signals
MY	N 017244 -	PI9900975	16-Mar-99		30-Jun-06	124686	30-Jun-21	Prediction on data
MY	N 017358 -	PI99002326	08-Jun-99		31-Oct-07	133145	31-Oct-22	Extra file contain also pauses SACD
MY	Q 098017 -	PI9902377	10-Jun-99		31-Oct-06	MY-126491-	31-Oct-21	Store audio with master TOC and paired sub-TOCs
NL	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
NL	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
NL	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
NL	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	0740831	31-Oct-15	Disc size on disc
NL	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
NL	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
NL	N 015678 -	97900395.1	24-Jan-97	0820663-A1	31-Mar-04	0820663	24-Jan-17	7 channel backwards compatible coding
NL	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
NL	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system
NL-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
NL-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
NL-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
NO	N 014746 -	19963388	01-Feb-95		18-Dec-06	322948	01-Feb-15	EFM+

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NO	N 014746 A	20043831	01-Feb-95				01-Feb-15	EFM+
NO	N 014746 B	20043830	01-Feb-95				01-Feb-15	EFM+
NZ	N 014746 -	278137	01-Feb-95	278137	23-Jun-97	278137	01-Feb-15	EFM+
PL	N 014746 -	P319407	01-Feb-95		04-Mar-02	192729	01-Feb-15	EFM+
PL	N 014746 A	P378756	01-Feb-95				01-Feb-15	EFM+
PL	N 014746 B		01-Feb-95				01-Feb-15	EFM+
PL	N 015093 -	P315584	31-Oct-95		29-Jun-00	180182	31-Oct-15	Disc size on disc
PL	N 015093 A	P337170	31-Oct-95		03-Jul-00	180307	31-Oct-15	Disc size on disc
PL	N 015110 -	P315686	16-Nov-95		16-Nov-99	178635	16-Nov-15	Buffering/speed control
PL	N 015452 -	P320006	26-Aug-96		18-Oct-02	183099	26-Aug-16	Improved DC control (of EFM+)
PL	N 015603 -	P321707	21-Nov-96		03-Jul-01	182469	21-Nov-16	Lowered granularity in multichannel DVD-interface
PL	N 015603 A	P347873	21-Nov-96		18-Oct-02	183167	21-Nov-16	Lowered granularity in multichannel DVD-interface
PL	N 016452 -	P327230	26-Sep-97		09-Feb-06	192073	26-Sep-17	1 bit ADC + lossless coding of audio
PL	N 016657 -	P335045	24-Nov-98		08-Nov-07	193705	24-Nov-18	Audio accessible via TOC and file system
PL	Q 098017 -	P338576	09-Jun-99		18-Aug-06	193706	09-Jun-19	Store audio with master TOC and paired sub-TOCs
PT	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
PT	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
PT	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
PT	N 015093 -	95934262.7	31-Oct-95	0740831-A1	10-May-00	0740831	31-Oct-15	Disc size on disc
PT	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
PT	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
PT	N 016405 -	97943108.7	20-Oct-97		16-Nov-05	0879465	20-Oct-17	Lossless audio bitstream compression
