

Test Setup

Test Setup		date	2017-09-07	2017-09-07	2017-09-07	2017-09-07	2017-09-07	2017-09-07	2017-08-29	2017-08-13		2017-09-07	2017-09-07	2017-09-07	2017-09-07	2017-09-07	2017-08-13		2017-09-07	2017-09-07	2017-09-07	2017-09-07	2017-09-07	2017-08-05
	sourcecard	nF	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	nF	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	nF	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker	EMU-tracker
line output loading capacitance	nF	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	nF	3.3	3.3	3.3	3.3	3.3	3.3	nF	3.3	3.3	3.3	3.3	3.3	3.3
ext. left pre-amp gain setting	V/V	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	V/V	0.03	0.03	0.03	0.03	0.03	0.03	V/V	0.5 or 0.03	0.5 or 0.03	0.5 or 0.03	0.5 or 0.03	0.5 or 0.03	0.5 or 0.03
attenuator setting	dB	-30	-30	-30	-30	-30	-30	-30	-30	-30	dB	-30	-30	-30	-30	-30	-30	dB	-6 or -30	-6 or -30	-6 or -30	-6 or -30	-6 or -30	-6 or -30
power supply voltage	V=	24	24	24	24	24	24	24	24	24	V=	24	24	24	24	24	24	V=	24	24	24	24	24	24
voltage at pin1	V=	0	0	0	5.78	0	0	0	0	0	V=	0	0	0	5.78	0	0	V=	0	0	0	0	0	0
voltage at pin8	V=	0	0	0	0	1,019	1,019	1,019	1,019	1,019	V=	0	0	0	0	1,019	1,019	V=	2,631	2,631	2,631	2,631	2,631	2,631
standby current consumption	mA=	64	64	34	70	36	31	31	31	31	mA=	64	64	34	70	36	31	mA=	93	118	106	108	102	102
test signal frequency	kHz	1	1	1	1	1	1	1	1	1	kHz	1	1	1	1	1	1	kHz	1	1	1	1	1	1

	pcb		Flipper	Flipper	Flipper	Flipper	Voltwide	Voltwide	Voltwide	Voltwide	Flipper	Flipper	Flipper	Flipper	Voltwide	Voltwide	Voltwide	Voltwide		Voltwide	Voltwide	Voltwide	Voltwide	Voltwide	Voltwide
	channel		right	left	left	left	right	right	right	right	right	left	left	left	right	right	right	right		right	Voltwide	Voltwide	Voltwide	Voltwide	Voltwide
	pcb configuration		2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL		2xRTL	2xRTL	2xRTL	2xRTL	2xRTL	2xRTL
	class-0 chip		TPA3118	TPA3118	TPA3128	TPA3128	TPA3128	TPA3128	TPA3128	TPA3128	TPA3118	TPA3118	TPA3128	TPA3128	TPA3128	TPA3128	TPA3128	TPA3118		TPA3118	TPA3118	TPA3118	TPA3118	TPA3118	TPA3118
	modulation scheme		BD	BD	hybrid	BD	hybrid	hybrid	hybrid	BD	BD	BD	hybrid	BD	hybrid	hybrid	BD	BD		BD	BD	BD	BD	BD	BD
	pwm clock frequency		400	400	600	600	400	400	400	400	400	400	600	400	400	400	400	400		400	400	400	400	400	400
	amp feedback configuration		pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter	pre-filter		post-filter	post-filter	post-filter	post-filter	post-filter	post-filter
	output filter inductors		Vishay 1518-AA	Coilcraft GA3416	Vishay 1518-AA	CSD0910B-6R8M	Codaca CSD0910B-6R8M	Codaca CSD1013B-8R2M	Ferrocore SHI-215145 MZ-6R8	Ferrocore SHI-215145 MZ-6R8	Vishay 1518-AA	Coilcraft GA3416	Vishay 1518-AA	CSD0910B-6R8M	Codaca CSD0910B-6R8M	Codaca CSD1013B-8R2M	Ferrocore SHI-215145 MZ-6R8	Coilcraft GA3416		CSD0910B-6R8M	Codaca CSD1013B-8R2M	Vishay 1518-AA	Ferrocore SHI-215145 MZ-6R8	Ferrocore SHI-215145 MZ-6R8	
	output filter capacitors		1u5	1u5	1u5	1u5	0u68	0u68	0u68	0u68	1u5	1u5	1u5	1u5	0u68	0u68	0u68	0u68		0u68	0u68	0u68	0u68	0u68	0u68
	output LC-filter damping network		5	5	5	5	5	5	10	10	5	5	5	5	5	5	5	5		NTCS+5	NTCS+5	NTCS+5	NTCS+5	NTCS+5	NTCS+5
	speaker output load		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		OPA1654	OPA1654	OPA1654	OPA1654	OPA1654	OPA1654
	analogue front end		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		OPA1654	OPA1654	OPA1654	OPA1654	OPA1654	OPA1654
	feedback resistor around TPA3118		20	20	20	20	26	26	26	26	20	20	20	20	26	26	26	26		36	36	36	36	36	36
	gain setting of TPAxx		symm	symm	symm	symm	symm	symm	symm	symm	asymm	asymm	asymm	asymm	asymm	asymm	asymm	asymm		asymm	asymm	asymm	asymm	asymm	asymm
	amp input configuration		symm	symm	symm	symm	symm	symm	symm	symm	asymm	asymm	asymm	asymm	asymm	asymm	asymm	asymm		asymm	asymm	asymm	asymm	asymm	asymm

