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Centro di Taratura
LAT N° 146
Calibration Centre
Laboratorio Accreditato di Taratura

LAT N° 146

CERTIFICATO DI TARATURA LAT 146 00815-V
Certificate of Calibration

- data di emissione *date of issue*	**2020/10/21**
- cliente *customer*	**Spectra S.r.l.** **Via J.F.Kennedy, 19 - 20871 Vimercate (MB)**
- destinatario *receiver*	**Ecoplame S.r.l.** **Via Andrea Vaccaro, 23 - 80134 Napoli (NA)**
- richiesta *application*	**T508/20**
- in data *date*	**2020/10/14**
Si riferisce a *referring to* - oggetto *item*	**Misuratore di Vibrazioni con Accelerometro Triassiale**
- costruttore *manufacturer*	**SINUS**
- modello *model*	**Soundbook (Canali: 1°-2°-3°)**
- matricola *serial number*	**07220**
- data di ricevimento oggetto *date of receipt of item*	**2020/10/15**
- data delle misure *date of measurements*	**2020/10/20**
- registro di laboratorio *laboratory reference*	**20-0252-RLV**

Il presente certificato di taratura è emesso in base all'accreditamento LAT N° 146 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT).
ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali e internazionali delle unità di misura del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT N° 146 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System.
ACCREDIA attests the calibration and measurement capability, the metrological competence of the Centre and the traceability of calibration results to the national and international standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure citate alla pagina seguente, dove sono specificati anche i campioni di prima linea da cui inizia la catena di riferibilità del Centro e i rispettivi certificati di taratura, in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.
The measurement results reported in this Certificate were obtained following the procedures given in the following page, where the reference standards are indicated as well, from which starts the traceability chain of the laboratory, and the related calibration certificates in their course of validity. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente al documento EA-4/02 e sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad livello di fiducia di circa il 95%. Normalmente tale fattore *k* vale 2.
The measurement uncertainties stated in this document have been determined according to EA-4/02. They were estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

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LAT N° 146

CERTIFICATO DI TARATURA LAT 146 00815-V
Certificate of Calibration

DESCRIZIONE DELL'OGGETTO IN TARATURA
Misuratore di Vibrazioni SINUS tipo Soundbook (Canali: 1°-2°-3°) matricola n° 07220
Accelerometro Triassiale PCB tipo 356B18 matricola n° 115073
Canale 1°= Asse X; Canale 2°= Asse Y; Canale 3°= Asse Z.

PROCEDURA DI TARATURA
I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando la procedura: PR002V rev. 01 del Manuale Operativo del laboratorio.

RIFERIMENTI NORMATIVI
ISO 8041-2005

CAMPIONI DI LABORATORIO					
Strumento	Marca e Modello	Matricola n°	Data taratura	Certificato n°	Ente
Multimetro	Keithley 2000	0758523	2020-07-08	046 365342	ARO
Tavola vibrante	PCB 080A200	165224	2013-05-30	13-0438-02	I.N.RI.M.
Accelerometro	PCB 352C03	LW156660	2019-06-07	19-0482-01	I.N.RI.M.
Condizionatore	PCB 482C54	288	2019-06-12	19-0482-02	I.N.RI.M.
Chiave dinamometrica	MHH Torqueleader ADS 4	0AN100424	2018-06-14	166 18-G0146	UTENSIL LINE
Termoigrometro	Delta Ohm HD 206-1	07028948	2020-03-18	123 20-SU-0284 123 20-SU-0285	CAMAR Elettronica

CONDIZIONI AMBIENTALI			
Parametro	Di riferimento	Inizio prova	Fine prova
Temperatura / °C	23,0	23,0	23,0
L'incertezza di misura della temperatura dell'aria è 1 °C.			

INCERTEZZA DI MISURA
Le incertezze di misura dichiarate in questo documento sono state determinate conformemente al documento EA-4/02 e sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad livello di fiducia di circa il 95%. Normalmente tale fattore k vale 2. Nella determinazione dell'incertezza tipo non è stata presa in considerazione la stabilità nel tempo dell'oggetto in taratura. L'incertezza estesa dichiarata per la taratura di analizzatori con trasduttore accoppiato risulta essere: **U_S = 2,5 %**

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LAT N° 146

CERTIFICATO DI TARATURA LAT 146 00815-V
Certificate of Calibration

1. MISURANDO, MODALITA' E CONDIZIONI DI MISURA

Il misurando è l'accelerazione letta sullo strumento in prova. La taratura, per la determinazione dell'ampiezza dell'accelerazione, è stata eseguita utilizzando la catena di riferimento.

	Asse X (1)	Asse Y (2)	Asse Z (3)
Metodo di fissaggio	Biadesivo	Biadesivo	Biadesivo
Coppia di serraggio / N m	-	-	-

- Materiale della superficie di montaggio: berillio;
- Tipo di adattatore usato: nessuno;
- Lubrificante usato: nessuno;
- Orientazione del trasduttore in taratura: verticale o orizzontale.

2. SENSIBILITA' DELL'INTERA CATENA

Nella tabella seguente, in funzione dell'asse di riferimento, sono indicati i valori di sensibilità del trasduttore impostati sullo strumento dal cliente e, se necessario, successivamente regolati dal Laboratorio

		Sensibilità impostata	***Sensibilità regolata***
Asse	***f*** / Hz	***s*** mV /(m s^{-2})	***s*** mV /(m s^{-2})
X (1)	100	133,038	99,000
Y (2)	100	132,028	99,000
Z (3)	100	146,952	99,000

3. RISULTATI

Nella tabella seguente sono riportati i valori di:

- Frequenza impostata (***f***);
- Accelerazione impostata (***a***);
- Fattore della ponderazione in frequenza scelta, valore adimensionale (**Fattore**);
- Accelerazione di riferimento ponderata ottenuta moltiplicando il fattore di ponderazione con l'accelerazione impostata (***a*** $_{ref.}$);
- Valori di accelerazione letti sullo strumento in taratura (**Lettura strumento**);
- Deviazione % tra i valori accelerazione letti sullo strumento in taratura e l'accelerazione di riferimento ponderata;
- Incertezza estesa associata alla misura calcolata (***U*** $_S$);
- Limiti di tolleranza della norma ISO 8041-2005, questi includono le incertezze estese associate alla misura (**Tolleranza norma**).

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Asse X (1)

f / Hz	***a*** / m s^{-2}	**Fattore** Ponderazione Wh	$a_{ref.}$ / m s^{-2}	**Lettura strumento** / m s^{-2}	**Deviazione** / %	U_S / %	**Tolleranza norma** / %
5	5	0,545	1.475	1.490	0.99	2.5	+26/-21
10	10	0,9514	7.087	7.120	0.47	2.5	+12/-11
20	10	0,782	6.680	6.770	1.34	2.5	+12/-11
40	10	0,4111	3.476	3.490	0.41	2.5	+12/-11
80	10	0,2024	1.920	1.920	0.01	2.5	+12/-11
160	10	0,1007	0.749	0.740	-1.26	2.5	+12/-11
315	10	0,05026	0.410	0.410	-0.02	2.5	+12/-11
630	10	0,02447	0.165	0.165	-0.28	2.5	+12/-11
1000	10	0,01346	0.086	0.075	-12.62	2.5	+26/-21

Asse Y (2)

f / Hz	***a*** / m s^{-2}	**Fattore** Ponderazione Wh	$a_{ref.}$ / m s^{-2}	**Lettura strumento** / m s^{-2}	**Deviazione** / %	U_S / %	**Tolleranza norma** / %
5	5	0,54500	1.494	1.470	-1.59	2.5	+26/-21
10	10	0,95140	7.177	7.030	-2.04	2.5	+12/-11
20	10	0,78200	6.750	6.680	-1.03	2.5	+12/-11
40	10	0,41110	3.494	3.430	-1.82	2.5	+12/-11
80	10	0,20240	1.944	1.890	-2.77	2.5	+12/-11
160	10	0,10070	0.759	0.740	-2.53	2.5	+12/-11
315	10	0,05026	0.415	0.408	-1.77	2.5	+12/-11
630	10	0,02447	0.168	0.165	-1.65	2.5	+12/-11
1000	10	0,01346	0.086	0.075	-12.71	2.5	+26/-21

Asse Z (3)

f / Hz	***a*** / m s^{-2}	**Fattore** Ponderazione Wh	$a_{ref.}$ / m s^{-2}	**Lettura strumento** / m s^{-2}	**Deviazione** / %	U_S / %	**Tolleranza norma** / %
5	5	0,54500	1.456	1.480	1.63	2.5	+26/-21
10	10	0,95140	6.958	7.080	1.76	2.5	+12/-11
20	10	0,78200	6.553	6.720	2.55	2.5	+12/-11
40	10	0,41110	3.407	3.470	1.84	2.5	+12/-11
80	10	0,20240	1.883	1.900	0.89	2.5	+12/-11
160	10	0,10070	0.743	0.740	-0.40	2.5	+12/-11
315	10	0,05026	0.406	0.410	0.86	2.5	+12/-11
630	10	0,02447	0.164	0.161	-1.59	2.5	+12/-11
1000	10	0,01346	0.083	0.073	-12.52	2.5	+26/-21

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Centro di Taratura
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LAT N° 146

CERTIFICATO DI TARATURA LAT 146 00816-V
Certificate of Calibration

- data di emissione *date of issue*	**2020/10/21**
- cliente *customer*	**Spectra S.r.l.** **Via J.F.Kennedy, 19 - 20871 Vimercate (MB)**
- destinatario *receiver*	**Ecoplame S.r.l.** **Via Andrea Vaccaro, 23 - 80134 Napoli (NA)**
- richiesta *application*	**T508/20**
- in data *date*	**2020/10/14**
Si riferisce a *referring to* - oggetto *item*	**Misuratore di Vibrazioni con Accelerometro Monoassiale**
- costruttore *manufacturer*	**SINUS**
- modello *model*	**Soundbook (Canale: 4°)**
- matricola *serial number*	**07220**
- data di ricevimento oggetto *date of receipt of item*	**2020/10/15**
- data delle misure *date of measurements*	**2020/10/20**
- registro di laboratorio *laboratory reference*	**20-0253-RLV**

Il presente certificato di taratura è emesso in base all'accreditamento LAT N° 146 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT).
ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali e internazionali delle unità di misura del Sistema Internazionale delle Unità (SI).
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This certificate of calibration is issued in compliance with the accreditation LAT N° 146 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System.
ACCREDIA attests the calibration and measurement capability, the metrological competence of the Centre and the traceability of calibration results to the national and international standards of the International System of Units (SI).
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The measurement results reported in this Certificate were obtained following the procedures given in the following page, where the reference standards are indicated as well, from which starts the traceability chain of the laboratory, and the related calibration certificates in their course of validity. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente al documento EA-4/02 e sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad livello di fiducia di circa il 95%. Normalmente tale fattore *k* vale 2.
The measurement uncertainties stated in this document have been determined according to EA-4/02. They were estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

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LAT N° 146

CERTIFICATO DI TARATURA LAT 146 00816-V
Certificate of Calibration

DESCRIZIONE DELL'OGGETTO IN TARATURA
Misuratore di Vibrazioni SINUS tipo Soundbook (Canale: 4°) matricola n° 07220
Accelerometro Monoassiale PCB tipo 393A03 matricola n° 42413
Canale 4°= Asse X.

PROCEDURA DI TARATURA
I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando la procedura: PR002V rev. 01 del Manuale Operativo del laboratorio.

RIFERIMENTI NORMATIVI
ISO 8041-2005

CAMPIONI DI LABORATORIO

Strumento	Marca e Modello	Matricola n°	Data taratura	Certificato n°	Ente
Multimetro	Keithley 2000	0758523	2020-07-08	046 365342	ARO
Tavola vibrante	PCB 080A200	165224	2013-05-30	13-0438-02	I.N.RI.M.
Accelerometro	PCB 352C03	LW156660	2019-06-07	19-0482-01	I.N.RI.M.
Condizionatore	PCB 482C54	288	2019-06-12	19-0482-02	I.N.RI.M.
Chiave dinamometrica	MHH Torqueleader ADS 4	0AN100424	2018-06-14	166 18-G0146	UTENSIL LINE
Termoigrometro	Delta Ohm HD 206-1	07028948	2020-03-18	123 20-SU-0284 123 20-SU-0285	CAMAR Elettronica

CONDIZIONI AMBIENTALI

Parametro	Di riferimento	Inizio prova	Fine prova
Temperatura / °C	23,0	23,0	23,0
L'incertezza di misura della temperatura dell'aria è 1 °C.			

INCERTEZZA DI MISURA

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente al documento EA-4/02 e sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad livello di fiducia di circa il 95%. Normalmente tale fattore k vale 2.
Nella determinazione dell'incertezza tipo non è stata presa in considerazione la stabilità nel tempo dell'oggetto in taratura. L'incertezza estesa dichiarata per la taratura di analizzatori con trasduttore accoppiato risulta essere:

U_S = 2,5 %

CERTIFICATO DI TARATURA LAT 146 00816-V
Certificate of Calibration

1. MISURANDO, MODALITA' E CONDIZIONI DI MISURA

Il misurando è l'accelerazione letta sullo strumento in prova. La taratura, per la determinazione dell'ampiezza dell'accelerazione, è stata eseguita utilizzando la catena di riferimento.

	Asse X (1)	Asse Y (2)	Asse Z (3)
Metodo di fissaggio	Biadesivo	Biadesivo	Biadesivo
Coppia di serraggio / N m	-	-	-

- Materiale della superficie di montaggio: berillio;
- Tipo di adattatore usato: nessuno;
- Lubrificante usato: nessuno;
- Orientazione del trasduttore in taratura: verticale o orizzontale;

2. SENSIBILITA' DELL'INTERA CATENA

Nella tabella seguente, in funzione dell'asse di riferimento, sono indicati i valori di sensibilità del trasduttore impostati sullo strumento dal cliente e, se necessario, successivamente regolati dal Laboratorio

		Sensibilità impostata	***Sensibilità regolata***
Asse	***f*** / Hz	***s*** mV /(m s^{-2})	***s*** mV /(m s^{-2})
X	100	105,755	100,000

3. RISULTATI

Nella tabella seguente sono riportati i valori di:

- Frequenza impostata (***f***);
- Accelerazione impostata (***a***);
- Fattore della ponderazione in frequenza scelta, valore adimensionale (**Fattore**);
- Accelerazione di riferimento ponderata ottenuta moltiplicando il fattore di ponderazione con l'accelerazione impostata (***a*** $_{ref.}$);
- Valori di accelerazione letti sullo strumento in taratura (**Lettura strumento**);
- Deviazione % tra i valori accelerazione letti sullo strumento in taratura e l'accelerazione di riferimento ponderata;
- Incertezza estesa associata alla misura calcolata (***U*** $_S$);
- Limiti di tolleranza della norma ISO 8041-2005, questi includono le incertezze estese associate alla misura (**Tolleranza norma**).

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CERTIFICATO DI TARATURA LAT 146 00816-V
Certificate of Calibration

Asse X

f / Hz	***a*** / m s^{-2}	**Fattore** Ponderazione Wd	$a_{ref.}$ / m s^{-2}	**Lettura strumento** / m s^{-2}	**Deviazione** / %	U_S / %	**Tolleranza norma** / %
5	5	0,40810	1.1645	1.0810	-7.17	2.5	+12/-11
10	10	0,20170	1.4869	1.4100	-5.17	2.5	+12/-11
20	10	0,10040	0.7395	0.7200	-2.64	2.5	+12/-11
40	10	0,04965	0.2702	0.2700	-0.07	2.5	+12/-11
80	10	0,02130	0.1043	0.1030	-1.23	2.5	+26/-21
160	10	0,00467	0.0180	0.0197	9.69	6.2	+26/-100

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LAT N° 146

CERTIFICATO DI TARATURA LAT 146 00817-V
Certificate of Calibration

- data di emissione *date of issue*	**2020/10/21**
- cliente *customer*	**Spectra S.r.l.** **Via J.F.Kennedy, 19 - 20871 Vimercate (MB)**
- destinatario *receiver*	**Ecoplame S.r.l.** **Via Andrea Vaccaro, 23 - 80134 Napoli (NA)**
- richiesta *application*	**T508/20**
- in data *date*	**2020/10/14**
Si riferisce a *referring to* - oggetto *item*	**Misuratore di Vibrazioni con Accelerometro Monoassiale**
- costruttore *manufacturer*	**SINUS**
- modello *model*	**Soundbook (Canale: 5°)**
- matricola *serial number*	**07220**
- data di ricevimento oggetto *date of receipt of item*	**2020/10/15**
- data delle misure *date of measurements*	**2020/10/20**
- registro di laboratorio *laboratory reference*	**20-0254-RLV**

Il presente certificato di taratura è emesso in base all'accreditamento LAT N° 146 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT).
ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali e internazionali delle unità di misura del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT N° 146 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System.
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I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure citate alla pagina seguente, dove sono specificati anche i campioni di prima linea da cui inizia la catena di riferibilità del Centro e i rispettivi certificati di taratura, in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.
The measurement results reported in this Certificate were obtained following the procedures given in the following page, where the reference standards are indicated as well, from which starts the traceability chain of the laboratory, and the related calibration certificates in their course of validity. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente al documento EA-4/02 e sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad livello di fiducia di circa il 95%. Normalmente tale fattore *k* vale 2.
The measurement uncertainties stated in this document have been determined according to EA-4/02. They were estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

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Centro di Taratura
LAT N° 146
Calibration Centre
Laboratorio Accreditato
di Taratura

LAT N° 146

CERTIFICATO DI TARATURA LAT 146 00817-V
Certificate of Calibration

DESCRIZIONE DELL'OGGETTO IN TARATURA
Misuratore di Vibrazioni SINUS tipo Soundbook (Canale: 5°) matricola n° 07220
Accelerometro Monoassiale PCB tipo 393A03 matricola n° 42415
Canale 5°= Asse Y.

PROCEDURA DI TARATURA
I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando la procedura: PR002V rev. 01 del Manuale Operativo del laboratorio.

RIFERIMENTI NORMATIVI
ISO 8041-2005

CAMPIONI DI LABORATORIO

Strumento	Marca e Modello	Matricola n°	Data taratura	Certificato n°	Ente
Multimetro	Keithley 2000	0758523	2020-07-08	046 365342	ARO
Tavola vibrante	PCB 080A200	165224	2013-05-30	13-0438-02	I.N.RI.M.
Accelerometro	PCB 352C03	LW156660	2019-06-07	19-0482-01	I.N.RI.M.
Condizionatore	PCB 482C54	288	2019-06-12	19-0482-02	I.N.RI.M.
Chiave dinamometrica	MHH Torqueleader ADS 4	0AN100424	2018-06-14	166 18-G0146	UTENSIL LINE
Termoigrometro	Delta Ohm HD 206-1	07028948	2020-03-18	123 20-SU-0284 123 20-SU-0285	CAMAR Elettronica

CONDIZIONI AMBIENTALI

Parametro	Di riferimento	Inizio prova	Fine prova
Temperatura / °C	23,0	23,0	23,0
L'incertezza di misura della temperatura dell'aria è 1 °C.			

INCERTEZZA DI MISURA
Le incertezze di misura dichiarate in questo documento sono state determinate conformemente al documento EA-4/02 e sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad livello di fiducia di circa il 95%. Normalmente tale fattore k vale 2. Nella determinazione dell'incertezza tipo non è stata presa in considerazione la stabilità nel tempo dell'oggetto in taratura. L'incertezza estesa dichiarata per la taratura di analizzatori con trasduttore accoppiato risulta essere: U_S = 2,5 %

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1. MISURANDO, MODALITA' E CONDIZIONI DI MISURA

Il misurando è l'accelerazione letta sullo strumento in prova. La taratura, per la determinazione dell'ampiezza dell'accelerazione, è stata eseguita utilizzando la catena di riferimento.

	Asse X (1)	Asse Y (2)	Asse Z (3)
Metodo di fissaggio	Biadesivo	Biadesivo	Biadesivo
Coppia di serraggio / N m	-	-	-

- Materiale della superficie di montaggio: berillio;
- Tipo di adattatore usato: nessuno;
- Lubrificante usato: nessuno;
- Orientazione del trasduttore in taratura: verticale o orizzontale;

2. SENSIBILITA' DELL'INTERA CATENA

Nella tabella seguente, in funzione dell'asse di riferimento, sono indicati i valori di sensibilità del trasduttore impostati sullo strumento dal cliente e, se necessario, successivamente regolati dal Laboratorio

		Sensibilità impostata	***Sensibilità regolata***
Asse	***f*** / Hz	***s*** mV /(m s^{-2})	***s*** mV /(m s^{-2})
Y	100	100,966	-

3. RISULTATI

Nella tabella seguente sono riportati i valori di:

- Frequenza impostata (***f***);
- Accelerazione impostata (***a***);
- Fattore della ponderazione in frequenza scelta, valore adimensionale (**Fattore**);
- Accelerazione di riferimento ponderata ottenuta moltiplicando il fattore di ponderazione con l'accelerazione impostata (***a*** $_{ref.}$);
- Valori di accelerazione letti sullo strumento in taratura (**Lettura strumento**);
- Deviazione % tra i valori accelerazione letti sullo strumento in taratura e l'accelerazione di riferimento ponderata;
- Incertezza estesa associata alla misura calcolata (***U*** $_S$);
- Limiti di tolleranza della norma ISO 8041-2005, questi includono le incertezze estese associate alla misura (**Tolleranza norma**).

Isoambiente s.r.l.
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Asse Y

f / Hz	***a*** / m s^{-2}	**Fattore** Ponderazione Wd	$a_{ref.}$ / m s^{-2}	**Lettura strumento** / m s^{-2}	**Deviazione** / %	U_S / %	**Tolleranza norma** / %
5	5	0,40810	1.1193	1.0400	-7.08	2.5	+12/-11
10	10	0,20170	1.4436	1.3700	-5.10	2.5	+12/-11
20	10	0,10040	0.8047	0.8120	0.90	2.5	+12/-11
40	10	0,04965	0.2613	0.2600	-0.50	2.5	+12/-11
80	10	0,02130	0.1012	0.1000	-1.16	2.5	+26/-21
160	10	0,00467	0.0172	0.0188	9.50	6.4	+26/-100

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Certificate of Calibration

- data di emissione *date of issue*	**2020/10/21**
- cliente *customer*	**Spectra S.r.l.** **Via J.F.Kennedy, 19 - 20871 Vimercate (MB)**
- destinatario *receiver*	**Ecoplame S.r.l.** **Via Andrea Vaccaro, 23 - 80134 Napoli (NA)**
- richiesta *application*	**T508/20**
- in data *date*	**2020/10/14**
Si riferisce a *referring to* - oggetto *item*	**Misuratore di Vibrazioni con Accelerometro Monoassiale**
- costruttore *manufacturer*	**SINUS**
- modello *model*	**Soundbook (Canale: 6°)**
- matricola *serial number*	**07220**
- data di ricevimento oggetto *date of receipt of item*	**2020/10/15**
- data delle misure *date of measurements*	**2020/10/20**
- registro di laboratorio *laboratory reference*	**20-0255-RLV**

Il presente certificato di taratura è emesso in base all'accreditamento LAT N° 146 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT).
ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali e internazionali delle unità di misura del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT N° 146 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System.
ACCREDIA attests the calibration and measurement capability, the metrological competence of the Centre and the traceability of calibration results to the national and international standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure citate alla pagina seguente, dove sono specificati anche i campioni di prima linea da cui inizia la catena di riferibilità del Centro e i rispettivi certificati di taratura, in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.
The measurement results reported in this Certificate were obtained following the procedures given in the following page, where the reference standards are indicated as well, from which starts the traceability chain of the laboratory, and the related calibration certificates in their course of validity. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente al documento EA-4/02 e sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad livello di fiducia di circa il 95%. Normalmente tale fattore *k* vale 2.
The measurement uncertainties stated in this document have been determined according to EA-4/02. They were estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Il Sostituto del Responsabile del Centro
Substitute for the Head of the Centre

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DESCRIZIONE DELL'OGGETTO IN TARATURA
Misuratore di Vibrazioni SINUS tipo Soundbook (Canale: 6°) matricola n° 07220
Accelerometro Monoassiale PCB tipo 393A03 matricola n° 42414
Canale 6°= Asse Z.

PROCEDURA DI TARATURA
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RIFERIMENTI NORMATIVI
ISO 8041-2005

CAMPIONI DI LABORATORIO

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Accelerometro	PCB 352C03	LW156660	2019-06-07	19-0482-01	I.N.RI.M.
Condizionatore	PCB 482C54	288	2019-06-12	19-0482-02	I.N.RI.M.
Chiave dinamometrica	MHH Torqueleader ADS 4	0AN100424	2018-06-14	166 18-G0146	UTENSIL LINE
Termoigrometro	Delta Ohm HD 206-1	07028948	2020-03-18	123 20-SU-0284 123 20-SU-0285	CAMAR Elettronica

CONDIZIONI AMBIENTALI

Parametro	Di riferimento	Inizio prova	Fine prova
Temperatura / °C	23,0	23,0	23,0
L'incertezza di misura della temperatura dell'aria è 1 °C.			

INCERTEZZA DI MISURA
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	Asse X (1)	Asse Y (2)	Asse Z (3)
Metodo di fissaggio	Biadesivo	Biadesivo	Biadesivo
Coppia di serraggio / N m	-	-	-

- Materiale della superficie di montaggio: berillio;
- Tipo di adattatore usato: nessuno;
- Lubrificante usato: nessuno;
- Orientazione del trasduttore in taratura: verticale o orizzontale;

2. SENSIBILITA' DELL'INTERA CATENA

Nella tabella seguente, in funzione dell'asse di riferimento, sono indicati i valori di sensibilità del trasduttore impostati sullo strumento dal cliente e, se necessario, successivamente regolati dal Laboratorio

		Sensibilità impostata	***Sensibilità regolata***
Asse	***f*** / Hz	***s*** mV /(m s^{-2})	***s*** mV /(m s^{-2})
Z	100	90,476	101,000

3. RISULTATI

Nella tabella seguente sono riportati i valori di:

- Frequenza impostata (***f***);
- Accelerazione impostata (***a***);
- Fattore della ponderazione in frequenza scelta, valore adimensionale (**Fattore**);
- Accelerazione di riferimento ponderata ottenuta moltiplicando il fattore di ponderazione con l'accelerazione impostata (***a*** $_{ref.}$);
- Valori di accelerazione letti sullo strumento in taratura (**Lettura strumento**);
- Deviazione % tra i valori accelerazione letti sullo strumento in taratura e l'accelerazione di riferimento ponderata;
- Incertezza estesa associata alla misura calcolata (***U*** $_S$);
- Limiti di tolleranza della norma ISO 8041-2005, questi includono le incertezze estese associate alla misura (**Tolleranza norma**).

