ROHDE & SCHWARZ

Calibration Certificate

Kalibrierschein

Certificate Number

Zertifikatsnummer

Unit Data

Item Gegenstand	**Audio analyzer, DC to 250 kHz, analyzer and generator with analog interfaces, PC**
Manufacturer Hersteller	**ROHDE & SCHWARZ**
Type Typ	**UPV**
Material Number Materialnummer	**1146.2003K02**
Serial Number Seriennummer	
Asset Number Inventarnummer	

Order Data

Customer
Auftraggeber

Order Number
Bestellnummer

.

Date of Receipt
Eingangsdatum

2014-01-03

Performance

Place and Date of Calibration
Ort und Datum der Kalibrierung

Memmingen, 2014-01-09

Scope of Calibration
Umfang der Kalibrierung

Standard Calibration

Statement of Compliance (Incoming)
Konformitätsaussage (Anlieferung)

All measurement values are within the datasheet specifications

Statement of Compliance (Outgoing)
Konformitätsaussage (Auslieferung)

All measurement values are within the datasheet specifications

Extent of Calibration Documents
Umfang des Kalibrierdokuments

2 Pages Calibration Certificate
110 Pages Outgoing Results

This calibration certificate documents, that the named Item is tested and measured against defined specifications.
Measurement results are located usually in the corresponding interval with a probability of approx. 95% (coverage factor k = 2).
Calibration is performed with test equipment and standards directly or indirectly traceable by means of approved calibration techniques to the PTB/DKD or other national / international standards, which realize the physical units of measurement according to the International System of Units (SI).
In all cases where no standards are available, measurements are referenced to standards of the R&S laboratories.
Principles and methods of calibration correspond with EN ISO/IEC 17025. The applied quality system is certified to EN ISO 9001.
This calibration certificate may not be reproduced other than in full.
Calibration certificates without signatures are not valid.
The user is obliged to have the object recalibrated at appropriate intervals.

Dieser Kalibrierschein dokumentiert, dass der genannte Gegenstand nach festgelegten Vorgaben geprüft und gemessen wurde. Die Messwerte lagen im Regelfall mit einer Wahrscheinlichkeit von annähernd 95% im zugeordneten Werteintervall (Erweiterte Messunsicherheit mit k = 2).
Die Kalibrierung erfolgte mit Messmitteln und Normalen, die direkt oder indirekt durch Ableitung mittels anerkannter Kalibriertechniken rückgeführt sind auf Normale der PTB/DKD oder anderer nationaler/internationaler Standards zur Darstellung der physikalischen Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Wenn keine Normale existieren, erfolgt die Rückführung auf Bezugsnormale der R&S-Laboratorien.
Grundsätze und Verfahren der Kalibrierung entsprechen EN ISO/IEC 17025.
Das angewandte Qualitätsmanagement-System ist zertifiziert nach EN ISO 9001.
Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden.
Kalibrierscheine ohne Signifizierungen sind ungültig.
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.

Rohde & Schwarz GmbH & Co. KG; Service Operations West

Date of Issue Ausstellungsdatum	**Head of Laboratory** Laborleitung	**Person Responsible** Bearbeiter
2014-01-10	Stefan Weise	Stephan Bröckelmann

ROHDE & SCHWARZ GmbH & Co KG · Mühldorfstraße 15 · D-81671 München, Federal Republic of Germany · Telefon (089) 41 29-0 · Telefax (089) 41 29-132 75
Geschäftsführung: Manfred Fleischmann (Vorsitzender), Christian Leicher, Gerhard Geier
Sitz München · Registereintrag: HRA 16 270 · Persönlich haftender Gesellschafter: RUSEG Verwaltungs-GmbH · Sitz München · Registereintrag: AG München HRB 7 534

Calibration Method
Kalibrieranweisung
see first page of test report

Relative Humidity **20%-60%**
Relative Luftfeuchte

Ambient Temperature
Umgebungstemperatur
(23 $^{+7}_{-3}$) °C

Working standards used (having a significant effect on the accuracy)
Verwendete Gebrauchsnormale (mit signifikantem Einfluss auf die Genauigkeit)

Item Gegenstand	Type Typ	Serial Number Seriennummer	Calibration Certificate Number Kalibrierscheinnummer	Cal. Due Kalibr. bis
Modular Frequency System	MFS	6509/001	0220-DKD-K-16101-2011-01	2014-01-31
Audio Analyzer	UPV	101113	279373 D-K-15012-01-00 2013-06	2014-06-30
Digitalmultimeter 8 1/2 Digit	3458A	.2823A14003	297367 D-K-15012-01-00 2013-12	2014-12-31

UGB1 **A compliance statement may be possible where a confidence level of less than 95 % is acceptable.**
Die Bestätigung der Konformität ist möglich, sofern ein Grad des Vertrauens von weniger als 95 % akzeptabel ist.

UGB2 **A non-compliance statement may be possible where a confidence level of less than 95 % is acceptable.**
Die Bestätigung der Nicht-Konformität ist möglich, sofern ein Grad des Vertrauens von weniger als 95 % akzeptabel ist.

Ref.: ILAC-G8:03/2009 'Guidelines on the Reporting of Compliance with Specification'

Notes
Anmerkungen

Installed options are included in calibration. Depending on installed options, numbers of pages of the record are not consecutive.

Outgoing Results

Designation:	**Audio Analyzer**
Type:	**UPV**
Material No.:	**1146.2003K02**
Serial No.:	**0**
Certificate No.:	
Referring to Test Documentation / Issue:	**1146.2003.01-T-15.00 / 09/07**

Test Department:	**5TSM1**
Name:	**see certificate**
Date:	**2014-01-09**

The following abbreviations may be used in this document

{a}	No measurement uncertainty stated because the errors always add together. So it is sure that a measurement result evaluated as "PASS" is pass.
{b}	The measurement uncertainty depends on the measurement result. The stated measurement uncertainty is valid for the close area around the specification. Measurement results outside the close area have a higher measurement uncertainty but are within the specification.
{c}	Functional test, therefore no measurement uncertainty is stated.
{d}	Typical value, refer to performance test.
{e}	The measurement uncertainty is taken into account when setting the measuring system.
DL or DT	Data Limit for symmetrical tolerance limits
DLL	Datasheet Lower Limit
DUL	Datasheet Upper Limit
MU	Symmetrical Measurement Uncertainty
MLL or MLV	Measurement Uncertainty Lower Value
MUL or MUV	Measurement Uncertainty Upper Value
Nom.	Nominal Value
Dev.	Deviation
MErr.	Measurement Error
Act.	Actual Value
UGB	Uncertainty Guard Band: Measuring uncertainty violates the data (spec.) limit.
UGB1	Measurement results marked as UGB1 show conformity with a probability of >50 % and <95 %.
UGB2	Measurement results marked as UGB2 show non-conformity with a probability of >50 % and <95 %.
DU	Datasheet Uncertainty

Explanation of charts

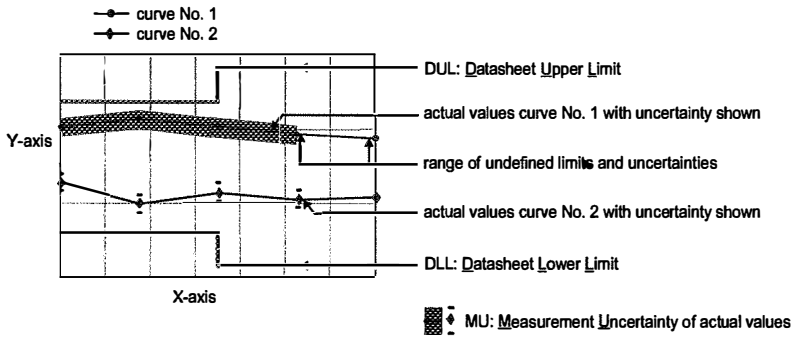


Table of contents

Software used for measurement			
Item	**Type**	**Version**	**Remark**
Factory/Service Edition	Setup	V07.20.02	Test Management Software G5
Test Program (010069_)	Component	V02.20	

1. DUT Configuration

Fitted options:
K1(01.00), K22(01.00), K4(01.00), B1(01.00), B2(02.04), B3(01.00), B48(03.02.1), B48(03.08.2), U2(01.00),

The options,
- UPV-B1 (Low Distortion Generator)
- UPV-B3 (Second Analog Generator)
- UPV-K4 (Remote Control)
- UPV-K22 (Jitter and Interface Test)

must be always integrated, for the complete performance test of the device. But it can be, that the options are not contained at the scope of delivery.

2. ANALOG GENERATOR: Level error Sinus

2.1 Amplifier switching

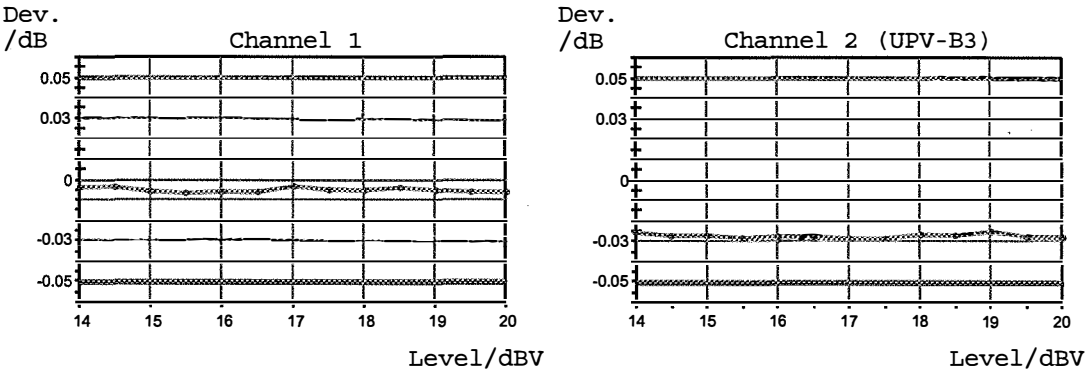
Frequency 1 kHz; Function Stereo Sine

MDAC	V1_gain	Atten.	Nominal /V	DL /dB	Deviation /dB	MU /dB
>> Channel 1 unbal <<						
6 dB	6 dB	--	8	±0.05	-0.005	0.001
6 dB	0 dB	--	4	±0.05	-0.004	0.001
6 dB	- 6 dB	--	2	±0.05	-0.001	0.001
6 dB	-12 dB	--	1	±0.05	-0.002	0.001
0 dB	-12 dB	--	0.5	±0.05	-0.001	0.001
6 dB	0 dB	24 dB	0.25	±0.05	-0.007	0.001
6 dB	0 dB	48 dB	0.015	±0.05	-0.009	0.002
>> Channel 1 bal <<						
6 dB	6 dB	--	16	±0.05	-0.010	0.002
6 dB	0 dB	--	8	±0.05	-0.008	0.001
6 dB	- 6 dB	--	4	±0.05	-0.008	0.001
6 dB	-12 dB	--	2	±0.05	-0.006	0.001
0 dB	-12 dB	--	1	±0.05	-0.007	0.001
6 dB	0 dB	24 dB	0.5	±0.05	-0.011	0.001
6 dB	0 dB	48 dB	0.030	±0.05	-0.015	0.001
>> Channel 2 unbal (UPV-B3) <<						
6 dB	6 dB	--	8	±0.05	-0.027	0.001
6 dB	0 dB	--	4	±0.05	-0.026	0.001
6 dB	- 6 dB	--	2	±0.05	-0.024	0.001
6 dB	-12 dB	--	1	±0.05	-0.024	0.001
0 dB	-12 dB	--	0.5	±0.05	-0.024	0.001
6 dB	0 dB	24 dB	0.25	±0.05	-0.028	0.001
6 dB	0 dB	48 dB	0.015	±0.05	-0.034	0.002

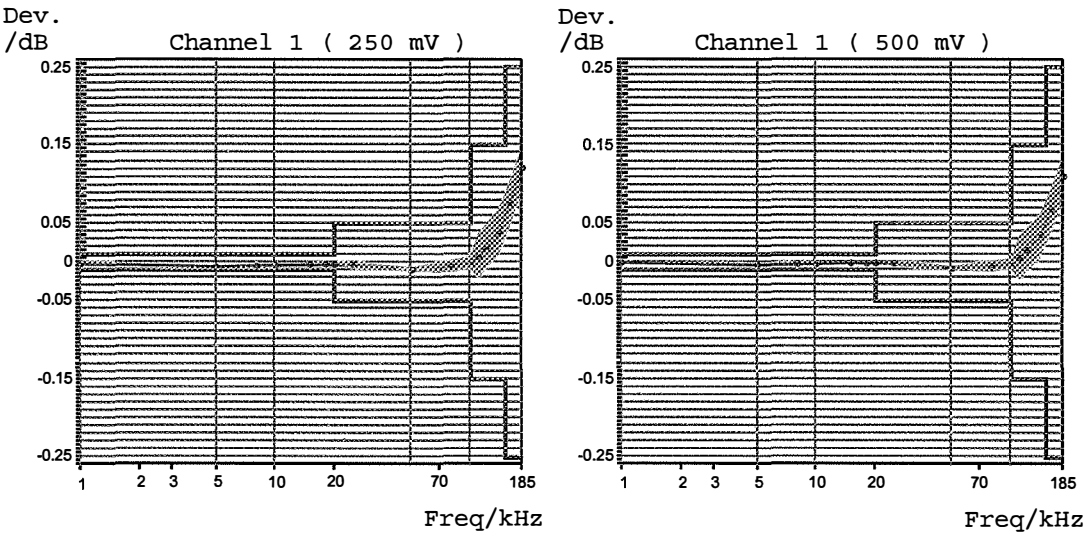
>> Channel 2 bal (UPV-B3) <<						
6 dB	6 dB	--	16	±0.05	-0.033	0.002
6 dB	0 dB	--	8	±0.05	-0.034	0.001
6 dB	- 6 dB	--	4	±0.05	-0.028	0.001
6 dB	-12 dB	--	2	±0.05	-0.029	0.001
0 dB	-12 dB	--	1	±0.05	-0.029	0.001
6 dB	0 dB	24 dB	0.5	±0.05	-0.035	0.001
6 dB	0 dB	48 dB	0.030	±0.05	-0.042	0.001
>> Channel 2; unbal; Function Sine <<						
6 dB	- 6 dB	--	2	±0.05	-0.001	0.001
>> Channel 2; bal; Function Sine <<						
6 dB	- 6 dB	--	4	±0.05	-0.008	0.001

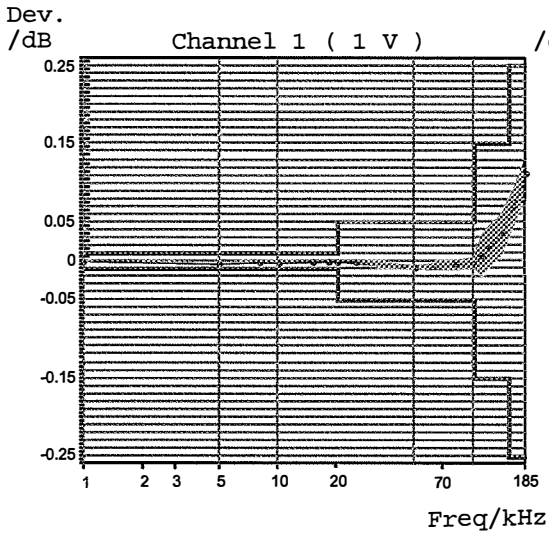
2.2 Accuracy Level Control

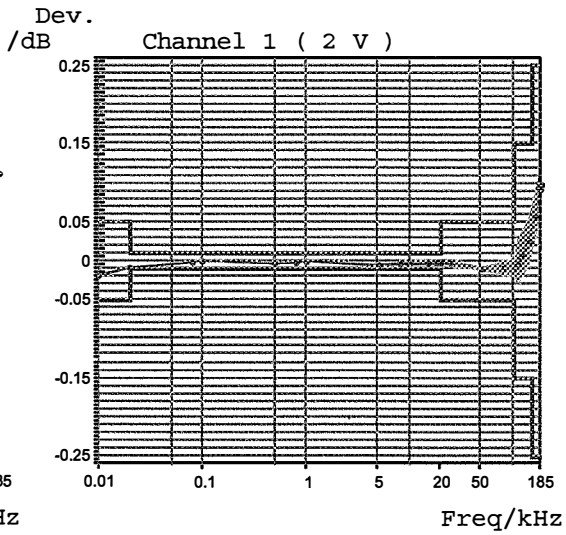
Freq. 1kHz; unbal; Function Stereo Sine

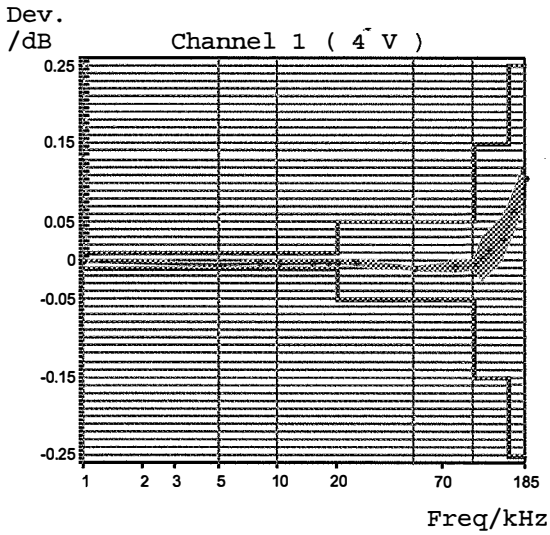


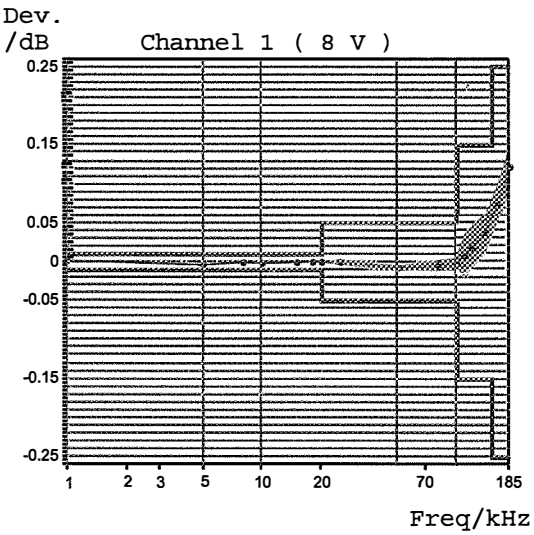
2.3 Frequency response Low Dist on (Option-B1), Output Unbal

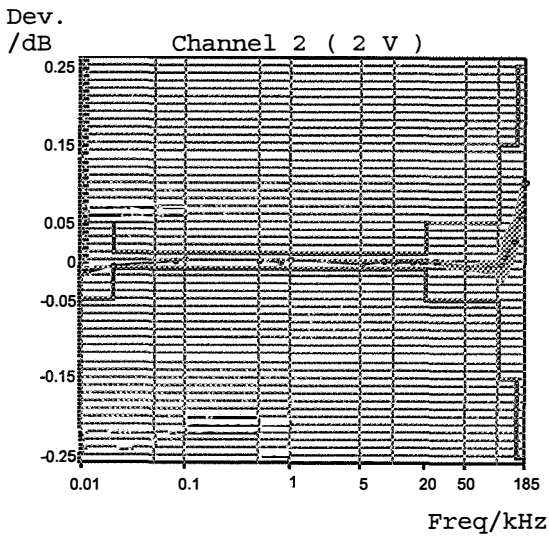



Dev.
/dB
Channel 1 (1 V)
0.25
0.15
0.05
0
-0.05
-0.15
-0.25
1 2 3 5 10 20 70 185
Freq/kHz