PT	N 016405 A	05106730.4	20-Oct-97		22-Aug-07	1603244		Lossless audio bitstream compression
PT	N 016650 -	98952984.7	24-Nov-98		31-Aug-05	0956559	24-Nov-18	Variable rate audio disk header at block start
PT	N 016657 -	98952981.3	24-Nov-98		02-Nov-05	0956558	24-Nov-18	Audio accessible via TOC and file system
PT	N 016831 -	99902767.5	22-Feb-99		11-Oct-06	0983634	22-Feb-19	Overruling probabilities in arithmetic coding
PT	N 016831 A	05106390.7	22-Feb-99		12-Dec-07	1605596		Overruling probabilities in arithmetic coding

Essential PH Patents relevant to Super Audio CD Player / SACD Part

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PT	N 017244 -	99902777.4	22-Feb-99	0983636-A1	26-Jan-05	0983636	22-Feb-19	Prediction on data
PT-EP	N 016194 A	03102217.1	07-Jan-98	1363283-A3			07-Jan-18	Merging plm channels in lossless coders
PT-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
PT-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
PT-EP	N 017216 -	99903866.4	02-Mar-99	0981862-A1			02-Mar-19	Choosing between lossless and not-lossless signals
RO	N 014746 -	96-001653	01-Feb-95		30-Mar-04	119099	01-Feb-15	EFM+
RO	N 014746 A	01-00059	01-Feb-95		30-Apr-04	119260	01-Feb-15	EFM+
RO	N 015093 -	96-01469	31-Oct-95		31-Mar-98	113191	31-Oct-15	Disc size on disc
RU	N 014746 -	96118250	01-Feb-95	33	27-Jul-00	2153707	01-Feb-15	EFM+
RU	N 015093 -	96116857	31-Oct-95	96116857	27-Jul-02	2186427	31-Oct-15	Disc size on disc
RU	N 015110 -	96117353	16-Nov-95		10-Jan-01	2161828	16-Nov-15	Buffering/speed control
RU	N 015452 -	97108582	26-Aug-96	15	20-Jul-00	2153200	26-Aug-16	Improved DC control (of EFM+)
RU	N 016452 -	98112792	26-Sep-97		20-Jan-02	2178618	26-Sep-17	1 bit ADC + lossless coding of audio
RU	N 016657 -	99119102	24-Nov-98		10-Mar-06	2271580	24-Nov-18	Audio accessible via TOC and file system
RU	N 017244 -	99127305	22-Feb-99		20-Apr-04	2227368	22-Feb-19	Prediction on data
SE	N 014746 -	95905746.4	01-Feb-95	0745254-A1	04-Nov-98	0745254	01-Feb-15	EFM+
SE	N 014752 -	95907127.5	14-Feb-95	0698270-A1	26-Jul-00	0698270	14-Feb-15	Interleaving ("fast header out")
SE	N 015087 -	95934799.8	08-Nov-95	0740832-A1	07-Jun-00	0740832	08-Nov-15	Application code in block header
SE	N 015110 -	95936053.8	16-Nov-95	0741900-A1	13-Jun-01	0741900	16-Nov-15	Buffering/speed control
SE	N 015452 -	96926545.3	26-Aug-96	0789910-A1	23-May-01	0789910	26-Aug-16	Improved DC control (of EFM+)
SE	N 016831 -	99902767.5	22-Feb-99		11-Oct-06	0983634	22-Feb-19	Overruling probabilities in arithmetic coding
SE	N 016831 A	05106390.7	22-Feb-99		12-Dec-07	1605596	22-Feb-19	Overruling probabilities in arithmetic coding
SE-EP	N 016805 -	99902773.3	22-Feb-99	0981861-A1			22-Feb-19	Multichannel arithmetic encoding
SE-EP	N 016822 -	99902770.9	22-Feb-99	0983635-A1			22-Feb-19	Efficient arithmetic coding of bitstream signals
SG	N 014752 -	9607077.6	14-Feb-95	0050623-A	24-Dec-01	50623	14-Feb-15	Interleaving ("fast header out")