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Asse Z

f / Hz	***a*** / m s^{-2}	**Fattore** Ponderazione Wk	$a_{ref.}$ / m s^{-2}	**Lettura strumento** / m s^{-2}	**Deviazione** / %	U_S / %	**Tolleranza norma** / %
5	5	1,03900	2.9229	2.7150	-7.11	2.5	+12/-11
10	10	0,98840	7.2134	6.8500	-5.04	2.5	+12/-11
20	10	0,63730	4.6501	4.5800	-1.51	2.5	+12/-11
40	10	0,31600	1.6972	1.7000	0.17	2.5	+12/-11
80	10	0,13390	0.6507	0.6500	-0.11	2.5	+26/-21
160	10	0,02922	0.1100	0.1100	-0.01	2.5	+26/-100

SINUS Messtechnik GmbH
Föpplstrasse 13
D-04347 Leipzig, Germany
☎ +49 341 24429 0
+49 341 24429 99
http://www.sinusmess.de

Production Test for Device

SINUS Expander_61

Serial Number: #09190

This device was tested according ISO 61672, ISO 60651 and the internal test specifications of the SINUS Messtechnik GmbH.

Date:	15-Apr-2021
Recommended Interval:	24 months
Next Production Test:	Apr-2023
Operator:	SWING Mk2 SINUS
Signature:	.....

Summary

The results of the testing procedure can be found in the table below.Testing equipment:

Generator:	DS360, Stanford Research Systems (serialnumber: 33965) calibration certificate (4103120) valid until: 23 Mar 2023
Software:	testing program version is 1.21.18 driver version is 6.0.68.1149

All measured data can be ordered in MATLAB file format for an additional price.

The following Tests are done:

Channel	*Apollo Firmware*	*Coupling*	*Frequency Response*	*Gain*	*Level Linearity*	*Inherent Noise*	*Phase Difference*	*THD*	*Third Octaves*
BNC_1	passed	passed	passed	passed	passed	passed	passed	passed	passed
BNC_2	passed	passed	passed	passed	passed	passed	passed	passed	passed
BNC_3	passed	passed	passed	passed	passed	passed	passed	passed	passed
BNC_4	passed	passed	passed	passed	passed	passed	passed	passed	passed
BNC_5	passed	passed	passed	passed	passed	passed	passed	passed	passed
BNC_6	passed	passed	passed	passed	passed	passed	passed	passed	passed
BNC_7	passed	passed	passed	passed	passed	passed	passed	passed	passed
BNC_8	passed	passed	passed	passed	passed	passed	passed	passed	passed

The following pages only show the test results for channel 1. The results for the other channels are available from SINUS Messtechnik GmbH upon request.

Phase Test passed!

Tolerance is 1 °

gain	frequency	phase difference	to channel	status
-20 dB	20000 Hz	0.00000 °	BNC_1	pass
-20 dB	20000 Hz	-0.00731 °	BNC_2	pass
-20 dB	20000 Hz	-0.00370 °	BNC_3	pass
-20 dB	20000 Hz	-0.01098 °	BNC_4	pass
-20 dB	20000 Hz	0.00018 °	BNC_5	pass
-20 dB	20000 Hz	0.00398 °	BNC_6	pass
-20 dB	20000 Hz	0.00964 °	BNC_7	pass
-20 dB	20000 Hz	0.00566 °	BNC_8	pass
0 dB	20000 Hz	0.00000 °	BNC_1	pass
0 dB	20000 Hz	-0.04124 °	BNC_2	pass
0 dB	20000 Hz	-0.02189 °	BNC_3	pass
0 dB	20000 Hz	-0.02671 °	BNC_4	pass
0 dB	20000 Hz	-0.00251 °	BNC_5	pass
0 dB	20000 Hz	-0.00492 °	BNC_6	pass
0 dB	20000 Hz	-0.00745 °	BNC_7	pass
0 dB	20000 Hz	-0.00160 °	BNC_8	pass

Apollo Firmware Test passed!

Part	ID	Serial Number
Digital	97	263189
Interface	129(ok)	271214(ok)
AnalogBase	257(ok)	281100(ok)
Connector	129(ok)	263381(ok)
Connector	129(ok)	263381(ok)
Connector	131(ok)	273532(ok)
Connector	131(ok)	273532(ok)
Module	258(ok)	272883(ok)
Module	258(ok)	272887(ok)
Module	258(ok)	272884(ok)
Module	258(ok)	272885(ok)

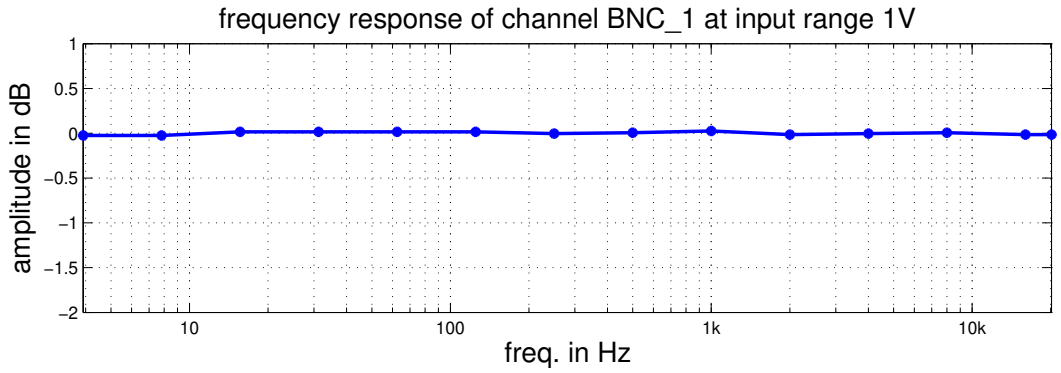
Coupling Test channel BNC_1 passed!

Generator V = 1V
Gain Setting: 1

Coupling	RMS Value (V_{rms})	Tol	MEAN Value (V_{rms})	Tol	Status
GND	1.5173e-005(-96dBV)	<0.1	-5.6883e-008(-145dBV)	abs<0.1	ok
DC	None		0.51014(-6dBV)	<0.55 , >0.45	ok
AC (1000Hz)	1.0023(0dBV)	>0.9,<1.1	-0.00061676(-64dBV)	abs<0.05	ok

Frequency Response Test channel BNC_1 passed!

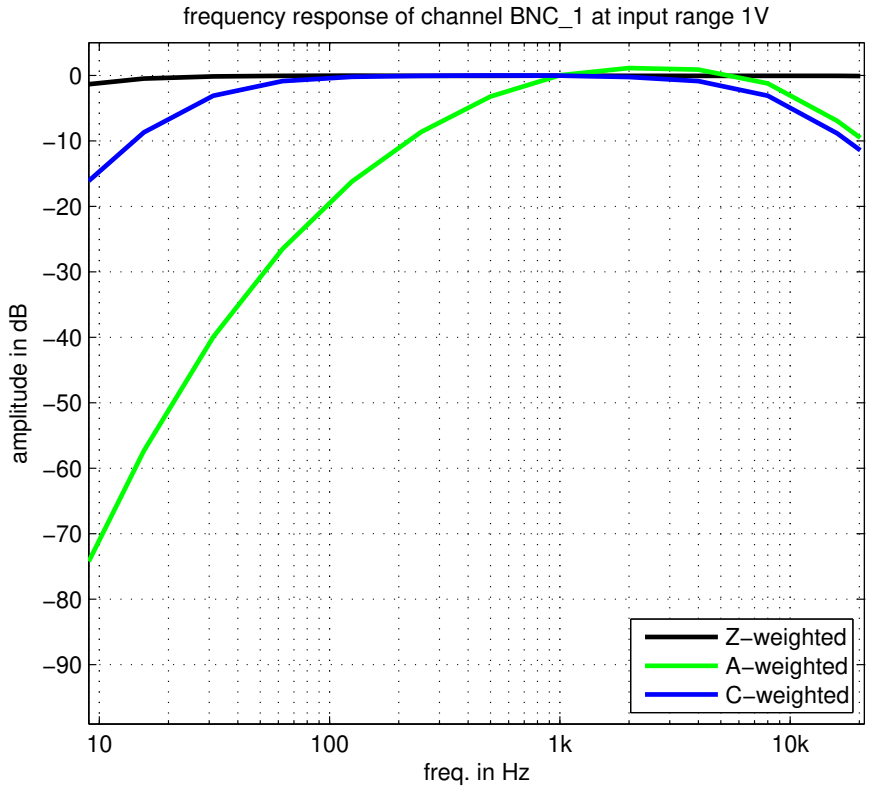
Max. Tolerance is 0.1dB
This test is done using DC coupling, 1V input range.



frequency in Hz	3.91	7.81	15.63	31.25	62.50	125.00	250.00	500.00	1000.00	2000.00	4000.00	8000.00	16000.00	20158.70
amplitude in dB	-0.024	-0.024	0.016	0.016	0.016	0.016	-0.004	0.006	0.026	-0.014	-0.004	0.006	-0.014	-0.014

Frequency Response for Z, A and C-weighted sound levels (Test passed)

Tolerance according to EN 61672-1:2003 class 1 (checked frequency range is 10 Hz ... 20 kHz)



Gain Test channel BNC_1 passed!

Calibrated at 1V (Gain: 0dB).

Gain (V)	(dB)	mean (%)	min (%)	max (%)	Tol. (%)	status
10	-20	0.0	-0.1	0.0	0.3	pass
1	0	0.0	0.0	0.0	0.3	pass

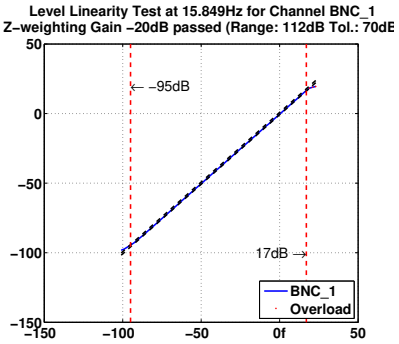
Checking internal calibration value passed (deviance: -0.97% Tol.: 6%).

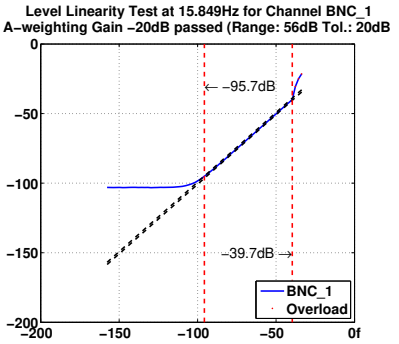
Level Linearity Test Normal Range channel BNC_1 passed!

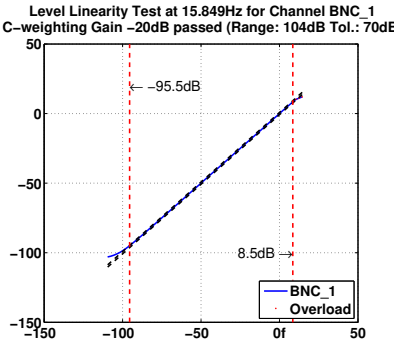
Max. Tolerance is 0.8dB

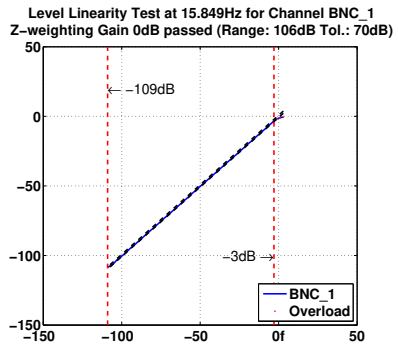
This test is done using AC coupling, 1Hz high pass switched on and ICP/200V off and in steps of 2dB

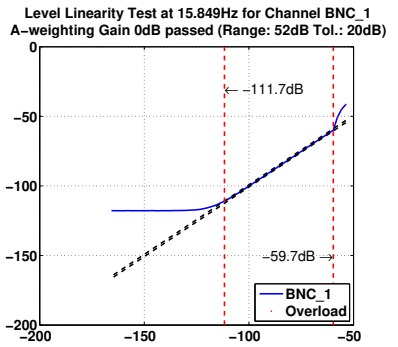
Gain	Frequency	Z				A				C			
		Range in dB		Status	Tol.	Range in dB		Status	Tol.	Range in dB		Status	Tol.
-20	15,849Hz	17..-95	112	passed	70	-39.7..-95.7	56	passed	20	8.5..-95.5	104	passed	70
0	15,849Hz	-3..-109	106	passed	70	-59.7..-111.7	52	passed	20	-11.5..-111.5	100	passed	70

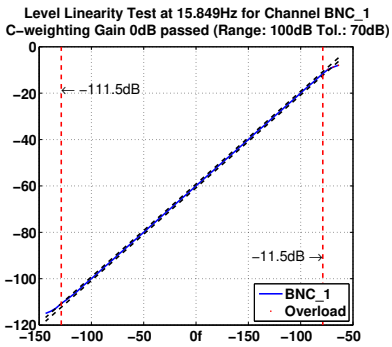












Inherent Noise Test channel BNC_1 passed!

Calibrated at 1V (Gain: 0dB).

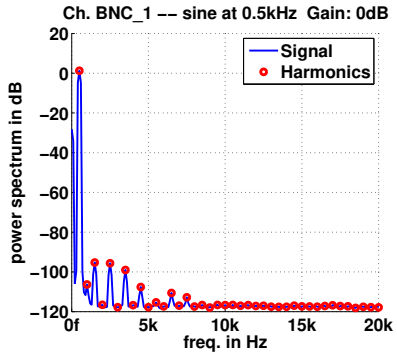
Gain (dB)	time data (mV_{rms})	Z (mV_{rms})	A (mV_{rms})	C (mV_{rms})	Status
-20	0.04031 (-88dBV)	0.00666 (-104dBV)	0.00498 (-106dBV)	0.00448 (-107dBV)	pass
0	0.00763 (-102dBV)	0.00131 (-118dBV)	0.00092 (-121dBV)	0.00094 (-121dBV)	pass

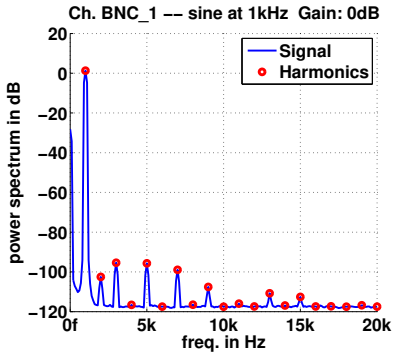
THD Test channel BNC_1 passed!

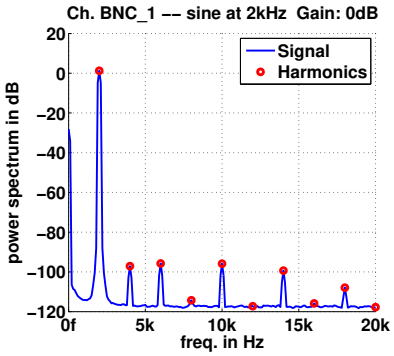
Max. THD Tolerance is -80dB
Measured at Gain: 0dB

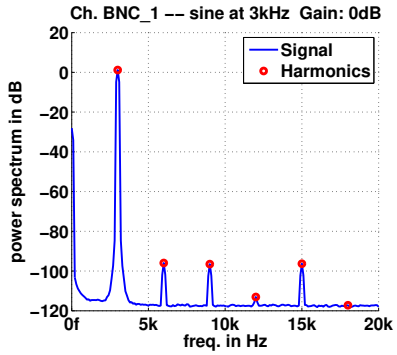
definition: $THD = \frac{P_2 + P_3 + \cdots + P_n}{P_1}$

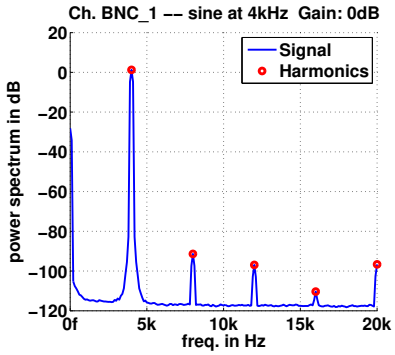
Frequency (Hz)	THD (dB)	THD+N (dB)	Number of Harmonics	Status
500.0	-92.2	-92.2	39	pass
1000.0	-92.2	-91.6	19	pass
2000.0	-91.9	-90.6	9	pass
3000.0	-92.6	-90.9	5	pass
4000.0	-90.6	-89.4	4	pass
5000.0	-92.0	-90.3	3	pass

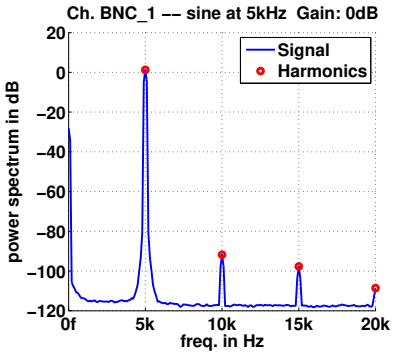












Third Octave Test according EN 61260:1995 (Class 0) channel BNC_1 passed!

This test is done using DC coupling, 1Hz high pass switched off and ICP/200V off and amplitude 17dBV
The following Third Octaves are tested according EN 61260:1995 (Class 0)

Tolerances marked with * are interpolated, due to generator and device frequency tolerances!

f_m in Hz	G^{-4}	G^{-3}	G^{-2}	G^{-1}	$G^{-\frac{1}{2}}$	$G^{-\frac{1}{2}}$	$G^{-\frac{3}{8}}$	$G^{-\frac{1}{4}}$	$G^{-\frac{1}{8}}$	G^{0}	$G^{\frac{1}{8}}$	$G^{\frac{1}{4}}$	$G^{\frac{3}{8}}$	$G^{\frac{1}{2}}$	$G^{\frac{1}{2}}$	G^{1}	G^{2}	G^{3}	G^{4}
upper lim	-75	-62	-42.5	-18	-2.3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	-2.3	-18	-42.5	-62	-75
lower lim	-Inf	-Inf	-Inf	-Inf	-4.5	-4.5	-1.1	-0.4	-0.2	-0.15	-0.2	-0.4	-1.1	-4.5	-4.5	-Inf	-Inf	-Inf	-Inf
15.625	-86.65	-66.77	-47.25	-22.84	-3.19	-3.2	-0.51	-0.04	-0.03	-0.06	-0.04	-0.03	-0.25	-3.23	-3.25	-31.14	-92.44	-110.31	-121.95
19.686	-78.26	-80.81	-52.21	-24.91	-3.31	-3.28	-0.46	-0.02	-0.03	-0.05	-0.02	-0.03	-0.39	-3.03	-3.02	-26.34	-57.03	-86.35	-122.12
24.803	-103.84	-68.04	-49.2	-23.84	-3.17	-3.21	-0.47	-0.04	-0.04	-0.01	-0.06	-0.06	-0.41	-3.23	-3.22	-26.99	-57.79	-104.27	-125.5
31.25	-86.69	-66.75	-47.24	-22.81	-3.2	-3.23	-0.56	-0.07	-0.07	-0.05	-0.02	-0.04	-0.26	-3.25	-3.25	-31.13	-92.76	-111.26	-120.43
39.373	-78.28	-80.84	-52.22	-24.87	-3.27	-3.29	-0.5	0.01	-0.05	-0.02	-0.03	-0.06	-0.39	-3.05	-3.06	-26.33	-57.07	-86.36	-123.37
49.606	-105.14	-68.09	-49.16	-23.82	-3.21	-3.18	-0.48	-0.01	0.01	-0.01	0.02	-0.04	-0.41	-3.2	-3.19	-26.99	-57.78	-101.92	-123.78
62.5	-86.72	-66.72	-47.24	-22.79	-3.16	-3.17	-0.47	-0.04	0.02	-0.03	-0.05	-0.07	-0.32	-3.27	-3.35	-31.14	-92.37	-111.43	-123.32
78.745	-78.22	-80.87	-52.26	-24.89	-3.31	-3.29	-0.5	-0.06	-0.07	-0.01	-0.03	0.02	-0.38	-3.08	-3.02	-26.31	-57.03	-86.39	-128.01
99.213	-106.37	-68.01	-49.19	-23.78	-3.22	-3.21	-0.52	-0.05	-0.05	0	0.01	-0.03	-0.42	-3.2	-3.13	-27.04	-57.72	-101.45	-123.29
125	-86.68	-66.76	-47.18	-22.79	-3.18	-3.18	-0.56	-0.03	0.03	0.02	-0.03	-0.04	-0.29	-3.25	-3.24	-31.11	-92.56	-111.57	-122.93
157.49	-78.22	-80.81	-52.16	-24.88	-3.27	-3.27	-0.46	-0.01	0	-0.03	0	-0.05	-0.38	-3.04	-3.07	-26.37	-57.04	-86.39	-123.07
198.425	-106.72	-68.03	-49.2	-23.84	-3.21	-3.17	-0.49	-0.04	-0.04	-0.01	-0.02	-0.05	-0.4	-3.13	-3.18	-27.06	-57.81	-101.89	-122.61
250	-86.75	-66.76	-47.19	-22.78	-3.15	-3.19	-0.54	0.03	0	-0.01	-0.09	-0.08	-0.3	-3.29	-3.34	-31.09	-94.29	-111.15	-122.02
314.98	-78.32	-80.89	-52.24	-24.91	-3.32	-3.32	-0.48	-0.1	-0.03	0.01	-0.03	-0.01	-0.35	-3.03	-3.07	-26.32	-57.05	-86.4	-124.96
396.85	-105.95	-68.06	-49.18	-23.8	-3.19	-3.18	-0.51	-0.01	-0.05	-0.03	-0.04	-0.01	-0.39	-3.15	-3.18	-27.02	-57.77	-102.05	-121.71
500	-86.78	-66.78	-47.2	-22.8	-3.18	-3.19	-0.54	-0.06	0.02	-0.02	0.03	0.01	-0.35	-3.29	-3.24	-31.05	-93.6	-110.78	-117.81
629.961	-78.32	-80.85	-52.21	-24.88	-3.24	-3.29	-0.47	-0.04	-0.01	0	-0.06	-0.03	-0.37	-3.07	-3.04	-26.29	-57.03	-86.34	-120.46
793.701	-105.94	-68.08	-49.18	-23.86	-3.21	-3.19	-0.52	-0.01	0.01	-0.02	-0.03	-0.06	-0.38	-3.21	-3.21	-27	-57.81	-103.65	-120.07
1000	-86.71	-66.73	-47.24	-22.76	-3.2	-3.2	-0.53	-0.02	-0.02	0	-0.03	-0.04	-0.32	-3.25	-3.26	-31.15	-93.5	-110.92	-118.77
1259.921	-78.28	-80.86	-52.17	-24.86	-3.29	-3.29	-0.49	-0.04	-0.03	-0.03	-0.03	-0.04	-0.41	-3.05	-3.05	-26.34	-57.06	-86.38	-115.49
1587.401	-105.9	-68.02	-49.16	-23.85	-3.19	-3.18	-0.49	-0.05	-0.04	-0.03	-0.06	-0.04	-0.4	-3.18	-3.2	-27.03	-57.79	-102.27	-116.21
2000	-86.69	-66.7	-47.24	-22.8	-3.18	-3.18	-0.53	-0.05	-0.02	-0.04	-0.03	-0.05	-0.29	-3.28	-3.27	-31.14	-93.64	-110.56	-116.05
2519.842	-78.26	-80.86	-52.19	-24.89	-3.28	-3.27	-0.52	-0.08	-0.03	-0.04	-0.07	-0.06	-0.43	-3.09	-3.1	-26.34	-57.06	-86.36	-114.27
3174.802	-105.61	-68.03	-49.2	-23.86	-3.22	-3.22	-0.54	-0.12	-0.07	-0.02	-0.04	-0.03	-0.39	-3.2	-3.2	-27.03	-57.81	-102.54	-115.3
4000	-86.73	-66.74	-47.24	-22.78	-3.2	-3.21	-0.53	-0.06	-0.02	-0.03	-0.02	-0.04	-0.3	-3.28	-3.28	-31.12	-93.28	-108.54	-112.97
5039.684	-78.29	-80.77	-52.21	-24.89	-3.28	-3.28	-0.52	-0.04	-0.03	-0.03	-0.02	-0.05	-0.41	-3.05	-3.04	-26.37	-57.05	-86.35	-111.18
6349.604	-104.79	-68.04	-49.19	-23.84	-3.19	-3.18	-0.53	-0.05	-0.02	-0.05	-0.04	-0.03	-0.41	-3.19	-3.19	-27.02	-57.78	-101.83	-108.94
8000	-86.71	-66.72	-47.24	-22.82	-3.19	-3.19	-0.52	-0.06	-0.03	-0.02	-0.05	-0.03	-0.29	-3.3	-3.3	-31.1	-93.04	-105.75	-109.41
10079.368	-78.28	-80.49	-52.23	-24.88	-3.31	-3.31	-0.48	-0.05	-0.05	-0.02	-0.04	-0.04	-0.4	-3.06	-3.06	-26.38	-57.06	-86.33	-108.07
12699.208	-102.55	-68.04	-49.18	-23.83	-3.19	-3.19	-0.55	-0.06	-0.04	-0.07	-0.04	-0.07	-0.43	-3.19	-3.19	-27.04	-57.81	-100.91	-106.49
16000	-86.69	-66.69	-47.22	-22.84	-3.19	-3.18	-0.53	-0.08	-0.03	-0.04	-0.07	-0.04	-0.33	-3.31	-3.31	-31.13	-92.72	-103.4	-103.6
20158.737	-78.26	-79.56	-52.25	-24.9	-3.31	-3.31	-0.5	-0.05	-0.05	-0.04	-0.03	-0.08	-0.41	-3.07	-3.07	-26.39	-57.07	-86.27	-99.83
25398.417	-98.4	-67.96	-49.2	-23.85	-3.21	-3.21	-0.55	-0.08	-0.05	-0.07	-0.07	-0.08	-0.47	-3.24	-3.24	-27.04	-57.8	-96.72	-95.08
32000	-86.52	-66.59	-47.25	-22.84	-3.24	-3.24	-0.59	-0.14	-0.03	-0.04	-0.06	-0.04	-0.32	-3.32	-3.32	-31.13	-91.66	-96.91	-95.57
40317.474	-78.2	-77.3	-52.25	-24.9	-3.32	-3.32	-0.51	-0.1	-0.04	-0.04	-0.04	-0.09	-0.41	-3.08	-3.08	-26.38	-57.11	-85.69	-92.71
50796.834	-93.23	-67.56	-49.2	-23.85	-3.22	-3.22	-0.56	-0.07	-0.08	-0.06	-0.05	-0.08	-0.43	-3.21	-3.21	-27.09	-57.84	-79.66	-91.97
64000	-85.91	-66.13	-47.24	-22.83	-3.2	-3.2	-0.59	-0.08	-0.07	-0.08	-0.06	-0.06	-0.36	-3.32	-3.32	-31.17	-70.41	-88.74	-88.84
80634.947	-81.37	-68.27	-46.47	-20.51	-3.07	-3.07	-0.79	-0.18	-0.08	-0.11	-0.11	-0.1	-0.44	-3.25	-3.25	-84.9	-83.87	-85.67	-84.43

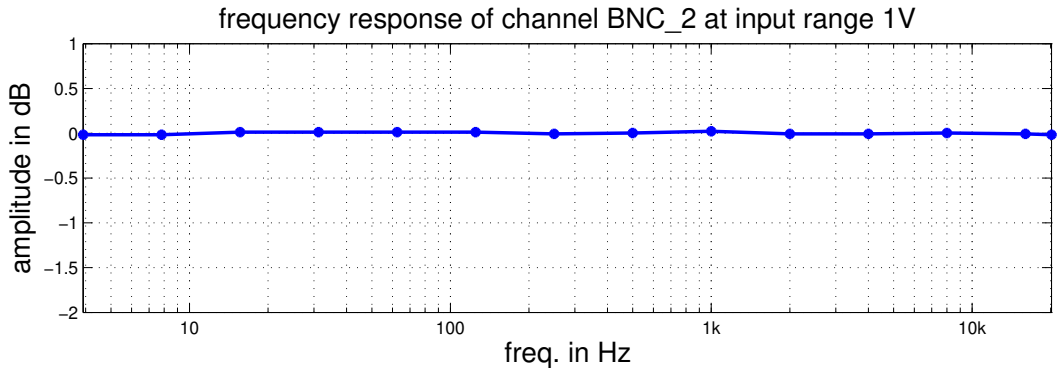
Coupling Test channel BNC_2 passed!