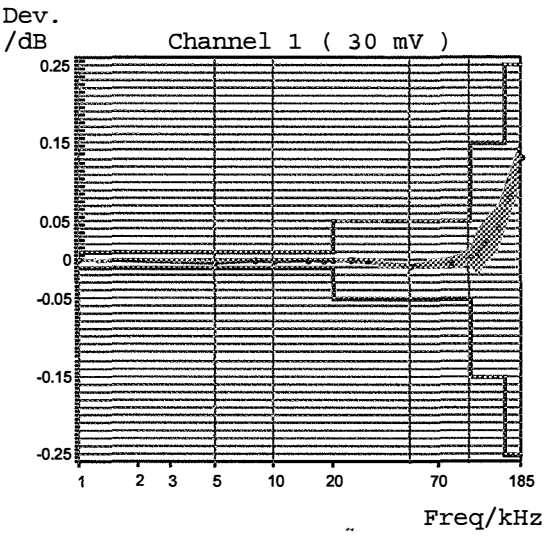

Dev.
/dB
Channel 1 (2 V)
0.25
0.15
0.05
0
-0.05
-0.15
-0.25
0.01 0.1 1 5 20 50 185
Freq/kHz

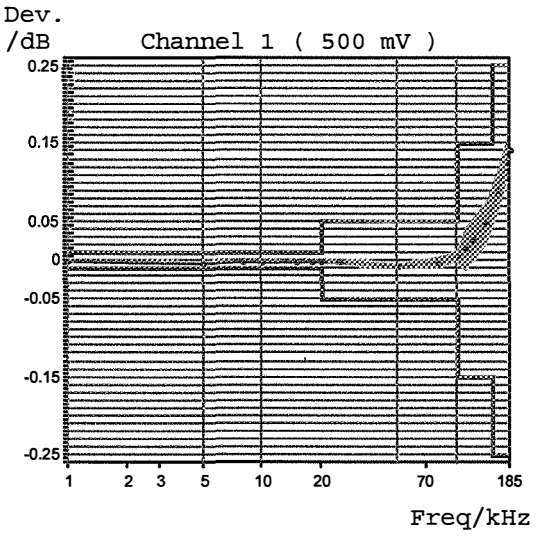

Dev.
/dB
Channel 1 (4 V)
0.25
0.15
0.05
0
-0.05
-0.15
-0.25
1 2 3 5 10 20 70 185
Freq/kHz

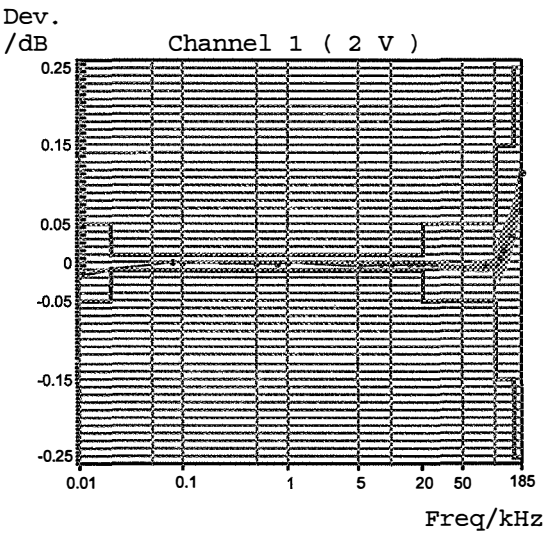

Dev.
/dB
Channel 1 (8 V)
0.25
0.15
0.05
0
-0.05
-0.15
-0.25
1 2 3 5 10 20 70 185
Freq/kHz

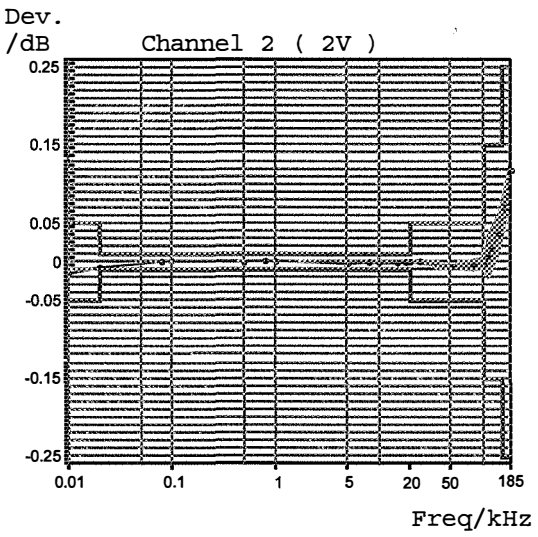

Dev.
/dB
Channel 2 (2 V)
0.25
0.15
0.05
0
-0.05
-0.15
-0.25
0.01 0.1 1 5 20 50 185
Freq/kHz

2.4 Frequency response Low Dist (Option-B1) on, Output Balanced



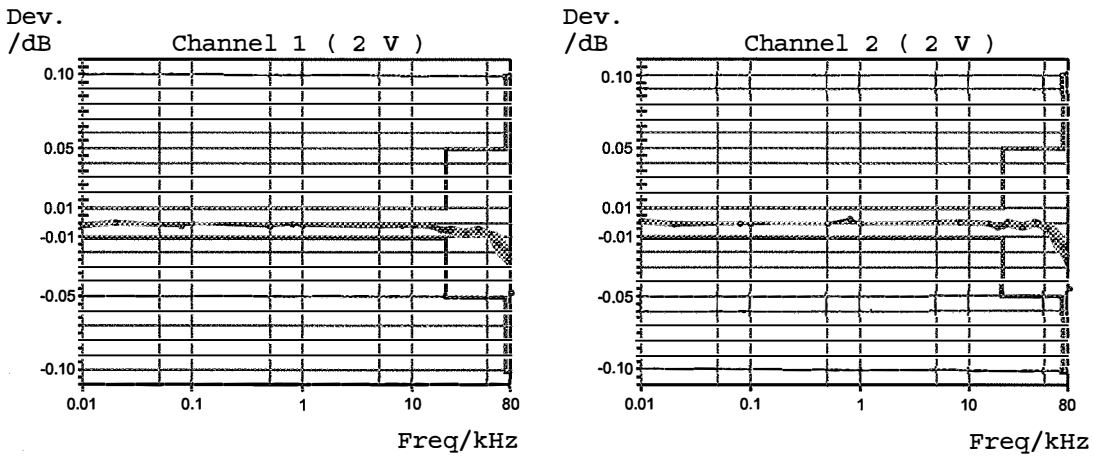






2.5 Frequency response Low Dist off, Output Unbalanced

Function = Stereo Sine



3. ANALOG GENERATOR: Frequency Accuracy

3.1 Frequency DSP-Signals

Nominal /Hz	DL /ppm	Deviation /ppm	MU /ppm
<<Channel 1>>			
1000	±10	-0.5	0.14
<<Channel 2 (Option B3)>>			
1000	±10	-0.4	0.14

3.2 Frequency Accuracy Low Dist Generator (Option-B1) Channel 1

Nominal /kHz	DL /%	Deviation /%	MU /%
0.01	±0.50	0.0508	0.0007
0.10	±0.50	-0.0005	0.0007
0.18	±0.50	0.0077	0.0004
0.20	±0.50	0.0025	0.0004
1.00	±0.50	0.0199	0.0001
1.50	±0.50	0.0172	0.0001
2.00	±0.50	0.0023	0.0001
4.00	±0.50	0.0022	0.0001
6.00	±0.50	0.0104	0.0001
8.00	±0.50	-0.0045	0.0001
10	±0.50	-0.0008	0.0001
12	±0.50	0.0074	0.0001
14	±0.50	0.0172	0.0001
16	±0.50	0.0037	0.0001
18	±0.50	0.0095	0.0001
20	±0.50	0.0111	0.0001
30	±0.50	-0.0506	0.0001
50	±0.50	-0.0011	0.0001
100	±0.50	0.1019	0.0001
185	±0.75	0.4918	0.0001

4. ANALOG GENERATOR: DC-Offset

4.1 Offset error with DC Offset ON (DC Voltage 0.0000 V)

Frequency 1 kHz; Function Stereo Sine

Level /Vrms	Nominal /mV	DL /mV	Deviation /mV	MU /mV
<<Unbal Ch1>>				
8.0	0	±80	3.8343	0.0019
4.0	0	±40	1.7440	0.0011
0.5	0	± 5	-0.9535	0.0007
<<Bal Ch1>>				
1.0	0	±10	-0.1844	0.0007
<<Unbal Ch2 (Option-B3)>>				
8.0	0	±80	-0.1915	0.0019
4.0	0	±40	0.4505	0.0011
0.5	0	± 5	0.2219	0.0007
<<Bal Ch2 (Option-B3)>>				
1.0	0	±10	1.0237	0.0007

DC Offset: Accuracy (AC Voltage 0.0000)

Function Stereo Sine

DC-Offset /V	Nominal /%	DL /%	Deviation /%	MU /%
<<Unbal Ch1>>				
5.00	0	±2	-0.046	0.001
-5.00	0	±2	-0.096	0.001
2.00	0	±2	-0.065	0.001
-2.00	0	±2	-0.025	0.001
1.00	0	±2	-0.109	0.001
-1.00	0	±2	0.038	0.001
0.50	0	±2	-0.230	0.001
-0.50	0	±2	0.189	0.001
0.25	0	±2	-0.071	0.001
-0.25	0	±2	-0.094	0.001
<<Bal Ch1>>				
2.00	0	±2	-0.080	0.001
-2.00	0	±2	-0.110	0.001
<<Unbal Ch2 (Option-B3)>>				
5.00	0	±2	-0.303	0.001
-5.00	0	±2	-0.328	0.001
2.00	0	±2	-0.252	0.001
-2.00	0	±2	-0.274	0.001
1.00	0	±2	-0.243	0.001
-1.00	0	±2	-0.298	0.001
0.50	0	±2	-0.217	0.001
-0.50	0	±2	-0.331	0.001
0.25	0	±2	-0.305	0.001
-0.25	0	±2	-0.374	0.001

<<Bal Ch2 (Option-B3)>>				
2.00	0	±2	-0.292	0.001
-2.00	0	±2	-0.401	0.001

5. ANALOG GENERATOR: THD,THD+N

5.1 THD with Low Dist Generator (Option-B1); Channel 1

Level /V	Output	DL /dB	Actual /dB	MU /dB
Frequency 20 Hz				
10.00	UNBAL	< -110	-123.6	0.4
2.50	UNBAL	< -112	-116.1	0.4
20.00	BAL	< -110	-122.2	0.4
5.00	BAL	< -112	-116.0	0.4
Frequency 180 Hz				
10.00	UNBAL	< -110	-123.8	0.4
2.50	UNBAL	< -112	-122.4	0.4
20.00	BAL	< -110	-123.4	0.4
5.00	BAL	< -112	-122.5	0.4
Frequency 1 kHz				
10.00	UNBAL	< -110	-125.0	0.4
2.50	UNBAL	< -112	-127.9	0.4
20.00	BAL	< -110	-126.3	0.4
5.00	BAL	< -112	-127.3	0.4
0.60	BAL	< -112	-125.3	0.4
Frequency 1.8 kHz				
10.00	UNBAL	< -110	-119.9	0.4
2.50	UNBAL	< -112	-127.4	0.4
20.00	BAL	< -110	-127.5	0.4
5.00	BAL	< -112	-128.2	0.4
Frequency 7 kHz				
10.00	UNBAL	< -110	-115.2	0.4
2.50	UNBAL	< -110	-117.5	0.4
20.00	BAL	< -110	-117.4	0.4
5.00	BAL	< -110	-119.8	0.4
Frequency 20 kHz				
10.00	UNBAL	< -105	-111.1	0.4
2.50	UNBAL	< -105	-113.6	0.4
20.00	BAL	< -105	-111.8	0.4
5.00	BAL	< -105	-113.5	0.4
Frequency 50 kHz				
10.00	UNBAL	< - 88	-93.9	1.2
2.50	UNBAL	< - 88	-95.2	1.2
20.00	BAL	< - 88	-93.9	1.2
5.00	BAL	< - 88	-95.1	1.2
Frequency 100 kHz				
10.00	UNBAL	< - 80	-90.8	1.2
2.50	UNBAL	< - 80	-100.0	1.2
20.00	BAL	< - 80	-94.7	1.2
5.00	BAL	< - 80	-99.5	1.2

5.2 THD+N with Low Dist Generator (Option-B1)

See ANALOG ANALYZER: THD+N Inherent Distortion

5.3 THD+N without Low Dist Generator (Option-B1)

See ANALOG ANALYZER: THD+N Inherent Distortion

6. ANALOG GENERATOR: MODDIST Inherent Distortion

6.1 MODDIST Inherent Distortion Channel 1

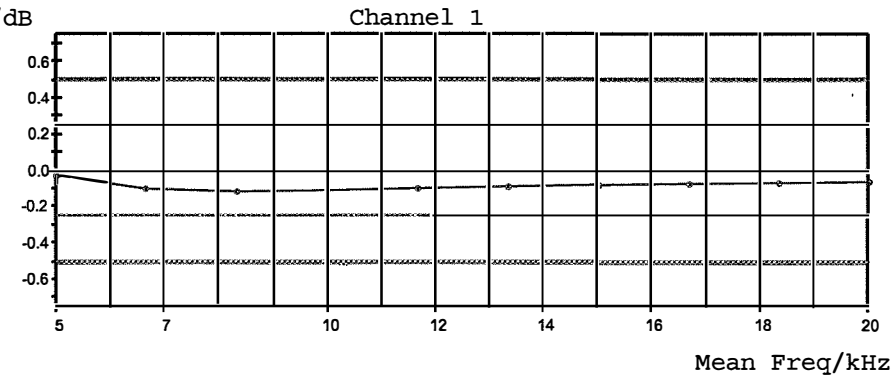
Lower Frequency : 60 Hz

F_HF /kHz	Volt LF:UF	Output	Tot. Volt /Vpp	DUL /dB	Actual /dB	MU /dB
4	4:1	UNBAL	28.0	- 90	-108.5	1
7	4:1	UNBAL	28.0	- 96	-108.3	1
10	4:1	UNBAL	28.0	- 90	-107.9	1
15	4:1	UNBAL	28.0	- 90	-107.9	1
20	4:1	UNBAL	28.0	- 90	-106.8	1
4	4:1	UNBAL	6.0	- 90	-108.9	1
7	4:1	UNBAL	6.0	- 96	-108.9	1
10	4:1	UNBAL	6.0	- 90	-108.7	1
15	4:1	UNBAL	6.0	- 90	-107.6	1
20	4:1	UNBAL	6.0	- 90	-106.7	1
4	4:1	BAL	56.0	- 90	-108.4	1
7	4:1	BAL	56.0	- 96	-108.9	1
10	4:1	BAL	56.0	- 90	-108.8	1
15	4:1	BAL	56.0	- 90	-108.1	1
20	4:1	BAL	56.0	- 90	-107.7	1
4	4:1	BAL	12.0	- 90	-107.9	1
7	4:1	BAL	12.0	- 96	-108.3	1
10	4:1	BAL	12.0	- 90	-108.1	1
15	4:1	BAL	12.0	- 90	-107.2	1
20	4:1	BAL	12.0	- 90	-106.3	1

7. ANALOG GENERATOR: DFD

7.1 DFD Level Accuracy

Output : UNBAL
Total Volt : 1.5 V (6 Vpp)
Diff Freq : 425 Hz
Mode : IEC 268



7.2 DFD d2 Inherent Distortion Channel 1

Diff Freq 425 Hz ; Mode IEC 268 ; DC Offs. OFF = with HP DIFF

F_mean /kHz	DC Offs.	Output	Tot. Volt /Vpp	DUL /dB	Actual /dB	MU /dB
5	OFF	UNBAL	28.0	-115	-127.2	0.1
10	OFF	UNBAL	28.0	-115	-128.7	0.1
15	OFF	UNBAL	28.0	-115	-129.9	0.1
20	OFF	UNBAL	28.0	-115	-131.4	0.1
5	OFF	UNBAL	6.0	-115	-124.5	0.1
10	OFF	UNBAL	6.0	-115	-126.3	0.1
15	OFF	UNBAL	6.0	-115	-127.6	0.1
20	OFF	UNBAL	6.0	-115	-128.0	0.1
5	OFF	BAL	56.0	-115	-127.6	0.1
10	OFF	BAL	56.0	-115	-128.2	0.1
15	OFF	BAL	56.0	-115	-130.9	0.1
20	OFF	BAL	56.0	-115	-134.7	0.1
5	OFF	BAL	12.0	-115	-127.1	0.1
10	OFF	BAL	12.0	-115	-127.8	0.1
15	OFF	BAL	12.0	-115	-130.7	0.1
20	OFF	BAL	12.0	-115	-134.7	0.1

7.3 DFD d3 Inherent Distortion Channel 1

Diff Freq 425 Hz ; Mode IEC 268

F_mean /kHz	Output	Tot. Volt /Vpp	DUL /dB	Actual /dB	MU /dB
5	UNBAL	28.0	- 94	-119.1	1.8
10	UNBAL	28.0	- 94	-117.0	1.8
15	UNBAL	28.0	- 94	-117.7	1.8
20	UNBAL	28.0	- 94	-116.6	1.8
5	UNBAL	6.0	- 94	-127.1	1.8
10	UNBAL	6.0	- 94	-128.3	1.8
15	UNBAL	6.0	- 94	-124.0	1.8
20	UNBAL	6.0	- 94	-117.8	1.8
5	BAL	56.0	- 94	-123.9	1.8
10	BAL	56.0	- 94	-114.6	1.8
15	BAL	56.0	- 94	-115.0	1.8
20	BAL	56.0	- 94	-112.6	1.8
5	BAL	12.0	- 94	-126.0	1.8
10	BAL	12.0	- 94	-122.8	1.8
15	BAL	12.0	- 94	-123.8	1.8
20	BAL	12.0	- 94	-120.0	1.8

8. ANALOG GENERATOR: Dynamic Intermodulation DIM (Option-B3)

8.1 DIM Level accuracy

Output UNBAL ; Channel 2 ; Total Voltage 3 V

Bandwidth /kHz	Square/Sine /kHz	DL /dB	Actual /dB	MU /dB
30	3.15/15	±0.3	0.074	0.003
30	2.96/14	±0.3	0.087	0.003
100	3.15/15	±0.3	0.082	0.008

8.2 DIM Inherent Distortion

See ANALOG ANALYZER: DIM Inherent Distortion

9. ANALOG GENERATOR: Output Impedances

Channel		Ro /Ohm	DLL /Ohm	DUL /Ohm	Actual /Ohm	MU /Ohm
1 BAL	/off	200	199.00	201.00	199.632	0.04
1 BAL	/off	600	597.00	603.00	599.600	0.04
2 BAL	/off	200	199.00	201.00	199.537	0.04
2 BAL	/off	600	597.00	603.00	599.551	0.04

10. ANALOG GENERATOR: Cross Talk Attenuation

Level 10 V; Freq 20 kHz

OUTP.	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	CH 1 -> CH 2	115	117.94	1
BAL	10	CH 1 -> CH 2	115	151.83	1
BAL	200*	CH 1 -> CH 2	115	140.89	1
BAL	600	CH 1 -> CH 2	115	138.05	1
UNB	5	CH 2 -> CH 1	115	123.19	1
BAL	10	CH 2 -> CH 1	115	154.44	1
BAL	200*	CH 2 -> CH 1	115	155.10	1
BAL	600	CH 2 -> CH 1	115	153.87	1