SG	N 015087 -	9702180.2	08-Nov-95		22-Jun-99	41092	08-Nov-15	Application code in block header
SG	N 015093 -	9703040.7	31-Oct-95		22-Feb-99	42670	31-Oct-15	Disc size on disc

Essential PH Patents relevant to Super Audio CD Player / SACD Part

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SG	N 015110	-	9611198.4		16-Nov-95	28-Sep-98	34467	16-Nov-15	Buffering/speed control	
SG	N 015452	-	9703300.5		26-Aug-96	15-Feb-02	44185	26-Aug-16	Improved DC control (of EFM+)	
SG	N 015678	-	9705093.4		24-Jan-97	16-Nov-99	46116	24-Jan-17	7 channel backwards compatible coding	
SG	N 015760	-	9705261.7		01-Apr-97	18-Apr-00	47256	01-Apr-17	Multichannel encoding	
SG	N 015808	-	9705475.3		02-Apr-97	29-Oct-04	48673	02-Apr-17	Selection of masked thresholds	
SG	N 015812	-	9801266.9		30-Apr-97	25-Jan-00	50214	30-Apr-17	Audio frequency scalability on DVD	
SG	N 016194	-	9804922.4		07-Jan-98	21-Aug-01	56435	07-Jan-18	Merging plm channels in lossless coders	
SG	N 016405	-	9804253.4		20-Oct-97	08-Feb-03	55567	20-Oct-17	Lossless audio bitstream compression	
SG	N 016452	-	9803241.0		26-Sep-97	17-Apr-01	53907	26-Sep-17	1 bit ADC + lossless coding of audio	
SG	N 016655	-	9903531.3		24-Nov-98	04-Jan-03	66969	24-Nov-18	Store audio with master TOC and sub-TOCs	
SG	N 016657	-	9903526.3		24-Nov-98	04-Jan-03	66964	24-Nov-18	Audio accessible via TOC and file system	
SG	N 016805	-	9905598.0		22-Feb-99	30-Jan-03	68963	22-Feb-19	Multichannel arithmetic encoding	
SG	N 016822	-	9905737.4		22-Feb-99	24-Oct-02	69438	22-Feb-19	Efficient arithmetic coding of bitstream signals	
SG	N 016831	-	9905633.5		22-Feb-99	12-Oct-02	68995	22-Feb-19	Overruling probabilities in arithmetic coding	
SG	N 017216	-	9905637.6		02-Mar-99	12-Oct-02	68997	02-Mar-19	Choosing between lossless and not-lossless signals	
SG	N 017244	-	9905611.1		22-Feb-99	07-Feb-03	68976	22-Feb-19	Prediction on data	
SG	Q 098017	-	200000659-3		09-Jun-99	28-Nov-03	70862	09-Jun-19	Store audio with master TOC and paired sub-TOCs	
SI	N 014746	-	95905746.4		01-Feb-95	0745254-A1	04-Nov-98	9530188	01-Feb-15	EFM+
SI	N 015678	-	97900395.1		24-Jan-97	0820663-A1	31-Mar-04	0820663	24-Jan-17	7 channel backwards compatible coding
SK	N 014746	-	96-PP1051		01-Feb-95	96-PP1051	19-Nov-03	283798	01-Feb-15	EFM+
SK	N 015093	-	96-PP920		31-Oct-95		12-Aug-02	282592	31-Oct-15	Disc size on disc
TR	N 014746	-	95-0136		15-Feb-95		22-Oct-02	29626	15-Feb-15	EFM+
TR	N 014752	-	95-0143		16-Feb-95		03-May-99	29401	16-Feb-15	Interleaving ("fast header out")
TR	N 015093	-	95-1446		17-Nov-95		22-Dec-97	TR19950144	17-Nov-15	Disc size on disc
TR	N 015678	-	97-01134		24-Jan-97		21-Mar-02	TR19970113	24-Jan-17	7 channel backwards compatible coding
TR	N 016650	-	99-01786		24-Nov-98				24-Nov-18	Variable rate audio disk header at block start
TR	N 016657	-	99-01788		24-Nov-98		21-May-07	TR19990178	24-Nov-18	Audio accessible via TOC and file system