Generator V = 1V
Gain Setting: 1

Coupling	RMS Value (V_{rms})	Tol	MEAN Value (V_{rms})	Tol	Status
GND	1.8063e-005(-95dBV)	<0.1	2.6803e-006(-111dBV)	abs<0.1	ok
DC	None		0.51033(-6dBV)	<0.55 , >0.45	ok
AC (1000Hz)	1.0027(0dBV)	>0.9,<1.1	-0.00061577(-64dBV)	abs<0.05	ok

Frequency Response Test channel BNC_2 passed!

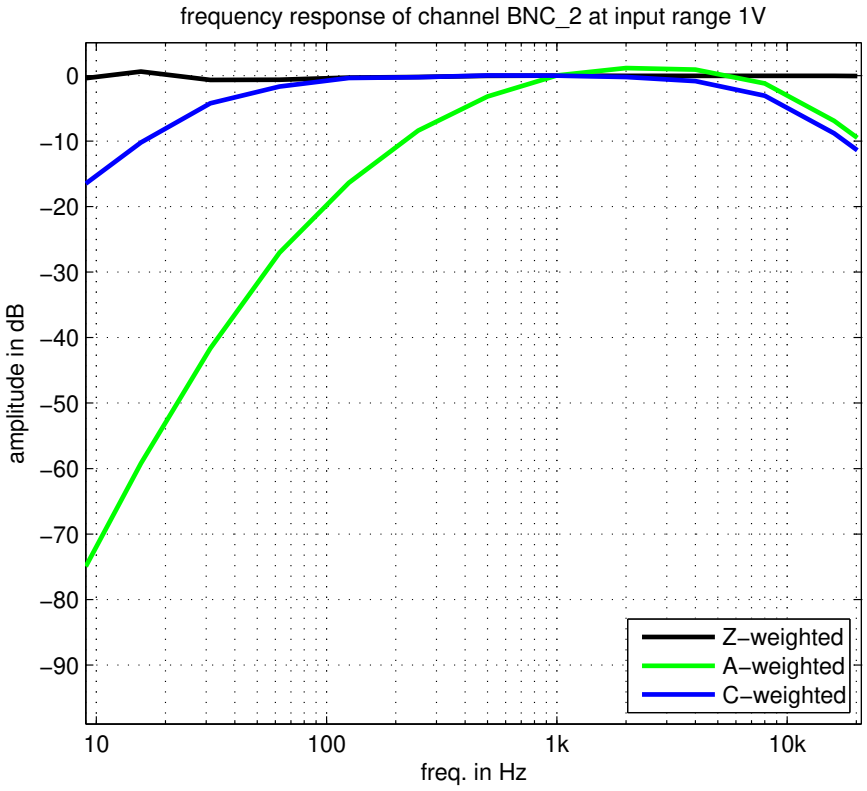
Max. Tolerance is 0.1dB
This test is done using DC coupling, 1V input range.



frequency in Hz	3.91	7.81	15.63	31.25	62.50	125.00	250.00	500.00	1000.00	2000.00	4000.00	8000.00	16000.00	20158.70
amplitude in dB	-0.017	-0.017	0.013	0.013	0.013	0.013	-0.007	0.003	0.023	-0.007	-0.007	0.003	-0.007	-0.017

Frequency Response for Z, A and C-weighted sound levels (Test passed)

Tolerance according to EN 61672-1:2003 class 1 (checked frequency range is 10 Hz ... 20 kHz)



Gain Test channel BNC_2 passed!

Calibrated at 1V (Gain: 0dB).

Gain (V)	(dB)	mean (%)	min (%)	max (%)	Tol. (%)	status
10	-20	0.0	-0.1	0.0	0.3	pass
1	0	0.0	0.0	0.0	0.3	pass

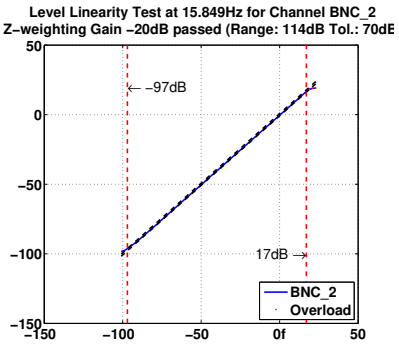
Checking internal calibration value passed (deviance: -1.04% Tol.: 6%).

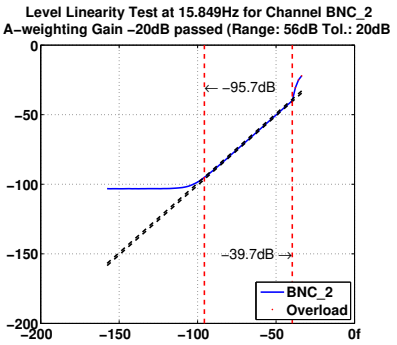
Level Linearity Test Normal Range channel BNC_2 passed!

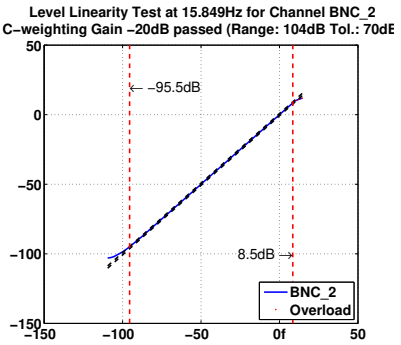
Max. Tolerance is 0.8dB

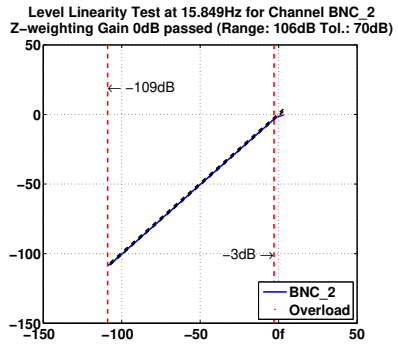
This test is done using AC coupling, 1Hz high pass switched on and ICP/200V off and in steps of 2dB

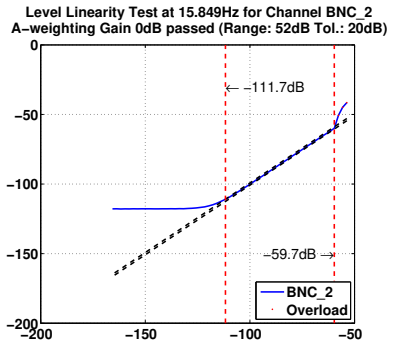
		Z				A				C			
Gain	Frequency	Range in dB		Status	Tol.	Range in dB		Status	Tol.	Range in dB		Status	Tol.
-20	15,849Hz	17..-97	114	passed	70	-39.7..-95.7	56	passed	20	8.5..-95.5	104	passed	70
0	15,849Hz	-3..-109	106	passed	70	-59.7..-111.7	52	passed	20	-11.5..-109.5	98	passed	70

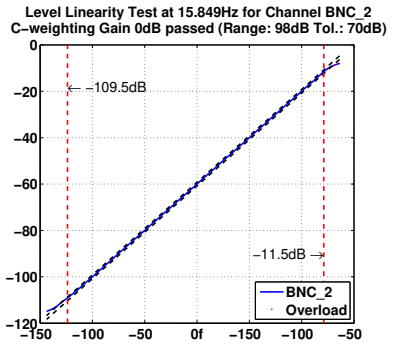












Inherent Noise Test channel BNC_2 passed!

Calibrated at 1V (Gain: 0dB).

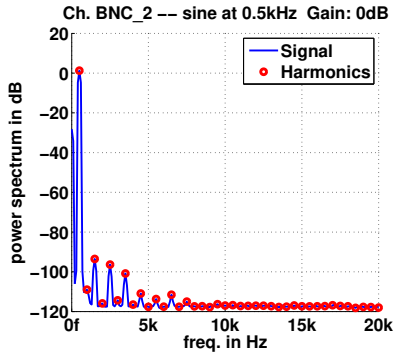
Gain (dB)	time data (mV_{rms})	Z (mV_{rms})	A (mV_{rms})	C (mV_{rms})	Status
-20	0.03933 (-88dBV)	0.00656 (-104dBV)	0.00494 (-106dBV)	0.00442 (-107dBV)	pass
0	0.00711 (-103dBV)	0.00130 (-118dBV)	0.00091 (-121dBV)	0.00094 (-121dBV)	pass

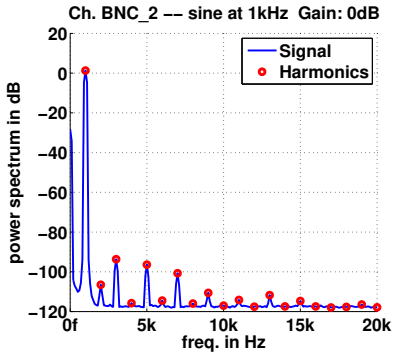
THD Test channel BNC_2 passed!

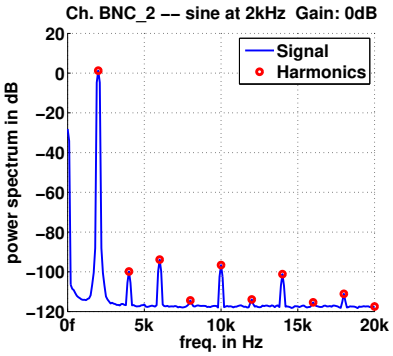
Max. THD Tolerance is -80dB
Measured at Gain: 0dB

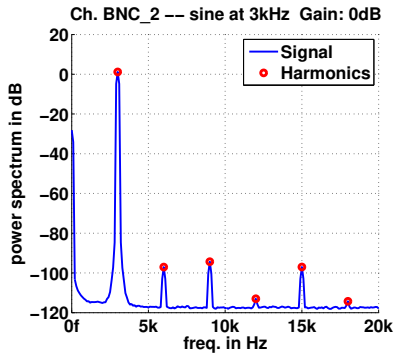
definition: $THD = \frac{P_2 + P_3 + \cdots + P_n}{P_1}$

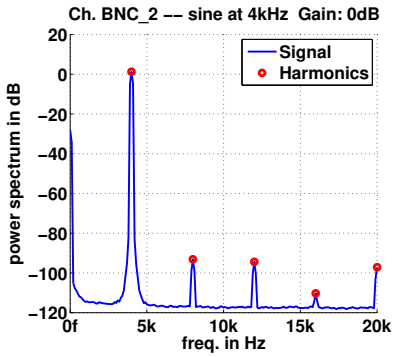
Frequency (Hz)	THD (dB)	THD+N (dB)	Number of Harmonics	Status
500.0	-92.0	-92.0	39	pass
1000.0	-92.2	-91.5	19	pass
2000.0	-92.0	-90.8	9	pass
3000.0	-92.3	-90.7	5	pass
4000.0	-91.0	-89.7	4	pass
5000.0	-91.9	-90.3	3	pass

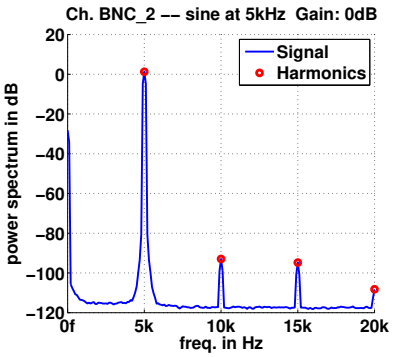












Third Octave Test according EN 61260:1995 (Class 0) channel BNC_2 passed!

This test is done using DC coupling, 1Hz high pass switched off and ICP/200V off and amplitude 17dBV
The following Third Octaves are tested according EN 61260:1995 (Class 0)

Tolerances marked with * are interpolated, due to generator and device frequency tolerances!

f_m in Hz	G^{-4}	G^{-3}	G^{-2}	G^{-1}	$G^{-\frac{1}{2}}$	$G^{-\frac{1}{2}}$	$G^{-\frac{3}{8}}$	$G^{-\frac{1}{4}}$	$G^{-\frac{1}{8}}$	G^{0}	$G^{\frac{1}{8}}$	$G^{\frac{1}{4}}$	$G^{\frac{3}{8}}$	$G^{\frac{1}{2}}$	$G^{\frac{1}{2}}$	G^{1}	G^{2}	G^{3}	G^{4}
upper lim	-75	-62	-42.5	-18	-2.3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	-2.3	-18	-42.5	-62	-75
lower lim	-Inf	-Inf	-Inf	-Inf	-4.5	-4.5	-1.1	-0.4	-0.2	-0.15	-0.2	-0.4	-1.1	-4.5	-4.5	-Inf	-Inf	-Inf	-Inf
15.625	-86.65	-66.77	-47.25	-22.84	-3.19	-3.2	-0.51	-0.04	-0.03	-0.06	-0.04	-0.03	-0.25	-3.23	-3.25	-31.14	-92.44	-110.38	-121.54
19.686	-78.26	-80.83	-52.21	-24.91	-3.31	-3.28	-0.46	-0.02	-0.03	-0.05	-0.02	-0.03	-0.39	-3.03	-3.02	-26.34	-57.03	-86.35	-121.28
24.803	-103.89	-68.04	-49.2	-23.84	-3.17	-3.21	-0.47	-0.04	-0.04	-0.01	-0.06	-0.06	-0.41	-3.23	-3.22	-26.99	-57.79	-104.27	-125.16
31.25	-86.69	-66.75	-47.24	-22.81	-3.2	-3.23	-0.56	-0.07	-0.07	-0.05	-0.02	-0.04	-0.26	-3.25	-3.25	-31.13	-92.76	-111.24	-120.72
39.373	-78.28	-80.85	-52.22	-24.87	-3.27	-3.29	-0.5	0.01	-0.05	-0.02	-0.02	-0.06	-0.39	-3.05	-3.06	-26.33	-57.07	-86.36	-123.62
49.606	-105.15	-68.09	-49.16	-23.82	-3.21	-3.18	-0.48	-0.01	0.01	-0.01	0.02	-0.04	-0.41	-3.2	-3.19	-26.99	-57.78	-101.92	-123.63
62.5	-86.72	-66.72	-47.24	-22.79	-3.16	-3.17	-0.47	-0.04	0.02	-0.03	-0.05	-0.07	-0.31	-3.27	-3.35	-31.14	-92.37	-111.45	-123.32
78.745	-78.22	-80.87	-52.26	-24.89	-3.31	-3.29	-0.5	-0.06	-0.07	-0.01	-0.03	0.02	-0.38	-3.08	-3.01	-26.31	-57.03	-86.39	-127.02
99.213	-106.3	-68.01	-49.19	-23.78	-3.22	-3.21	-0.52	-0.05	-0.05	0	0.01	-0.03	-0.42	-3.2	-3.13	-27.04	-57.72	-101.45	-123.54
125	-86.68	-66.76	-47.18	-22.79	-3.18	-3.17	-0.56	-0.03	0.03	0.02	-0.03	-0.04	-0.29	-3.25	-3.24	-31.11	-92.56	-111.54	-123.22
157.49	-78.22	-80.81	-52.16	-24.88	-3.27	-3.27	-0.46	-0.01	0	-0.03	0	-0.05	-0.37	-3.04	-3.07	-26.37	-57.04	-86.39	-123.69
198.425	-106.59	-68.03	-49.2	-23.84	-3.21	-3.17	-0.49	-0.04	-0.03	-0.01	-0.02	-0.05	-0.4	-3.13	-3.18	-27.06	-57.81	-101.89	-123.06
250	-86.75	-66.76	-47.18	-22.78	-3.15	-3.19	-0.54	0.03	0	-0.01	-0.09	-0.08	-0.3	-3.29	-3.34	-31.09	-94.29	-111.21	-122.18
314.98	-78.31	-80.89	-52.24	-24.9	-3.32	-3.32	-0.48	-0.1	-0.02	0.01	-0.03	-0.01	-0.34	-3.03	-3.07	-26.32	-57.05	-86.4	-124.84
396.85	-105.77	-68.06	-49.18	-23.8	-3.19	-3.18	-0.51	-0.01	-0.05	-0.03	-0.04	-0.01	-0.39	-3.15	-3.18	-27.02	-57.77	-102.05	-121.75
500	-86.78	-66.78	-47.2	-22.8	-3.18	-3.19	-0.54	-0.06	0.02	-0.02	0.03	0.01	-0.35	-3.29	-3.24	-31.05	-93.6	-110.83	-117.97
629.961	-78.32	-80.85	-52.21	-24.88	-3.24	-3.29	-0.47	-0.04	-0.01	0	-0.06	-0.03	-0.37	-3.07	-3.04	-26.29	-57.03	-86.34	-120.66
793.701	-105.77	-68.08	-49.18	-23.86	-3.21	-3.19	-0.52	-0.01	0.01	-0.02	-0.02	-0.06	-0.38	-3.21	-3.21	-27	-57.81	-103.65	-119.65
1000	-86.71	-66.73	-47.24	-22.76	-3.2	-3.2	-0.53	-0.02	-0.02	0	-0.03	-0.04	-0.32	-3.25	-3.26	-31.15	-93.5	-110.85	-118.75
1259.921	-78.28	-80.86	-52.17	-24.86	-3.29	-3.29	-0.49	-0.04	-0.03	-0.03	-0.03	-0.04	-0.41	-3.05	-3.05	-26.34	-57.06	-86.38	-115.27
1587.401	-105.73	-68.02	-49.16	-23.85	-3.19	-3.18	-0.49	-0.05	-0.04	-0.03	-0.06	-0.04	-0.4	-3.18	-3.2	-27.03	-57.79	-102.28	-116.41
2000	-86.69	-66.7	-47.24	-22.8	-3.18	-3.18	-0.53	-0.05	-0.02	-0.04	-0.03	-0.05	-0.29	-3.28	-3.27	-31.14	-93.64	-110.54	-115.99
2519.842	-78.25	-80.86	-52.19	-24.89	-3.28	-3.27	-0.52	-0.08	-0.03	-0.04	-0.07	-0.06	-0.43	-3.09	-3.1	-26.34	-57.06	-86.36	-114.33
3174.802	-105.47	-68.03	-49.19	-23.86	-3.22	-3.22	-0.54	-0.12	-0.07	-0.02	-0.04	-0.03	-0.39	-3.2	-3.2	-27.03	-57.81	-102.53	-115.48
4000	-86.73	-66.74	-47.24	-22.78	-3.2	-3.21	-0.53	-0.06	-0.02	-0.03	-0.02	-0.04	-0.3	-3.28	-3.28	-31.12	-93.28	-108.58	-113.11
5039.684	-78.29	-80.76	-52.2	-24.89	-3.28	-3.27	-0.52	-0.04	-0.03	-0.03	-0.02	-0.05	-0.4	-3.05	-3.04	-26.37	-57.05	-86.35	-111.19
6349.604	-104.7	-68.04	-49.19	-23.84	-3.19	-3.18	-0.52	-0.05	-0.02	-0.05	-0.04	-0.03	-0.41	-3.19	-3.19	-27.02	-57.78	-101.83	-108.94
8000	-86.71	-66.72	-47.24	-22.82	-3.19	-3.19	-0.52	-0.06	-0.03	-0.02	-0.05	-0.03	-0.29	-3.3	-3.3	-31.1	-93.04	-105.7	-109.41
10079.368	-78.28	-80.47	-52.23	-24.88	-3.31	-3.31	-0.48	-0.05	-0.05	-0.02	-0.04	-0.04	-0.4	-3.06	-3.06	-26.38	-57.06	-86.33	-108.07
12699.208	-102.57	-68.04	-49.18	-23.83	-3.19	-3.19	-0.55	-0.06	-0.04	-0.07	-0.04	-0.07	-0.43	-3.19	-3.19	-27.04	-57.81	-100.88	-106.39
16000	-86.69	-66.69	-47.22	-22.84	-3.19	-3.18	-0.53	-0.08	-0.03	-0.04	-0.07	-0.04	-0.33	-3.31	-3.31	-31.13	-92.72	-103.32	-103.66
20158.737	-78.26	-79.51	-52.25	-24.9	-3.31	-3.31	-0.5	-0.05	-0.05	-0.04	-0.03	-0.08	-0.41	-3.07	-3.07	-26.38	-57.06	-86.27	-99.86
25398.417	-98.51	-67.96	-49.2	-23.85	-3.21	-3.21	-0.55	-0.08	-0.05	-0.07	-0.07	-0.08	-0.47	-3.24	-3.24	-27.04	-57.8	-96.74	-95.1
32000	-86.53	-66.59	-47.25	-22.84	-3.24	-3.24	-0.59	-0.14	-0.03	-0.04	-0.06	-0.04	-0.32	-3.32	-3.32	-31.13	-91.66	-96.92	-95.58
40317.474	-78.21	-77.35	-52.25	-24.9	-3.32	-3.32	-0.51	-0.1	-0.04	-0.04	-0.04	-0.09	-0.41	-3.08	-3.08	-26.38	-57.11	-85.68	-92.71
50796.834	-93.37	-67.58	-49.2	-23.85	-3.22	-3.22	-0.56	-0.07	-0.08	-0.06	-0.04	-0.08	-0.43	-3.21	-3.21	-27.08	-57.84	-79.65	-91.99
64000	-85.92	-66.16	-47.24	-22.83	-3.2	-3.2	-0.59	-0.07	-0.07	-0.08	-0.06	-0.06	-0.36	-3.32	-3.32	-31.16	-70.4	-88.75	-88.84
80634.947	-81.38	-68.43	-46.47	-20.5	-3.07	-3.07	-0.78	-0.17	-0.08	-0.11	-0.1	-0.1	-0.44	-3.24	-3.24	-84.89	-83.92	-85.78	-84.55

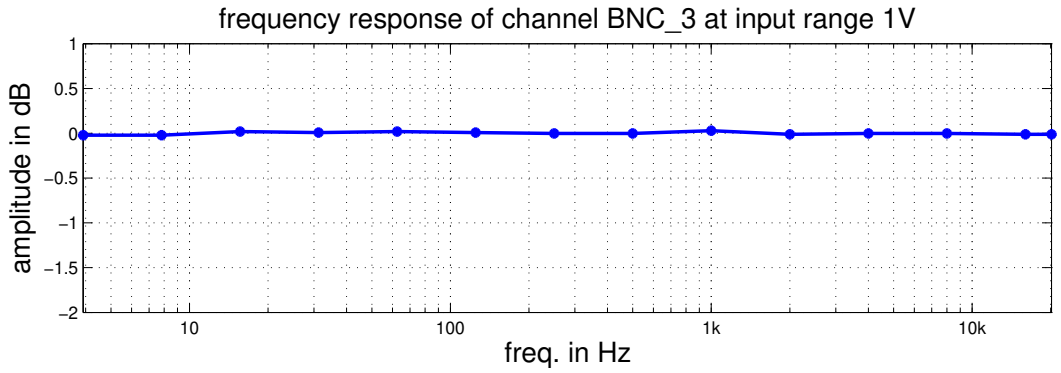
Coupling Test channel BNC_3 passed!

Generator V = 1V
Gain Setting: 1

Coupling	RMS Value (V_{rms})	Tol	MEAN Value (V_{rms})	Tol	Status
GND	1.4641e-005(-97dBV)	<0.1	-3.4173e-005(-89dBV)	abs<0.1	ok
DC	None		0.51052(-6dBV)	<0.55 , >0.45	ok
AC (1000Hz)	1.0031(0dBV)	>0.9,<1.1	-0.00065197(-64dBV)	abs<0.05	ok

Frequency Response Test channel BNC_3 passed!