* With option UPV-U1 150 Ohm

11. ANALOG GENERATOR: Common Mode Rejection CMRR

Function = Sine

Freq /kHz	Level /V	Ro /Ohm	Channel	DLL /dB	Actual /dB	MU /dB
1.025	20	10	1	>75	119.6	0.19
1.025	20	200*	1	>75	116.4	0.19
1.025	20	600	1	>75	112.4	0.19
20	20	10	1	>60	80.7	0.19
20	20	200*	1	>60	79.6	0.19
20	20	600	1	>60	78.5	0.19
1.025	2	10	1	>75	102.6	0.19
1.025	2	200*	1	>75	103.1	0.19
1.025	2	600	1	>75	102.1	0.19
20	2	10	1	>60	80.2	0.19
20	2	200*	1	>60	79.1	0.19
20	2	600	1	>60	78.0	0.19
1.025	20	10	2	>75	93.3	0.19
1.025	20	200*	2	>75	94.2	0.19
1.025	20	600	2	>75	95.6	0.19
20	20	10	2	>60	72.3	0.19
20	20	200*	2	>60	72.9	0.19
20	20	600	2	>60	73.7	0.19
1.025	2	10	2	>75	93.3	0.19
1.025	2	200*	2	>75	94.1	0.19
1.025	2	600	2	>75	95.2	0.19
20	2	10	2	>60	72.5	0.19
20	2	200*	2	>60	73.1	0.19
20	2	600	2	>60	74.0	0.19

Function = Stereo Sine (only with option B3)

20	20	10	2	>60	80.0	0.19
20	2	10	2	>60	81.2	0.19

* With option UPV-U1 150 Ohm

12. ANALOG ANALYZER: Level Accuracy RMS

12.1 Level Accuracy at 1 kHz

Input Voltage = 0.75 * Range; Input Bal

Channel 1

Range /V	Band	Pre_Att /dB	Preamp. /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.1	22 kHz	0	+20	+10	±0.05	0.001	0.002
0.3	22 kHz	0	0	+20	±0.05	0.003	0.002
0.6	22 kHz	0	0	+15	±0.05	0.000	0.002
1.8	22 kHz	0	0	+ 5	±0.05	0.001	0.002
3.0	22 kHz	0	0	0	±0.05	0.001	0.002
6.0	22 kHz	-15	0	+10	±0.05	0.004	0.002
30	22 kHz	-30	0	+10	±0.05	0.004	0.002
3.0	40 kHz	0	0	0	±0.05	0.000	0.002
3.0	80 kHz	0	0	0	±0.05	0.000	0.002
3.0	250 kHz	0	0	0	±0.05	0.001	0.002

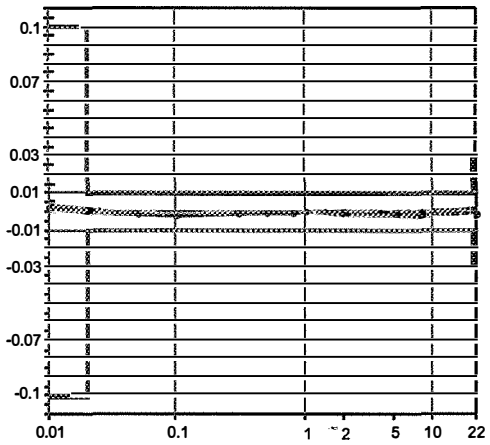
Channel 2

Range /V	Band	Pre_Att /dB	Preamp. /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.1	22 kHz	0	+20	+10	±0.05	0.002	0.002
0.3	22 kHz	0	0	+20	±0.05	0.004	0.002
0.6	22 kHz	0	0	+15	±0.05	0.001	0.002
1.8	22 kHz	0	0	+ 5	±0.05	0.001	0.002
3.0	22 kHz	0	0	0	±0.05	0.001	0.002
6.0	22 kHz	-15	0	+10	±0.05	0.002	0.002
30	22 kHz	-30	0	+10	±0.05	0.004	0.002
3.0	40 kHz	0	0	0	±0.05	0.000	0.002
3.0	80 kHz	0	0	0	±0.05	0.000	0.002
3.0	250 kHz	0	0	0	±0.05	0.000	0.002

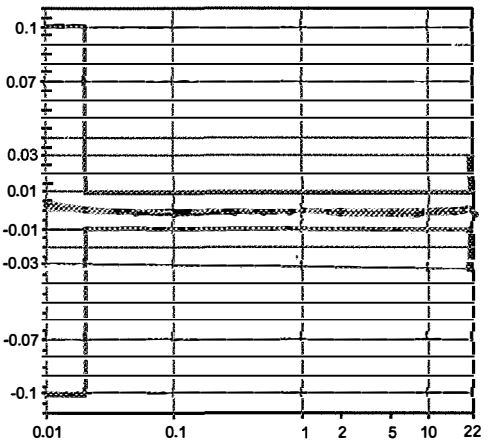
12.2 Frequency Response Analyzer Bandwidth 22 kHz

Range 3 V; Input Voltage = 0.75 * Range; Input Bal

[dB] < Channel 1>

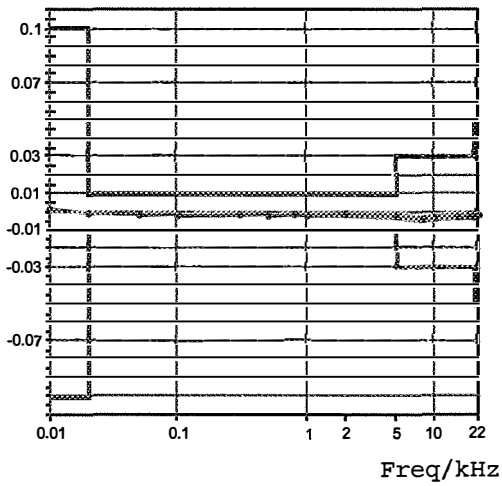


[dB] < Channel 2>

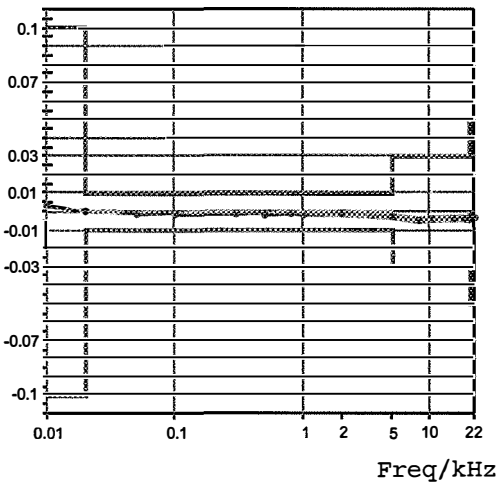


Range 6 V; Input Voltage = 0.75 * Range; Input Bal

[dB] < Channel 1>



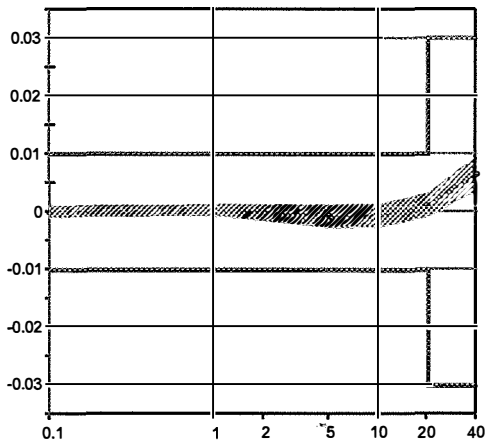
[dB] < Channel 2>



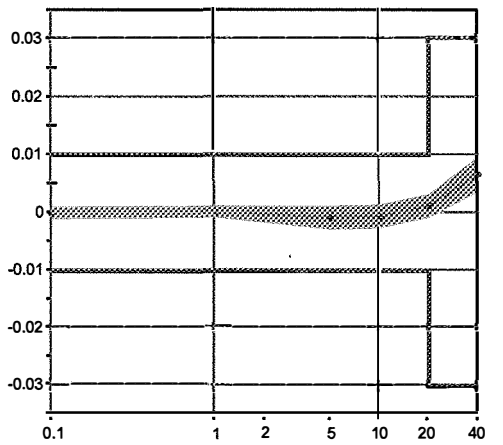
12.3 Frequency Response Analyzer Bandwidth 40 kHz

Range 3 V; Input Voltage = 0.75 * Range; Input Bal

[dB] < Channel 1>



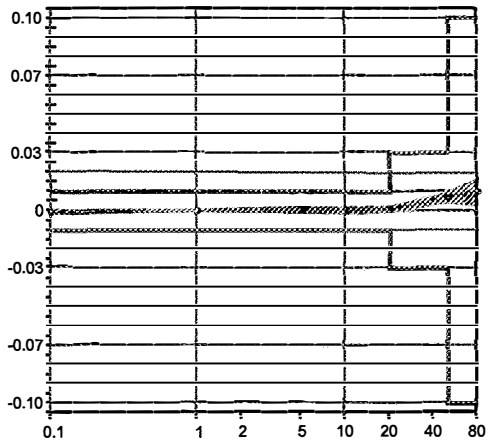
[dB] < Channel 2>



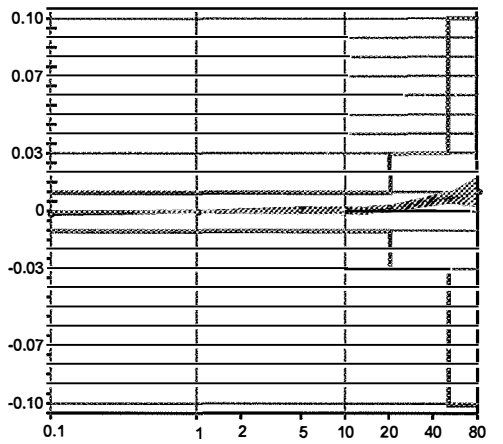
12.4 Frequency Response Analyzer Bandwidth 80 kHz

Range 3 V; Input Voltage = 0.75 * Range; Input Bal

[dB] < Channel 1>

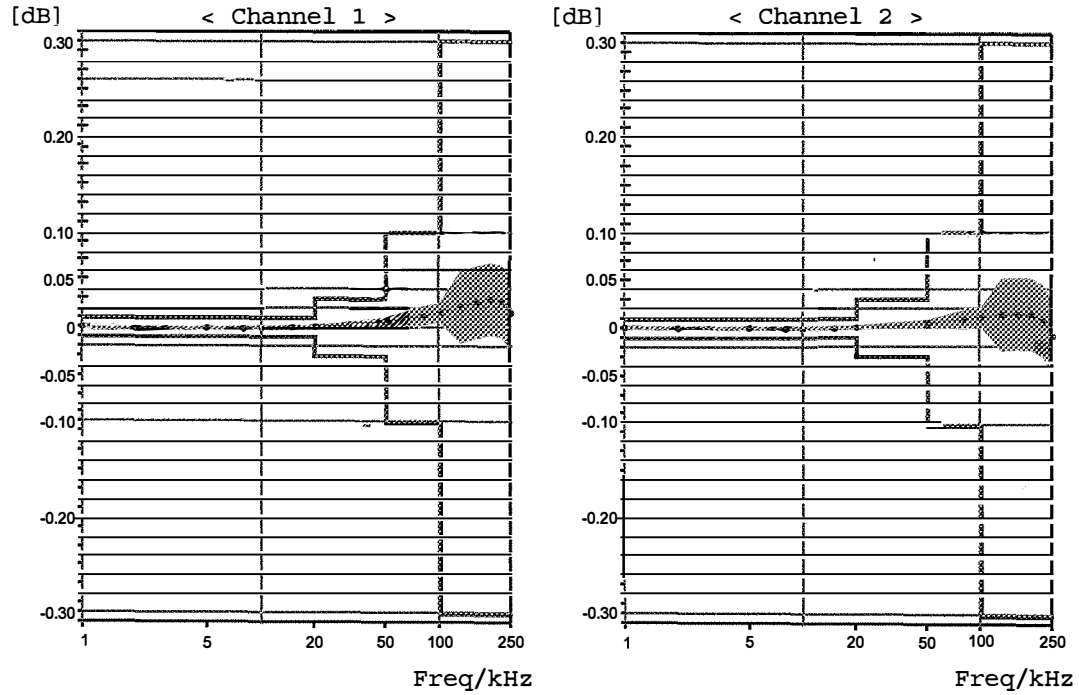


[dB] < Channel 2>

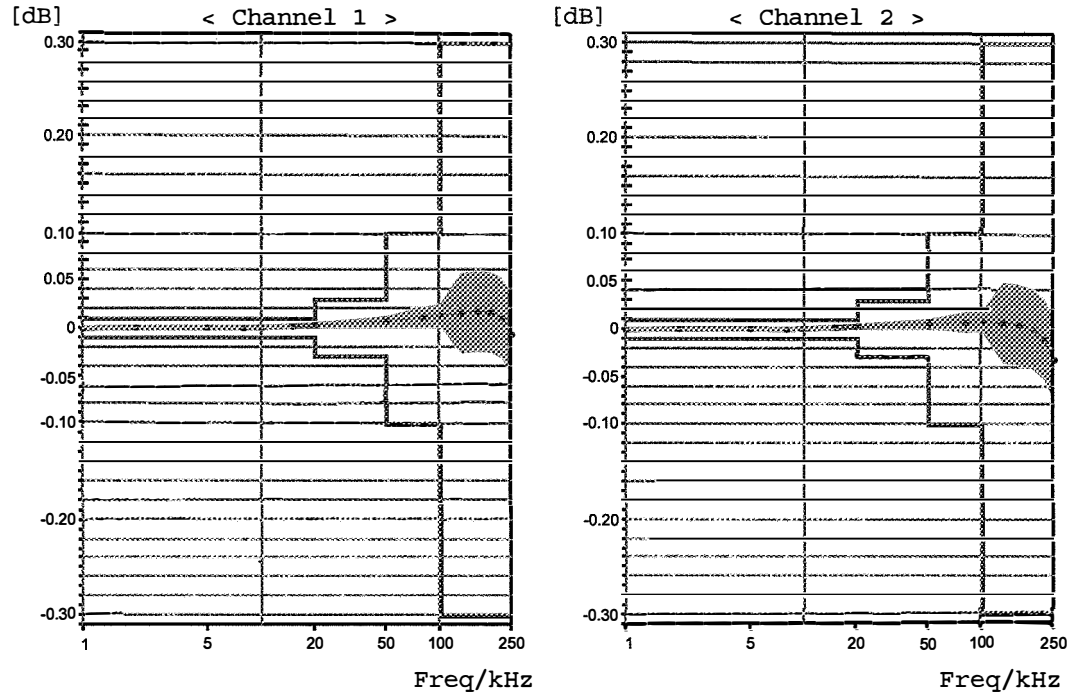


12.5 Frequency Response Analyzer Bandwidth 250 kHz

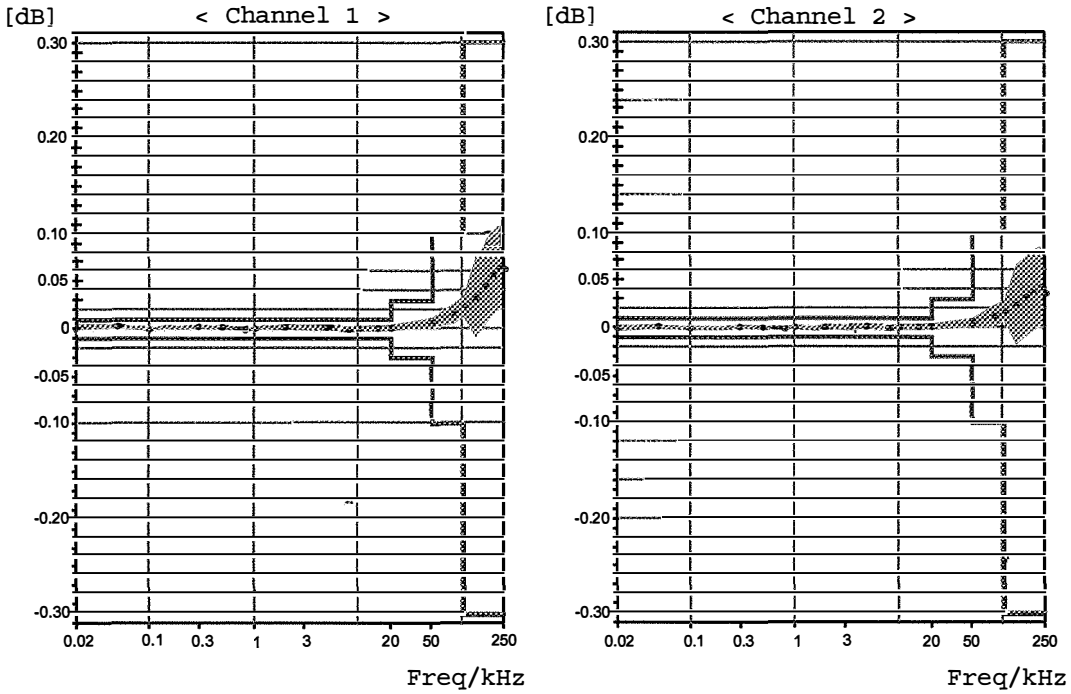
Range 100 mV; Input Voltage = 0.75 * Range; Input Bal



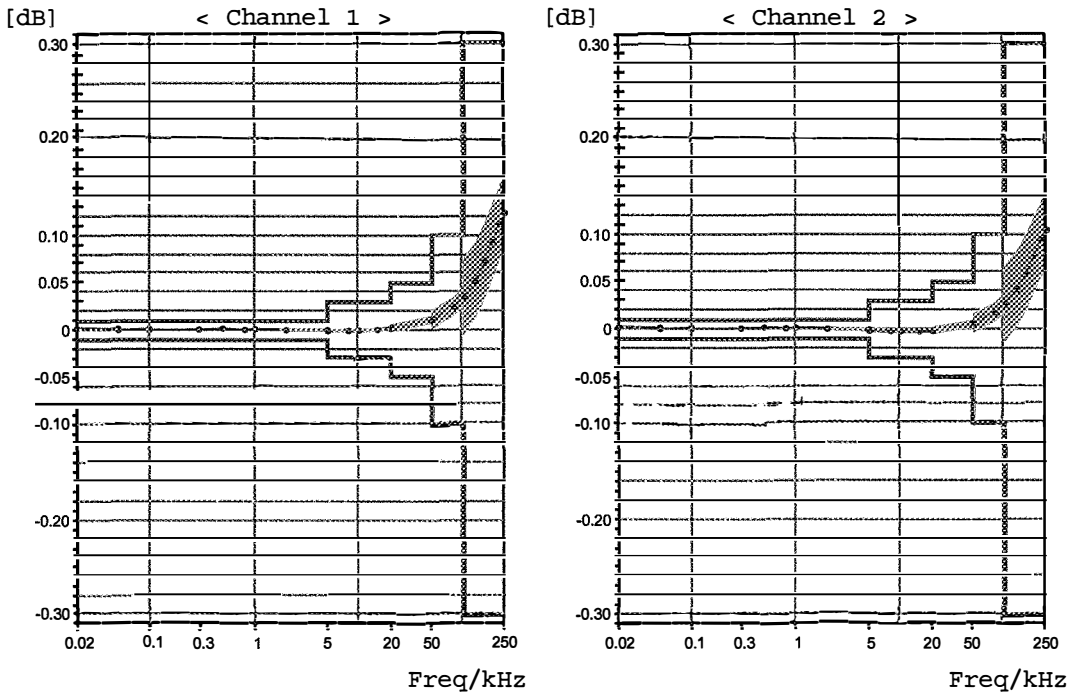
Range 300 mV; Input Voltage = 0.75 * Range; Input Bal