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TR	N 016822	-	99-02831		22-Feb-99		21-Mar-02	TR19990283 22-Feb-19	Efficient arithmetic coding of bitstream signals
TW	N 013146	-	79108193	56055	01-Oct-90	12-Aug-92	56055	01-Oct-10	Buffering/speed control
TW	N 014746	-	84101360	294862	15-Feb-95	15-Apr-97	82864	15-Feb-15	EFM+
TW	N 014752	-	84101856	256904	28-Feb-95	20-Dec-95	73076	28-Feb-15	Interleaving ("fast header out")
TW	N 015087	-	84113943	292382	27-Dec-95	13-Mar-97	82165	27-Dec-15	Application code in block header
TW	N 015093	-	84113944		27-Dec-95	01-Sep-05	I239004	27-Dec-15	Disc size on disc
TW	N 015110	-	85102221	439365	27-Feb-96	25-Sep-01	NI-133095	27-Feb-16	Buffering/speed control
TW	N 015452	-	85112032	394931	02-Oct-96	19-Oct-00	116382	02-Oct-16	Improved DC control (of EFM+)
TW	N 015471	-	088216250	525822	27-Feb-96	14-Jul-03	201070	27-Feb-16	Multilayer disc and player
TW	N 015760	-	86104273	359933	03-Apr-97	04-Oct-99	103527	03-Apr-17	Multichannel encoding
TW	N 016194	-	87102116	418574	16-Feb-98	03-May-01	124972	16-Feb-18	Merging plm channels in lossless coders
TW	N 016650	-	87120722	541796	14-Dec-98	31-Oct-03	NI-181048	13-Dec-18	Variable rate audio disk header at block start
TW	N 016655	-	87120523	432368	10-Dec-98	20-Aug-01	130935	10-Dec-18	Store audio with master TOC and sub-TOCs
TW	N 016657	-	87120529	408312	10-Dec-98	09-Mar-01	122045	10-Dec-18	Audio accessible via TOC and file system
TW	N 017216	-	88103645	484284	10-Mar-99	06-Aug-02	NI-153766	10-Mar-19	Choosing between lossless and not-lossless signals
TW	N 017270	-	089102669	567473	17-Feb-00	06-Apr-04	NI-192359	16-Feb-20	Access list for SACD
TW	N 017358	-	88112303	439055	20-Jul-99	24-Sep-01	133055	20-Jul-19	Extra file contain also pauses SACD
TW	Q 098017	-	88115547	452765	09-Sep-99	28-Dec-01	NI-140065	08-Sep-19	Store audio with master TOC and paired sub-TOCs
UA	N 014746	-	96083269		01-Feb-95	15-Nov-01	42757	01-Feb-15	EFM+
UA	N 015093	-	96072883		31-Oct-95	15-Oct-01	42015	31-Oct-15	Disc size on disc
US	N 013146	A	07/896803		09-Jun-92	18-May-93	5212678	28-Sep-10	Buffering/speed control
US	N 013146	B	08/003345		12-Jan-93	31-Oct-95	5463607	31-Oct-12	Buffering/speed control
US	N 014746	-	08/385533		08-Feb-95	09-Dec-97	5696505	08-Feb-15	EFM+
US	N 014746	A	08/900275		08-Feb-95	06-Jul-99	5920272	08-Feb-15	EFM+
US	N 014746	K	90/006637		09-May-03			09-May-23	EFM+
US	N 014746	R	09/899091		08-Feb-95			08-Feb-15	EFM+
US	N 014752	-	08/389369		16-Feb-95	17-Nov-98	5838696	16-Feb-15	Interleaving ("fast header out")

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US	N 014752 B	09/136650	19-Aug-98		04-Apr-00	6047397	16-Feb-15	Interleaving ("fast header out")
US	N 015087 -	08/558515	16-Nov-95		06-Jul-99	5920874	16-Nov-15	Application code in block header
US	N 015093 -	08/558517	16-Nov-95		14-May-02	6388962	16-Nov-15	Disc size on disc
US	N 015093 C	10/134912	29-Apr-02	2002-0118632-A1	25-Feb-03	6526005	16-Nov-15	Disc size on disc