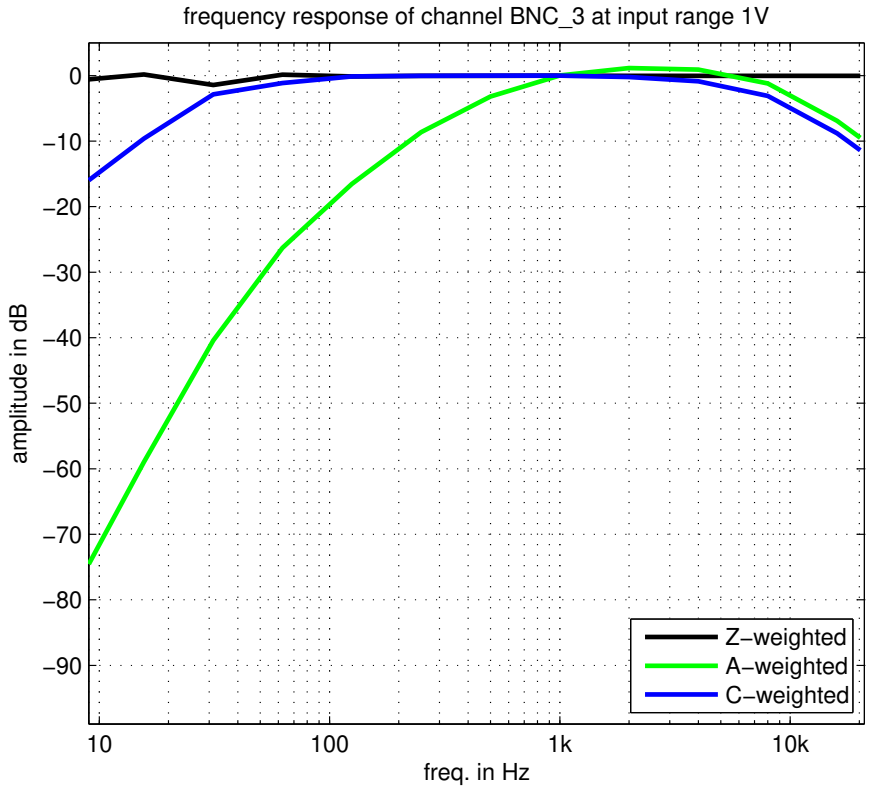
Max. Tolerance is 0.1dB
This test is done using DC coupling, 1V input range.



frequency in Hz	3.91	7.81	15.63	31.25	62.50	125.00	250.00	500.00	1000.00	2000.00	4000.00	8000.00	16000.00	20158.70
amplitude in dB	-0.021	-0.021	0.019	0.009	0.019	0.009	-0.001	-0.001	0.029	-0.011	-0.001	-0.001	-0.011	-0.011

Frequency Response for Z, A and C-weighted sound levels (Test passed)

Tolerance according to EN 61672-1:2003 class 1 (checked frequency range is 10 Hz ... 20 kHz)



Gain Test channel BNC_3 passed!

Calibrated at 1V (Gain: 0dB).

Gain (V)	(dB)	mean (%)	min (%)	max (%)	Tol. (%)	status
10	-20	0.0	-0.1	0.0	0.3	pass
1	0	0.0	0.0	0.0	0.3	pass

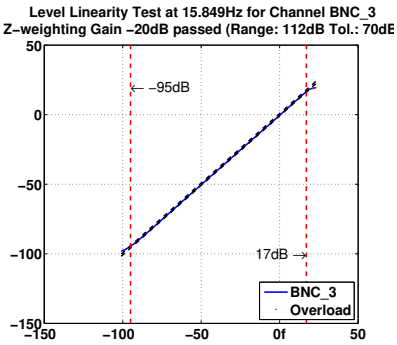
Checking internal calibration value passed (deviance: -0.52% Tol.: 6%).

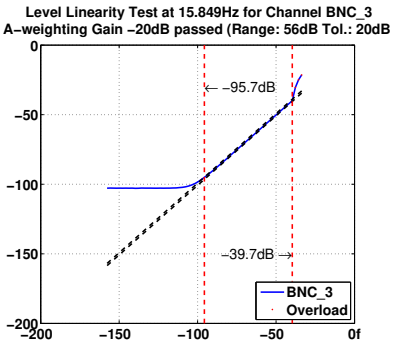
Level Linearity Test Normal Range channel BNC_3 passed!

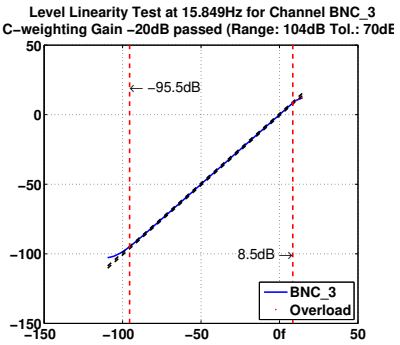
Max. Tolerance is 0.8dB

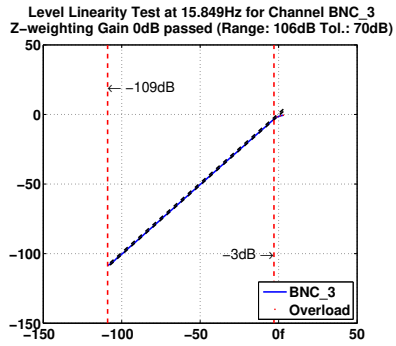
This test is done using AC coupling, 1Hz high pass switched on and ICP/200V off and in steps of 2dB

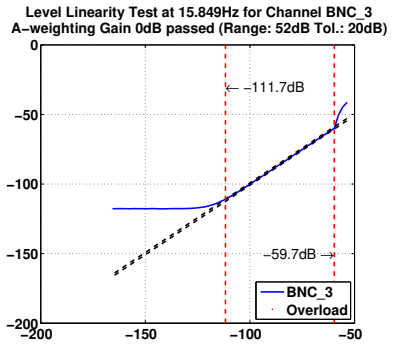
		Z				A				C			
Gain	Frequency	Range in dB		Status	Tol.	Range in dB		Status	Tol.	Range in dB		Status	Tol.
-20	15,849Hz	17..-95	112	passed	70	-39.7..-95.7	56	passed	20	8.5..-95.5	104	passed	70
0	15,849Hz	-3..-109	106	passed	70	-59.7..-111.7	52	passed	20	-11.5..-109.5	98	passed	70

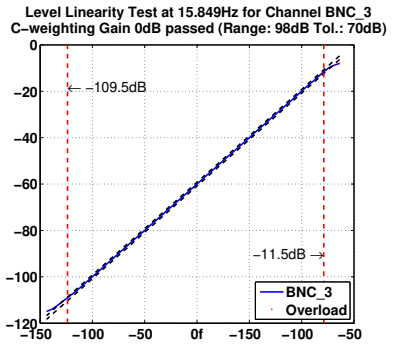












Inherent Noise Test channel BNC_3 passed!

Calibrated at 1V (Gain: 0dB).

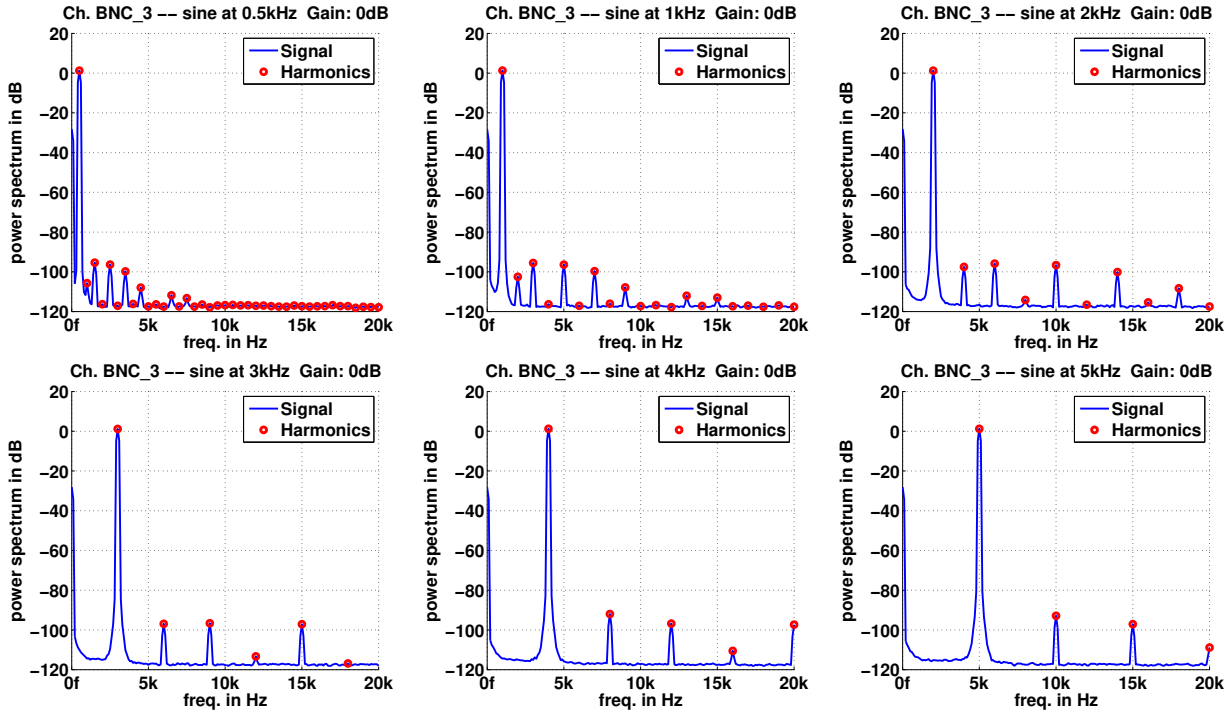
Gain (dB)	time data (mV_{rms})	Z (mV_{rms})	A (mV_{rms})	C (mV_{rms})	Status
-20	0.03886 (-88dBV)	0.00672 (-103dBV)	0.00512 (-106dBV)	0.00454 (-107dBV)	pass
0	0.00766 (-102dBV)	0.00133 (-118dBV)	0.00094 (-121dBV)	0.00096 (-120dBV)	pass

THD Test channel BNC_3 passed!

Max. THD Tolerance is -80dB
Measured at Gain: 0dB

definition: $THD = \frac{P_2 + P_3 + \cdots + P_n}{P_1}$

Frequency (Hz)	THD (dB)	THD+N (dB)	Number of Harmonics	Status
500.0	-92.6	-92.6	39	pass
1000.0	-92.7	-92.0	19	pass
2000.0	-92.4	-91.0	9	pass
3000.0	-93.3	-91.3	5	pass
4000.0	-91.1	-89.8	4	pass
5000.0	-92.6	-90.8	3	pass



Third Octave Test according EN 61260:1995 (Class 0) channel BNC_3 passed!

This test is done using DC coupling, 1Hz high pass switched off and ICP/200V off and amplitude 17dBV
The following Third Octaves are tested according EN 61260:1995 (Class 0)

Tolerances marked with * are interpolated, due to generator and device frequency tolerances!

f_m in Hz	G^{-4}	G^{-3}	G^{-2}	G^{-1}	$G^{-\frac{1}{2}}$	$G^{-\frac{1}{2}}$	$G^{-\frac{3}{8}}$	$G^{-\frac{1}{4}}$	$G^{-\frac{1}{8}}$	G^{0}	$G^{\frac{1}{8}}$	$G^{\frac{1}{4}}$	$G^{\frac{3}{8}}$	$G^{\frac{1}{2}}$	$G^{\frac{1}{2}}$	G^{1}	G^{2}	G^{3}	G^{4}
upper lim	-75	-62	-42.5	-18	-2.3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	-2.3	-18	-42.5	-62	-75
lower lim	-Inf	-Inf	-Inf	-Inf	-4.5	-4.5	-1.1	-0.4	-0.2	-0.15	-0.2	-0.4	-1.1	-4.5	-4.5	-Inf	-Inf	-Inf	-Inf
15.625	-86.65	-66.77	-47.25	-22.84	-3.19	-3.2	-0.51	-0.04	-0.03	-0.06	-0.04	-0.03	-0.25	-3.23	-3.25	-31.14	-92.42	-110.94	-119.55
19.686	-78.27	-80.82	-52.21	-24.91	-3.31	-3.28	-0.46	-0.02	-0.03	-0.05	-0.02	-0.03	-0.39	-3.03	-3.02	-26.34	-57.03	-86.35	-116.44
24.803	-104.58	-68.03	-49.2	-23.84	-3.17	-3.21	-0.47	-0.04	-0.04	-0.01	-0.06	-0.06	-0.41	-3.23	-3.22	-26.99	-57.79	-104.32	-125.07
31.25	-86.69	-66.75	-47.24	-22.81	-3.2	-3.23	-0.56	-0.07	-0.07	-0.05	-0.02	-0.04	-0.26	-3.25	-3.25	-31.13	-92.71	-111.04	-122.01
39.373	-78.28	-80.84	-52.22	-24.87	-3.27	-3.29	-0.5	0.01	-0.05	-0.02	-0.02	-0.06	-0.39	-3.05	-3.06	-26.33	-57.07	-86.36	-124.02
49.606	-105.52	-68.09	-49.16	-23.82	-3.21	-3.18	-0.48	-0.01	0.01	-0.01	0.02	-0.04	-0.41	-3.2	-3.19	-26.99	-57.78	-101.92	-123.49
62.5	-86.72	-66.72	-47.24	-22.79	-3.16	-3.17	-0.47	-0.04	0.02	-0.03	-0.05	-0.07	-0.32	-3.27	-3.35	-31.14	-92.37	-111.26	-123.6
78.745	-78.22	-80.87	-52.26	-24.89	-3.31	-3.29	-0.5	-0.06	-0.07	-0.01	-0.03	0.02	-0.38	-3.08	-3.02	-26.31	-57.03	-86.39	-128.67
99.213	-106.65	-68.01	-49.19	-23.78	-3.22	-3.21	-0.52	-0.05	-0.05	0	0.01	-0.03	-0.42	-3.2	-3.13	-27.04	-57.72	-101.46	-122.93
125	-86.68	-66.76	-47.18	-22.79	-3.18	-3.17	-0.56	-0.03	0.03	0.02	-0.03	-0.04	-0.29	-3.25	-3.24	-31.11	-92.56	-111.46	-122.76
157.49	-78.22	-80.81	-52.16	-24.88	-3.27	-3.27	-0.46	-0.01	0	-0.03	0	-0.05	-0.37	-3.04	-3.07	-26.37	-57.04	-86.39	-123.86
198.425	-106.99	-68.03	-49.2	-23.84	-3.21	-3.17	-0.49	-0.04	-0.03	-0.01	-0.02	-0.05	-0.4	-3.13	-3.18	-27.06	-57.81	-101.88	-122.97
250	-86.75	-66.76	-47.18	-22.78	-3.15	-3.19	-0.54	0.03	0	-0.01	-0.09	-0.08	-0.3	-3.29	-3.34	-31.09	-94.29	-111.11	-122.35
314.98	-78.32	-80.89	-52.24	-24.9	-3.32	-3.32	-0.48	-0.1	-0.02	0.01	-0.03	-0.01	-0.34	-3.03	-3.07	-26.32	-57.05	-86.4	-124.2
396.85	-106.35	-68.06	-49.18	-23.8	-3.19	-3.18	-0.51	-0.01	-0.05	-0.03	-0.03	-0.01	-0.39	-3.15	-3.18	-27.02	-57.77	-102.05	-121.44
500	-86.78	-66.78	-47.2	-22.8	-3.18	-3.19	-0.54	-0.06	0.02	-0.02	0.03	0.01	-0.35	-3.29	-3.24	-31.05	-93.6	-110.8	-118.23
629.961	-78.32	-80.85	-52.2	-24.88	-3.23	-3.29	-0.47	-0.04	-0.01	0	-0.06	-0.03	-0.37	-3.07	-3.03	-26.29	-57.03	-86.34	-120.8
793.701	-106.32	-68.08	-49.18	-23.86	-3.21	-3.19	-0.52	-0.01	0.01	-0.02	-0.02	-0.06	-0.38	-3.21	-3.21	-27	-57.81	-103.67	-119.97
1000	-86.72	-66.73	-47.24	-22.76	-3.2	-3.2	-0.53	-0.02	-0.02	0	-0.03	-0.04	-0.32	-3.25	-3.26	-31.15	-93.5	-110.82	-118.67
1259.921	-78.28	-80.86	-52.17	-24.86	-3.29	-3.29	-0.49	-0.04	-0.03	-0.03	-0.03	-0.04	-0.41	-3.05	-3.05	-26.34	-57.06	-86.38	-115.4
1587.401	-106.29	-68.02	-49.16	-23.85	-3.19	-3.18	-0.49	-0.05	-0.04	-0.03	-0.06	-0.04	-0.4	-3.18	-3.2	-27.03	-57.79	-102.28	-116.7
2000	-86.69	-66.7	-47.24	-22.8	-3.18	-3.18	-0.53	-0.05	-0.02	-0.04	-0.03	-0.05	-0.29	-3.28	-3.27	-31.14	-93.65	-110.56	-115.99
2519.842	-78.26	-80.86	-52.19	-24.89	-3.28	-3.27	-0.52	-0.08	-0.03	-0.04	-0.07	-0.06	-0.43	-3.09	-3.1	-26.34	-57.06	-86.36	-114.22
3174.802	-105.98	-68.03	-49.19	-23.86	-3.22	-3.22	-0.54	-0.12	-0.07	-0.02	-0.04	-0.03	-0.39	-3.2	-3.2	-27.03	-57.81	-102.53	-115.31
4000	-86.73	-66.74	-47.24	-22.78	-3.2	-3.21	-0.53	-0.05	-0.02	-0.03	-0.02	-0.04	-0.3	-3.28	-3.28	-31.12	-93.28	-108.52	-113.06
5039.684	-78.29	-80.76	-52.2	-24.89	-3.28	-3.27	-0.52	-0.04	-0.03	-0.03	-0.02	-0.05	-0.4	-3.05	-3.04	-26.37	-57.05	-86.35	-111.06
6349.604	-105.1	-68.04	-49.19	-23.84	-3.18	-3.18	-0.52	-0.05	-0.02	-0.05	-0.04	-0.03	-0.41	-3.19	-3.19	-27.02	-57.78	-101.85	-109.05
8000	-86.71	-66.72	-47.24	-22.82	-3.19	-3.19	-0.52	-0.06	-0.03	-0.02	-0.05	-0.03	-0.29	-3.3	-3.3	-31.1	-93.04	-105.67	-109.47
10079.368	-78.28	-80.47	-52.23	-24.88	-3.31	-3.31	-0.48	-0.05	-0.05	-0.02	-0.04	-0.04	-0.4	-3.06	-3.06	-26.38	-57.06	-86.33	-108.09
12699.208	-102.78	-68.04	-49.18	-23.83	-3.19	-3.19	-0.55	-0.06	-0.04	-0.07	-0.04	-0.07	-0.43	-3.19	-3.19	-27.04	-57.81	-100.89	-106.44
16000	-86.7	-66.69	-47.22	-22.84	-3.19	-3.18	-0.53	-0.08	-0.03	-0.04	-0.07	-0.04	-0.33	-3.31	-3.31	-31.13	-92.72	-103.35	-103.59
20158.737	-78.26	-79.51	-52.25	-24.9	-3.31	-3.31	-0.5	-0.05	-0.05	-0.04	-0.03	-0.08	-0.41	-3.07	-3.07	-26.38	-57.06	-86.27	-99.84
25398.417	-98.52	-67.95	-49.2	-23.85	-3.21	-3.21	-0.55	-0.08	-0.05	-0.07	-0.07	-0.08	-0.47	-3.24	-3.24	-27.04	-57.8	-96.76	-95.1
32000	-86.53	-66.58	-47.24	-22.84	-3.24	-3.24	-0.59	-0.14	-0.03	-0.04	-0.06	-0.04	-0.32	-3.32	-3.32	-31.13	-91.65	-96.92	-95.57
40317.474	-78.2	-77.2	-52.25	-24.9	-3.32	-3.32	-0.51	-0.1	-0.04	-0.04	-0.04	-0.09	-0.41	-3.08	-3.08	-26.38	-57.11	-85.68	-92.7
50796.834	-93.35	-67.54	-49.2	-23.85	-3.21	-3.21	-0.56	-0.07	-0.08	-0.06	-0.04	-0.08	-0.43	-3.21	-3.21	-27.08	-57.84	-79.65	-91.99
64000	-85.91	-66.11	-47.24	-22.83	-3.2	-3.2	-0.59	-0.07	-0.07	-0.08	-0.06	-0.06	-0.36	-3.32	-3.32	-31.16	-70.4	-88.72	-88.79
80634.947	-81.36	-68.25	-46.47	-20.5	-3.07	-3.07	-0.78	-0.17	-0.08	-0.11	-0.1	-0.1	-0.44	-3.25	-3.25	-84.88	-83.85	-85.73	-84.42

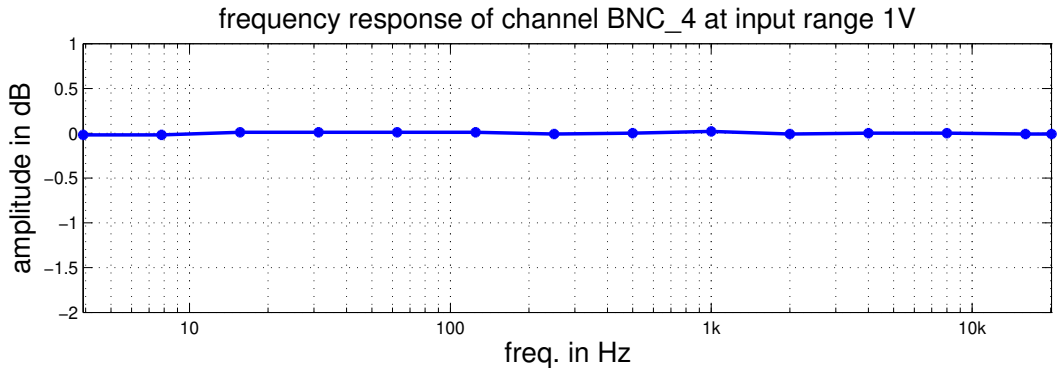
Coupling Test channel BNC_4 passed!

Generator V = 1V
Gain Setting: 1

Coupling	RMS Value (V_{rms})	Tol	MEAN Value (V_{rms})	Tol	Status
GND	1.7803e-005(-95dBV)	<0.1	1.9236e-005(-94dBV)	abs<0.1	ok
DC	None		0.51038(-6dBV)	<0.55 , >0.45	ok
AC (1000Hz)	1.0028(0dBV)	>0.9,<1.1	-0.0006669(-64dBV)	abs<0.05	ok

Frequency Response Test channel BNC_4 passed!

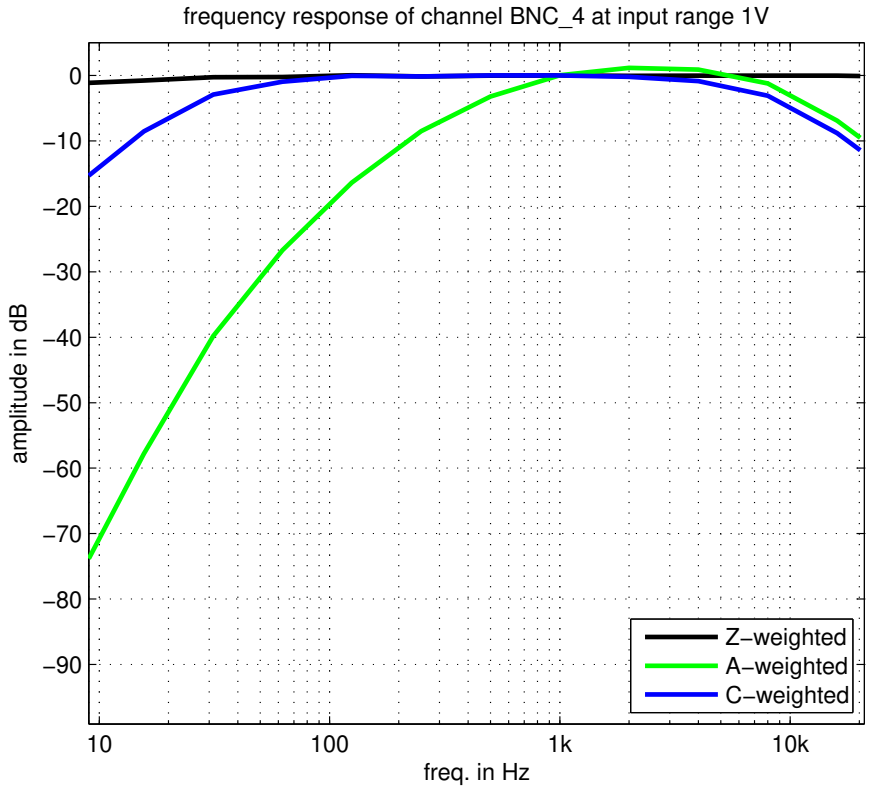
Max. Tolerance is 0.1dB
This test is done using DC coupling, 1V input range.



frequency in Hz	3.91	7.81	15.63	31.25	62.50	125.00	250.00	500.00	1000.00	2000.00	4000.00	8000.00	16000.00	20158.70
amplitude in dB	-0.019	-0.019	0.011	0.011	0.011	0.011	-0.009	0.001	0.021	-0.009	0.001	0.001	-0.009	-0.009

Frequency Response for Z, A and C-weighted sound levels (Test passed)

Tolerance according to EN 61672-1:2003 class 1 (checked frequency range is 10 Hz ... 20 kHz)



Gain Test channel BNC_4 passed!

Calibrated at 1V (Gain: 0dB).

Gain (V)	(dB)	mean (%)	min (%)	max (%)	Tol. (%)	status
10	-20	0.0	-0.1	0.0	0.3	pass
1	0	0.0	0.0	0.0	0.3	pass

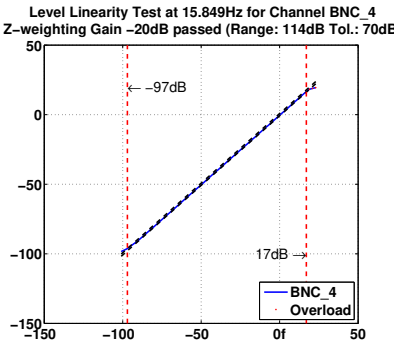
Checking internal calibration value passed (deviance: -0.7% Tol.: 6%).

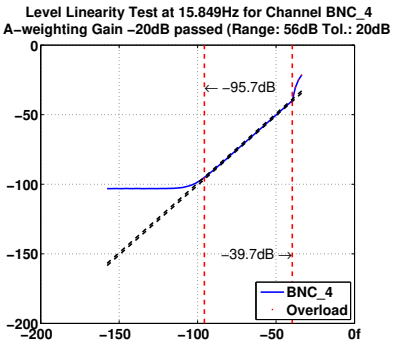
Level Linearity Test Normal Range channel BNC_4 passed!