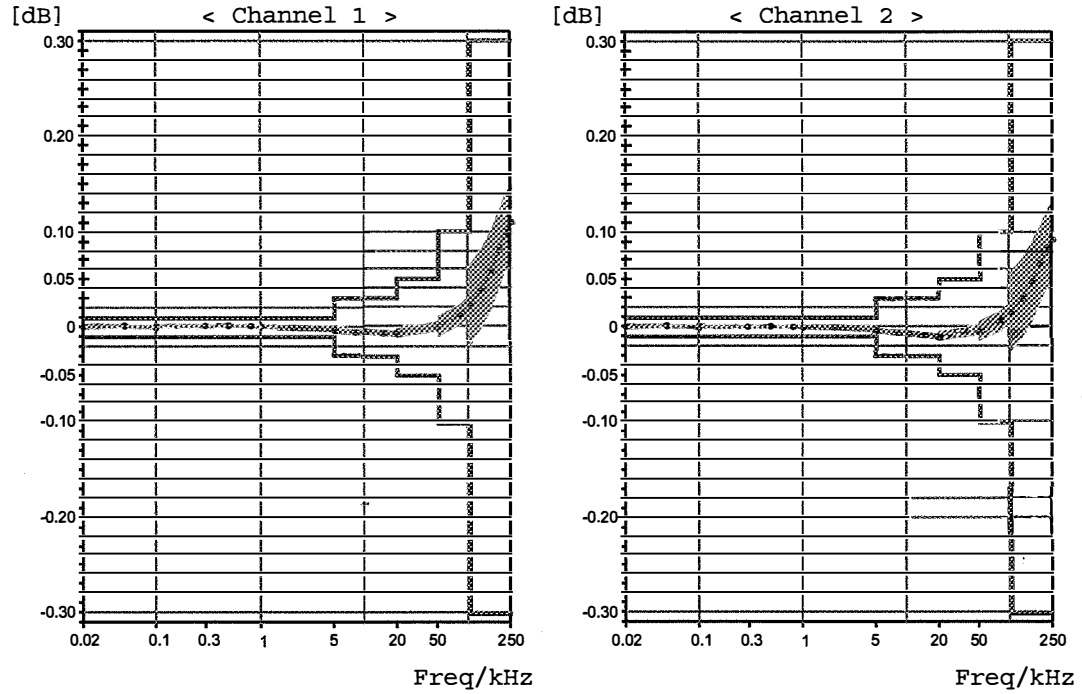
Range 3 V; Input Voltage = 0.75 * Range; Input Bal



Range 6 V; Input Voltage = 0.75 * Range; Input Bal



Range 30 V; Input Voltage = 7 V RMS; Input Bal



13. ANALOG ANALYZER: Level Accuracy Quasi Peak

13.1 Level Accuracy at 1 kHz

Reference = 3 V RMS = 0 dBr

Channel	Function	Filter	DL /dBr	Actual /dBr	MU /dBr
1	Quasi Peak	OFF	±0.05	0.00	0.01
2	Quasi Peak	OFF	±0.05	0.00	0.01
1	Quasi Peak	CCIR 1k wtd	±0.15	-0.06	0.01
2	Quasi Peak	CCIR 1k wtd	±0.15	-0.06	0.01

13.2 Dynamic Single Burst Display Behaviour

Function = Quasi Peak
Reference = Displayed level with continued signal = 0 dBr

Channel	Sine Burst Duration /ms	DUL /dBr	DLL /dBr	Actual /dBr	MU /dBr
1	50	- 3.3	- 6.0	-4.12	0.01
2	50	- 3.3	- 6.0	-4.12	0.01
1	10	- 5.2	- 7.7	-5.78	0.01
2	10	- 5.2	- 7.7	-5.78	0.01
1	1	-13.4	-17.4	-15.33	0.01
2	1	-13.4	-17.4	-15.33	0.01

14. ANALOG ANALYZER: Inherent Noise

These values are only display indications. Uncertainty can not be fixed.

Ri 300 Ohm; Bal; Range 18 mV;

Bandwidth	Function	Pre Filter	Channel	DUL /µV	Actual /µV
22 kHz	RMS	A Weighting	1	1.0	0.78
22 kHz	RMS	A Weighting	2	1.0	0.78
22 kHz	RMS	CCIR unwtd	1	1.4	1.05
22 kHz	RMS	CCIR unwtd	2	1.4	1.05
22 kHz	QPEAK	CCIR 1k wtd	1	5.0	3.72
22 kHz	QPEAK	CCIR 1k wtd	2	5.0	3.63
80 kHz	RMS	OFF	1	2.8	2.04
80 kHz	RMS	OFF	2	2.8	2.00
250 kHz	RMS	OFF	1	7.0	4.40
250 kHz	RMS	OFF	2	7.0	4.36

15. ANALOG ANALYZER: Input Impedances

Input BAL

Channel	Ri /Ohm	DLL /Ohm	DUL /Ohm	Actual /Ohm	MU /Ohm
1	200000	198000.0	202000.0	200743.523	3.92
1	600	597.0	603.0	602.279	0.04
1	300	298.5	301.5	301.249	0.04
2	200000	198000.0	202000.0	200768.324	3.92
2	600	597.0	603.0	600.787	0.04
2	300	298.5	301.5	300.930	0.04

16. ANALOG ANALYZER: Cross Talk Attenuation

Input Signal Sine 10 V / 20 kHz

Direction	DLL /dB	Actual /dB	MU /dB
Ch. 1 -> Ch. 2	120	149.94	0.25
Ch. 2 -> Ch. 1	120	145.23	0.25

17. ANALOG ANALYZER: Common Mode Rejection CMRR

Channel 1; Ri 200 kOhm; Bandwidth 22 kHz

Frequency /kHz	Ue /V	Range	DLL /dB	Actual /dB	MU /dB
0.05	3	18 mV	90	110.9	0.32
1.00	3	18 mV	86	105.3	0.15
20.00	3	18 mV	80	83.7	0.15
0.05	3	3 V	90	100.4	0.32
1.00	3	3 V	86	107.2	0.15
20.00	3	3 V	80	89.4	0.15

Channel 2					
0.05	3	18 mV	90	114.1	0.32
1.00	3	18 mV	86	110.7	0.15
20.00	3	18 mV	80	83.5	0.15
0.05	3	3 V	90	112.4	0.32
1.00	3	3 V	86	109.1	0.15
20.00	3	3 V	80	90.5	0.15

18. ANALOG ANALYZER: Frequency Accuracy

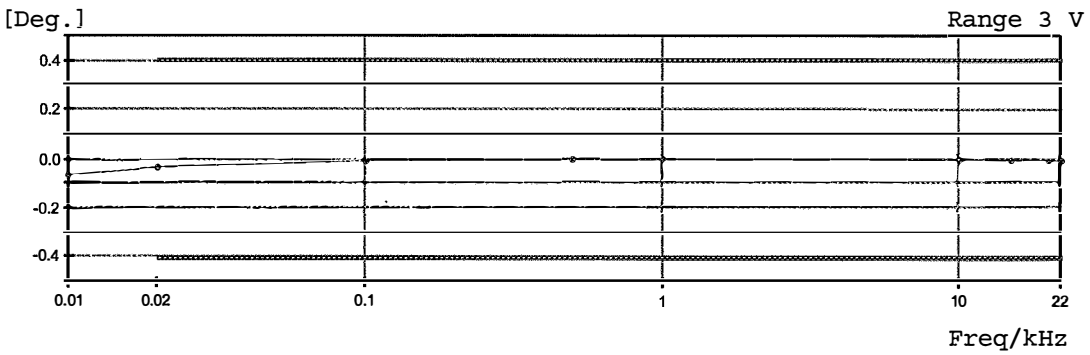
Frequency /kHz	Ue /V	Bandwidth /kHz	Channel	DL /ppm	Actual /ppm	MU /ppm
0.010	3.00	22	1	±10	0.9	0.8
1.000	3.00	22	1	±10	0.8	0.1
22.000	3.00	22	1	±10	0.8	0.1
0.010	3.00	22	2	±10	0.9	0.8
1.000	3.00	22	2	±10	0.8	0.1
22.000	3.00	22	2	±10	0.8	0.1
1.000	3.00	40	1	±10	0.8	0.1
1.000	3.00	40	2	±10	0.8	0.1
1.000	3.00	80	1	±10	0.8	0.1
1.000	3.00	80	2	±10	0.8	0.1
0.020	3.00	250	1	±10	1.1	0.4
1.000	3.00	250	1	±10	0.9	0.1
185.000	3.00	250	1	±10	0.4	0.1
0.020	3.00	250	2	±10	0.7	0.4
1.000	3.00	250	2	±10	0.7	0.1
185.000	3.00	250	2	±10	0.4	0.1

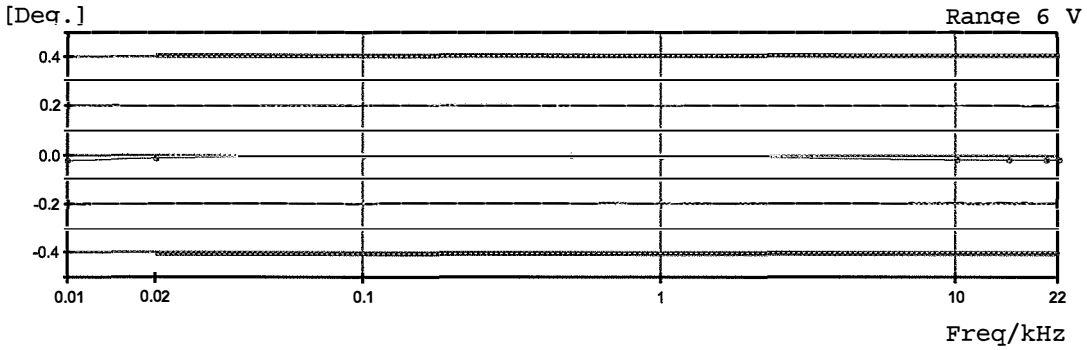
19. ANALOG ANALYZER: Phase Synchronism

19.1 Phase Synchronism, Analyzer Bandwidth 22 kHz

These values are only display indications with equal input signals to both channels. Uncertainty can not be fixed.

Input BAL; Ue = 0.75*Range

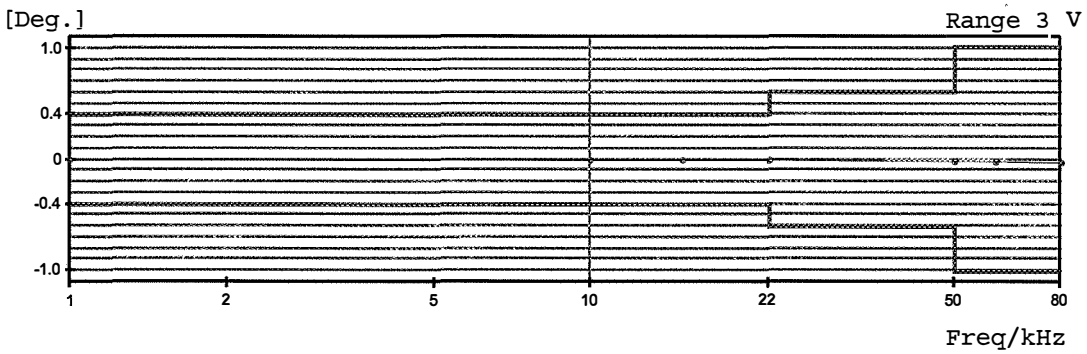




19.2 Phase Synchronism, Analyzer Bandwidth 80 kHz

These values are only display indications with equal input signals to both channels. Uncertainty can not be fixed.

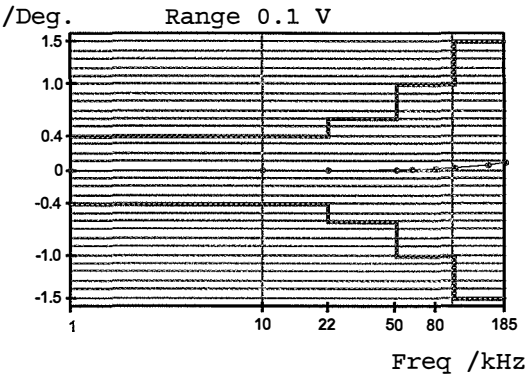
Input BAL; Ue = 0.75*Range

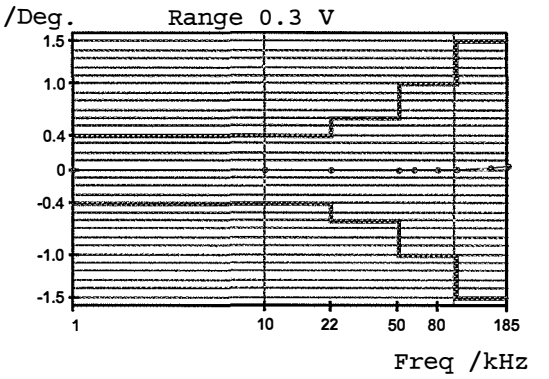


19.3 Phase Synchronism, Analyzer Bandwidth 250 kHz

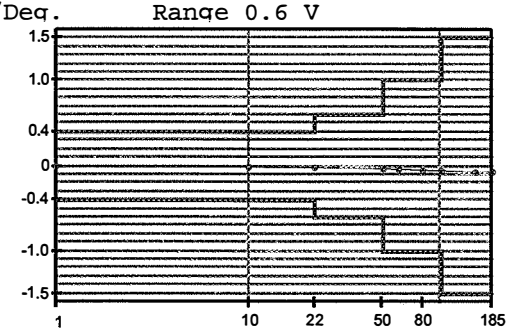
These values are only display indications with equal input signals to both channels. Uncertainty can not be fixed.

Input BAL; Ue = 0.75*Range



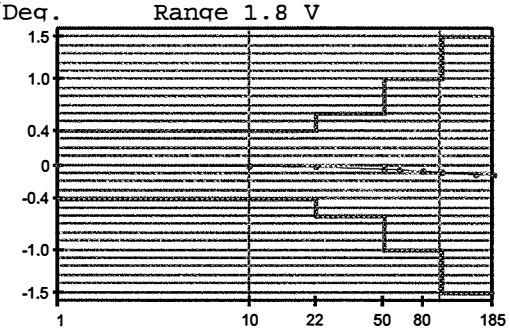


/Deg. Range 0.6 V



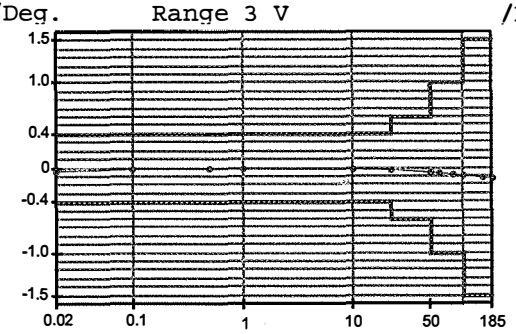
Freq /kHz

/Deg. Range 1.8 V



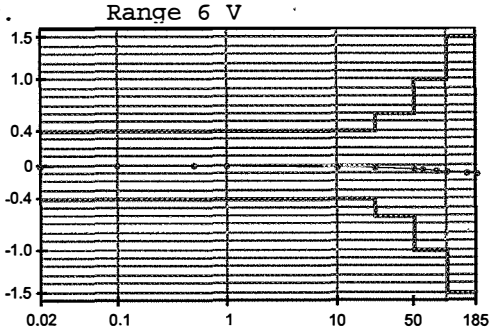
Freq /kHz

/Deg. Range 3 V



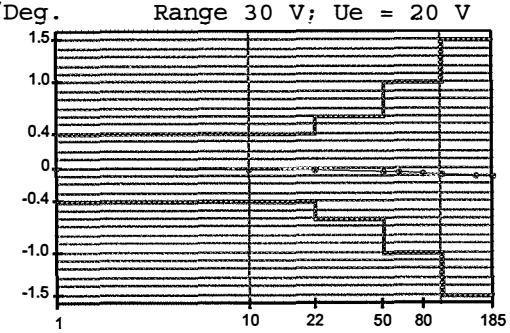
Freq /kHz

/Deg. Range 6 V



Freq /kHz

/Deg. Range 30 V; Ue = 20 V



Freq /kHz

20. ANALOG ANALYZER: DC Accuracy

20.1 DC Accuracy Analyzer Bandwidth 22 kHz

Input BAL; Range 3 V

Level /V	DL /%	Actual /%	MU /%
<<Channel 1>>			
+4.5	±1.067	0.033	0.001
-4.5	±1.067	0.018	0.001
+3.0	±1.100	0.040	0.001
-3.0	±1.100	0.021	0.001
+2.5	±1.120	0.041	0.001
-2.5	±1.120	0.017	0.001
+2.0	±1.150	0.042	0.001
-2.0	±1.150	0.015	0.001
+1.5	±1.200	0.046	0.001
-1.5	±1.200	0.013	0.001
+1.0	±1.300	0.057	0.001
-1.0	±1.300	0.002	0.001
+0.5	±1.600	0.082	0.001
-0.5	±1.600	-0.026	0.001
+0.3	±2.000	0.118	0.001
-0.3	±2.000	-0.062	0.001
<<Channel 2>>			
+4.5	±1.067	0.029	0.001
-4.5	±1.067	0.019	0.001
+3.0	±1.100	0.035	0.001
-3.0	±1.100	0.023	0.001
+2.5	±1.120	0.037	0.001
-2.5	±1.120	0.021	0.001
+2.0	±1.150	0.038	0.001
-2.0	±1.150	0.020	0.001
+1.5	±1.200	0.040	0.001
-1.5	±1.200	0.018	0.001
+1.0	±1.300	0.048	0.001
-1.0	±1.300	0.011	0.001
+0.5	±1.600	0.065	0.001
-0.5	±1.600	-0.008	0.001
+0.3	±2.000	0.090	0.001
-0.3	±2.000	-0.034	0.001

21. ANALOG ANALYZER: THD, THD+N

21.1 THD Inherent Distortion, Analyzer Bandwidth 22 kHz, Channel 1

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
10	10	0.01	bal	- 100	-114.1
3	2	0.01	bal	- 100	-114.6
3	2	0.01	unb	- 100	-116.9
1	1	0.01	unb	- 100	-112.8
10	10	0.02	bal	- 110	-116.6
3	2	0.02	bal	- 110	-118.2
3	2	0.02	unb	- 110	-120.1
1	1	0.02	unb	- 110	-115.2
10	10	0.05	bal	- 110	-117.4
3	2	0.05	bal	- 110	-119.8
3	2	0.05	unb	- 110	-120.2
1	1	0.05	unb	- 110	-118.0
10	10	0.10	bal	- 110	-121.0
3	2	0.10	bal	- 110	-123.8
3	2	0.10	unb	- 110	-125.1
1	1	0.10	unb	- 110	-121.4
10	10	0.45	bal	- 110	-120.9
3	2	0.45	bal	- 110	-122.0
3	2	0.45	unb	- 110	-122.6
1	1	0.45	unb	- 110	-121.1
10	10	1.00	bal	- 110	-121.3
3	2	1.00	bal	- 110	-122.4
3	2	1.00	unb	- 110	-123.2
1	1	1.00	unb	- 110	-120.7
10	10	3.00	bal	- 110	-115.5
10	10	3.00	unb	- 106	-108.9
3	2	3.00	bal	- 110	-116.8
3	2	3.00	unb	- 106	-115.6
1	1	3.00	unb	- 106	-115.4
10	10	7.00	bal	- 110	-120.4
10	10	7.00	unb	- 100	-106.6
3	2	7.00	bal	- 110	-123.8
3	2	7.00	unb	- 106	-120.1
1	1	7.00	unb	- 106	-113.0
10	10	10.00	bal	- 110	-115.8
10	10	10.00	unb	- 100	-103.8
3	2	10.00	bal	- 110	-117.6
3	2	10.00	unb	- 106	-111.0
1	1	10.00	unb	- 106	-111.0