US	N 015110 A	08/858482	16-May-97				27-Nov-15	Buffering/speed control
US	N 015452 -	08/706048	30-Aug-96		04-Aug-98	5790056	30-Aug-16	Improved DC control (of EFM+)
US	N 015471 -	08/573850	18-Dec-95		09-Apr-02	6370102	18-Dec-15	Multilayer disc and player
US	N 015471 A	10/083330	22-Oct-01	2002-0101811-A1	16-Sep-03	6621786	18-Dec-15	Multilayer disc and player
US	N 015471 B	10/614411	07-Jul-03	2004-0095879-A1	24-Apr-07	7209431	18-Dec-15	Multilayer disc and player
US	N 015603 -	08/798198	09-Dec-96		13-Jun-00	6076062	09-Dec-16	Lowered granularity in multichannel DVD-interface
US	N 015603 R	10/170822	13-Jun-02				09-Dec-19	Lowered granularity in multichannel DVD-interface
US	N 015678 -	08/795820	06-Feb-97		15-Dec-98	5850456	06-Feb-17	7 channel backwards compatible coding
US	N 015760 -	08/826916	09-Apr-97		28-Sep-99	5960037	09-Apr-17	Multichannel encoding
US	N 015787 -	08/795120	07-Feb-97		02-Mar-99	5878080	07-Feb-17	Compatible N-channel transmission
US	N 015808 -	08/826919	09-Apr-97		08-Feb-00	6023490	09-Apr-17	Selection of masked thresholds
US	N 015812 -	08/852761	07-May-97		30-Nov-99	5995493	07-May-17	Audio frequency scalability on DVD
US	N 016194 -	09/007551	15-Jan-98		24-Jul-01	6266368	15-Jan-18	Merging plm channels in lossless coders
US	N 016194 R	10/626427	24-Jul-03				15-Jan-18	Merging plm channels in lossless coders
US	N 016405 -	08/966375	07-Nov-97		11-Sep-01	6289306	07-Nov-17	Lossless audio bitstream compression
US	N 016405 A	09/726764	30-Nov-00	2001-0003165-A1	18-Mar-03	6535845	07-Nov-17	Lossless audio bitstream compression
US	N 016405 B	10/304122	25-Nov-02	2003-0074193-A1	12-Sep-06	7107212	07-Nov-17	Lossless audio bitstream compression
US	N 016452 -	08/937435	25-Sep-97		31-Jul-01	6269338	06-Apr-18	1 bit ADC + lossless coding of audio
US	N 016452 A	09/689056	12-Oct-00		17-Aug-04	6778965	25-Sep-17	1 bit ADC + lossless coding of audio
US	N 016452 B	10/872844	21-Jun-04	2004-0225496-A1	29-May-07	7225136	25-Sep-17	1 bit ADC + lossless coding of audio
US	N 016650 -	09/341911	24-Nov-98		09-Dec-03	6661762	24-Nov-18	Variable rate audio disk header at block start
US	N 016650 A	10/680458	07-Oct-03		07-Nov-06	7133334	24-Nov-18	Variable rate audio disk header at block start
US	N 016655 -	09/341910	24-Nov-98				24-Nov-18	Store audio with master TOC and sub-TOCs

Essential PH Patents relevant to Super Audio CD Player / SACD Part

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US	N 016657 -	09/355379	24-Nov-98		05-Mar-02	6353580	24-Nov-18	Audio accessible via TOC and file system
US	N 016657 A	10/039713	29-Oct-01	2002-0064102-A1	27-Mar-07	7196976	24-Nov-18	Audio accessible via TOC and file system
US	N 016657 B	11/682524	06-Mar-07	2007-0147190-A1			24-Nov-18	Audio accessible via TOC and file system
US	N 016805 -	09/268252	15-Mar-99		08-May-01	6229463	15-Mar-19	Multichannel arithmetic encoding
US	N 016822 -	09/273285	19-Mar-99		07-Nov-00	6144320	19-Mar-19	Efficient arithmetic coding of bitstream signals