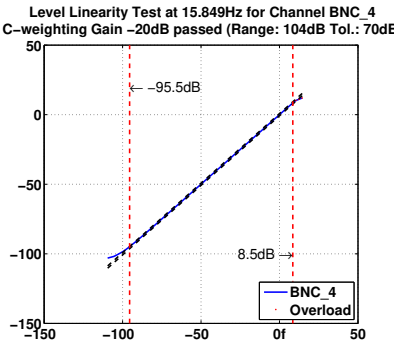
Max. Tolerance is 0.8dB

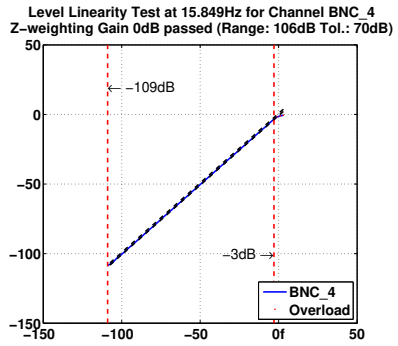
This test is done using AC coupling, 1Hz high pass switched on and ICP/200V off and in steps of 2dB

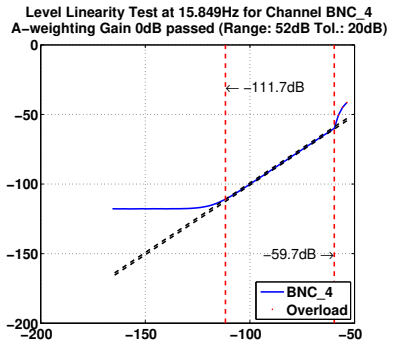
		Z				A				C			
Gain	Frequency	Range in dB		Status	Tol.	Range in dB		Status	Tol.	Range in dB		Status	Tol.
-20	15,849Hz	17..-97	114	passed	70	-39.7..-95.7	56	passed	20	8.5..-95.5	104	passed	70
0	15,849Hz	-3..-109	106	passed	70	-59.7..-111.7	52	passed	20	-11.5..-109.5	98	passed	70

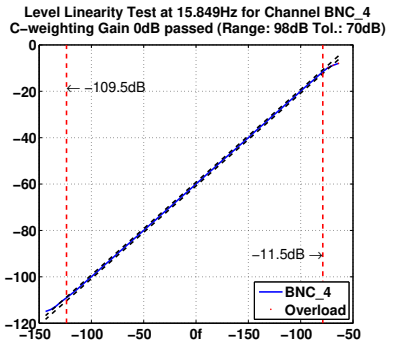












Inherent Noise Test channel BNC_4 passed!

Calibrated at 1V (Gain: 0dB).

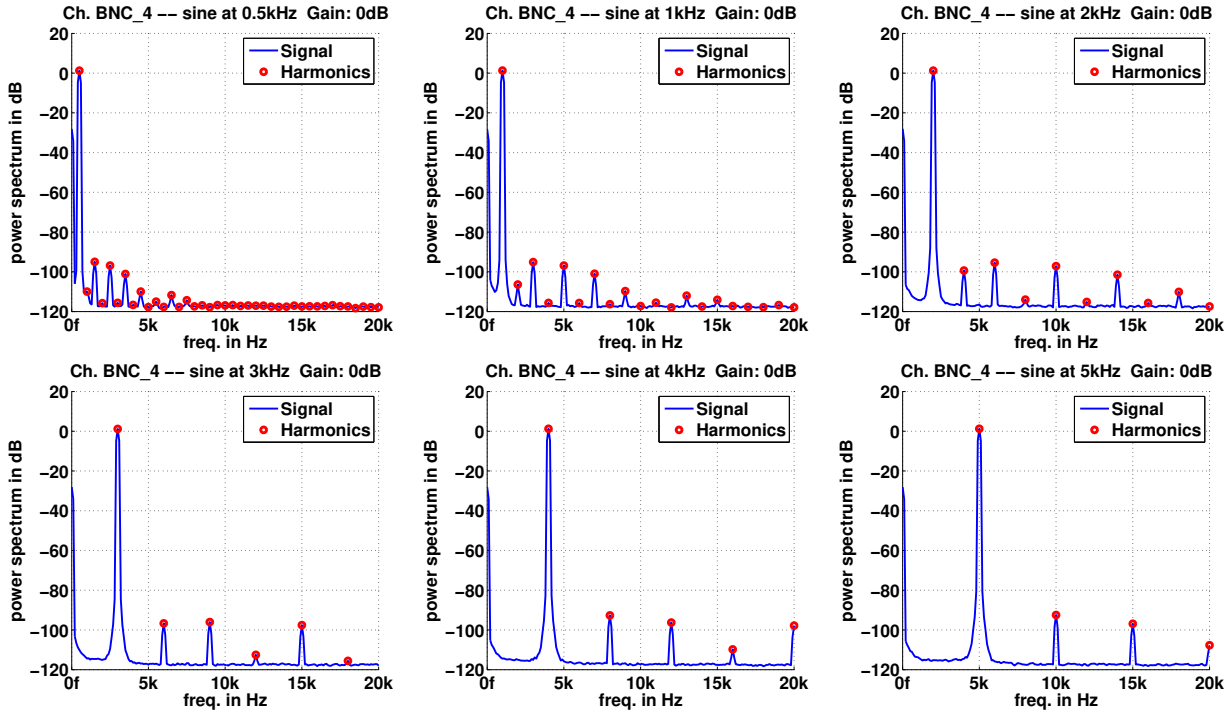
Gain (dB)	time data (mV_{rms})	Z (mV_{rms})	A (mV_{rms})	C (mV_{rms})	Status
-20	0.03779 (-88dBV)	0.00657 (-104dBV)	0.00496 (-106dBV)	0.00443 (-107dBV)	pass
0	0.00713 (-103dBV)	0.00131 (-118dBV)	0.00092 (-121dBV)	0.00094 (-121dBV)	pass

THD Test channel BNC_4 passed!

Max. THD Tolerance is -80dB
Measured at Gain: 0dB

definition: $THD = \frac{P_2 + P_3 + \cdots + P_n}{P_1}$

Frequency (Hz)	THD (dB)	THD+N (dB)	Number of Harmonics	Status
500.0	-92.8	-92.8	39	pass
1000.0	-93.1	-92.3	19	pass
2000.0	-92.9	-91.3	9	pass
3000.0	-93.1	-91.2	5	pass
4000.0	-91.5	-90.0	4	pass
5000.0	-92.3	-90.5	3	pass



Third Octave Test according EN 61260:1995 (Class 0) channel BNC_4 passed!

This test is done using DC coupling, 1Hz high pass switched off and ICP/200V off and amplitude 17dBV
The following Third Octaves are tested according EN 61260:1995 (Class 0)

Tolerances marked with * are interpolated, due to generator and device frequency tolerances!

f_m in Hz	G^{-4}	G^{-3}	G^{-2}	G^{-1}	$G^{-\frac{1}{2}}$	$G^{-\frac{1}{2}}$	$G^{-\frac{3}{8}}$	$G^{-\frac{1}{4}}$	$G^{-\frac{1}{8}}$	G^{0}	$G^{\frac{1}{8}}$	$G^{\frac{1}{4}}$	$G^{\frac{3}{8}}$	$G^{\frac{1}{2}}$	$G^{\frac{1}{2}}$	G^{1}	G^{2}	G^{3}	G^{4}
upper lim	-75	-62	-42.5	-18	-2.3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	-2.3	-18	-42.5	-62	-75
lower lim	-Inf	-Inf	-Inf	-Inf	-4.5	-4.5	-1.1	-0.4	-0.2	-0.15	-0.2	-0.4	-1.1	-4.5	-4.5	-Inf	-Inf	-Inf	-Inf
15.625	-86.65	-66.77	-47.25	-22.84	-3.19	-3.2	-0.51	-0.04	-0.03	-0.06	-0.04	-0.03	-0.25	-3.23	-3.25	-31.14	-92.4	-110.99	-119.91
19.686	-78.27	-80.81	-52.21	-24.91	-3.31	-3.28	-0.46	-0.02	-0.03	-0.05	-0.02	-0.03	-0.39	-3.03	-3.02	-26.34	-57.03	-86.34	-116.41
24.803	-104.63	-68.04	-49.2	-23.84	-3.17	-3.21	-0.47	-0.04	-0.04	-0.01	-0.06	-0.06	-0.41	-3.23	-3.22	-26.99	-57.79	-104.32	-125.59
31.25	-86.69	-66.75	-47.24	-22.81	-3.2	-3.23	-0.56	-0.07	-0.07	-0.05	-0.02	-0.04	-0.26	-3.25	-3.25	-31.13	-92.71	-110.97	-121.9
39.373	-78.28	-80.84	-52.22	-24.87	-3.27	-3.29	-0.5	0.01	-0.05	-0.02	-0.03	-0.06	-0.39	-3.05	-3.06	-26.33	-57.07	-86.36	-124.44
49.606	-105.55	-68.09	-49.16	-23.82	-3.21	-3.18	-0.48	-0.01	0.01	-0.01	0.02	-0.04	-0.41	-3.2	-3.19	-26.99	-57.78	-101.92	-122.69
62.5	-86.72	-66.72	-47.24	-22.79	-3.16	-3.17	-0.47	-0.04	0.02	-0.03	-0.05	-0.07	-0.32	-3.27	-3.35	-31.14	-92.37	-111.23	-123.22
78.745	-78.22	-80.88	-52.26	-24.89	-3.31	-3.29	-0.5	-0.06	-0.07	-0.01	-0.03	0.02	-0.38	-3.08	-3.02	-26.31	-57.03	-86.39	-128.06
99.213	-106.63	-68.01	-49.19	-23.78	-3.22	-3.21	-0.52	-0.05	-0.05	0	0.01	-0.03	-0.42	-3.2	-3.13	-27.04	-57.72	-101.46	-122.79
125	-86.68	-66.76	-47.18	-22.79	-3.18	-3.17	-0.56	-0.03	0.03	0.02	-0.03	-0.04	-0.29	-3.25	-3.24	-31.11	-92.56	-111.46	-122.94
157.49	-78.22	-80.82	-52.16	-24.88	-3.27	-3.27	-0.46	-0.01	0	-0.03	0	-0.05	-0.37	-3.04	-3.07	-26.37	-57.04	-86.39	-123.62
198.425	-106.97	-68.03	-49.2	-23.84	-3.21	-3.17	-0.49	-0.04	-0.03	-0.01	-0.02	-0.05	-0.4	-3.13	-3.18	-27.06	-57.81	-101.88	-123.39
250	-86.75	-66.76	-47.18	-22.78	-3.15	-3.19	-0.54	0.03	0	-0.01	-0.09	-0.08	-0.3	-3.29	-3.34	-31.09	-94.29	-111.2	-121.98
314.98	-78.32	-80.89	-52.24	-24.9	-3.32	-3.32	-0.48	-0.1	-0.03	0.01	-0.03	-0.01	-0.34	-3.03	-3.07	-26.32	-57.05	-86.4	-125.08
396.85	-106.27	-68.06	-49.18	-23.8	-3.19	-3.18	-0.51	-0.01	-0.05	-0.03	-0.03	-0.01	-0.39	-3.15	-3.18	-27.02	-57.77	-102.04	-122.3
500	-86.78	-66.78	-47.2	-22.8	-3.18	-3.19	-0.54	-0.06	0.02	-0.02	0.03	0.01	-0.35	-3.29	-3.24	-31.05	-93.6	-110.83	-118.64
629.961	-78.33	-80.85	-52.2	-24.88	-3.24	-3.29	-0.47	-0.04	-0.01	0	-0.06	-0.03	-0.37	-3.07	-3.04	-26.29	-57.03	-86.34	-120.85
793.701	-106.22	-68.08	-49.18	-23.86	-3.21	-3.19	-0.52	-0.01	0.01	-0.02	-0.02	-0.06	-0.38	-3.21	-3.21	-27	-57.81	-103.65	-119.88
1000	-86.71	-66.73	-47.24	-22.76	-3.2	-3.2	-0.53	-0.02	-0.02	0	-0.03	-0.04	-0.32	-3.25	-3.26	-31.15	-93.5	-110.86	-118.95
1259.921	-78.28	-80.86	-52.17	-24.86	-3.29	-3.29	-0.49	-0.04	-0.03	-0.03	-0.03	-0.04	-0.41	-3.05	-3.05	-26.34	-57.06	-86.38	-115.57
1587.401	-106.22	-68.02	-49.16	-23.85	-3.19	-3.18	-0.49	-0.05	-0.04	-0.03	-0.06	-0.04	-0.4	-3.18	-3.2	-27.03	-57.79	-102.28	-116.4
2000	-86.69	-66.7	-47.24	-22.8	-3.18	-3.18	-0.53	-0.05	-0.02	-0.04	-0.03	-0.05	-0.29	-3.28	-3.27	-31.14	-93.65	-110.56	-116.1
2519.842	-78.26	-80.85	-52.19	-24.89	-3.28	-3.27	-0.52	-0.08	-0.03	-0.04	-0.07	-0.06	-0.43	-3.09	-3.1	-26.34	-57.06	-86.36	-114.13
3174.802	-105.9	-68.03	-49.2	-23.86	-3.22	-3.22	-0.54	-0.12	-0.07	-0.02	-0.04	-0.03	-0.39	-3.2	-3.2	-27.03	-57.81	-102.53	-115.24
4000	-86.73	-66.74	-47.24	-22.78	-3.2	-3.21	-0.53	-0.06	-0.02	-0.03	-0.02	-0.04	-0.3	-3.28	-3.28	-31.12	-93.28	-108.54	-113.02
5039.684	-78.29	-80.74	-52.2	-24.89	-3.28	-3.27	-0.52	-0.04	-0.03	-0.03	-0.02	-0.05	-0.4	-3.05	-3.04	-26.37	-57.05	-86.35	-111.13
6349.604	-105.03	-68.04	-49.19	-23.84	-3.19	-3.18	-0.52	-0.05	-0.02	-0.05	-0.04	-0.03	-0.41	-3.19	-3.19	-27.02	-57.78	-101.82	-109.04
8000	-86.71	-66.72	-47.24	-22.82	-3.19	-3.19	-0.52	-0.06	-0.03	-0.02	-0.05	-0.03	-0.29	-3.3	-3.3	-31.1	-93.04	-105.68	-109.56
10079.368	-78.28	-80.45	-52.23	-24.88	-3.31	-3.31	-0.48	-0.05	-0.05	-0.02	-0.04	-0.04	-0.4	-3.06	-3.06	-26.38	-57.06	-86.33	-108.15
12699.208	-102.75	-68.03	-49.18	-23.83	-3.19	-3.19	-0.55	-0.06	-0.04	-0.07	-0.04	-0.07	-0.43	-3.19	-3.19	-27.03	-57.81	-100.88	-106.4
16000	-86.7	-66.69	-47.22	-22.84	-3.19	-3.18	-0.53	-0.08	-0.03	-0.04	-0.07	-0.04	-0.33	-3.31	-3.31	-31.13	-92.73	-103.31	-103.61
20158.737	-78.26	-79.46	-52.25	-24.89	-3.31	-3.31	-0.5	-0.05	-0.05	-0.04	-0.03	-0.08	-0.41	-3.07	-3.07	-26.38	-57.06	-86.27	-99.85
25398.417	-98.49	-67.96	-49.2	-23.85	-3.21	-3.21	-0.55	-0.08	-0.05	-0.07	-0.07	-0.08	-0.47	-3.24	-3.24	-27.04	-57.8	-96.74	-95.1
32000	-86.53	-66.59	-47.24	-22.84	-3.24	-3.24	-0.59	-0.14	-0.03	-0.04	-0.06	-0.04	-0.32	-3.32	-3.32	-31.13	-91.65	-96.91	-95.59
40317.474	-78.2	-77.26	-52.25	-24.9	-3.32	-3.32	-0.51	-0.1	-0.04	-0.04	-0.04	-0.09	-0.41	-3.08	-3.08	-26.38	-57.11	-85.68	-92.71
50796.834	-93.3	-67.56	-49.2	-23.85	-3.21	-3.21	-0.56	-0.07	-0.08	-0.06	-0.04	-0.08	-0.43	-3.21	-3.21	-27.08	-57.84	-79.65	-91.98
64000	-85.91	-66.15	-47.24	-22.83	-3.2	-3.2	-0.59	-0.07	-0.07	-0.08	-0.06	-0.06	-0.36	-3.32	-3.32	-31.16	-70.4	-88.76	-88.82
80634.947	-81.37	-68.4	-46.47	-20.5	-3.07	-3.07	-0.78	-0.17	-0.08	-0.11	-0.1	-0.1	-0.44	-3.24	-3.25	-84.89	-83.87	-85.88	-84.37

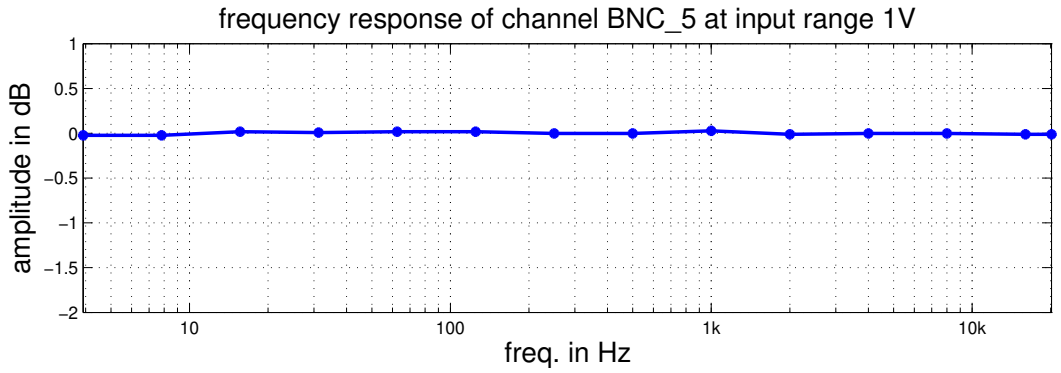
Coupling Test channel BNC_5 passed!

Generator V = 1V
Gain Setting: 1

Coupling	RMS Value (V_{rms})	Tol	MEAN Value (V_{rms})	Tol	Status
GND	1.4344e-005(-97dBV)	<0.1	-4.7133e-006(-107dBV)	abs<0.1	ok
DC	None		0.51045(-6dBV)	<0.55 , >0.45	ok
AC (1000Hz)	1.0031(0dBV)	>0.9,<1.1	-0.00071029(-63dBV)	abs<0.05	ok

Frequency Response Test channel BNC_5 passed!

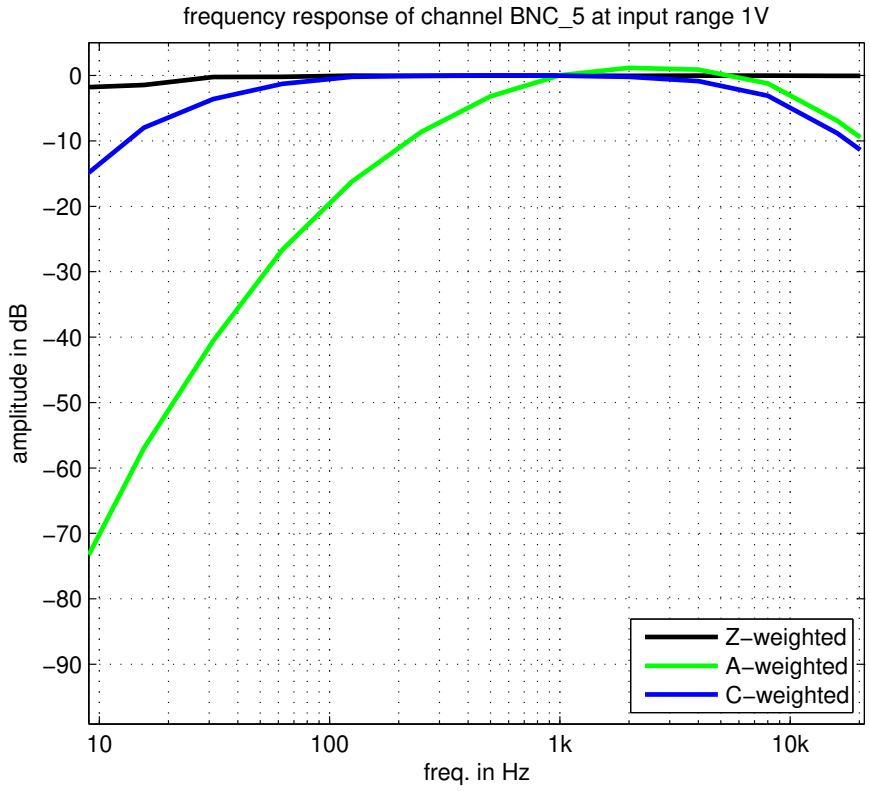
Max. Tolerance is 0.1dB
This test is done using DC coupling, 1V input range.



frequency in Hz	3.91	7.81	15.63	31.25	62.50	125.00	250.00	500.00	1000.00	2000.00	4000.00	8000.00	16000.00	20158.70
amplitude in dB	-0.022	-0.022	0.018	0.008	0.018	0.018	-0.002	-0.002	0.028	-0.012	-0.002	-0.002	-0.012	-0.012

Frequency Response for Z, A and C-weighted sound levels (Test passed)

Tolerance according to EN 61672-1:2003 class 1 (checked frequency range is 10 Hz ... 20 kHz)



Gain Test channel BNC_5 passed!

Calibrated at 1V (Gain: 0dB).

Gain (V)	(dB)	mean (%)	min (%)	max (%)	Tol. (%)	status
10	-20	0.0	-0.1	0.0	0.3	pass
1	0	0.0	0.0	0.0	0.3	pass

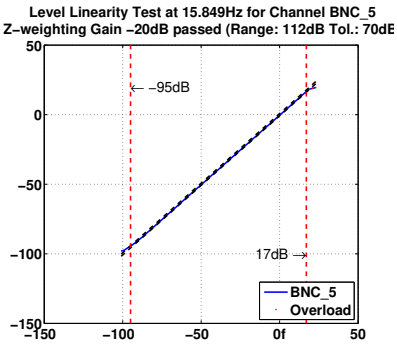
Checking internal calibration value passed (deviance: -1.17% Tol.: 6%).

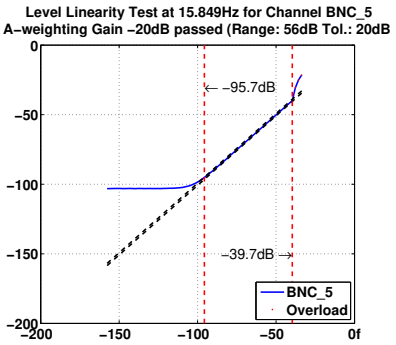
Level Linearity Test Normal Range channel BNC_5 passed!

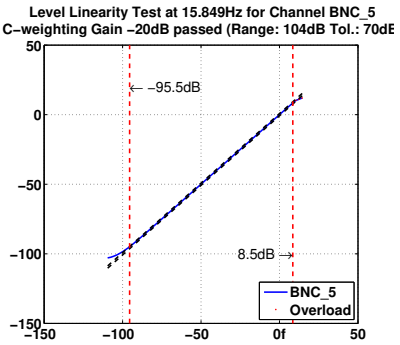
Max. Tolerance is 0.8dB

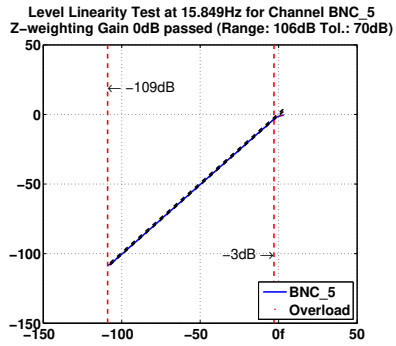
This test is done using AC coupling, 1Hz high pass switched on and ICP/200V off and in steps of 2dB

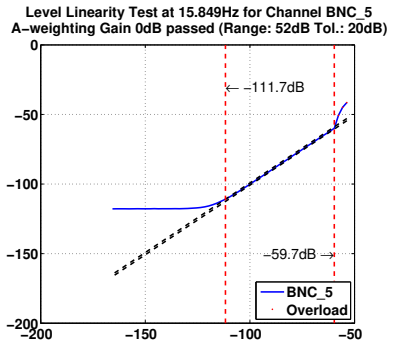
		Z				A				C			
Gain	Frequency	Range in dB		Status	Tol.	Range in dB		Status	Tol.	Range in dB		Status	Tol.
-20	15,849Hz	17..-95	112	passed	70	-39.7..-95.7	56	passed	20	8.5..-95.5	104	passed	70
0	15,849Hz	-3..-109	106	passed	70	-59.7..-111.7	52	passed	20	-11.5..-109.5	98	passed	70

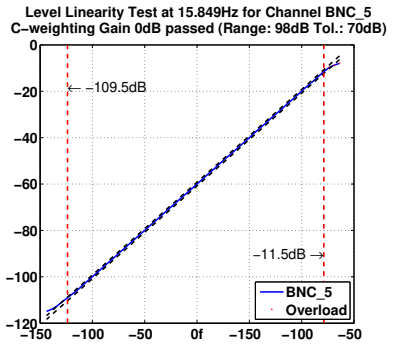












Inherent Noise Test channel BNC_5 passed!

Calibrated at 1V (Gain: 0dB).

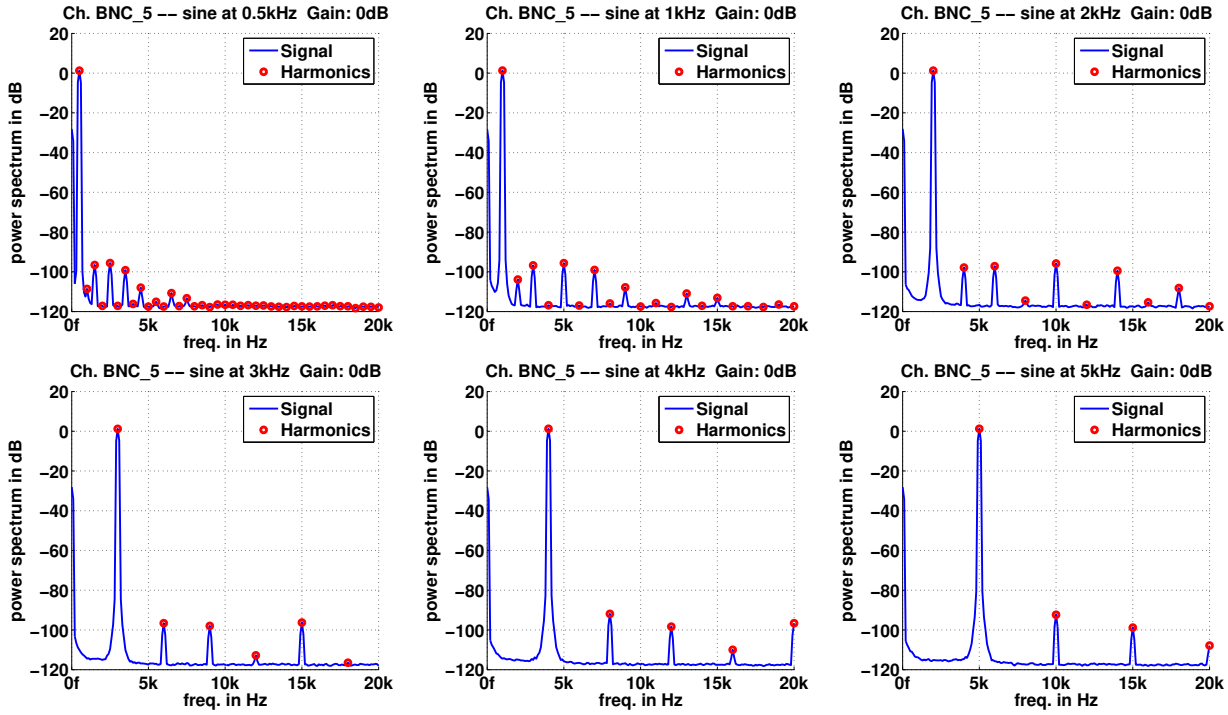
Gain (dB)	time data (mV_{rms})	Z (mV_{rms})	A (mV_{rms})	C (mV_{rms})	Status
-20	0.03642 (-89dBV)	0.00664 (-104dBV)	0.00500 (-106dBV)	0.00450 (-107dBV)	pass
0	0.00706 (-103dBV)	0.00132 (-118dBV)	0.00092 (-121dBV)	0.00095 (-120dBV)	pass

THD Test channel BNC_5 passed!