21.2 THD Inherent Distortion, Analyzer Bandwidth 22 kHz, Channel 2

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
10	10	0.01	bal	- 100	-117.4
3	2	0.01	bal	- 100	-118.0
3	2	0.01	unb	- 100	-118.0
1	1	0.01	unb	- 100	-114.4
10	10	0.02	bal	- 110	-119.2
3	2	0.02	bal	- 110	-119.2
3	2	0.02	unb	- 110	-121.9
1	1	0.02	unb	- 110	-118.4
10	10	0.05	bal	- 110	-119.8
3	2	0.05	bal	- 110	-120.3
3	2	0.05	unb	- 110	-121.1
1	1	0.05	unb	- 110	-119.7
10	10	0.10	bal	- 110	-123.3
3	2	0.10	bal	- 110	-123.9
3	2	0.10	unb	- 110	-125.1
1	1	0.10	unb	- 110	-122.8
10	10	0.45	bal	- 110	-120.5
3	2	0.45	bal	- 110	-123.4
3	2	0.45	unb	- 110	-122.7
1	1	0.45	unb	- 110	-120.9
10	10	1.00	bal	- 110	-121.8
3	2	1.00	bal	- 110	-123.7
3	2	1.00	unb	- 110	-124.7
1	1	1.00	unb	- 110	-123.1
10	10	3.00	bal	- 110	-116.2
10	10	3.00	unb	- 106	-109.2
3	2	3.00	bal	- 110	-118.5
3	2	3.00	unb	- 106	-117.0
1	1	3.00	unb	- 106	-116.3
10	10	7.00	bal	- 110	-115.9
10	10	7.00	unb	- 100	-105.6
3	2	7.00	bal	- 110	-119.3
3	2	7.00	unb	- 106	-113.8
1	1	7.00	unb	- 106	-112.9
10	10	10.00	bal	- 110	-114.2
10	10	10.00	unb	- 100	-103.8
3	2	10.00	bal	- 110	-116.5
3	2	10.00	unb	- 106	-112.1
1	1	10.00	unb	- 106	-111.5

21.3 THD Inherent Distortion, Analyzer Bandwidth 250 kHz, Channel 1

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
10	10	0.05	bal	- 100	-117.1
3	2	0.05	bal	- 100	-119.0
3	2	0.05	unb	- 100	-120.8
1	1	0.05	unb	- 100	-117.6
10	10	0.10	bal	- 100	-120.9
3	2	0.10	bal	- 100	-123.2
3	2	0.10	unb	- 100	-123.0
1	1	0.10	unb	- 100	-120.9
10	10	0.45	bal	- 100	-119.7
3	2	0.45	bal	- 100	-122.1
3	2	0.45	unb	- 100	-122.6
1	1	0.45	unb	- 100	-120.1
10	10	1.00	bal	- 100	-121.3
3	2	1.00	bal	- 100	-121.8
3	2	1.00	unb	- 100	-120.6
1	1	1.00	unb	- 100	-119.6
10	10	3.00	bal	- 100	-115.7
3	2	3.00	bal	- 100	-116.4
3	2	3.00	unb	- 100	-116.0
1	1	3.00	unb	- 100	-114.5
10	10	7.00	bal	- 100	-119.3
3	2	7.00	bal	- 100	-121.3
3	2	7.00	unb	- 100	-121.8
1	1	7.00	unb	- 100	-112.6
10	10	22.00	bal	- 100	-110.4
10	10	22.00	unb	- 90	-99.2
3	2	22.00	bal	- 100	-110.9
3	2	22.00	unb	- 100	-106.5
1	1	22.00	unb	- 100	-107.7
10	10	50.00	bal	- 90	-94.2
10	10	50.00	unb	- 80	-89.0
3	2	50.00	bal	- 90	-94.1
3	2	50.00	unb	- 90	-93.7
1	1	50.00	unb	- 90	-93.9
10	10	100.00	bal	- 80	-97.6
10	10	100.00	unb	- 75	-84.4
3	2	100.00	bal	- 80	-95.6
3	2	100.00	unb	- 80	-96.9
1	1	100.00	unb	- 80	-98.3

21.4 THD Inherent Distortion, Analyzer Bandwidth 250 kHz, Channel 2

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
10	10	0.05	bal	- 100	-118.8
3	2	0.05	bal	- 100	-119.0
3	2	0.05	unb	- 100	-120.7
1	1	0.05	unb	- 100	-119.0
10	10	0.10	bal	- 100	-122.1
3	2	0.10	bal	- 100	-123.4
3	2	0.10	unb	- 100	-124.3
1	1	0.10	unb	- 100	-122.0
10	10	0.45	bal	- 100	-120.5
3	2	0.45	bal	- 100	-121.9
3	2	0.45	unb	- 100	-122.9
1	1	0.45	unb	- 100	-120.8
10	10	1.00	bal	- 100	-121.2
3	2	1.00	bal	- 100	-122.9
3	2	1.00	unb	- 100	-124.0
1	1	1.00	unb	- 100	-121.8
10	10	3.00	bal	- 100	-115.2
3	2	3.00	bal	- 100	-118.3
3	2	3.00	unb	- 100	-118.0
1	1	3.00	unb	- 100	-115.8
10	10	7.00	bal	- 100	-116.0
3	2	7.00	bal	- 100	-119.9
3	2	7.00	unb	- 100	-115.3
1	1	7.00	unb	- 100	-113.0
10	10	22.00	bal	- 100	-111.2
10	10	22.00	unb	- 90	-99.6
3	2	22.00	bal	- 100	-112.0
3	2	22.00	unb	- 100	-108.6
1	1	22.00	unb	- 100	-109.2
10	10	50.00	bal	- 90	-94.4
10	10	50.00	unb	- 80	-89.0
3	2	50.00	bal	- 90	-94.7
3	2	50.00	unb	- 90	-94.7
1	1	50.00	unb	- 90	-94.6
10	10	100.00	bal	- 80	-98.3
10	10	100.00	unb	- 75	-83.6
3	2	100.00	bal	- 80	-97.4
3	2	100.00	unb	- 80	-101.8
1	1	100.00	unb	- 80	-100.7

21.5 THD+N Inherent Distortion without Low Distortion Generator (B1), Channel 1

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Output Unbal; Function Stereo Sine

--Level 2.5 V--

Freq. /kHz	Gen. Band /kHz	Ana. Band /kHz	Lim Low /Hz	Lim up /kHz	DUL /dB	Actual /dB
0.02	22	22	20	22	-103	-106.0
1	22	22	20	22	-103	-111.4
3	22	22	20	22	-103	-111.5
6	22	22	20	22	-103	-110.5
8	22	22	20	22	-103	-110.3
10	22	22	20	22	-103	-110.1
20	22	22	20	22	-103	-110.3
0.02	40	80	20	80	- 90	-99.6
1	40	80	20	80	- 90	-100.5
3	40	80	20	80	- 90	-100.4
6	40	80	20	80	- 90	-100.4
8	40	80	20	80	- 90	-100.3
10	40	80	20	80	- 90	-100.0
20	40	80	20	80	- 90	-99.1
20	80	80	20	80	- 90	-99.8
40	80	80	20	80	- 83	-99.9
75	80	80	20	80	- 90	-100.1

--Frequency 1 kHz--

Level /V	Gen. Band /kHz	Ana. Band /kHz	Lim Low /Hz	Lim up /kHz	DUL /dB	Actual /dB
1	22	22	20	22	-103	-109.5
2	22	22	20	22	-103	-110.6
5	22	22	20	22	-103	-107.3
8	22	22	20	22	-103	-109.2

21.6 THD+N Inherent Distortion without Low Distortion Generator (B1), Channel 2

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Output Unbal; Function Stereo Sine

--Level 2.5 V--

Freq. /kHz	Gen. Band /kHz	Ana. Band /kHz	Lim Low /Hz	Lim up /kHz	DUL /dB	Actual /dB
0.02	22	22	20	22	-103	-107.8
1	22	22	20	22	-103	-111.1
3	22	22	20	22	-103	-110.8
6	22	22	20	22	-103	-110.1
8	22	22	20	22	-103	-110.5
10	22	22	20	22	-103	-109.8
20	22	22	20	22	-103	-110.3

0.02	40	80	20 80	- 90	-99.8
1	40	80	20 80	- 90	-100.1
3	40	80	20 80	- 90	-100.3
6	40	80	20 80	- 90	-100.0
8	40	80	20 80	- 90	-99.9
10	40	80	20 80	- 90	-99.6
20	40	80	20 80	- 90	-98.1
20	80	80	20 80	- 90	-99.8
40	80	80	20 80	- 83	-99.8
75	80	80	20 80	- 90	-100.0

--Frequency 1 kHz--

Level /V	Gen. Band /kHz	Ana. Band /kHz	Lim Low /Hz	Lim up /kHz	DUL /dB	Actual /dB
1	22	22	20 22		-103	-109.4
2	22	22	20 22		-103	-111.5
5	22	22	20 22		-103	-107.4
8	22	22	20 22		-103	-109.3

21.7 THD+N Inherent Distortion, Analyzer Bandwidth 22 kHz, Channel 1

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Bandwidth 20 Hz - 22 kHz; Output BAL; Low Dist On

Range /V	U_in /V	Freq /kHz	DUL /dB	Actual /dB
10	10	0.02	- 105	-111.8
6	3	0.02	- 98	-104.0
3	2	0.02	- 100.5	-112.3
1	1	0.02	- 105	-109.1
10	10	0.05	- 105	-112.4
6	3	0.05	- 98	-104.4
3	2	0.05	- 100.5	-113.0
1	1	0.05	- 105	-109.5
10	10	0.10	- 105	-113.1
6	3	0.10	- 98	-104.2
3	2	0.10	- 100.5	-113.5
1	1	0.10	- 105	-109.9
10	10	0.45	- 105	-112.9
6	3	0.45	- 98	-104.1
3	2	0.45	- 100.5	-113.1
1	1	0.45	- 105	-109.6
10	10	1.00	- 105	-113.0
6	3	1.00	- 98	-104.1
3	2	1.00	- 100.5	-112.8
1	1	1.00	- 105	-109.6
10	10	3.00	- 105	-108.8
6	3	3.00	- 98	-103.5
3	2	3.00	- 100.5	-109.0
1	1	3.00	- 105	-107.5
10	10	7.00	- 105	-109.4
6	3	7.00	- 98	-103.9
3	2	7.00	- 100.5	-109.2
1	1	7.00	- 105	-107.5
10	10	20.00	- 105	-109.5
6	3	20.00	- 98	-103.9
3	2	20.00	- 100.5	-109.1
1	1	20.00	- 105	-108.2

21.8 THD+N Inherent Distortion, Analyzer Bandwidth 22 kHz, Channel 2

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Bandwidth 20 Hz - 22 kHz; Output BAL; Low Dist On

Range /V	U_in /V	Freq /kHz	DUL /dB	Actual /dB
10	10	0.02	- 105	-112.9
6	3	0.02	- 98	-104.3
3	2	0.02	- 100.5	-112.8
1	1	0.02	- 105	-109.4
10	10	0.05	- 105	-112.9
6	3	0.05	- 98	-104.3
3	2	0.05	- 100.5	-113.5
1	1	0.05	- 105	-109.8
10	10	0.10	- 105	-113.6
6	3	0.10	- 98	-104.4
3	2	0.10	- 100.5	-113.5
1	1	0.10	- 105	-109.7
10	10	0.45	- 105	-113.4
6	3	0.45	- 98	-104.5
3	2	0.45	- 100.5	-113.3
1	1	0.45	- 105	-109.6
10	10	1.00	- 105	-113.2
6	3	1.00	- 98	-104.5
3	2	1.00	- 100.5	-112.9
1	1	1.00	- 105	-109.5
10	10	3.00	- 105	-108.9
6	3	3.00	- 98	-104.0
3	2	3.00	- 100.5	-109.3
1	1	3.00	- 105	-107.9
10	10	7.00	- 105	-109.0
6	3	7.00	- 98	-103.9
3	2	7.00	- 100.5	-108.9
1	1	7.00	- 105	-107.5
10	10	20.00	- 105	-109.6
6	3	20.00	- 98	-104.2
3	2	20.00	- 100.5	-109.0
1	1	20.00	- 105	-108.1

21.9 THD+N Inherent Distortion, Ana. Band 250 kHz, Freq Lim 20 Hz - 22 kHz, Ch 1

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Output BAL; Low Dist On

Range /V	U_in /V	Freq /kHz	DUL /dB	Actual /dB
10	10	0.50	- 97	-113.0
6	3	0.50	- 95	-104.3
3	2	0.50	- 95	-112.9
1	1	0.50	- 97	-109.5
10	10	1.00	- 97	-112.7
6	3	1.00	- 95	-104.7
3	2	1.00	- 95	-112.3
1	1	1.00	- 97	-109.5
10	10	7.00	- 97	-109.3
6	3	7.00	- 95	-103.7
3	2	7.00	- 95	-108.6
1	1	7.00	- 97	-107.4
10	10	20.00	- 97	-109.0
6	3	20.00	- 95	-104.2
3	2	20.00	- 95	-108.7
1	1	20.00	- 97	-108.1

21.10 THD+N Inherent Distortion, Ana. Band 250 kHz, Freq Lim 20 Hz - 22 kHz, Ch 2

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Output BAL; Low Dist On

Range /V	U_in /V	Freq /kHz	DUL /dB	Actual /dB
10	10	0.50	- 97	-113.2
6	3	0.50	- 95	-104.6
3	2	0.50	- 95	-113.0
1	1	0.50	- 97	-109.9
10	10	1.00	- 97	-112.7
6	3	1.00	- 95	-104.5
3	2	1.00	- 95	-112.7
1	1	1.00	- 97	-109.5
10	10	7.00	- 97	-108.8
6	3	7.00	- 95	-104.2
3	2	7.00	- 95	-108.4
1	1	7.00	- 97	-107.7
10	10	20.00	- 97	-109.2
6	3	20.00	- 95	-104.2
3	2	20.00	- 95	-108.9
1	1	20.00	- 97	-108.0

21.11 THD+N Inherent Distortion, Ana. Band 250 kHz, Freq Lim 20 Hz - 80 kHz, Ch 1

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Output BAL; Low Dist On

Range /V	U_in /V	Freq /kHz	DUL /dB	Actual /dB
10	10	0.50	- 90	-109.7
6	3	0.50	- 90	-100.6
3	2	0.50	- 90	-108.0
1	1	0.50	- 90	-104.5
10	10	1.00	- 90	-109.6
6	3	1.00	- 90	-100.8
3	2	1.00	- 90	-108.2
1	1	1.00	- 90	-104.5
10	10	7.00	- 90	-107.5
6	3	7.00	- 90	-100.6
3	2	7.00	- 90	-106.0
1	1	7.00	- 90	-103.5
10	10	22.00	- 90	-105.2
6	3	22.00	- 90	-100.5
3	2	22.00	- 90	-104.7
1	1	22.00	- 90	-102.7

21.12 THD+N Inherent Distortion, Ana. Band 250 kHz, Freq Lim 20 Hz - 80 kHz, Ch 2

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Output BAL; Low Dist On

Range /V	U_in /V	Freq /kHz	DUL /dB	Actual /dB
10	10	0.50	- 90	-110.0
6	3	0.50	- 90	-100.8
3	2	0.50	- 90	-108.1
1	1	0.50	- 90	-104.5
10	10	1.00	- 90	-109.7
6	3	1.00	- 90	-100.8
3	2	1.00	- 90	-108.4
1	1	1.00	- 90	-104.4
10	10	7.00	- 90	-107.1
6	3	7.00	- 90	-100.8
3	2	7.00	- 90	-106.3
1	1	7.00	- 90	-103.6
10	10	22.00	- 90	-105.4
6	3	22.00	- 90	-100.3
3	2	22.00	- 90	-104.8
1	1	22.00	- 90	-103.0

21.13 THD+N Inherent Distortion, Ana. Band 250 kHz, Freq Lim 20 Hz - 250 kHz, Ch 1

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Output BAL; Low Dist On

Range /V	U_in /V	Freq /kHz	DUL /dB	Actual /dB
10	10	0.50	- 84	-105.7
6	3	0.50	- 84	-96.8
3	2	0.50	- 84	-102.9
1	1	0.50	- 84	-99.1
10	10	1.00	- 84	-105.6
6	3	1.00	- 84	-96.7
3	2	1.00	- 84	-103.0
1	1	1.00	- 84	-99.1
10	10	7.00	- 84	-104.8
6	3	7.00	- 84	-96.7
3	2	7.00	- 84	-102.2
1	1	7.00	- 84	-98.9
10	10	22.00	- 84	-103.2
6	3	22.00	- 84	-96.6
3	2	22.00	- 84	-101.5
1	1	22.00	- 84	-98.7
10	10	50.00	- 84	-93.4
6	3	50.00	- 84	-92.1
3	2	50.00	- 84	-93.2
1	1	50.00	- 84	-92.8
10	10	100.00	- 84	-96.2
6	3	100.00	- 84	-94.1
3	2	100.00	- 84	-94.5
1	1	100.00	- 84	-95.7

21.14 THD+N Inherent Distortion, Ana. Band 250 kHz, Freq Lim 20 Hz - 250 kHz, Ch 2

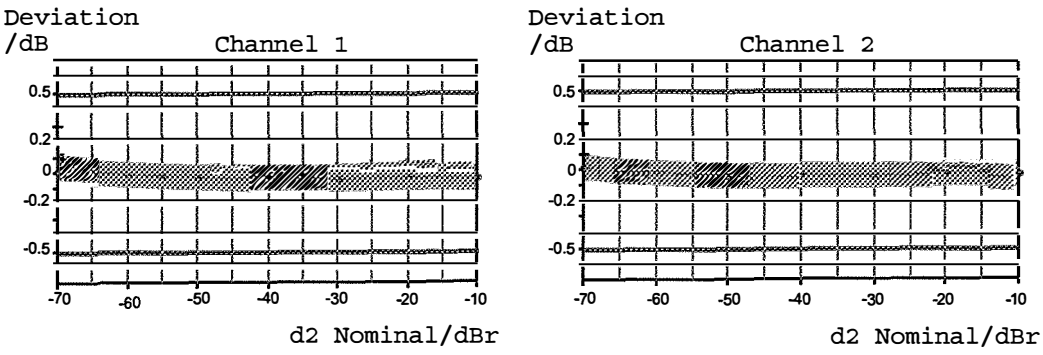
Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Output BAL; Low Dist On

Range /V	U_in /V	Freq /kHz	DUL /dB	Actual /dB
10	10	0.50	- 84	-105.7
6	3	0.50	- 78	-96.9
3	2	0.50	- 80.5	-102.9
1	1	0.50	- 84	-99.1
10	10	1.00	- 84	-105.7
6	3	1.00	- 78	-96.9
3	2	1.00	- 80.5	-103.0
1	1	1.00	- 84	-99.2
10	10	7.00	- 84	-104.5
6	3	7.00	- 78	-96.7
3	2	7.00	- 80.5	-102.2
1	1	7.00	- 84	-98.9
10	10	22.00	- 84	-103.3
6	3	22.00	- 78	-96.7
3	2	22.00	- 80.5	-101.6
1	1	22.00	- 84	-98.8
10	10	50.00	- 84	-93.6
6	3	50.00	- 78	-92.3
3	2	50.00	- 80.5	-93.5
1	1	50.00	- 84	-93.0
10	10	100.00	- 84	-96.2
6	3	100.00	- 78	-94.1
3	2	100.00	- 80.5	-95.3
1	1	100.00	- 84	-96.1

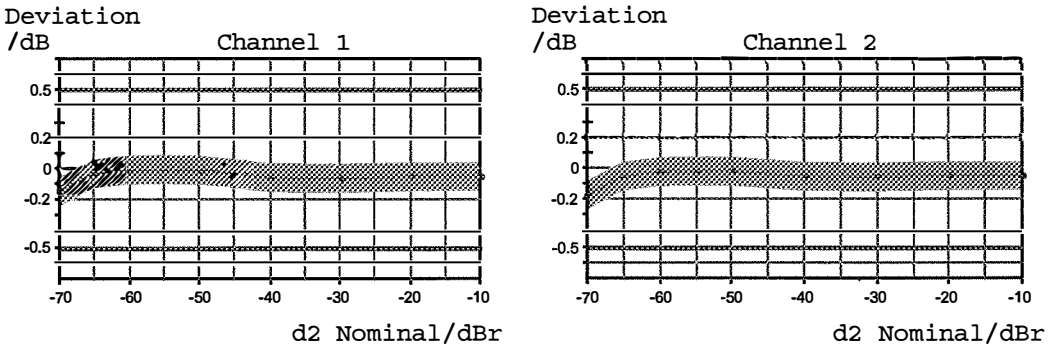
21.15 Measurement Accuracy THD, Analyzer Bandwidth 22 kHz