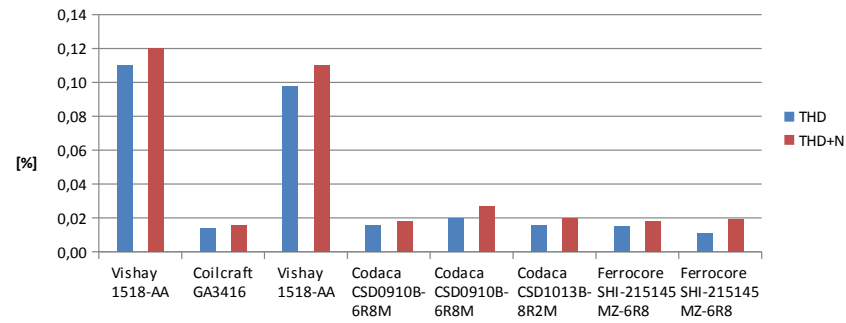
THD Measurements

THD measurements		software										hardware											
		ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	ARTA/SPA	
input signal voltage	dBV	0.1	0.1	0.1	0.1	-5.9	-5.9	-5	-9.1	dBV	0.1	0.1	0.1	0.1	-5.9	-5.9	-9.1	dBV	-8.7	-8.7	-8.7	-8.7	-8.9
output 1.harmonic (H1)	dBV	19.9	20	20	20	19.7	19.7	20.64	20.3	dBV	20	20.1	20	20	19.8	19.8	20.3	dBV	20.5	20.5	20.5	20.5	20.3
output 2.harmonic (H2)	dBV	-71	-75	-66	-66	-67.5	-67.5	-71.5	-79	dBV	-62.5	-71	-79	-64.5	-48	-48	-50	dBV	-74	-76	-75.5	-75	-71
output 3.harmonic (H3)	dBV	-40	-68	-41	-70	-72	-67.5	-75	-72	dBV	-40	-58.5	-41	-55	-50	-50	-47	dBV	-85	-82	-83	-61	-88
THD	%	0.1100	0.0140	0.0980	0.016	0.0200	0.0160	0.0150	0.0110	%	0.1100	0.0210	0.0930	0.0250	0.0550	0.0550	0.0580	%	0.0022	0.0026	0.0026	0.009	0.0027
THD+N	%	0.1200	0.0160	0.1100	0.018	0.0270	0.0200	0.0180	0.0190	%	0.1200	0.0230	0.1100	0.0280	0.0600	0.0600	0.0650	%	0.008	0.0079	0.008	0.016	0.0084