Max. THD Tolerance is -80dB
Measured at Gain: 0dB

definition: $THD = \frac{P_2 + P_3 + \cdots + P_n}{P_1}$

Frequency (Hz)	THD (dB)	THD+N (dB)	Number of Harmonics	Status
500.0	-92.7	-92.7	39	pass
1000.0	-92.8	-92.1	19	pass
2000.0	-92.5	-91.1	9	pass
3000.0	-93.3	-91.3	5	pass
4000.0	-91.2	-89.8	4	pass
5000.0	-92.6	-90.8	3	pass



Third Octave Test according EN 61260:1995 (Class 0) channel BNC_5 passed!

This test is done using DC coupling, 1Hz high pass switched off and ICP/200V off and amplitude 17dBV
The following Third Octaves are tested according EN 61260:1995 (Class 0)

Tolerances marked with * are interpolated, due to generator and device frequency tolerances!

f_m in Hz	G^{-4}	G^{-3}	G^{-2}	G^{-1}	$G^{-\frac{1}{2}}$	$G^{-\frac{1}{2}}$	$G^{-\frac{3}{8}}$	$G^{-\frac{1}{4}}$	$G^{-\frac{1}{8}}$	G^{0}	$G^{\frac{1}{8}}$	$G^{\frac{1}{4}}$	$G^{\frac{3}{8}}$	$G^{\frac{1}{2}}$	$G^{\frac{1}{2}}$	G^{1}	G^{2}	G^{3}	G^{4}
upper lim	-75	-62	-42.5	-18	-2.3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	-2.3	-18	-42.5	-62	-75
lower lim	-Inf	-Inf	-Inf	-Inf	-4.5	-4.5	-1.1	-0.4	-0.2	-0.15	-0.2	-0.4	-1.1	-4.5	-4.5	-Inf	-Inf	-Inf	-Inf
15.625	-86.67	-66.78	-47.28	-22.82	-3.21	-3.16	-0.53	-0.06	-0.04	-0.02	-0.03	-0.06	-0.29	-3.29	-3.26	-31.13	-92.17	-108.31	-118.63
19.686	-78.3	-80.71	-52.19	-24.87	-3.29	-3.31	-0.46	-0.04	0.01	-0.05	-0.04	-0.02	-0.42	-3.02	-3.02	-26.35	-57.04	-86.32	-119.48
24.803	-104.26	-68.07	-49.18	-23.87	-3.19	-3.18	-0.5	-0.04	-0.04	-0.04	-0.06	-0.06	-0.42	-3.22	-3.22	-27.02	-57.8	-101.75	-121.95
31.25	-86.7	-66.76	-47.26	-22.79	-3.21	-3.27	-0.54	-0.04	-0.07	0.01	-0.01	-0.07	-0.24	-3.32	-3.25	-31.05	-92.16	-110.34	-119.47
39.373	-78.24	-80.86	-52.19	-24.86	-3.26	-3.32	-0.46	-0.04	-0.01	-0.02	0.01	-0.07	-0.39	-3.04	-3.05	-26.32	-57.07	-86.36	-123.57
49.606	-105.08	-68.08	-49.21	-23.78	-3.15	-3.21	-0.48	-0.01	-0.01	-0.06	0.02	-0.07	-0.42	-3.2	-3.2	-27	-57.71	-102.55	-124.97
62.5	-86.71	-66.72	-47.25	-22.78	-3.2	-3.15	-0.55	-0.02	0.02	-0.03	-0.06	0.01	-0.29	-3.24	-3.35	-31.09	-93.55	-111.06	-122.04
78.745	-78.32	-80.87	-52.24	-24.86	-3.3	-3.28	-0.47	0	-0.02	0.02	0	0.01	-0.4	-3.02	-3.08	-26.33	-57.05	-86.36	-125.13
99.213	-106.38	-68.1	-49.17	-23.84	-3.21	-3.2	-0.54	-0.05	0	0.01	-0.01	-0.03	-0.39	-3.13	-3.2	-27.01	-57.79	-102.63	-123.92
125	-86.79	-66.77	-47.24	-22.77	-3.13	-3.21	-0.54	-0.03	-0.03	-0.05	0.03	-0.03	-0.29	-3.25	-3.32	-31.03	-95.01	-111.25	-121.66
157.49	-78.29	-80.87	-52.18	-24.85	-3.32	-3.32	-0.5	-0.03	-0.01	-0.02	-0.01	-0.03	-0.37	-3.06	-3.07	-26.33	-57.04	-86.33	-123.29
198.425	-106.78	-68.04	-49.2	-23.79	-3.23	-3.21	-0.51	-0.03	-0.04	-0.04	-0.03	-0.05	-0.41	-3.16	-3.18	-27.06	-57.75	-103.84	-121.28
250	-86.75	-66.76	-47.24	-22.79	-3.19	-3.14	-0.49	-0.05	-0.03	-0.06	-0.1	0	-0.31	-3.3	-3.36	-31.13	-93.53	-111.19	-122.65
314.98	-78.31	-80.86	-52.21	-24.91	-3.32	-3.29	-0.5	-0.07	-0.04	-0.04	-0.03	-0.03	-0.35	-3.04	-3.03	-26.36	-57.05	-86.39	-121.65
396.85	-106.06	-68.09	-49.18	-23.85	-3.22	-3.16	-0.46	-0.05	0.01	-0.05	-0.01	-0.04	-0.36	-3.17	-3.16	-27.02	-57.75	-101.73	-121.91
500	-86.73	-66.69	-47.19	-22.79	-3.16	-3.19	-0.53	-0.01	0.03	-0.03	-0.02	-0.01	-0.27	-3.23	-3.22	-31.18	-94.23	-111.2	-119.44
629.961	-78.32	-80.81	-52.19	-24.88	-3.27	-3.25	-0.48	-0.02	0.03	-0.03	-0.06	0	-0.39	-3.07	-3.07	-26.29	-57.03	-86.42	-119.64
793.701	-105.97	-68.03	-49.18	-23.85	-3.21	-3.22	-0.47	-0.05	-0.03	-0.02	-0.03	-0.06	-0.41	-3.17	-3.18	-27	-57.81	-102.83	-120.15
1000	-86.71	-66.73	-47.2	-22.74	-3.21	-3.16	-0.51	0	-0.01	0	0.03	-0.02	-0.31	-3.29	-3.26	-31.15	-94.26	-110.75	-116.8
1259.921	-78.28	-80.86	-52.17	-24.86	-3.27	-3.29	-0.49	-0.06	-0.02	-0.03	-0.02	-0.04	-0.42	-3.07	-3.05	-26.34	-57.06	-86.4	-117.87
1587.401	-105.89	-68.03	-49.16	-23.84	-3.2	-3.2	-0.52	-0.06	-0.03	-0.02	-0.04	-0.03	-0.39	-3.21	-3.21	-27.04	-57.79	-102.97	-117.12
2000	-86.71	-66.7	-47.24	-22.78	-3.19	-3.18	-0.54	-0.04	-0.02	-0.04	-0.02	-0.05	-0.3	-3.29	-3.26	-31.16	-93.66	-110.1	-115.79
2519.842	-78.26	-80.84	-52.19	-24.9	-3.28	-3.27	-0.52	-0.08	-0.04	-0.04	-0.07	-0.06	-0.43	-3.09	-3.09	-26.34	-57.06	-86.38	-114.63
3174.802	-105.68	-68.03	-49.2	-23.86	-3.22	-3.23	-0.55	-0.12	-0.06	-0.02	-0.05	-0.03	-0.4	-3.21	-3.2	-27.03	-57.79	-102.07	-114.37
4000	-86.72	-66.74	-47.25	-22.79	-3.21	-3.2	-0.52	-0.05	-0.02	-0.03	-0.03	-0.04	-0.31	-3.27	-3.27	-31.12	-93.23	-108.58	-111.7
5039.684	-78.29	-80.76	-52.2	-24.89	-3.28	-3.28	-0.52	-0.04	-0.03	-0.04	-0.02	-0.04	-0.41	-3.04	-3.05	-26.36	-57.05	-86.35	-110.41
6349.604	-104.79	-68.03	-49.19	-23.85	-3.18	-3.18	-0.53	-0.05	-0.02	-0.05	-0.04	-0.04	-0.41	-3.19	-3.19	-27.02	-57.78	-101.93	-108.48
8000	-86.71	-66.72	-47.24	-22.82	-3.19	-3.19	-0.53	-0.06	-0.03	-0.02	-0.05	-0.03	-0.3	-3.3	-3.31	-31.11	-93.05	-106.08	-108.49
10079.368	-78.28	-80.49	-52.23	-24.88	-3.31	-3.31	-0.49	-0.05	-0.05	-0.02	-0.03	-0.04	-0.4	-3.06	-3.06	-26.38	-57.07	-86.33	-108.08
12699.208	-102.55	-68.04	-49.18	-23.83	-3.19	-3.19	-0.54	-0.06	-0.03	-0.07	-0.04	-0.07	-0.43	-3.19	-3.19	-27.04	-57.81	-100.87	-106.48
16000	-86.69	-66.69	-47.22	-22.84	-3.19	-3.19	-0.53	-0.08	-0.04	-0.04	-0.07	-0.04	-0.33	-3.31	-3.31	-31.13	-92.76	-103.46	-103.66
20158.737	-78.26	-79.53	-52.25	-24.9	-3.31	-3.31	-0.5	-0.05	-0.05	-0.04	-0.03	-0.08	-0.41	-3.07	-3.07	-26.39	-57.07	-86.27	-99.63
25398.417	-98.44	-67.96	-49.2	-23.85	-3.21	-3.21	-0.56	-0.08	-0.05	-0.07	-0.07	-0.08	-0.48	-3.24	-3.24	-27.04	-57.81	-96.71	-95.16
32000	-86.53	-66.59	-47.25	-22.84	-3.24	-3.24	-0.6	-0.14	-0.04	-0.04	-0.07	-0.04	-0.32	-3.32	-3.32	-31.13	-91.72	-96.78	-95.79
40317.474	-78.2	-77.25	-52.25	-24.9	-3.32	-3.32	-0.51	-0.1	-0.04	-0.04	-0.04	-0.09	-0.41	-3.08	-3.08	-26.38	-57.11	-85.7	-92.87
50796.834	-93.24	-67.55	-49.2	-23.85	-3.22	-3.22	-0.56	-0.07	-0.08	-0.06	-0.05	-0.08	-0.43	-3.21	-3.21	-27.09	-57.84	-79.69	-91.87
64000	-85.9	-66.12	-47.24	-22.83	-3.2	-3.2	-0.59	-0.08	-0.07	-0.08	-0.06	-0.06	-0.36	-3.32	-3.32	-31.17	-70.4	-88.59	-88.91
80634.947	-81.36	-68.25	-46.47	-20.5	-3.07	-3.07	-0.78	-0.18	-0.08	-0.11	-0.11	-0.1	-0.44	-3.25	-3.25	-84.83	-83.66	-85.71	-84.4

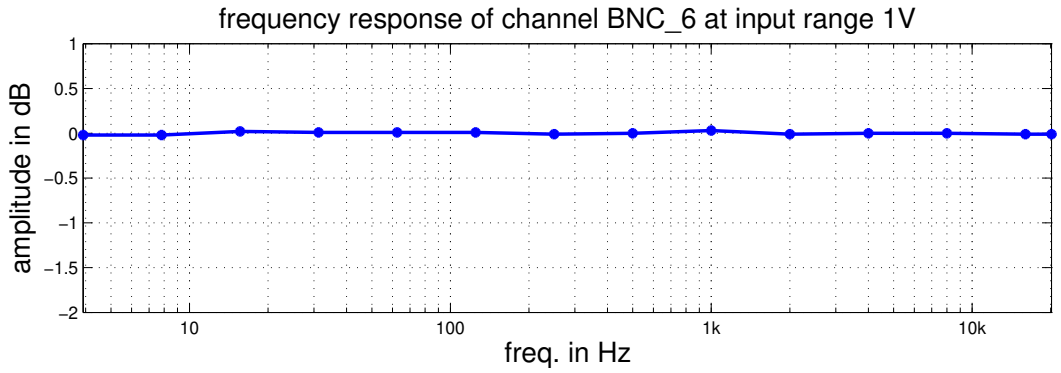
Coupling Test channel BNC_6 passed!

Generator V = 1V
Gain Setting: 1

Coupling	RMS Value (V_{rms})	Tol	MEAN Value (V_{rms})	Tol	Status
GND	1.7549e-005(-95dBV)	<0.1	-2.5536e-006(-112dBV)	abs<0.1	ok
DC	None		0.51033(-6dBV)	<0.55 , >0.45	ok
AC (1000Hz)	1.0028(0dBV)	>0.9,<1.1	-0.00070633(-63dBV)	abs<0.05	ok

Frequency Response Test channel BNC_6 passed!

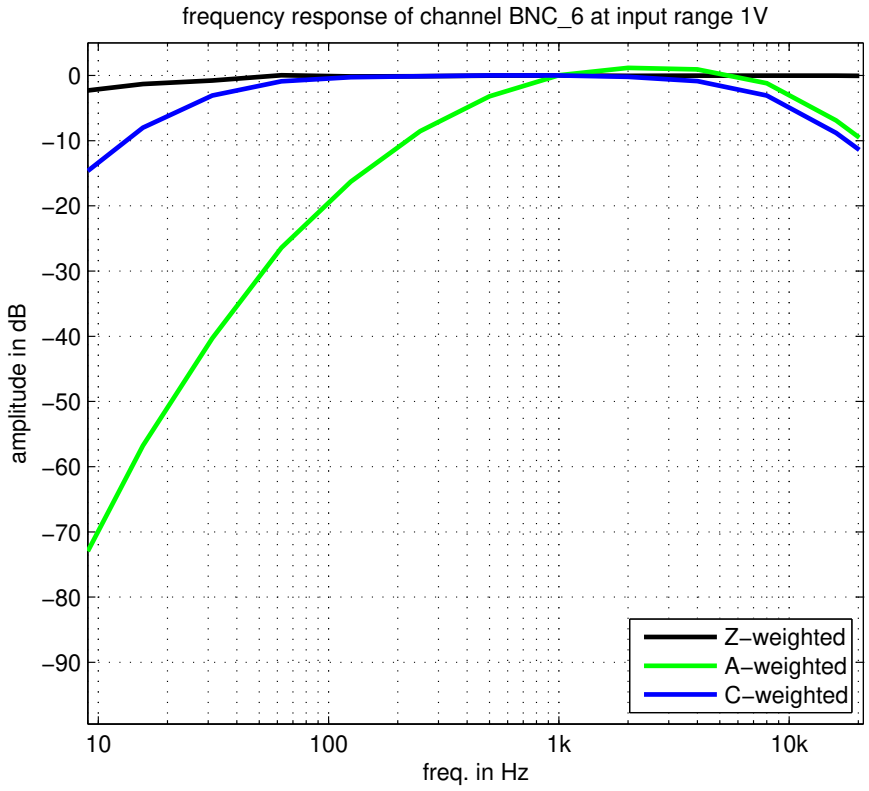
Max. Tolerance is 0.1dB
This test is done using DC coupling, 1V input range.



frequency in Hz	3.91	7.81	15.63	31.25	62.50	125.00	250.00	500.00	1000.00	2000.00	4000.00	8000.00	16000.00	20158.70
amplitude in dB	-0.02	-0.02	0.02	0.01	0.01	0.01	-0.01	0	0.03	-0.01	0	0	-0.01	-0.01

Frequency Response for Z, A and C-weighted sound levels (Test passed)

Tolerance according to EN 61672-1:2003 class 1 (checked frequency range is 10 Hz ... 20 kHz)



Gain Test channel BNC_6 passed!

Calibrated at 1V (Gain: 0dB).

Gain (V)	(dB)	mean (%)	min (%)	max (%)	Tol. (%)	status
10	-20	0.0	-0.1	0.0	0.3	pass
1	0	0.0	0.0	0.0	0.3	pass

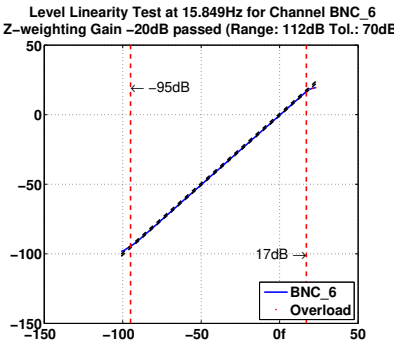
Checking internal calibration value passed (deviance: -0.99% Tol.: 6%).

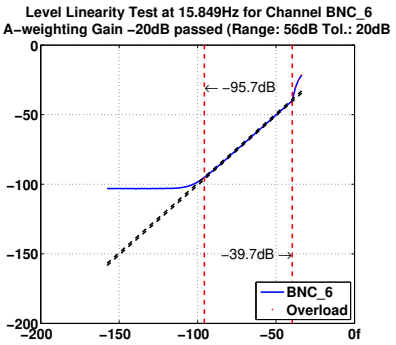
Level Linearity Test Normal Range channel BNC_6 passed!

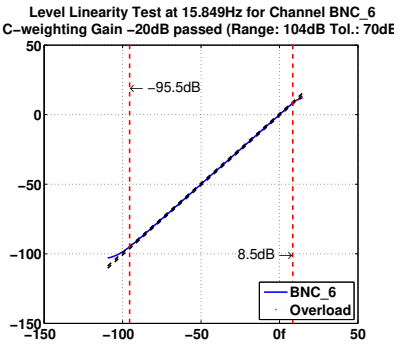
Max. Tolerance is 0.8dB

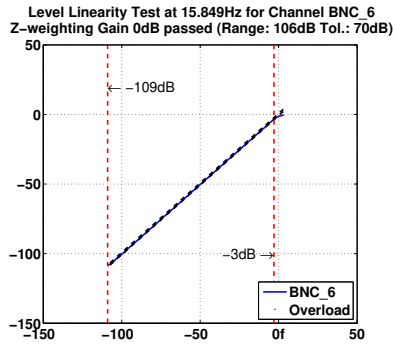
This test is done using AC coupling, 1Hz high pass switched on and ICP/200V off and in steps of 2dB

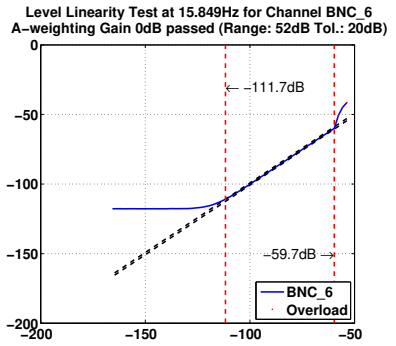
		Z				A				C			
Gain	Frequency	Range in dB		Status	Tol.	Range in dB		Status	Tol.	Range in dB		Status	Tol.
-20	15,849Hz	17..-95	112	passed	70	-39.7..-95.7	56	passed	20	8.5..-95.5	104	passed	70
0	15,849Hz	-3..-109	106	passed	70	-59.7..-111.7	52	passed	20	-11.5..-109.5	98	passed	70

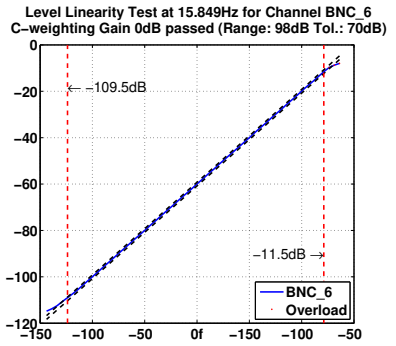












Inherent Noise Test channel BNC_6 passed!

Calibrated at 1V (Gain: 0dB).

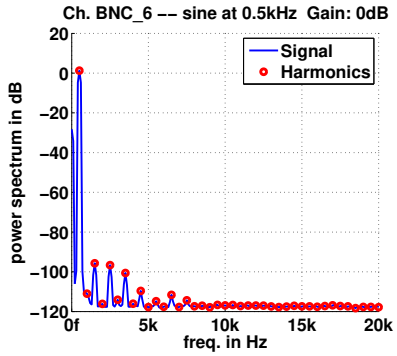
Gain (dB)	time data (mV_{rms})	Z (mV_{rms})	A (mV_{rms})	C (mV_{rms})	Status
-20	0.03698 (-89dBV)	0.00660 (-104dBV)	0.00495 (-106dBV)	0.00445 (-107dBV)	pass
0	0.00706 (-103dBV)	0.00135 (-117dBV)	0.00093 (-121dBV)	0.00099 (-120dBV)	pass

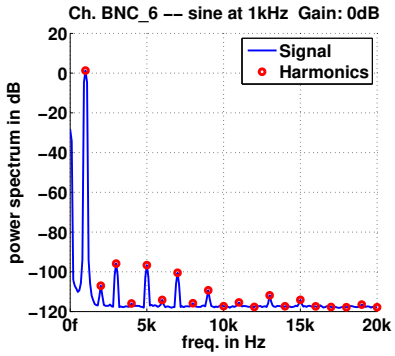
THD Test channel BNC_6 passed!

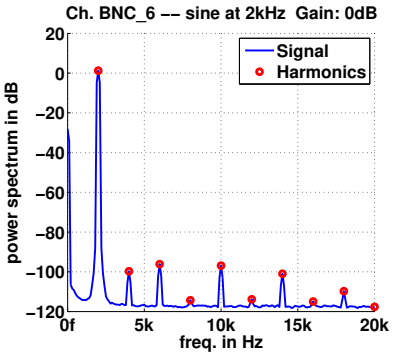
Max. THD Tolerance is -80dB
Measured at Gain: 0dB

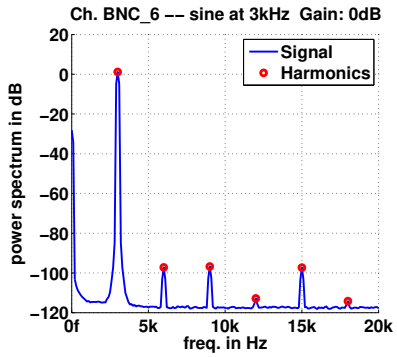
definition: $THD = \frac{P_2 + P_3 + \cdots + P_n}{P_1}$

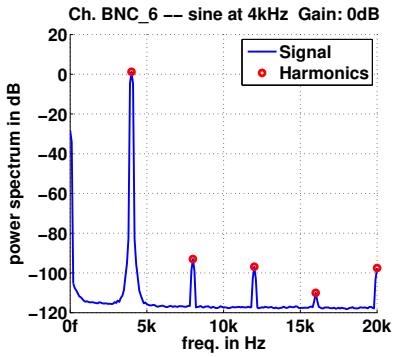
Frequency (Hz)	THD (dB)	THD+N (dB)	Number of Harmonics	Status
500.0	-93.0	-93.0	39	pass
1000.0	-93.3	-92.5	19	pass
2000.0	-93.1	-91.5	9	pass
3000.0	-93.4	-91.4	5	pass
4000.0	-91.7	-90.2	4	pass
5000.0	-92.7	-90.8	3	pass

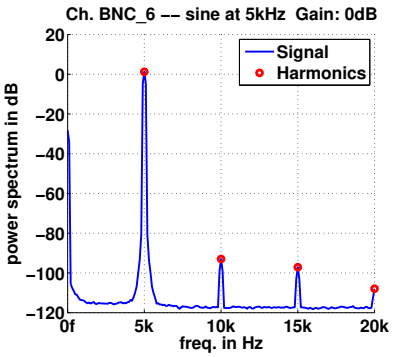












Third Octave Test according EN 61260:1995 (Class 0) channel BNC_6 passed!