Range 3 V; f1 Level = 2 V; f1 Frequency = 9 kHz



21.16 Measurement Accuracy THD, Analyzer Bandwidth 250 kHz

Range 3 V; f1 Level = 2 V; f1 Frequency = 21 kHz



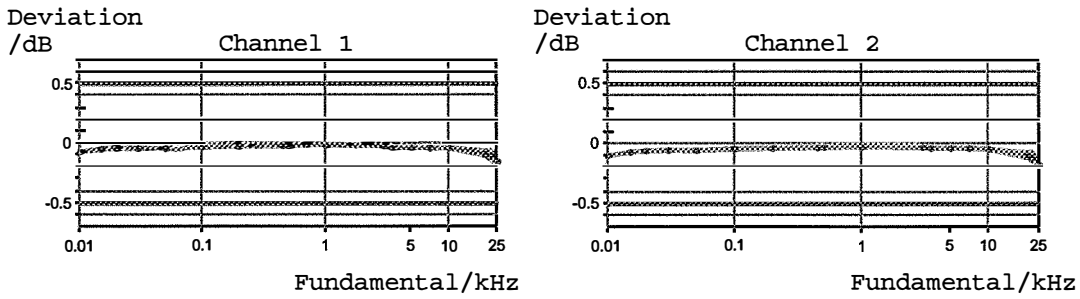
21.17 THD+N Measurement Accuracy

Analyzer Bandwidth 22 kHz, f1 Level = 3 V, f1 Frequency = 1 kHz

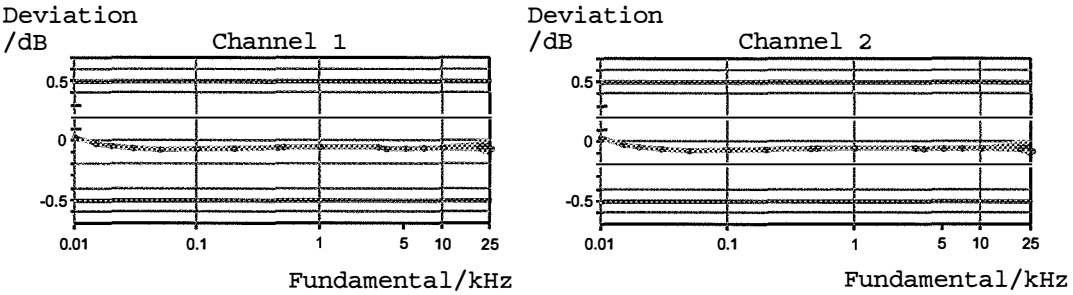
Dyn Mode	d2 Nominal /dB	DUL /dB	DLL /dB	Actual /dB	MU /dB
<<Channel 1>>					
Precision	- 40	0.5	- 0.5	-0.05	0.01
FAST rej. NARROW	- 40	0.5	- 0.5	0.00	0.01
FAST rej. WIDE	- 40	0.5	- 0.5	-0.06	0.01
<<Channel 2>>					
Precision	- 40	0.5	- 0.5	-0.05	0.01
FAST rej. NARROW	- 40	0.5	- 0.5	0.00	0.01
FAST rej. WIDE	- 40	0.5	- 0.5	-0.07	0.01

21.18 Notchfilter Frequency Response, Analyzer Bandwidth 80 kHz

f1 Level = 2 V; d2 Nominal = -50 dB

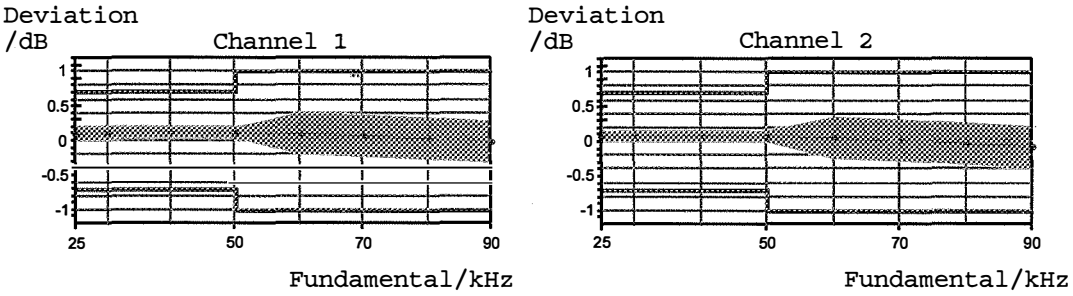


f1 Level = 2 V; d2 Nominal = -30 dB

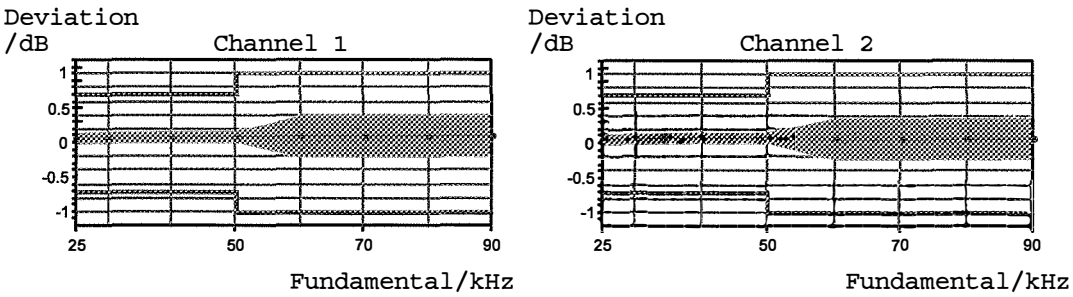


21.19 Notchfilter Frequency Response, Analyzer Bandwidth 250 kHz

f1 Level = 2 V; d2 Nominal = -50 dB



f1 Level = 2 V; d2 Nominal = -30 dB



22. ANALOG ANALYZER: INTERMODULATION DISTORTION (MOD DIST)

22.1 Mod Dist Inherent Distortion, Analyzer Bandwidth 22 kHz, Channel 1

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Level /Veff	Upper Freq /kHz	Lower Freq /Hz	DUL /dB	Actual /dB
5	4	30	- 100	-107.7
5	4	200	- 100	-108.1
5	4	500	- 100	-108.8
5	7	60	- 100	-104.9
5	7	200	- 100	-104.9
5	7	500	- 100	-104.8
5	15	30	- 96	-101.6
5	15	200	- 96	-101.2
5	15	500	- 96	-102.7
5	20	60	- 96	-100.5
5	20	200	- 96	-100.5
5	20	500	- 96	-101.4
2.5	4	30	- 100	-116.9
2.5	4	200	- 100	-115.7
2.5	4	500	- 100	-115.2
2.5	7	60	- 100	-112.8
2.5	7	200	- 100	-112.7
2.5	7	500	- 100	-112.1
2.5	15	30	- 96	-105.5
2.5	15	200	- 96	-105.6
2.5	15	500	- 96	-104.8
2.5	20	60	- 96	-105.8
2.5	20	200	- 96	-105.9
2.5	20	500	- 96	-104.8

22.2 Mod Dist Inherent Distortion, Analyzer Bandwidth 22 kHz, Channel 2

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Level /Veff	Upper Freq /kHz	Lower Freq /Hz	DUL /dB	Actual /dB
5	4	30	- 100	-108.3
5	4	200	- 100	-108.1
5	4	500	- 100	-106.5
5	7	60	- 100	-104.8
5	7	200	- 100	-103.7
5	7	500	- 100	-105.6
5	15	30	- 96	-101.7
5	15	200	- 96	-101.3
5	15	500	- 96	-101.3
5	20	60	- 96	-100.7
5	20	200	- 96	-100.7
5	20	500	- 96	-100.2

2.5	4	30	- 100	-122.2
2.5	4	200	- 100	-123.4
2.5	4	500	- 100	-118.4
2.5	7	60	- 100	-117.1
2.5	7	200	- 100	-117.1
2.5	7	500	- 100	-114.5
2.5	15	30	- 96	-108.9
2.5	15	200	- 96	-108.5
2.5	15	500	- 96	-107.7
2.5	20	60	- 96	-105.8
2.5	20	200	- 96	-106.0
2.5	20	500	- 96	-104.9

22.3 Mod Dist Inherent Distortion, Analyzer Bandwidth 250 kHz, Channel 1

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Level /Veff	Upper Freq /kHz	Lower Freq /Hz	DUL /dB	Actual /dB
5	4	30	- 96	-96.9
5	4	200	- 96	-106.8
5	4	500	- 96	-105.3
5	7	60	- 96	-105.6
5	7	200	- 96	-103.1
5	7	500	- 96	-103.1
5	15	30	- 96	-102.1
5	15	200	- 96	-101.2
5	20	200	- 96	-100.5
5	20	500	- 96	-99.9
5	50	200	- 90	-96.2
5	50	500	- 90	-96.1
5	100	500	- 80	-93.4
2.5	4	200	- 96	-114.8
2.5	4	500	- 96	-108.1
2.5	7	200	- 96	-112.8
2.5	7	500	- 96	-109.8
2.5	20	200	- 96	-105.8
2.5	20	500	- 96	-104.5
2.5	50	200	- 90	-96.6
2.5	50	500	- 90	-95.7
2.5	100	500	- 80	-88.0

22.4 Mod Dist Inherent Distortion, Analyzer Bandwidth 250 kHz, Channel 2

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Level /Veff	Upper Freq /kHz	Lower Freq /Hz	DUL /dB	Actual /dB
5	4	30	- 96	-98.2
5	4	200	- 96	-106.1
5	4	500	- 96	-107.0
5	7	60	- 96	-105.2
5	7	200	- 96	-105.2
5	7	500	- 96	-103.9
5	15	30	- 96	-102.3
5	15	200	- 96	-101.7
5	20	200	- 96	-100.5
5	20	500	- 96	-100.8
5	50	200	- 90	-96.7
5	50	500	- 90	-97.1
5	100	500	- 80	-93.8
2.5	4	200	- 96	-114.0
2.5	4	500	- 96	-108.0
2.5	7	200	- 96	-115.2
2.5	7	500	- 96	-110.4
2.5	20	200	- 96	-105.5
2.5	20	500	- 96	-106.6
2.5	50	200	- 90	-95.9
2.5	50	500	- 90	-95.8
2.5	100	500	- 80	-88.2

22.5 Measurement Accuracy MOD DIST, Analyzer Bandwidth 22 kHz

Level reference = f_hf with 0.7 V
Unit of interfering frequencies U3-U6 = dBr related to f_hf

interfering frequencies :

U3 f_hf-2*f_nf
U4 f_hf-f_nf
U5 f_hf+f_nf
U6 f_hf+2*f_nf

f_hf /kHz	f_nf /Hz	U3	U4	U5	U6	Nom. /dB	DL /dB	Actual /dB	MU /dB
<<Channel 1>>									
4	500	- 40	-140	-140	-140	-40	±0.50	0.00	0.05
4	500	- 60	- 60	- 60	- 60	-51	±0.50	0.00	0.05
4	500	-140	- 66	- 66	-140	-60	±0.50	-0.01	0.05
4	500	- 60	-140	-140	-140	-60	±0.50	-0.04	0.05
4	500	- 70	-140	-140	-140	-70	±0.50	-0.01	0.07
7	60	- 74	- 80	- 80	-140	-71	±0.50	0.03	0.10
7	60	-140	- 66	- 66	-140	-60	±0.50	0.02	0.05
15	200	- 60	- 60	- 60	- 60	-51	±0.50	0.04	0.05
15	200	- 80	- 80	- 80	- 80	-71	±0.50	0.02	0.10
20	500	-140	-140	-140	- 70	-70	±0.50	0.01	0.07

<<Channel 2>>									
4	500	- 40	-140	-140	-140	-40	±0.50	0.00	0.05
4	500	- 60	- 60	- 60	- 60	-51	±0.50	0.00	0.05
4	500	-140	- 66	- 66	-140	-60	±0.50	-0.01	0.05
4	500	- 60	-140	-140	-140	-60	±0.50	-0.05	0.05
4	500	- 70	-140	-140	-140	-70	±0.50	-0.02	0.07
7	60	- 74	- 80	- 80	-140	-71	±0.50	0.04	0.10
7	60	-140	- 66	- 66	-140	-60	±0.50	0.02	0.05
15	200	- 60	- 60	- 60	- 60	-51	±0.50	0.03	0.05
15	200	- 80	- 80	- 80	- 80	-71	±0.50	-0.01	0.10
20	500	-140	-140	-140	- 70	-70	±0.50	0.03	0.07

22.6 Measurement Accuracy MOD DIST, Analyzer Bandwidth 250 kHz

Level reference = f_hf with 0.7 V
Units of interfering frequencies U3-U6 = dBr related to f_hf

interfering frequencies:

U3 f_hf-2*f_nf
U4 f_hf-f_nf
U5 f_hf+f_nf
U6 f_hf+2*f_nf

f_hf /kHz	f_nf /Hz	U3	U4	U5	U6	Nom. /dB	DL /dB	Actual /dB	MU /dB
<<Channel 1>>									
4	500	- 20	-140	-140	-140	-20	±0.50	0.00	0.05
7	200	- 60	- 60	- 60	- 60	-51	±0.50	0.04	0.05
15	300	-140	-140	- 60	-140	-60	±0.50	0.05	0.05
20	500	- 30	- 30	-140	-140	-27	±0.50	0.01	0.05
50	400	- 30	- 30	-140	-140	-27	±0.75	0.01	0.12
75	500	- 50	-140	-140	- 50	-44	±0.75	0.02	0.23
<<Channel 2>>									
4	500	- 20	-140	-140	-140	-20	±0.50	0.00	0.05
7	200	- 60	- 60	- 60	- 60	-51	±0.50	0.03	0.05
15	300	-140	-140	- 60	-140	-60	±0.50	0.06	0.05
20	500	- 30	- 30	-140	-140	-27	±0.50	0.01	0.05
50	400	- 30	- 30	-140	-140	-27	±0.75	0.01	0.12
75	500	- 50	-140	-140	- 50	-44	±0.75	0.02	0.23

23. ANALOG ANALYZER: DIFFERENCE FREQUENCY DISTORTION (DFD)

23.1 Inherent Distortion DFD-d2 (IEC268), Analyzer Bandwidth 22 kHz, Channel 1

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Ueff /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
4	7	80	- 112	-131.4
4	7	225	- 112	-132.0
4	7	525	- 112	-126.6
4	7	975	- 112	-135.2
4	7	2000	- 112	-122.4
4	15	80	- 112	-129.2
4	15	225	- 112	-129.0
4	15	525	- 112	-133.6
4	15	975	- 112	-126.2
4	15	2000	- 112	-126.7
4	20	80	- 112	-129.1
4	20	225	- 112	-127.8
4	20	525	- 112	-130.1
4	20	975	- 112	-125.2
4	20	2000	- 112	-125.1
2.3	7	80	- 112	-142.7
2.3	7	225	- 112	-143.3
2.3	7	525	- 112	-138.9
2.3	7	975	- 112	-142.1
2.3	7	2000	- 112	-124.2
2.3	15	80	- 112	-140.5
2.3	15	225	- 112	-139.8
2.3	15	525	- 112	-138.8
2.3	15	975	- 112	-133.5
2.3	15	2000	- 112	-131.3
2.3	20	80	- 112	-136.6
2.3	20	225	- 112	-136.1
2.3	20	525	- 112	-132.4
2.3	20	975	- 112	-134.9
2.3	20	2000	- 112	-129.1

23.2 Inherent Distortion DFD-d2 (IEC268), Analyzer Bandwidth 22 kHz, Channel 2

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Ueff /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
4	7	80	- 112	-138.2
4	7	225	- 112	-134.6
4	7	525	- 112	-136.6
4	7	975	- 112	-128.5
4	7	2000	- 112	-125.0
4	15	80	- 112	-129.3
4	15	225	- 112	-128.3
4	15	525	- 112	-128.5
4	15	975	- 112	-126.4
4	15	2000	- 112	-125.6
4	20	80	- 112	-127.5
4	20	225	- 112	-125.8
4	20	525	- 112	-129.1
4	20	975	- 112	-126.9
4	20	2000	- 112	-122.8
2.3	7	80	- 112	-133.7
2.3	7	225	- 112	-134.1
2.3	7	525	- 112	-132.5
2.3	7	975	- 112	-130.8
2.3	7	2000	- 112	-123.8
2.3	15	80	- 112	-135.2
2.3	15	225	- 112	-138.0
2.3	15	525	- 112	-135.5
2.3	15	975	- 112	-133.8
2.3	15	2000	- 112	-124.7
2.3	20	80	- 112	-144.5
2.3	20	225	- 112	-141.7
2.3	20	525	- 112	-135.9
2.3	20	975	- 112	-139.2
2.3	20	2000	- 112	-131.9

23.3 Inherent Distortion DFD-d2 (IEC268), Analyzer Bandwidth 250 kHz, Channel 1

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Ueff /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
4	7	225	- 110	-132.3
4	7	525	- 110	-135.5
4	7	975	- 110	-127.7
4	7	2000	- 110	-111.3
4	20	225	- 110	-131.2
4	20	525	- 110	-129.6
4	20	975	- 110	-127.7
4	20	2000	- 110	-125.4
4	50	225	- 95	-116.6
4	50	525	- 95	-116.4
4	50	975	- 95	-116.0
4	50	2000	- 95	-114.9
4	100	225	- 80	-104.9
4	100	525	- 80	-104.8
4	100	975	- 80	-104.7
4	100	2000	- 80	-104.7
2.3	7	225	- 110	-145.4
2.3	7	525	- 110	-138.5
2.3	7	975	- 110	-137.4
2.3	7	2000	- 110	-115.8
2.3	20	225	- 110	-132.1
2.3	20	525	- 110	-129.9
2.3	20	975	- 110	-136.2
2.3	20	2000	- 110	-133.4
2.3	50	225	- 95	-111.3
2.3	50	525	- 95	-111.3
2.3	50	975	- 95	-111.2
2.3	50	2000	- 95	-112.0
2.3	100	225	- 80	-99.0
2.3	100	525	- 80	-99.1
2.3	100	975	- 80	-99.0
2.3	100	2000	- 80	-99.3

23.4 Inherent Distortion DFD-d2 (IEC268), Analyzer Bandwidth 250 kHz, Channel 2

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Ueff /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
4	7	225	- 110	-132.7
4	7	525	- 110	-132.2
4	7	975	- 110	-130.6
4	7	2000	- 110	-123.4
4	20	225	- 110	-129.2
4	20	525	- 110	-129.0
4	20	975	- 110	-124.9
4	20	2000	- 110	-123.7
4	50	225	- 95	-115.8
4	50	525	- 95	-116.0
4	50	975	- 95	-115.2
4	50	2000	- 95	-114.8
4	100	225	- 80	-103.9
4	100	525	- 80	-103.4
4	100	975	- 80	-104.0
4	100	2000	- 80	-103.8
2.3	7	225	- 110	-137.6
2.3	7	525	- 110	-138.3
2.3	7	975	- 110	-132.2
2.3	7	2000	- 110	-117.7
2.3	20	225	- 110	-145.5
2.3	20	525	- 110	-137.5
2.3	20	975	- 110	-136.0
2.3	20	2000	- 110	-133.0
2.3	50	225	- 95	-112.0
2.3	50	525	- 95	-112.3
2.3	50	975	- 95	-112.4
2.3	50	2000	- 95	-112.2
2.3	100	225	- 80	-99.6
2.3	100	525	- 80	-99.6
2.3	100	975	- 80	-99.6
2.3	100	2000	- 80	-99.6