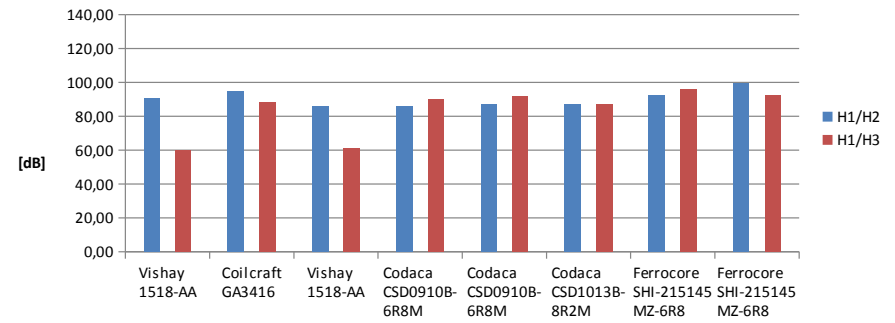
Calculations

	H1/H2	dB	90.9	98	86	86	87.2	87.2	92.14	99.3	dB	82.5	91.1	99	84.5	67.8	67.8	70.3	dB	94.9	96.5	96	95.5	91.5	108.3
	H1/H3	dB	59.9	86	61	90	91.7	87.2	95.64	92.3	dB	60	78.6	69	75	69.8	69.8	67.3	dB	105.9	102.5	103.5	81.5	108.5	120.3
voltage gain @ signal frequency	V/V	19.8	19.9	19.9	19.9	25.6	25.6	25.64	29.4	19.9	19.9	20	19.9	19.9	25.7	25.7	29.4	29.4	dB	29.2	29.2	29.2	29.2	29.2	29.2
voltage gain @ signal frequency	V/V	9.8	9.9	9.9	9.9	19.1	19.1	19.1	29.5	V/V	9.9	10.0	9.9	9.9	19.3	19.3	29.5	29.5	V/V	28.8	28.8	28.8	28.8	28.8	28.8
output voltage	Vrms	9.9	10.0	10.0	10.0	9.7	9.7	10.8	10.4	Vrms	10.0	10.1	10.0	10.0	9.8	9.8	10.4	10.4	Vrms	10.6	10.6	10.6	10.6	10.6	10.6
output power	Wrms	19.5	20.0	20.0	20.0	18.7	18.7	11.6	10.7	Wrms	20.0	20.5	20.0	20.0	19.1	19.1	10.7	10.7	Wrms	22.4	22.4	22.4	22.4	22.4	22.4

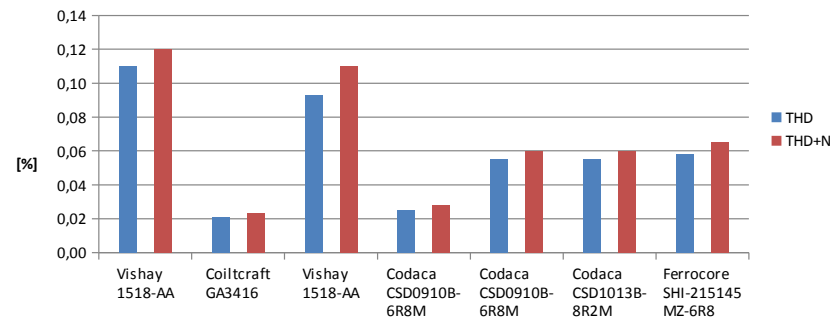
THD - Differential Drive



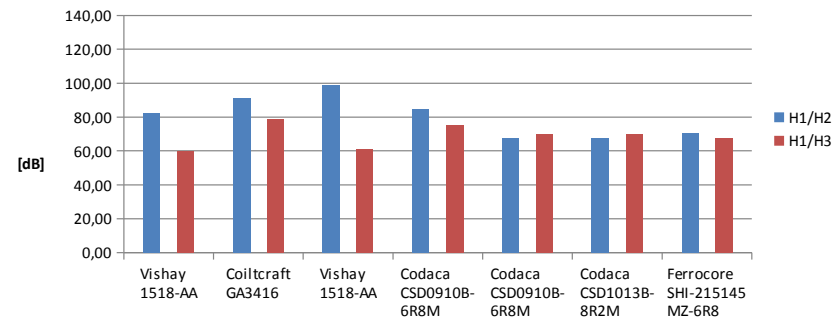
Margin - Differential Drive



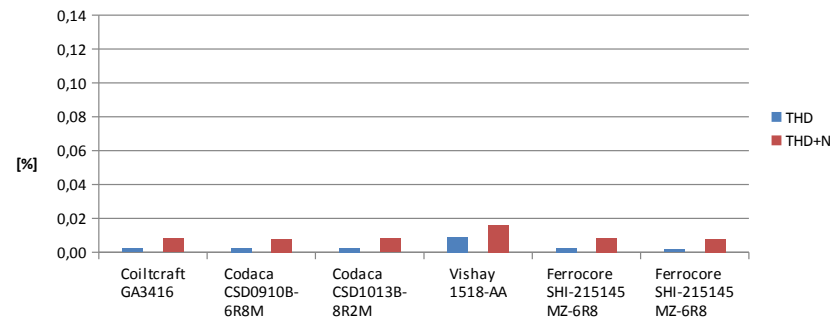
THD - Pseudo-Differential Drive



Margin - Pseudo-Differential Drive



THD - Pseudo-Differential Drive with PFFB



Margin - Pseudo-Differential Drive with PFFB