This test is done using DC coupling, 1Hz high pass switched off and ICP/200V off and amplitude 17dBV
The following Third Octaves are tested according EN 61260:1995 (Class 0)

Tolerances marked with * are interpolated, due to generator and device frequency tolerances!

f_m in Hz	G^{-4}	G^{-3}	G^{-2}	G^{-1}	$G^{-\frac{1}{2}}$	$G^{-\frac{1}{2}}$	$G^{-\frac{3}{8}}$	$G^{-\frac{1}{4}}$	$G^{-\frac{1}{8}}$	G^{0}	$G^{\frac{1}{8}}$	$G^{\frac{1}{4}}$	$G^{\frac{3}{8}}$	$G^{\frac{1}{2}}$	$G^{\frac{1}{2}}$	G^{1}	G^{2}	G^{3}	G^{4}
upper lim	-75	-62	-42.5	-18	-2.3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	-2.3	-18	-42.5	-62	-75
lower lim	-Inf	-Inf	-Inf	-Inf	-4.5	-4.5	-1.1	-0.4	-0.2	-0.15	-0.2	-0.4	-1.1	-4.5	-4.5	-Inf	-Inf	-Inf	-Inf
15.625	-86.68	-66.78	-47.28	-22.82	-3.21	-3.16	-0.53	-0.06	-0.04	-0.02	-0.03	-0.06	-0.29	-3.29	-3.26	-31.13	-92.17	-108.27	-118.72
19.686	-78.3	-80.76	-52.19	-24.87	-3.29	-3.31	-0.46	-0.05	0.01	-0.05	-0.04	-0.02	-0.42	-3.02	-3.02	-26.35	-57.04	-86.32	-119.35
24.803	-104.65	-68.07	-49.18	-23.87	-3.19	-3.18	-0.5	-0.04	-0.04	-0.04	-0.06	-0.06	-0.42	-3.22	-3.22	-27.02	-57.8	-101.75	-122.81
31.25	-86.71	-66.76	-47.26	-22.79	-3.21	-3.26	-0.54	-0.04	-0.07	0.01	-0.01	-0.07	-0.24	-3.32	-3.25	-31.05	-92.16	-110.29	-119.37
39.373	-78.24	-80.87	-52.19	-24.86	-3.26	-3.32	-0.46	-0.04	-0.01	-0.02	0.01	-0.07	-0.39	-3.04	-3.05	-26.32	-57.07	-86.36	-124.07
49.606	-105.3	-68.08	-49.21	-23.78	-3.15	-3.21	-0.48	-0.01	-0.01	-0.06	0.02	-0.07	-0.42	-3.2	-3.2	-27	-57.71	-102.56	-125.67
62.5	-86.72	-66.73	-47.25	-22.78	-3.2	-3.15	-0.55	-0.02	0.02	-0.03	-0.06	0.01	-0.29	-3.24	-3.35	-31.09	-93.55	-111.13	-122.31
78.745	-78.32	-80.87	-52.24	-24.86	-3.3	-3.28	-0.47	0	-0.02	0.02	0	0.01	-0.4	-3.02	-3.08	-26.33	-57.05	-86.36	-125.07
99.213	-106.48	-68.1	-49.17	-23.84	-3.21	-3.2	-0.54	-0.05	0	0.01	-0.01	-0.03	-0.39	-3.13	-3.2	-27.01	-57.79	-102.63	-123.77
125	-86.79	-66.77	-47.24	-22.77	-3.13	-3.21	-0.54	-0.03	-0.03	-0.05	0.03	-0.03	-0.29	-3.25	-3.32	-31.03	-95.01	-111.26	-121.68
157.49	-78.29	-80.87	-52.18	-24.85	-3.32	-3.32	-0.5	-0.03	-0.01	-0.02	-0.01	-0.03	-0.37	-3.06	-3.08	-26.33	-57.04	-86.33	-122.98
198.425	-106.89	-68.04	-49.2	-23.79	-3.23	-3.21	-0.51	-0.03	-0.04	-0.04	-0.03	-0.05	-0.41	-3.16	-3.18	-27.06	-57.75	-103.84	-121.18
250	-86.75	-66.76	-47.24	-22.79	-3.19	-3.14	-0.49	-0.05	-0.03	-0.06	-0.1	0	-0.31	-3.3	-3.36	-31.13	-93.53	-111.15	-122.3
314.98	-78.31	-80.86	-52.21	-24.91	-3.32	-3.29	-0.5	-0.07	-0.04	-0.04	-0.03	-0.03	-0.35	-3.04	-3.03	-26.36	-57.05	-86.39	-121.65
396.85	-106.19	-68.09	-49.18	-23.85	-3.22	-3.16	-0.46	-0.05	0.01	-0.05	-0.01	-0.04	-0.36	-3.17	-3.16	-27.02	-57.75	-101.73	-121.78
500	-86.73	-66.69	-47.19	-22.79	-3.16	-3.19	-0.53	-0.01	0.03	-0.03	-0.02	-0.01	-0.27	-3.23	-3.22	-31.18	-94.23	-111.19	-119.3
629.961	-78.32	-80.81	-52.19	-24.88	-3.27	-3.25	-0.48	-0.02	0.03	-0.03	-0.06	0	-0.39	-3.07	-3.07	-26.29	-57.03	-86.42	-119.98
793.701	-106.09	-68.03	-49.18	-23.85	-3.21	-3.22	-0.47	-0.05	-0.03	-0.01	-0.03	-0.06	-0.41	-3.17	-3.18	-27	-57.81	-102.82	-119.88
1000	-86.71	-66.73	-47.2	-22.74	-3.21	-3.16	-0.51	0	-0.01	0	0.03	-0.02	-0.31	-3.29	-3.26	-31.15	-94.26	-110.71	-117
1259.921	-78.28	-80.86	-52.17	-24.86	-3.27	-3.29	-0.49	-0.06	-0.02	-0.03	-0.02	-0.04	-0.42	-3.07	-3.05	-26.34	-57.06	-86.4	-118.61
1587.401	-106.02	-68.03	-49.16	-23.84	-3.2	-3.2	-0.52	-0.06	-0.03	-0.02	-0.04	-0.03	-0.39	-3.21	-3.21	-27.04	-57.79	-102.97	-116.94
2000	-86.71	-66.7	-47.24	-22.78	-3.19	-3.18	-0.54	-0.04	-0.02	-0.04	-0.02	-0.05	-0.3	-3.29	-3.26	-31.16	-93.66	-110.07	-115.91
2519.842	-78.26	-80.84	-52.19	-24.9	-3.28	-3.27	-0.52	-0.08	-0.04	-0.04	-0.07	-0.06	-0.43	-3.09	-3.09	-26.34	-57.06	-86.38	-114.5
3174.802	-105.8	-68.03	-49.2	-23.86	-3.22	-3.23	-0.55	-0.12	-0.06	-0.02	-0.05	-0.03	-0.4	-3.21	-3.2	-27.03	-57.79	-102.07	-114.51
4000	-86.72	-66.74	-47.25	-22.79	-3.21	-3.2	-0.52	-0.05	-0.02	-0.03	-0.03	-0.04	-0.31	-3.27	-3.27	-31.12	-93.23	-108.53	-111.54
5039.684	-78.29	-80.76	-52.2	-24.89	-3.28	-3.28	-0.52	-0.04	-0.03	-0.04	-0.02	-0.04	-0.4	-3.05	-3.05	-26.36	-57.05	-86.35	-110.32
6349.604	-104.93	-68.03	-49.19	-23.85	-3.18	-3.18	-0.53	-0.05	-0.02	-0.05	-0.04	-0.04	-0.41	-3.19	-3.19	-27.02	-57.78	-101.92	-108.46
8000	-86.71	-66.72	-47.24	-22.82	-3.19	-3.19	-0.53	-0.06	-0.03	-0.02	-0.05	-0.03	-0.3	-3.3	-3.31	-31.11	-93.05	-106.18	-108.44
10079.368	-78.28	-80.48	-52.23	-24.88	-3.31	-3.31	-0.49	-0.04	-0.05	-0.02	-0.03	-0.04	-0.4	-3.06	-3.06	-26.38	-57.07	-86.33	-108.13
12699.208	-102.68	-68.04	-49.18	-23.83	-3.19	-3.19	-0.54	-0.06	-0.03	-0.07	-0.04	-0.07	-0.43	-3.19	-3.19	-27.04	-57.81	-100.87	-106.47
16000	-86.69	-66.69	-47.22	-22.84	-3.19	-3.19	-0.54	-0.08	-0.04	-0.04	-0.07	-0.04	-0.33	-3.31	-3.31	-31.13	-92.76	-103.46	-103.64
20158.737	-78.26	-79.51	-52.25	-24.9	-3.31	-3.31	-0.5	-0.05	-0.05	-0.04	-0.03	-0.08	-0.41	-3.07	-3.07	-26.39	-57.07	-86.27	-99.62
25398.417	-98.54	-67.96	-49.2	-23.85	-3.21	-3.21	-0.56	-0.08	-0.05	-0.07	-0.07	-0.08	-0.48	-3.24	-3.24	-27.04	-57.81	-96.69	-95.18
32000	-86.53	-66.59	-47.25	-22.84	-3.24	-3.24	-0.6	-0.14	-0.04	-0.04	-0.07	-0.04	-0.32	-3.32	-3.32	-31.13	-91.72	-96.77	-95.78
40317.474	-78.21	-77.34	-52.25	-24.9	-3.32	-3.32	-0.51	-0.1	-0.04	-0.04	-0.04	-0.09	-0.41	-3.08	-3.08	-26.38	-57.11	-85.71	-92.86
50796.834	-93.34	-67.59	-49.2	-23.85	-3.22	-3.22	-0.56	-0.07	-0.08	-0.07	-0.05	-0.08	-0.43	-3.21	-3.21	-27.09	-57.84	-79.69	-91.87
64000	-85.93	-66.17	-47.24	-22.83	-3.2	-3.2	-0.59	-0.08	-0.07	-0.08	-0.06	-0.06	-0.36	-3.32	-3.32	-31.17	-70.4	-88.62	-88.89
80634.947	-81.38	-68.47	-46.47	-20.51	-3.07	-3.07	-0.79	-0.18	-0.08	-0.11	-0.11	-0.1	-0.44	-3.25	-3.25	-84.82	-83.79	-85.38	-84.56

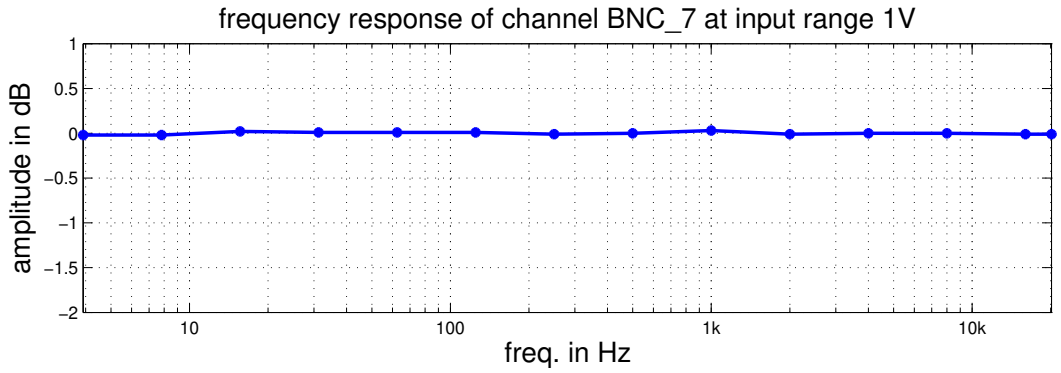
Coupling Test channel BNC_7 passed!

Generator V = 1V
Gain Setting: 1

Coupling	RMS Value (V_{rms})	Tol	MEAN Value (V_{rms})	Tol	Status
GND	1.5327e-005(-96dBV)	<0.1	-2.306e-006(-113dBV)	abs<0.1	ok
DC	None		0.51055(-6dBV)	<0.55 , >0.45	ok
AC (1000Hz)	1.0032(0dBV)	>0.9,<1.1	-0.00072034(-63dBV)	abs<0.05	ok

Frequency Response Test channel BNC_7 passed!

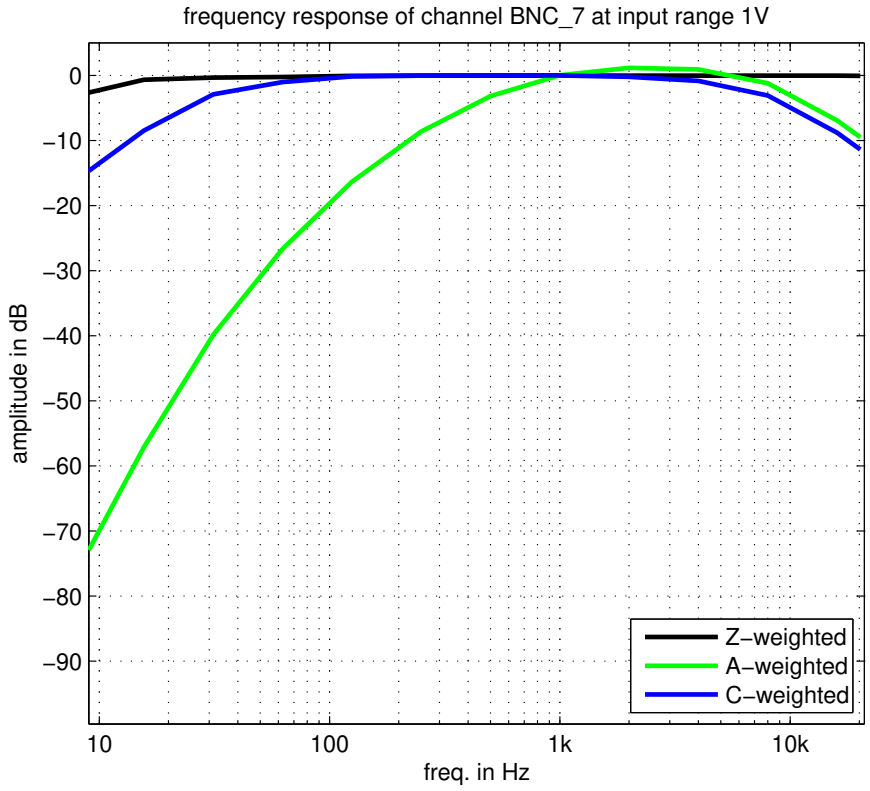
Max. Tolerance is 0.1dB
This test is done using DC coupling, 1V input range.



frequency in Hz	3.91	7.81	15.63	31.25	62.50	125.00	250.00	500.00	1000.00	2000.00	4000.00	8000.00	16000.00	20158.70
amplitude in dB	-0.02	-0.02	0.02	0.01	0.01	0.01	-0.01	0	0.03	-0.01	0	0	-0.01	-0.01

Frequency Response for Z, A and C-weighted sound levels (Test passed)

Tolerance according to EN 61672-1:2003 class 1 (checked frequency range is 10 Hz ... 20 kHz)



Gain Test channel BNC_7 passed!

Calibrated at 1V (Gain: 0dB).

Gain (V)	(dB)	mean (%)	min (%)	max (%)	Tol. (%)	status
10	-20	0.0	-0.1	0.0	0.3	pass
1	0	0.0	0.0	0.0	0.3	pass

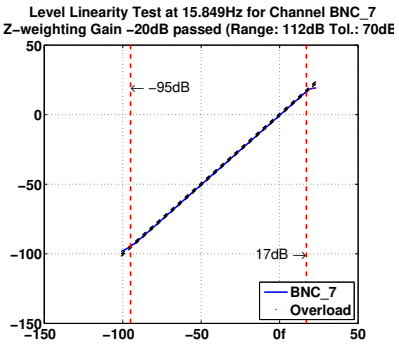
Checking internal calibration value passed (deviance: -0.87% Tol.: 6%).

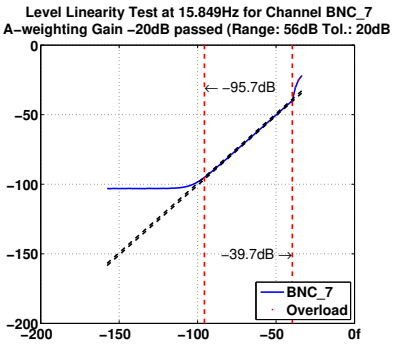
Level Linearity Test Normal Range channel BNC_7 passed!

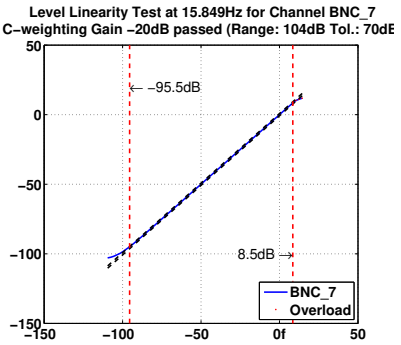
Max. Tolerance is 0.8dB

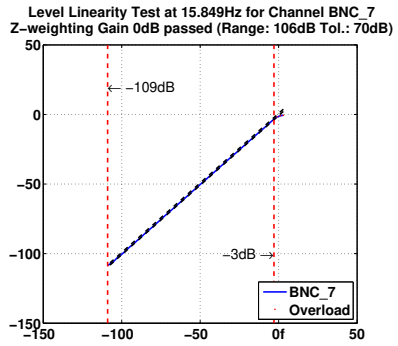
This test is done using AC coupling, 1Hz high pass switched on and ICP/200V off and in steps of 2dB

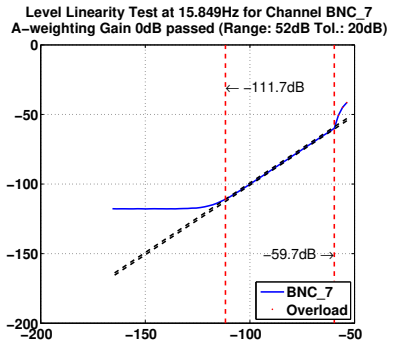
		Z				A				C			
Gain	Frequency	Range in dB		Status	Tol.	Range in dB		Status	Tol.	Range in dB		Status	Tol.
-20	15,849Hz	17..-95	112	passed	70	-39.7..-95.7	56	passed	20	8.5..-95.5	104	passed	70
0	15,849Hz	-3..-109	106	passed	70	-59.7..-111.7	52	passed	20	-11.5..-109.5	98	passed	70

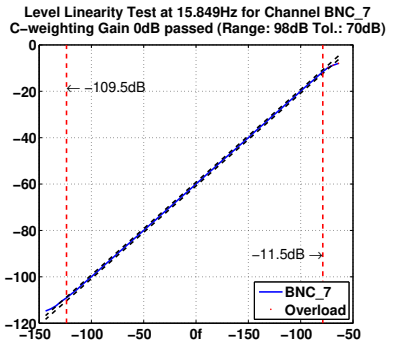












Inherent Noise Test channel BNC_7 passed!

Calibrated at 1V (Gain: 0dB).

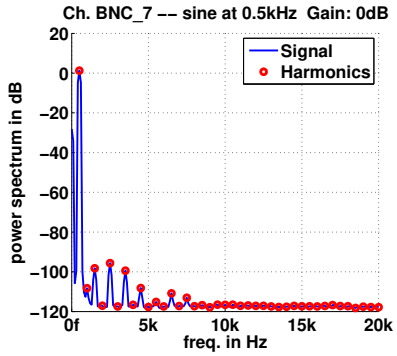
Gain (dB)	time data (mV_{rms})	Z (mV_{rms})	A (mV_{rms})	C (mV_{rms})	Status
-20	0.04147 (-88dBV)	0.00657 (-104dBV)	0.00494 (-106dBV)	0.00441 (-107dBV)	pass
0	0.00688 (-103dBV)	0.00135 (-117dBV)	0.00092 (-121dBV)	0.00100 (-120dBV)	pass

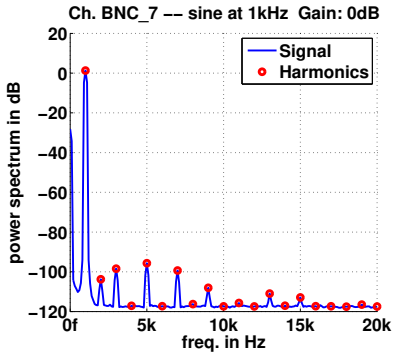
THD Test channel BNC_7 passed!

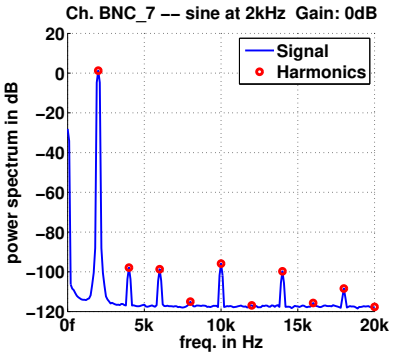
Max. THD Tolerance is -80dB
Measured at Gain: 0dB

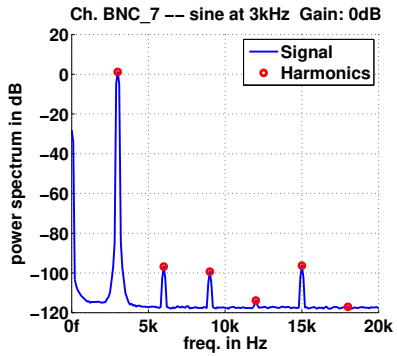
definition: $THD = \frac{P_2 + P_3 + \cdots + P_n}{P_1}$

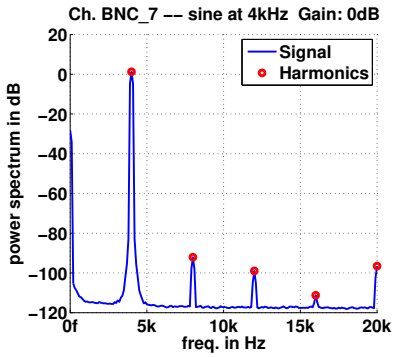
Frequency (Hz)	THD (dB)	THD+N (dB)	Number of Harmonics	Status
500.0	-93.2	-93.2	39	pass
1000.0	-93.3	-92.5	19	pass
2000.0	-92.9	-91.4	9	pass
3000.0	-93.7	-91.6	5	pass
4000.0	-91.4	-90.0	4	pass
5000.0	-92.8	-90.9	3	pass

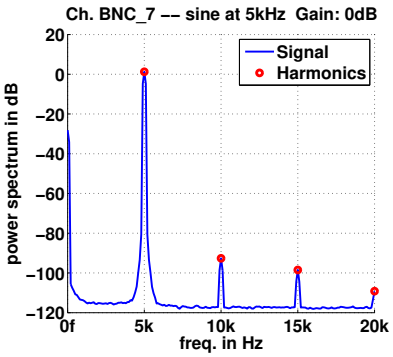












Third Octave Test according EN 61260:1995 (Class 0) channel BNC_7 passed!

This test is done using DC coupling, 1Hz high pass switched off and ICP/200V off and amplitude 17dBV
The following Third Octaves are tested according EN 61260:1995 (Class 0)

Tolerances marked with * are interpolated, due to generator and device frequency tolerances!

f_m in Hz	G^{-4}	G^{-3}	G^{-2}	G^{-1}	$G^{-\frac{1}{2}}$	$G^{-\frac{1}{2}}$	$G^{-\frac{3}{8}}$	$G^{-\frac{1}{4}}$	$G^{-\frac{1}{8}}$	G^{0}	$G^{\frac{1}{8}}$	$G^{\frac{1}{4}}$	$G^{\frac{3}{8}}$	$G^{\frac{1}{2}}$	$G^{\frac{1}{2}}$	G^{1}	G^{2}	G^{3}	G^{4}
upper lim	-75	-62	-42.5	-18	-2.3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	-2.3	-18	-42.5	-62	-75
lower lim	-Inf	-Inf	-Inf	-Inf	-4.5	-4.5	-1.1	-0.4	-0.2	-0.15	-0.2	-0.4	-1.1	-4.5	-4.5	-Inf	-Inf	-Inf	-Inf
15.625	-86.7	-66.78	-47.28	-22.82	-3.21	-3.16	-0.53	-0.06	-0.04	-0.02	-0.03	-0.06	-0.29	-3.29	-3.26	-31.13	-92.14	-110.95	-119.9
19.686	-78.29	-80.75	-52.19	-24.87	-3.29	-3.31	-0.46	-0.04	0.01	-0.05	-0.04	-0.02	-0.42	-3.02	-3.02	-26.35	-57.04	-86.32	-120.98
24.803	-104.44	-68.07	-49.18	-23.87	-3.19	-3.18	-0.5	-0.04	-0.04	-0.04	-0.06	-0.06	-0.42	-3.22	-3.22	-27.02	-57.79	-101.72	-122.36
31.25	-86.7	-66.76	-47.26	-22.79	-3.21	-3.26	-0.54	-0.04	-0.07	0.01	-0.01	-0.07	-0.24	-3.32	-3.25	-31.05	-92.16	-110.26	-121.91
39.373	-78.24	-80.86	-52.2	-24.86	-3.26	-3.32	-0.46	-0.04	-0.01	-0.02	0.01	-0.07	-0.39	-3.04	-3.05	-26.32	-57.07	-86.36	-122.9
49.606	-105.02	-68.08	-49.21	-23.78	-3.15	-3.21	-0.48	-0.01	-0.01	-0.06	0.02	-0.07	-0.42	-3.2	-3.2	-27	-57.71	-102.55	-125.76
62.5	-86.72	-66.72	-47.25	-22.78	-3.2	-3.15	-0.55	-0.02	0.02	-0.03	-0.06	0.01	-0.29	-3.24	-3.35	-31.09	-93.5	-111.12	-121.81
78.745	-78.32	-80.88	-52.24	-24.86	-3.3	-3.28	-0.47	0	-0.02	0.02	0	0.01	-0.4	-3.02	-3.08	-26.33	-57.05	-86.36	-125.27
99.213	-106.46	-68.1	-49.17	-23.84	-3.21	-3.2	-0.54	-0.05	0	0.01	-0.01	-0.03	-0.39	-3.13	-3.2	-27.01	-57.79	-102.64	-124.21
125	-86.79	-66.77	-47.24	-22.76	-3.13	-3.21	-0.54	-0.03	-0.03	-0.05	0.03	-0.03	-0.29	-3.25	-3.32	-31.03	-95.01	-111.27	-121.65
157.49	-78.29	-80.87	-52.18	-24.85	-3.32	-3.32	-0.5	-0.03	-0.01	-0.02	-0.01	-0.03	-0.37	-3.06	-3.07	-26.33	-57.04	-86.33	-123.32
198.425	-106.91	-68.04	-49.2	-23.79	-3.23	-3.21	-0.51	-0.03	-0.04	-0.04	-0.03	-0.05	-0.41	-3.16	-3.18	-27.06	-57.75	-103.84	-121.5
250	-86.75	-66.76	-47.24	-22.79	-3.19	-3.14	-0.49	-0.05	-0.03	-0.06	-0.1	0	-0.31	-3.3	-3.36	-31.13	-93.52	-111.21	-122.28
314.98	-78.31	-80.86	-52.21	-24.91	-3.32	-3.29	-0.5	-0.07	-0.04	-0.04	-0.03	-0.03	-0.34	-3.04	-3.03	-26.36	-57.05	-86.39	-121.1
396.85	-106.23	-68.09	-49.18	-23.85	-3.22	-3.16	-0.46	-0.05	0.01	-0.05	-0.01	-0.04	-0.36	-3.17	-3.16	-27.02	-57.75	-101.74	-121.81
500	-86.73	-66.69	-47.19	-22.79	-3.16	-3.19	-0.53	-0.01	0.03	-0.02	-0.02	-0.01	-0.27	-3.23	-3.22	-31.18	-94.23	-111.24	-119.78
629.961	-78.32	-80.81	-52.19	-24.88	-3.27	-3.25	-0.48	-0.02	0.03	-0.03	-0.06	0	-0.39	-3.07	-3.07	-26.28	-57.03	-86.42	-119.23
793.701	-106.14	-68.03	-49.18	-23.85	-3.21	-3.22	-0.47	-0.05	-0.03	-0.01	-0.03	-0.06	-0.41	-3.17	-3.18	-27	-57.81	-102.81	-120.01
1000	-86.71	-66.73	-47.2	-22.74	-3.21	-3.16	-0.51	0	-0.01	0	0.03	-0.02	-0.31	-3.29	-3.26	-31.15	-94.26	-110.77	-116.73
1259.921	-78.28	-80.86	-52.17	-24.86	-3.27	-3.29	-0.49	-0.06	-0.02	-0.03	-0.02	-0.04	-0.42	-3.07	-3.05	-26.34	-57.06	-86.4	-118.43
1587.401	-106.07	-68.03	-49.16	-23.84	-3.2	-3.2	-0.52	-0.05	-0.03	-0.02	-0.04	-0.03	-0.39	-3.2	-3.2	-27.03	-57.79	-102.96	-117.01
2000	-86.71	-66.7	-47.24	-22.78	-3.19	-3.18	-0.54	-0.04	-0.02	-0.04	-0.02	-0.05	-0.3	-3.29	-3.26	-31.16	-93.66	-110.06	-116.12
2519.842	-78.26	-80.84	-52.19	-24.89	-3.28	-3.27	-0.52	-0.08	-0.04	-0.04	-0.07	-0.06	-0.43	-3.09	-3.09	-26.34	-57.06	-86.37	-114.52
3174.802	-105.84	-68.03	-49.2	-23.86	-3.22	-3.23	-0.55	-0.12	-0.06	-0.01	-0.05	-0.03	-0.4	-3.21	-3.2	-27.03	-57.79	-102.08	-114.5
4000	-86.72	-66.74	-47.25	-22.79	-3.21	-3.2	-0.51	-0.05	-0.02	-0.03	-0.03	-0.04	-0.31	-3.27	-3.27	-31.12	-93.23	-108.52	-111.48
5039.684	-78.29	-80.75	-52.2	-24.89	-3.28	-3.28	-0.52	-0.04	-0.03	-0.04	-0.02	-0.04	-0.4	-3.04	-3.05	-26.36	-57.05	-86.35	-110.29
6349.604	-104.95	-68.03	-49.19	-23.85	-3.18	-3.18	-0.53	-0.05	-0.02	-0.05	-0.03	-0.04	-0.41	-3.19	-3.19	-27.02	-57.78	-101.92	-108.54
8000	-86.71	-66.72	-47.24	-22.82	-3.19	-3.19	-0.52	-0.06	-0.03	-0.02	-0.05	-0.03	-0.3	-3.3	-3.31	-31.11	-93.05	-106.16	-108.39
10079.368	-78.28	-80.47	-52.23	-24.88	-3.31	-3.31	-0.49	-0.04	-0.05	-0.02	-0.03	-0.04	-0.4	-3.06	-3.06	-26.38	-57.06	-86.33	-108.09
12699.208	-102.69	-68.04	-49.18	-23.82	-3.19	-3.19	-0.54	-0.06	-0.03	-0.07	-0.03	-0.07	-0.43	-3.19	-3.19	-27.04	-57.81	-100.9	-106.43
16000	-86.69	-66.69	-47.22	-22.84	-3.18	-3.19	-0.53	-0.08	-0.04	-0.04	-0.07	-0.04	-0.33	-3.31	-3.31	-31.13	-92.76	-103.47	-103.65
20158.737	-78.26	-79.51	-52.25	-24.9	-3.31	-3.31	-0.5	-0.05	-0.05	-0.04	-0.03	-0.08	-0.41	-3.07	-3.07	-26.38	-57.06	-86.27	-99.62
25398.417	-98.54	-67.96	-49.2	-23.85	-3.21	-3.21	-0.55	-0.08	-0.05	-0.07	-0.07	-0.08	-0.47	-3.24	-3.24	-27.04	-57.8	-96.67	-95.17
32000	-86.53	-66.59	-47.25	-22.84	-3.24	-3.24	-0.59	-0.14	-0.03	-0.04	-0.06	-0.04	-0.32	-3.32	-3.32	-31.13	-91.72	-96.8	-95.78
40317.474	-78.21	-77.3	-52.25	-24.9	-3.32	-3.32	-0.51	-0.1	-0.04	-0.04	-0.04	-0.09	-0.41	-3.08	-3.08	-26.38	-57.11	-85.71	-92.88
50796.834	-93.31	-67.57	-49.2	-23.85	-3.22	-3.22	-0.56	-0.07	-0.08	-0.06	-0.05	-0.08	-0.43	-3.21	-3.21	-27.08	-57.84	-79.69	-91.85
64000	-85.92	-66.15	-47.24	-22.83	-3.2	-3.2	-0.59	-0.08	-0.07	-0.08	-0.06	-0.06	-0.36	-3.32	-3.32	-31.17	-70.4	-88.59	-88.9
80634.947	-81.38	-68.39	-46.47	-20.5	-3.07	-3.07	-0.78	-0.18	-0.08	-0.11	-0.11	-0.1	-0.44	-3.25	-3.25	-84.81	-83.69	-85.59	-84.67