US	N 016831 -	09/271746	18-Mar-99		14-Aug-01	6275176	18-Mar-19	Overruling probabilities in arithmetic coding
US	N 017216 -	09/270440	16-Mar-99		18-Feb-03	6522695	16-Mar-19	Choosing between lossless and not-lossless signals
US	N 017216 A	10/298975	18-Nov-02		27-Mar-07	7197079	16-Mar-19	Choosing between lossless and not-lossless signals
US	N 017244 -	09/270441	16-Mar-99		04-Sep-01	6285301	16-Mar-19	Prediction on data
US	N 017270 -	09/479638	07-Jan-00		04-Nov-03	6643228	07-Jan-20	Access list for SACD
US	N 017270 A	10/651858	29-Aug-03	2004-0047613-A1	04-Sep-07	7266054	07-Jan-20	Access list for SACD
US	N 017358 -	09/328023	08-Jun-99		14-Oct-03	6633515	08-Jun-19	Extra file contain also pauses SACD
US	Q 098017 -	09/328024	08-Jun-99		09-Apr-02	6370090	08-Jun-19	Store audio with master TOC and paired sub-TOCs
US	Q 098017 A	10/056366	25-Jan-02	2002-0114252-A1	28-Aug-07	7263051	08-Jun-19	Store audio with master TOC and paired sub-TOCs
US	Q 098017 B	11/673113	09-Feb-07	2007-0127321-A1			08-Jun-19	Store audio with master TOC and paired sub-TOCs
VE	N 015093 -	95-2032	17-Nov-95		04-Oct-02	57442	17-Nov-15	Disc size on disc
VE	N 015452 -	96-1517	30-Aug-96		07-Oct-02	57944	30-Aug-16	Improved DC control (of EFM+)
VE	N 015678 -	97-228	07-Feb-97	BUL.NO.428	28-Sep-00	58215	07-Feb-17	7 channel backwards compatible coding
VN	N 014746 -	S19960099	13-Aug-96		25-Oct-00	1407	13-Aug-11	EFM+
VN	N 015093 -	S19960035	15-Jul-96		30-Jun-00	1338	15-Jul-11	Disc size on disc
VN	N 015110 -	S19960064	26-Jul-96		12-Apr-00	1241	26-Jul-16	Buffering/speed control
VN	N 015452 -	S19970327	25-Apr-97		27-Nov-00	1598	25-Apr-17	Improved DC control (of EFM+)
VN	N 015603 -	S19970704	21-Nov-96		25-Oct-02	3007	21-Nov-16	Lowered granularity in multichannel DVD-interface
VN	N 015678 -	S19970913	07-Oct-97		20-Apr-01	2012	07-Oct-17	7 channel backwards compatible coding
VN	N 015812 -	S19980009	30-Apr-97		21-Mar-02	2681	30-Apr-17	Audio frequency scalability on DVD
VN	N 016405 -	S19980572	20-Oct-97				20-Oct-17	Lossless audio bitstream compression
VN	N 016452 -	S19980496	26-Sep-97		17-Feb-05	4791	26-Sep-17	1 bit ADC + lossless coding of audio

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VN	N 016650 -	S19990609	24-Nov-98		07-Dec-04	4684	24-Nov-18	Variable rate audio disk header at block start
ZA	N 014746 -	95-1115	10-Feb-95		30-Oct-96	95-1115	10-Feb-15	EFM+
ZA	N 014752 -	951194	14-Feb-95		30-Oct-96	95-1194	14-Feb-15	Interleaving ("fast header out")
ZA	N 015093 -	959489	08-Nov-95		30-Jul-97	95-9489	08-Nov-15	Disc size on disc
ZA	N 015110 -	95-9939	22-Nov-95		30-Jul-97	95-9939	22-Nov-15	Buffering/speed control
ZA	N 015452 -	967261	27-Aug-96		27-May-98	96/7261	27-Aug-16	Improved DC control (of EFM+)
ZA	N 016405 -	9710008	06-Nov-97		28-Jul-99	97/10008	06-Nov-17	Lossless audio bitstream compression
ZA	N 016805 -	992073	15-Mar-99		24-Nov-99	99-2073	15-Mar-19	Multichannel arithmetic encoding