23.5 Inherent Distortion DFD-d3 (IEC268), Analyzer Bandwidth 22 kHz, Channel 1

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Ueff /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
4.0	7	80	- 96	-114.7
4.0	7	225	- 96	-118.3
4.0	7	525	- 96	-125.3
4.0	7	975	- 96	-121.6
4.0	7	2000	- 96	-123.1
4.0	15	80	- 96	-106.8
4.0	15	225	- 96	-114.6
4.0	15	525	- 96	-115.7
4.0	15	975	- 96	-121.9
4.0	15	2000	- 96	-124.3
4.0	20	80	- 96	-101.7
4.0	20	225	- 96	-107.0
4.0	20	525	- 96	-119.0
4.0	20	975	- 96	-118.9
4.0	20	2000	- 96	-122.1
2.0	7	80	- 96	-117.7
2.0	7	225	- 96	-119.8
2.0	7	525	- 96	-120.3
2.0	7	975	- 96	-124.9
2.0	7	2000	- 96	-127.2
2.0	15	80	- 96	-114.8
2.0	15	225	- 96	-115.1
2.0	15	525	- 96	-117.9
2.0	15	975	- 96	-123.2
2.0	15	2000	- 96	-125.3
2.0	20	80	- 96	-107.5
2.0	20	225	- 96	-113.4
2.0	20	525	- 96	-117.0
2.0	20	975	- 96	-119.6
2.0	20	2000	- 96	-122.3

23.6 Inherent Distortion DFD-d3 (IEC268), Analyzer Bandwidth 22 kHz, Channel 2

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Ueff /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
4.0	7	80	- 96	-114.7
4.0	7	225	- 96	-118.4
4.0	7	525	- 96	-122.2
4.0	7	975	- 96	-120.4
4.0	7	2000	- 96	-125.9
4.0	15	80	- 96	-106.4
4.0	15	225	- 96	-114.0
4.0	15	525	- 96	-113.9
4.0	15	975	- 96	-120.6
4.0	15	2000	- 96	-124.4
4.0	20	80	- 96	-101.9
4.0	20	225	- 96	-106.9
4.0	20	525	- 96	-118.6
4.0	20	975	- 96	-120.6
4.0	20	2000	- 96	-120.1
2.0	7	80	- 96	-117.9
2.0	7	225	- 96	-120.5
2.0	7	525	- 96	-121.3
2.0	7	975	- 96	-125.6
2.0	7	2000	- 96	-128.5
2.0	15	80	- 96	-114.6
2.0	15	225	- 96	-115.7
2.0	15	525	- 96	-117.9
2.0	15	975	- 96	-121.9
2.0	15	2000	- 96	-124.7
2.0	20	80	- 96	-107.8
2.0	20	225	- 96	-113.2
2.0	20	525	- 96	-116.5
2.0	20	975	- 96	-118.7
2.0	20	2000	- 96	-121.9

23.7 Inherent Distortion DFD-d3 (IEC268), Analyzer Bandwidth 250 kHz, Channel 1

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Ueff /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
4.0	7	225	- 80	-110.4
4.0	7	525	- 80	-110.4
4.0	7	975	- 80	-114.5
4.0	7	2000	- 80	-113.4
4.0	20	225	- 80	-105.9
4.0	20	525	- 80	-110.2
4.0	20	975	- 80	-109.6
4.0	20	2000	- 80	-111.2
4.0	50	225	- 75	-104.4
4.0	50	525	- 75	-107.7
4.0	50	975	- 75	-107.6
4.0	50	2000	- 75	-110.1
4.0	100	225	- 70	-94.2
4.0	100	525	- 70	-95.2
4.0	100	975	- 70	-94.5
4.0	100	2000	- 70	-96.0
2.0	7	225	- 80	-114.2
2.0	7	525	- 80	-111.8
2.0	7	975	- 80	-117.1
2.0	7	2000	- 80	-110.6
2.0	20	225	- 80	-111.4
2.0	20	525	- 80	-112.4
2.0	20	975	- 80	-114.4
2.0	20	2000	- 80	-112.8
2.0	50	225	- 75	-107.6
2.0	50	525	- 75	-108.1
2.0	50	975	- 75	-110.9
2.0	50	2000	- 75	-112.1
2.0	100	225	- 70	-102.6
2.0	100	525	- 70	-106.7
2.0	100	975	- 70	-105.1
2.0	100	2000	- 70	-108.5

23.8 Inherent Distortion DFD-d3 (IEC268), Analyzer Bandwidth 250 kHz, Channel 2

Uncertainty can not be fixed.
Because the reference signal is generated by two low distortion generators. Both generators are sufficiently uncoupled by the resistance network. An inherent distortion can be excluded.

Ueff /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
4.0	7	225	- 80	-108.3
4.0	7	525	- 80	-110.0
4.0	7	975	- 80	-111.5
4.0	7	2000	- 80	-112.4
4.0	20	225	- 80	-106.8
4.0	20	525	- 80	-109.6
4.0	20	975	- 80	-109.5
4.0	20	2000	- 80	-110.2
4.0	50	225	- 75	-103.3
4.0	50	525	- 75	-105.5
4.0	50	975	- 75	-107.2
4.0	50	2000	- 75	-111.1
4.0	100	225	- 70	-94.0
4.0	100	525	- 70	-95.3
4.0	100	975	- 70	-94.1
4.0	100	2000	- 70	-96.0
2.0	7	225	- 80	-113.5
2.0	7	525	- 80	-114.5
2.0	7	975	- 80	-118.6
2.0	7	2000	- 80	-111.6
2.0	20	225	- 80	-112.0
2.0	20	525	- 80	-111.0
2.0	20	975	- 80	-111.6
2.0	20	2000	- 80	-109.7
2.0	50	225	- 75	-108.1
2.0	50	525	- 75	-107.4
2.0	50	975	- 75	-112.2
2.0	50	2000	- 75	-110.2
2.0	100	225	- 70	-103.5
2.0	100	525	- 70	-106.2
2.0	100	975	- 70	-104.5
2.0	100	2000	- 70	-110.9

23.9 Measurement Accuracy DFD-d2, Analyzer Bandwidth 22 kHz

M/U Freq = Mean Frequency (IEC 268)
M/U Freq = Upper Frequency (IEC 118)
Dynamic Mode = Prec

M/U Freq /kHz	Diff Freq /Hz	U3 /dBr	Meas Mode	Nominal /dB	DL /dB	Dev. /dB	MU /dB
<<Channel 1>>							
7	400	- 20	IEC 268	- 20	±0.50	-0.02	0.02
7	400	- 50	IEC 268	- 50	±0.50	0.07	0.03
7	400	- 60	IEC 268	- 60	±0.50	0.07	0.09
5	125	- 40	IEC 118	- 34	±0.50	0.00	0.02
7	125	- 60	IEC 118	- 54	±0.50	0.11	0.09

<<Channel 2>>							
7	400	- 20	IEC 268	- 20	±0.50	-0.02	0.02
7	400	- 50	IEC 268	- 50	±0.50	0.08	0.03
7	400	- 60	IEC 268	- 60	±0.50	0.08	0.09
5	125	- 40	IEC 118	- 34	±0.50	0.00	0.02
7	125	- 60	IEC 118	- 54	±0.50	0.11	0.09

23.10 Measurement Accuracy DFD-d2, Analyzer Bandwidth 250 kHz

MeanFreq /kHz	Diff Freq /Hz	U3 /dBr	Meas Mode	Nominal /dB	DL /dB	Dev. /dB	MU /dB
<<Channel 1>>							
5	200	- 40	IEC 268	- 40	±0.50	-0.02	0.02
20	300	- 60	IEC 268	- 60	±0.50	0.09	0.09
50	500	- 50	IEC 268	- 50	±0.75	0.07	0.07
75	1000	- 60	IEC 268	- 60	±1.00	0.06	0.14
75	2000	- 60	IEC 268	- 60	±1.00	0.09	0.14
<<Channel 2>>							
5	200	- 40	IEC 268	- 40	±0.50	-0.02	0.02
20	300	- 60	IEC 268	- 60	±0.50	0.09	0.09
50	500	- 50	IEC 268	- 50	±0.75	0.08	0.07
75	1000	- 60	IEC 268	- 60	±1.00	0.09	0.14
75	2000	- 60	IEC 268	- 60	±1.00	0.17	0.14

23.11 Test DFD-d2 Analog-low-pass, Analyzer Bandwidth 22 kHz

Dynamic Mode = Prec

Mean Freq /kHz	Diff Freq /Hz	U3 /dBr	Meas Mode	Nominal /dB	DL /dB	Dev. /dB	MU /dB
<<Channel 1>>							
15	100	- 60	IEC 268	- 60	±0.50	0.09	0.09
15	200	- 60	IEC 268	- 60	±0.50	0.09	0.09
15	500	- 60	IEC 268	- 60	±0.50	0.07	0.09
15	1000	- 60	IEC 268	- 60	±0.50	0.02	0.09
15	2000	- 60	IEC 268	- 60	±0.50	0.05	0.09
<<Channel 2>>							
15	100	- 60	IEC 268	- 60	±0.50	0.09	0.09
15	200	- 60	IEC 268	- 60	±0.50	0.10	0.09
15	500	- 60	IEC 268	- 60	±0.50	0.08	0.09
15	1000	- 60	IEC 268	- 60	±0.50	0.05	0.09
15	2000	- 60	IEC 268	- 60	±0.50	0.13	0.09

23.12 Measurement Accuracy DFD-d3, Analyzer Bandwidth 22 kHz

M/U Freq = Mean Frequency (IEC 268)
M/U Freq = Upper Frequency (IEC 118)

M/U Freq /kHz	Diff Freq /Hz	U4 /dBr	U5 /dBr	Meas Mode	Nominal /dB	DL /dB	Dev. /dB	MU /dB
<<Channel 1>>								
15	100	- 60	- 60	IEC 268	- 54	±0.50	0.00	0.09
15	200	- 40	-140	IEC 268	- 40	±0.50	-0.02	0.02
15	500	-140	- 60	IEC 268	- 60	±0.50	-0.02	0.17
7	1000	- 20	- 60	IEC 268	- 20	±0.50	0.07	0.01
7	2000	- 60	- 60	IEC 268	- 54	±0.50	0.00	0.09
5	125	- 40	- 20	IEC 118	- 34	±0.50	0.00	0.01
7	125	- 60	- 60	IEC 118	- 54	±0.50	0.00	0.09
<<Channel 2>>								
15	100	- 60	- 60	IEC 268	- 54	±0.50	0.00	0.09
15	200	- 40	-140	IEC 268	- 40	±0.50	-0.02	0.02
15	500	-140	- 60	IEC 268	- 60	±0.50	-0.02	0.17
7	1000	- 20	- 60	IEC 268	- 20	±0.50	0.07	0.01
7	2000	- 60	- 60	IEC 268	- 54	±0.50	0.00	0.09
5	125	- 40	- 20	IEC 118	- 34	±0.50	0.00	0.01
7	125	- 60	- 60	IEC 118	- 54	±0.50	0.00	0.09

23.13 Measurement Accuracy DFD-d3, Analyzer Bandwidth 250 kHz

MeanFreq /kHz	Diff Freq /Hz	U4 /dBr	U5 /dBr	Meas Mode	Nominal /dB	DL /dB	Dev. /dB	MU /dB
<<Channel 1>>								
7	2000	- 60	- 60	IEC 268	- 54	±0.50	0.00	0.09
7	1000	- 20	-140	IEC 268	- 20	±0.50	-0.02	0.01
25	500	- 60	- 60	IEC 268	- 54	±0.75	0.01	0.10
75	200	-140	- 40	IEC 268	- 40	±1.00	0.00	0.12
<<Channel 2>>								
7	2000	- 60	- 60	IEC 268	- 54	±0.50	0.00	0.09
7	1000	- 20	-140	IEC 268	- 20	±0.50	-0.02	0.01
25	500	- 60	- 60	IEC 268	- 54	±0.75	0.01	0.10
75	200	-140	- 40	IEC 268	- 40	±1.00	0.00	0.12

24. ANALOG ANALYZER: DYNAMIC INTERMODULATION DISTORTION (DIM)

24.1 DIM Inherent Distortion, Analyzer Bandwidth 22 kHz, Channel 1

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Square/Sine 3.15/15 kHz; Output Type Unbal

Range /Vrms	Total Volt /Vrms	Bandwidth	DUL /dB	Actual /dB
10.0	10.00	100 kHz	- 90	-100.3
6.0	6.00	100 kHz	- 90	-104.2
3.0	3.00	100 kHz	- 100	-108.3
3.0	3.00	30 kHz	- 100	-108.7
3.0	1.50	100 kHz	- 95	-108.5
3.0	1.50	30 kHz	- 95	-109.8
1.8	1.50	100 kHz	- 98	-109.9
1.0	1.00	100 kHz	- 100	-110.2
0.6	0.50	100 kHz	- 98	-107.2

Total Volt 3 V; Range 3 V; Output Type Unbal

Square/Sine	Bandwidth	DUL /dB	Actual /dB
3.15/15 kHz	30 kHz	- 100	-109.4
3.15/15 kHz	100 kHz	- 100	-109.6
2.96/14 kHz	30 kHz	- 100	-108.2
2.96/14 kHz	100 kHz	- 100	-108.3

24.2 DIM Inherent Distortion, Analyzer Bandwidth 22 kHz, Channel 2

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

Square/Sine 3.15/15 kHz; Output Type Unbal

Range /Vrms	Total Volt /Vrms	Bandwidth	DUL /dB	Actual /dB
10.0	10.00	100 kHz	- 90	-100.0
6.0	6.00	100 kHz	- 90	-104.2
3.0	3.00	100 kHz	- 100	-109.4
3.0	3.00	30 kHz	- 100	-109.9
3.0	1.50	100 kHz	- 95	-109.1
3.0	1.50	30 kHz	- 95	-112.7
1.8	1.50	100 kHz	- 98	-110.6
1.0	1.00	100 kHz	- 100	-110.4
0.6	0.50	100 kHz	- 98	-108.9

Total Volt 3 V; Range 3 V; Output Type Unbal

Square/Sine	Bandwidth	DUL /dB	Actual /dB
3.15/15 kHz	30 kHz	- 100	-110.6
3.15/15 kHz	100 kHz	- 100	-109.2
2.96/14 kHz	30 kHz	- 100	-108.1
2.96/14 kHz	100 kHz	- 100	-108.8

24.3 DIM Measurement Accuracy, Analyzer Bandwidth 22 kHz, Channel 1

Ref Level 0.5 V; Output Type Unbal; Range 3 V;

Intermod. Signal	Freq /kHz	Volt /dBr	Nominal /dB	DL /dB	Actual /dB	MU /dB
---------- Square/Sine 3.15/15 kHz ----------						
U5	0.75	- 20	- 20	± 0.5	0.00	0.01
U1	11.85	- 60	- 60	± 0.5	-0.01	0.01
---------- Square/Sine 2.96/14 kHz ----------						
U5	0.80	- 20	- 20	± 0.5	0.00	0.01

25. Audio Monitor: Phone Out

Functiontest Phone Out

Nominal	Actual
pass	pass

Functiontest AUX Out

Nominal	Actual
pass	pass

26. Interface Test: USB, VGA,DVI, LAN

See convention {c}

	Nominal	Actual
All USB Ports	PASS	PASS
Ext. VGA Monitor	PASS	PASS
Ext. DVI Monitor (only with FMR 9/6)	PASS	-NI-
LAN	PASS	PASS

-NI- = not installed in this device

27. Digital Audio I/O 192 kHz (Option R&S UPV-B2)

27.1 Level accuracy

Audio Freq 997 Hz

Sample Freq /kHz	Function	Input	Nom. /FS	DLL /FS	DUL /FS	Act. /FS	MU /FS
48	RMS	Intern	0.5	0.4995	0.5005	0.50000	0.00001

27.2 THD+N

Audio Freq 997 Hz; 1 FS

Sample Freq /kHz	Function	Input	DUL	Act. /dB
96	THD+N	Intern	-142	-149.6

Total inherent distortion of analyzer and generator together as specified in datasheet. Therefore no measurement uncertainty can be fixed.

27.3 Generator sample frequency accuracy

Sample Freq /kHz	DL /ppm	Act. /ppm	MU /ppm
96	± 10	-0.5	0.1

28. B48: Level Error RMS

28.1 Level Error at 1 kHz

Input Voltage = 0.75 * Range

Channel 1

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.004	0.002
0.8	0	12	±0.05	0.001	0.002
3.0	0	0	±0.05	0.002	0.002
12.0	24	12	±0.05	-0.001	0.002
50.0	24	0	±0.05	0.000	0.002

Channel 2

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.009	0.002
0.8	0	12	±0.05	-0.002	0.002
3.0	0	0	±0.05	0.002	0.002
12.0	24	12	±0.05	-0.005	0.002
50.0	24	0	±0.05	-0.001	0.002

Channel 3

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.003	0.002
0.8	0	12	±0.05	0.000	0.002
3.0	0	0	±0.05	0.003	0.002
12.0	24	12	±0.05	-0.001	0.002
50.0	24	0	±0.05	0.001	0.002

Channel 4

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.005	0.002
0.8	0	12	±0.05	-0.001	0.002
3.0	0	0	±0.05	0.003	0.002
12.0	24	12	±0.05	-0.003	0.002
50.0	24	0	±0.05	0.001	0.002

Channel 5

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.047	0.002
0.8	0	12	±0.05	-0.039	0.002
3.0	0	0	±0.05	-0.032	0.002
12.0	24	12	±0.05	-0.035	0.002
50.0	24	0	±0.05	-0.031	0.002

Channel 6

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	0.001	0.002
0.8	0	12	±0.05	0.003	0.002
3.0	0	0	±0.05	0.004	0.002
12.0	24	12	±0.05	0.001	0.002
50.0	24	0	±0.05	0.002	0.002

Channel 7

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.004	0.002
0.8	0	12	±0.05	0.001	0.002
3.0	0	0	±0.05	0.004	0.002
12.0	24	12	±0.05	0.002	0.002
50.0	24	0	±0.05	0.004	0.002

Channel 8

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.009	0.002
0.8	0	12	±0.05	0.001	0.002
3.0	0	0	±0.05	0.005	0.002
12.0	24	12	±0.05	0.000	0.002
50.0	24	0	±0.05	0.003	0.002

Channel 9

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.007	0.002
0.8	0	12	±0.05	-0.003	0.002
3.0	0	0	±0.05	-0.001	0.002
12.0	24	12	±0.05	0.000	0.002
50.0	24	0	±0.05	-0.001	0.002

Channel 10

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.007	0.002
0.8	0	12	±0.05	-0.005	0.002
3.0	0	0	±0.05	-0.001	0.002
12.0	24	12	±0.05	-0.005	0.002
50.0	24	0	±0.05	-0.003	0.002

Channel 11

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.007	0.002
0.8	0	12	±0.05	-0.004	0.002
3.0	0	0	±0.05	-0.001	0.002
12.0	24	12	±0.05	0.001	0.002
50.0	24	0	±0.05	0.001	0.002

Channel 12

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.005	0.002
0.8	0	12	±0.05	-0.007	0.002
3.0	0	0	±0.05	-0.001	0.002
12.0	24	12	±0.05	-0.004	0.002
50.0	24	0	±0.05	-0.001	0.002

Channel 13

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.007	0.002
0.8	0	12	±0.05	-0.006	0.002
3.0	0	0	±0.05	-0.003	0.002
12.0	24	12	±0.05	-0.004	0.002
50.0	24	0	±0.05	-0.003	0.002

Channel 14

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.010	0.002
0.8	0	12	±0.05	-0.007	0.002
3.0	0	0	±0.05	-0.003	0.002
12.0	24	12	±0.05	-0.005	0.002
50.0	24	0	±0.05	-0.003	0.002