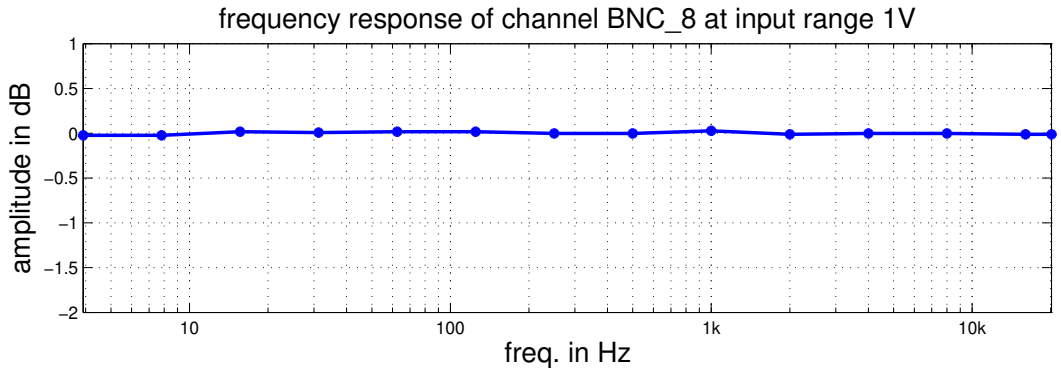
Coupling Test channel BNC_8 passed!

Generator V = 1V
Gain Setting: 1

Coupling	RMS Value (V_{rms})	Tol	MEAN Value (V_{rms})	Tol	Status
GND	1.7536e-005(-95dBV)	<0.1	-2.6874e-005(-91dBV)	abs<0.1	ok
DC	None		0.51056(-6dBV)	<0.55 , >0.45	ok
AC (1000Hz)	1.0033(0dBV)	>0.9,<1.1	-0.00080264(-62dBV)	abs<0.05	ok

Frequency Response Test channel BNC_8 passed!

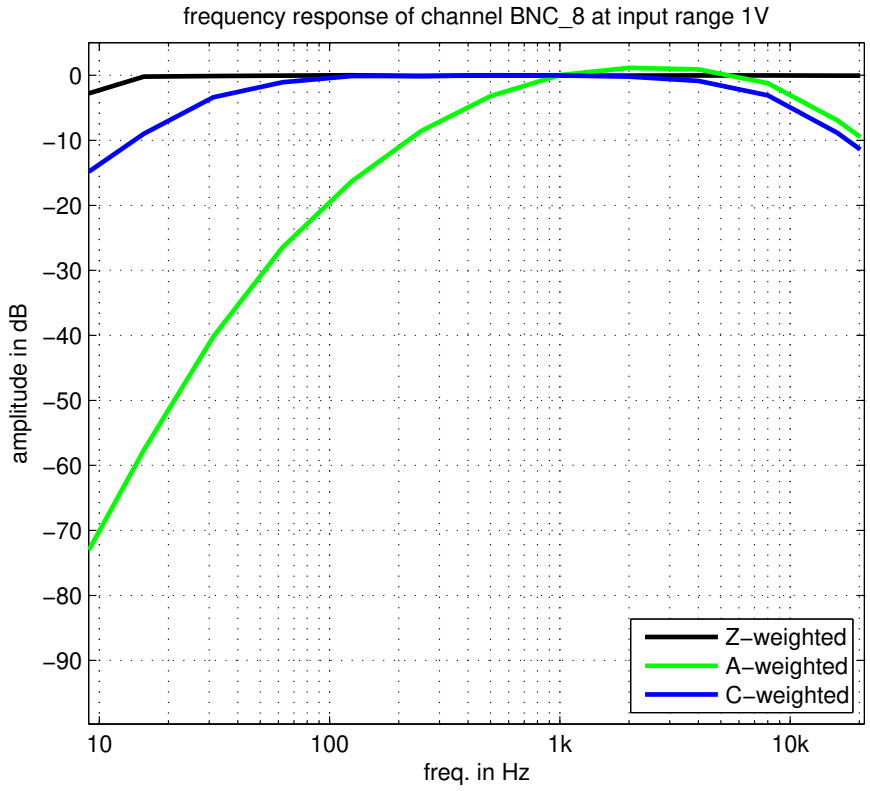
Max. Tolerance is 0.1dB
This test is done using DC coupling, 1V input range.



frequency in Hz	3.91	7.81	15.63	31.25	62.50	125.00	250.00	500.00	1000.00	2000.00	4000.00	8000.00	16000.00	20158.70
amplitude in dB	-0.022	-0.022	0.018	0.008	0.018	0.018	-0.002	-0.002	0.028	-0.012	-0.002	-0.002	-0.012	-0.012

Frequency Response for Z, A and C-weighted sound levels (Test passed)

Tolerance according to EN 61672-1:2003 class 1 (checked frequency range is 10 Hz ... 20 kHz)



Gain Test channel BNC_8 passed!

Calibrated at 1V (Gain: 0dB).

Gain (V)	(dB)	mean (%)	min (%)	max (%)	Tol. (%)	status
10	-20	0.0	0.0	0.0	0.3	pass
1	0	0.0	0.0	0.0	0.3	pass

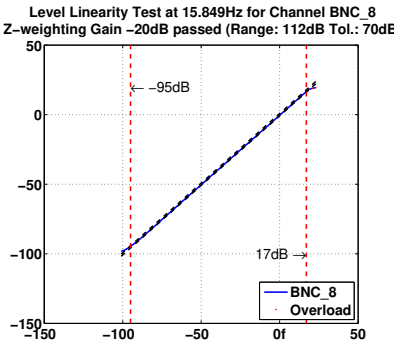
Checking internal calibration value passed (deviance: -0.94% Tol.: 6%).

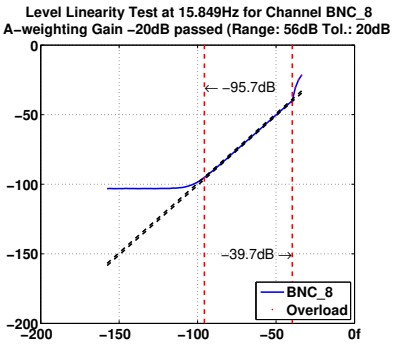
Level Linearity Test Normal Range channel BNC_8 passed!

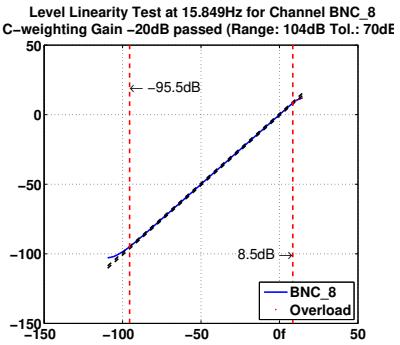
Max. Tolerance is 0.8dB

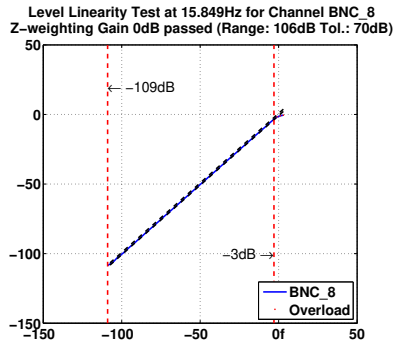
This test is done using AC coupling, 1Hz high pass switched on and ICP/200V off and in steps of 2dB

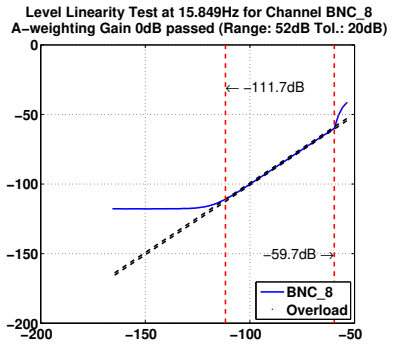
		Z				A				C			
Gain	Frequency	Range in dB		Status	Tol.	Range in dB		Status	Tol.	Range in dB		Status	Tol.
-20	15,849Hz	17..-95	112	passed	70	-39.7..-95.7	56	passed	20	8.5..-95.5	104	passed	70
0	15,849Hz	-3..-109	106	passed	70	-59.7..-111.7	52	passed	20	-11.5..-109.5	98	passed	70

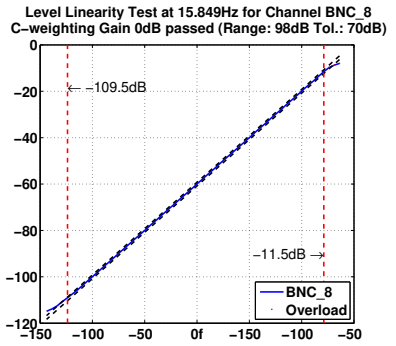












Inherent Noise Test channel BNC_8 passed!

Calibrated at 1V (Gain: 0dB).

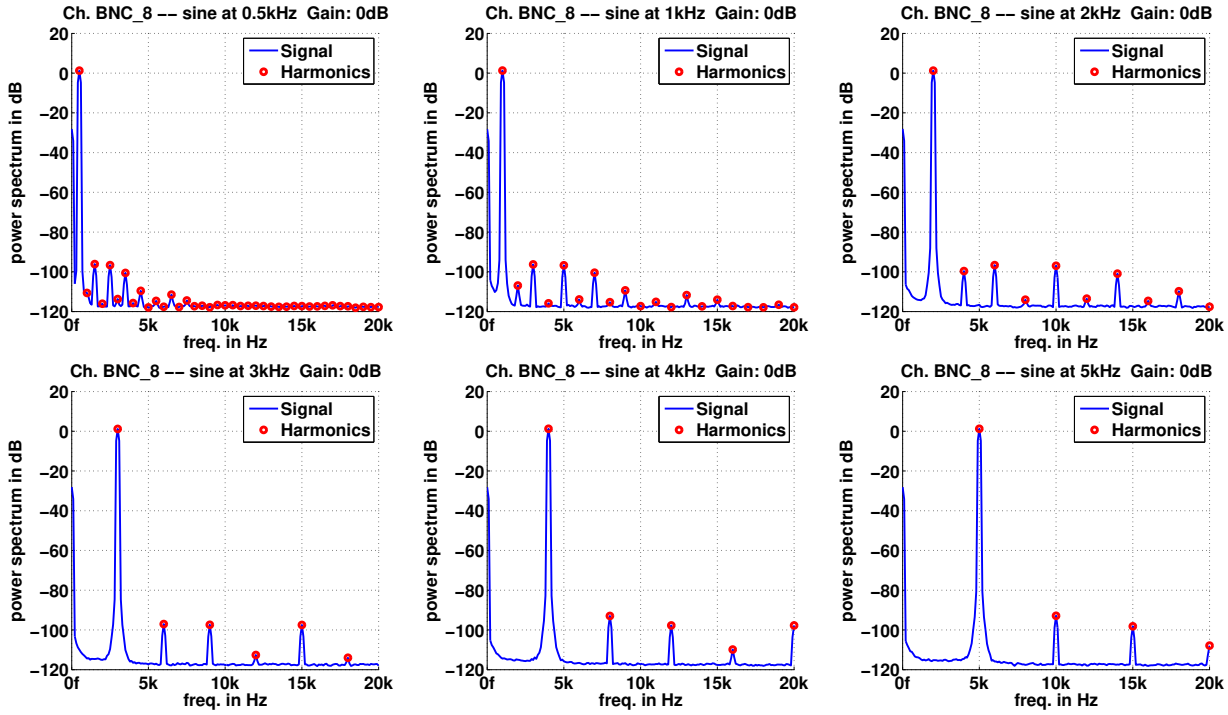
Gain (dB)	time data (mV_{rms})	Z (mV_{rms})	A (mV_{rms})	C (mV_{rms})	Status
-20	0.03591 (-89dBV)	0.00659 (-104dBV)	0.00495 (-106dBV)	0.00444 (-107dBV)	pass
0	0.00671 (-103dBV)	0.00136 (-117dBV)	0.00093 (-121dBV)	0.00099 (-120dBV)	pass

THD Test channel BNC_8 passed!

Max. THD Tolerance is -80dB
Measured at Gain: 0dB

definition: $THD = \frac{P_2 + P_3 + \cdots + P_n}{P_1}$

Frequency (Hz)	THD (dB)	THD+N (dB)	Number of Harmonics	Status
500.0	-93.2	-93.2	39	pass
1000.0	-93.4	-92.6	19	pass
2000.0	-93.3	-91.6	9	pass
3000.0	-93.6	-91.6	5	pass
4000.0	-91.9	-90.4	4	pass
5000.0	-92.9	-90.9	3	pass



Third Octave Test according EN 61260:1995 (Class 0) channel BNC_8 passed!

This test is done using DC coupling, 1Hz high pass switched off and ICP/200V off and amplitude 17dBV
The following Third Octaves are tested according EN 61260:1995 (Class 0)

Tolerances marked with * are interpolated, due to generator and device frequency tolerances!

f_m in Hz	G^{-4}	G^{-3}	G^{-2}	G^{-1}	$G^{-\frac{1}{2}}$	$G^{-\frac{1}{2}}$	$G^{-\frac{3}{8}}$	$G^{-\frac{1}{4}}$	$G^{-\frac{1}{8}}$	G^{0}	$G^{\frac{1}{8}}$	$G^{\frac{1}{4}}$	$G^{\frac{3}{8}}$	$G^{\frac{1}{2}}$	$G^{\frac{1}{2}}$	G^{1}	G^{2}	G^{3}	G^{4}
upper lim	-75	-62	-42.5	-18	-2.3	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	-2.3	-18	-42.5	-62	-75
lower lim	-Inf	-Inf	-Inf	-Inf	-4.5	-4.5	-1.1	-0.4	-0.2	-0.15	-0.2	-0.4	-1.1	-4.5	-4.5	-Inf	-Inf	-Inf	-Inf
15.625	-86.7	-66.78	-47.28	-22.83	-3.21	-3.17	-0.53	-0.06	-0.04	-0.02	-0.04	-0.06	-0.29	-3.29	-3.27	-31.13	-92.15	-110.8	-120.09
19.686	-78.29	-80.8	-52.19	-24.87	-3.29	-3.31	-0.46	-0.05	0.01	-0.05	-0.04	-0.02	-0.42	-3.02	-3.02	-26.35	-57.04	-86.32	-121.48
24.803	-104.53	-68.08	-49.18	-23.87	-3.19	-3.18	-0.5	-0.04	-0.04	-0.04	-0.06	-0.06	-0.42	-3.22	-3.22	-27.02	-57.79	-101.71	-122.38
31.25	-86.71	-66.76	-47.26	-22.79	-3.21	-3.27	-0.54	-0.04	-0.07	0.01	-0.01	-0.07	-0.24	-3.32	-3.25	-31.05	-92.16	-110.33	-121.92
39.373	-78.24	-80.87	-52.2	-24.86	-3.26	-3.32	-0.46	-0.04	-0.01	-0.02	0.01	-0.07	-0.39	-3.04	-3.05	-26.32	-57.07	-86.36	-123.31
49.606	-105.07	-68.08	-49.21	-23.78	-3.15	-3.21	-0.48	-0.01	-0.01	-0.06	0.02	-0.07	-0.42	-3.2	-3.2	-27	-57.71	-102.55	-125.32
62.5	-86.72	-66.73	-47.25	-22.78	-3.2	-3.15	-0.55	-0.02	0.02	-0.03	-0.06	0.01	-0.29	-3.24	-3.35	-31.09	-93.51	-111.14	-121.35
78.745	-78.32	-80.88	-52.24	-24.87	-3.3	-3.28	-0.47	0	-0.02	0.02	0	0.01	-0.4	-3.02	-3.08	-26.33	-57.05	-86.36	-124.45
99.213	-106.44	-68.1	-49.17	-23.84	-3.21	-3.2	-0.54	-0.05	0	0.01	-0.01	-0.03	-0.39	-3.13	-3.2	-27.01	-57.79	-102.64	-124.77
125	-86.79	-66.77	-47.24	-22.76	-3.13	-3.21	-0.54	-0.03	-0.03	-0.05	0.03	-0.03	-0.29	-3.25	-3.32	-31.03	-95.01	-111.29	-121.93
157.49	-78.29	-80.88	-52.18	-24.85	-3.32	-3.32	-0.5	-0.03	-0.01	-0.02	-0.01	-0.03	-0.37	-3.06	-3.07	-26.33	-57.04	-86.33	-123.47
198.425	-106.84	-68.04	-49.2	-23.79	-3.23	-3.21	-0.51	-0.03	-0.04	-0.04	-0.03	-0.05	-0.41	-3.17	-3.18	-27.06	-57.75	-103.84	-121.51
250	-86.75	-66.76	-47.24	-22.79	-3.19	-3.14	-0.49	-0.05	-0.03	-0.06	-0.1	0	-0.31	-3.3	-3.36	-31.13	-93.53	-111.18	-122.38
314.98	-78.31	-80.86	-52.21	-24.91	-3.32	-3.29	-0.5	-0.07	-0.04	-0.04	-0.03	-0.03	-0.35	-3.04	-3.03	-26.36	-57.05	-86.39	-121.83
396.85	-106.15	-68.09	-49.18	-23.85	-3.22	-3.16	-0.46	-0.05	0.01	-0.05	-0.01	-0.04	-0.36	-3.17	-3.16	-27.02	-57.75	-101.75	-122.13
500	-86.73	-66.69	-47.19	-22.79	-3.16	-3.19	-0.53	-0.01	0.03	-0.02	-0.02	-0.01	-0.27	-3.23	-3.22	-31.18	-94.23	-111.18	-119.39
629.961	-78.32	-80.81	-52.19	-24.88	-3.27	-3.25	-0.48	-0.02	0.03	-0.02	-0.06	0	-0.39	-3.07	-3.07	-26.29	-57.03	-86.42	-119.03
793.701	-106.09	-68.03	-49.18	-23.85	-3.21	-3.22	-0.47	-0.05	-0.03	-0.02	-0.03	-0.06	-0.41	-3.17	-3.18	-27	-57.81	-102.81	-119.89
1000	-86.71	-66.73	-47.2	-22.74	-3.21	-3.16	-0.51	0	-0.01	0	0.03	-0.02	-0.31	-3.29	-3.26	-31.15	-94.26	-110.6	-116.64
1259.921	-78.28	-80.86	-52.17	-24.86	-3.27	-3.29	-0.49	-0.06	-0.02	-0.03	-0.02	-0.04	-0.42	-3.07	-3.05	-26.34	-57.06	-86.4	-117.83
1587.401	-106	-68.03	-49.16	-23.84	-3.2	-3.2	-0.52	-0.05	-0.03	-0.02	-0.04	-0.03	-0.39	-3.21	-3.21	-27.03	-57.79	-102.95	-117.22
2000	-86.71	-66.7	-47.24	-22.78	-3.19	-3.18	-0.54	-0.04	-0.02	-0.04	-0.02	-0.05	-0.3	-3.29	-3.26	-31.16	-93.66	-110.13	-116.13
2519.842	-78.26	-80.84	-52.19	-24.89	-3.28	-3.27	-0.52	-0.08	-0.04	-0.04	-0.07	-0.06	-0.43	-3.09	-3.09	-26.34	-57.06	-86.38	-114.49
3174.802	-105.78	-68.03	-49.2	-23.86	-3.22	-3.23	-0.55	-0.12	-0.06	-0.02	-0.05	-0.03	-0.4	-3.21	-3.2	-27.03	-57.79	-102.06	-114.52
4000	-86.72	-66.74	-47.25	-22.79	-3.21	-3.2	-0.52	-0.05	-0.02	-0.03	-0.03	-0.04	-0.31	-3.27	-3.27	-31.12	-93.23	-108.48	-111.58
5039.684	-78.29	-80.75	-52.2	-24.89	-3.28	-3.28	-0.52	-0.04	-0.03	-0.04	-0.02	-0.04	-0.4	-3.04	-3.05	-26.36	-57.05	-86.35	-110.28
6349.604	-104.91	-68.03	-49.19	-23.85	-3.18	-3.18	-0.53	-0.05	-0.02	-0.05	-0.04	-0.04	-0.41	-3.19	-3.19	-27.02	-57.78	-101.93	-108.55
8000	-86.71	-66.72	-47.24	-22.82	-3.19	-3.19	-0.53	-0.06	-0.03	-0.02	-0.05	-0.03	-0.3	-3.3	-3.31	-31.11	-93.06	-106.15	-108.5
10079.368	-78.28	-80.46	-52.23	-24.88	-3.31	-3.31	-0.49	-0.04	-0.05	-0.02	-0.03	-0.04	-0.4	-3.06	-3.06	-26.38	-57.06	-86.33	-108.19
12699.208	-102.67	-68.04	-49.18	-23.83	-3.19	-3.19	-0.54	-0.06	-0.03	-0.07	-0.03	-0.07	-0.43	-3.19	-3.19	-27.04	-57.81	-100.88	-106.47
16000	-86.69	-66.69	-47.22	-22.84	-3.19	-3.19	-0.53	-0.08	-0.04	-0.04	-0.07	-0.04	-0.33	-3.31	-3.31	-31.13	-92.76	-103.45	-103.67
20158.737	-78.26	-79.46	-52.25	-24.9	-3.31	-3.31	-0.5	-0.05	-0.05	-0.04	-0.03	-0.08	-0.41	-3.07	-3.07	-26.38	-57.07	-86.27	-99.6
25398.417	-98.54	-67.96	-49.2	-23.85	-3.21	-3.21	-0.55	-0.08	-0.05	-0.07	-0.07	-0.08	-0.47	-3.24	-3.24	-27.04	-57.8	-96.69	-95.16
32000	-86.53	-66.59	-47.25	-22.84	-3.24	-3.24	-0.59	-0.14	-0.03	-0.04	-0.06	-0.04	-0.32	-3.32	-3.32	-31.13	-91.73	-96.78	-95.81
40317.474	-78.21	-77.25	-52.25	-24.9	-3.32	-3.32	-0.51	-0.1	-0.04	-0.04	-0.04	-0.09	-0.41	-3.08	-3.08	-26.38	-57.11	-85.7	-92.87
50796.834	-93.31	-67.57	-49.2	-23.85	-3.22	-3.22	-0.56	-0.07	-0.08	-0.06	-0.05	-0.08	-0.43	-3.21	-3.21	-27.09	-57.84	-79.69	-91.87
64000	-85.91	-66.16	-47.24	-22.83	-3.2	-3.2	-0.59	-0.08	-0.07	-0.08	-0.06	-0.06	-0.36	-3.32	-3.32	-31.17	-70.4	-88.56	-88.85
80634.947	-81.37	-68.43	-46.47	-20.5	-3.07	-3.07	-0.78	-0.18	-0.08	-0.11	-0.11	-0.1	-0.44	-3.25	-3.25	-84.83	-83.66	-85.55	-84.45