Channel 15

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.005	0.002
0.8	0	12	±0.05	-0.004	0.002
3.0	0	0	±0.05	-0.003	0.002
12.0	24	12	±0.05	-0.005	0.002
50.0	24	0	±0.05	-0.006	0.002

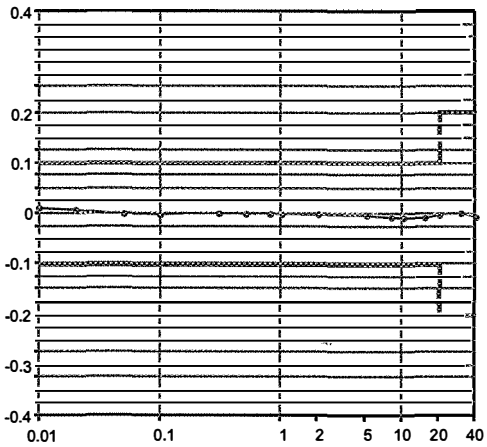
Channel 16

Range /V	Pre_Att /dB	Rangeamp. /dB	DL /dB	Actual /dB	MU /dB
0.2	0	24	±0.05	-0.013	0.002
0.8	0	12	±0.05	-0.008	0.002
3.0	0	0	±0.05	-0.004	0.002
12.0	24	12	±0.05	-0.007	0.002
50.0	24	0	±0.05	-0.006	0.002

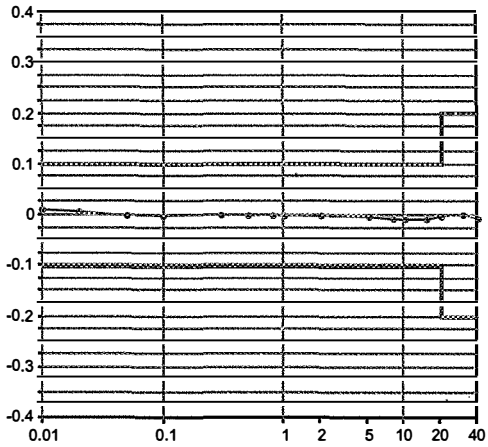
29. B48: Frequency Response Analyzer

Frequency Response Range 0.2 V

[dB] < Channel 1 >



[dB] < Channel 2 >



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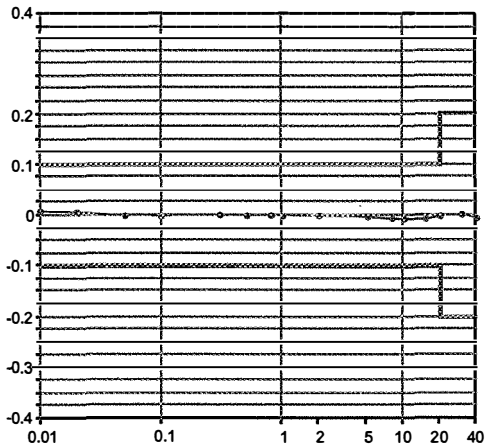
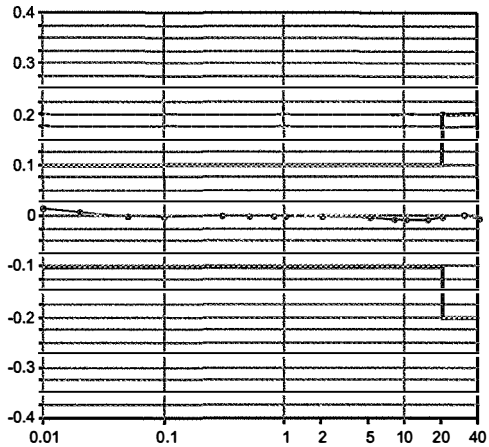
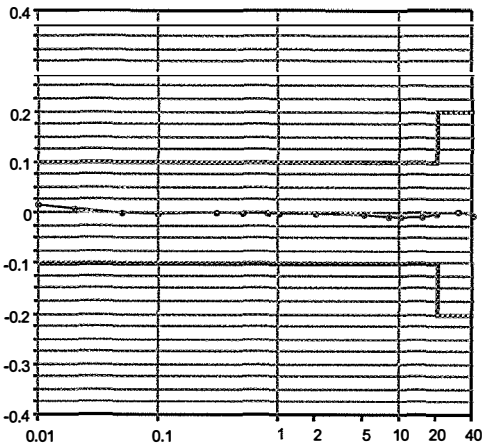


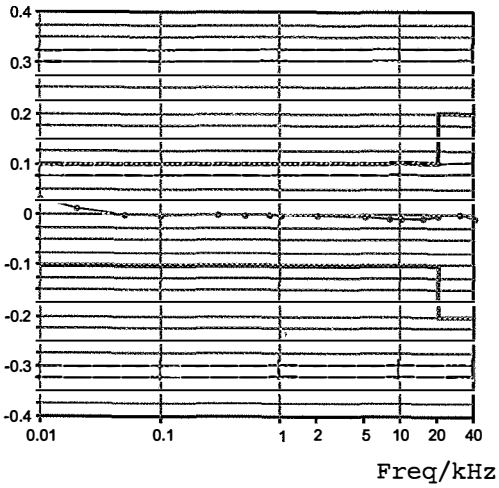
[dB] < Channel 4 >



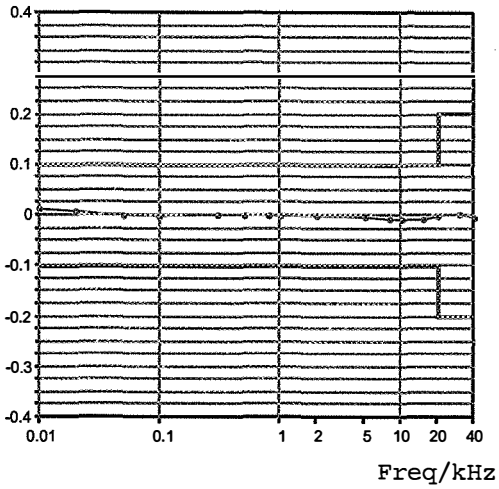
[dB] < Channel 5 >



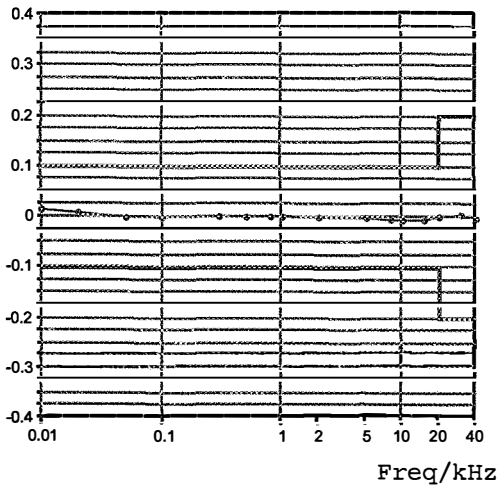
[dB] < Channel 6 >



[dB] < Channel 7 >

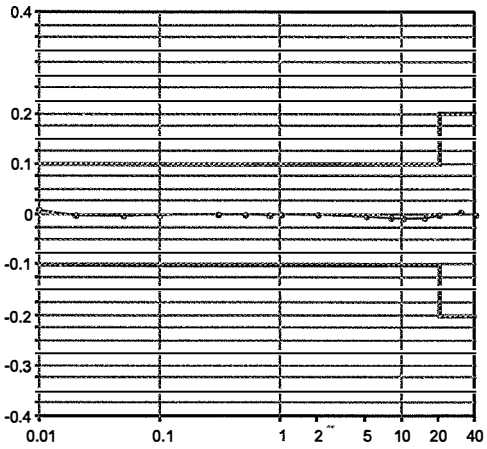


[dB] < Channel 8 >

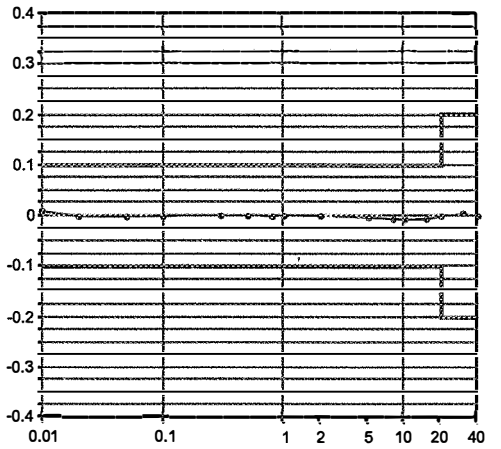


Frequency Response Range 3.0V

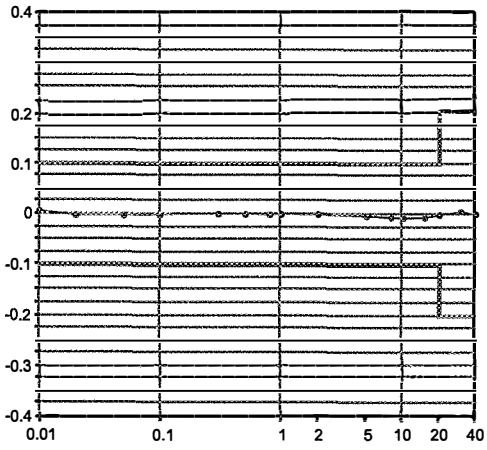
[dB] < Channel 1 >



[dB] < Channel 2 >



[dB] < Channel 3 >



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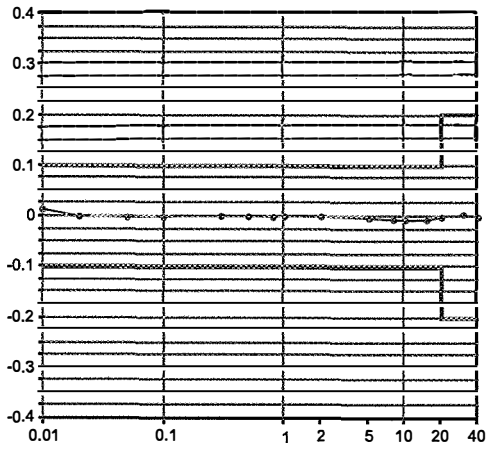
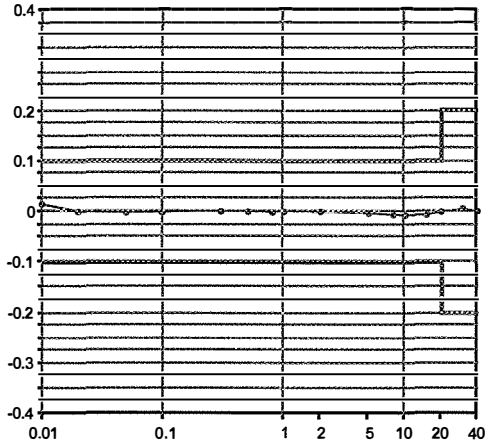
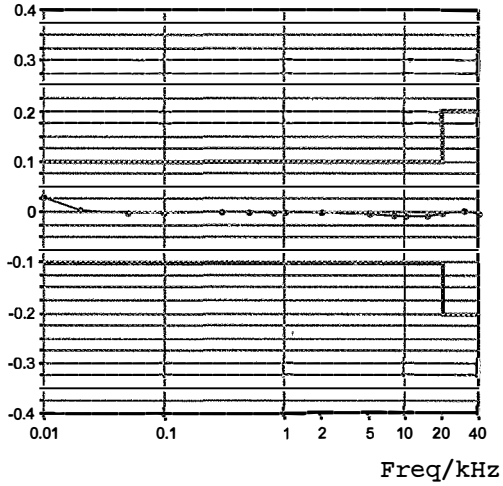


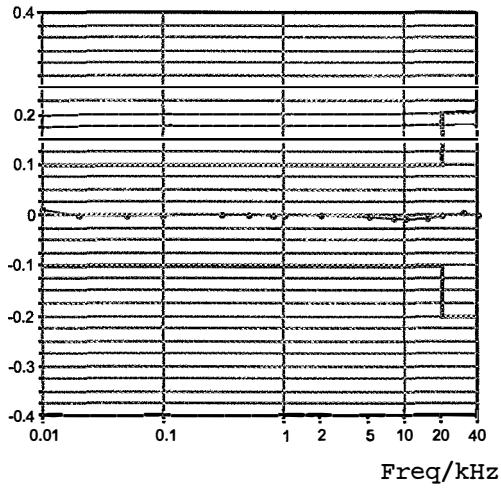
[dB] < Channel 5 >



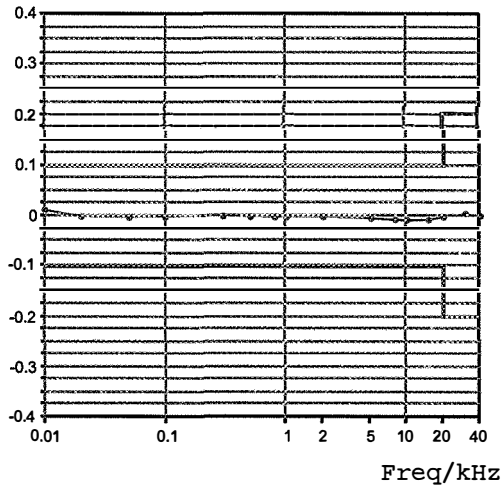
[dB] < Channel 6 >



[dB] < Channel 7 >

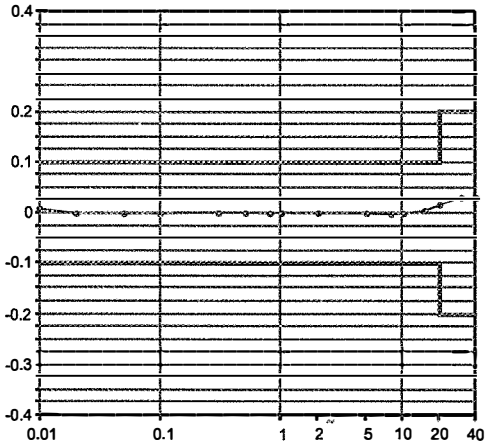


[dB] < Channel 8 >

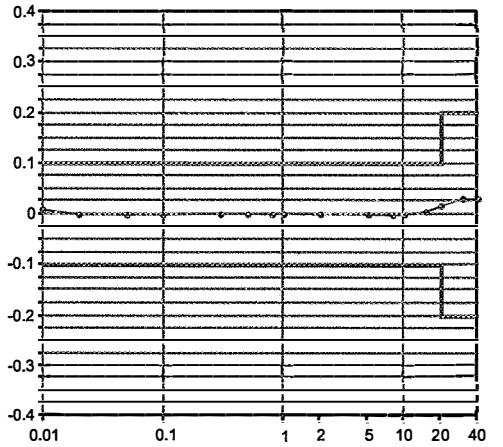


Frequency Response Range 12.0V

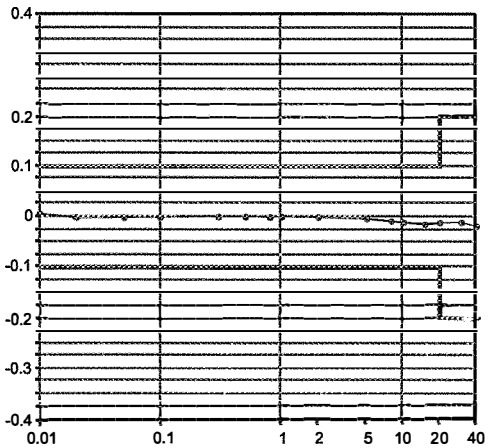
[dB] < Channel 1 >



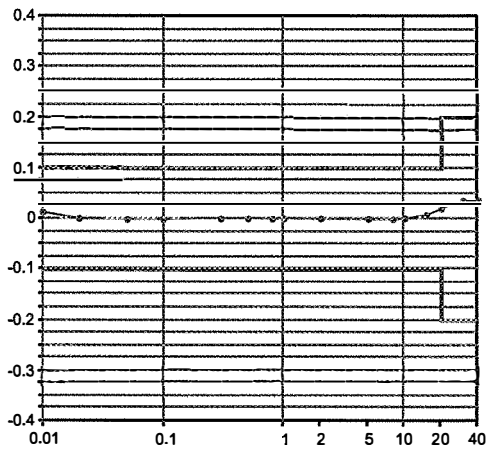
[dB] < Channel 2 >



[dB] < Channel 3 >



[dB] < Channel 4 >



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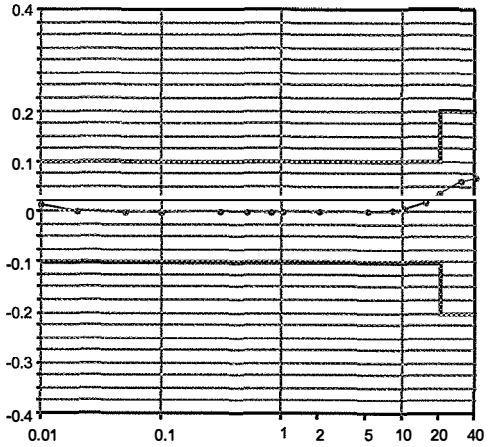

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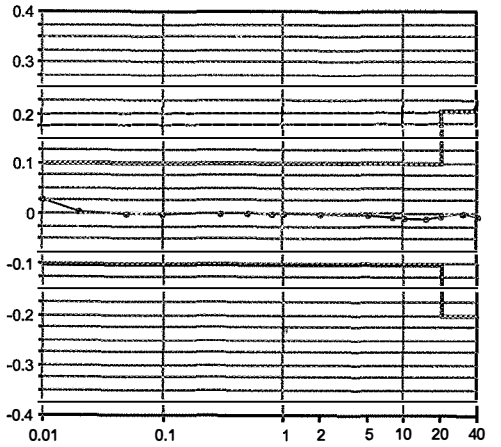
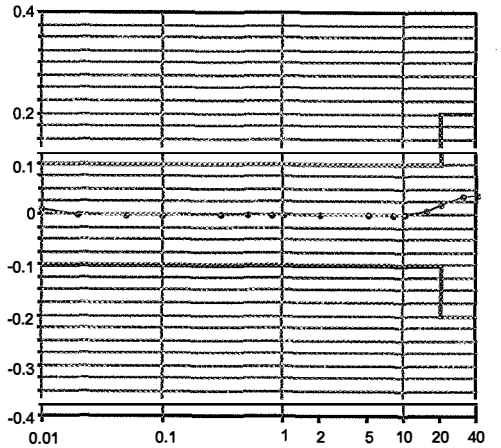


[dB] < Channel 7 >



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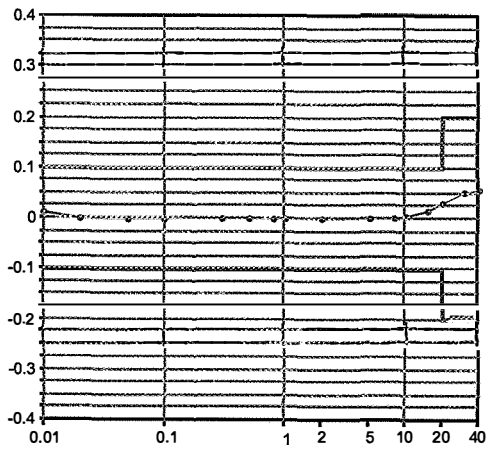
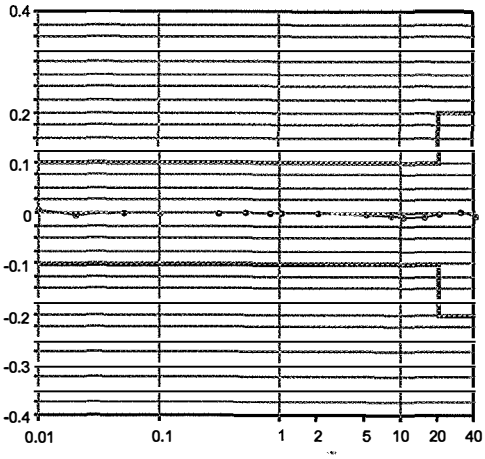
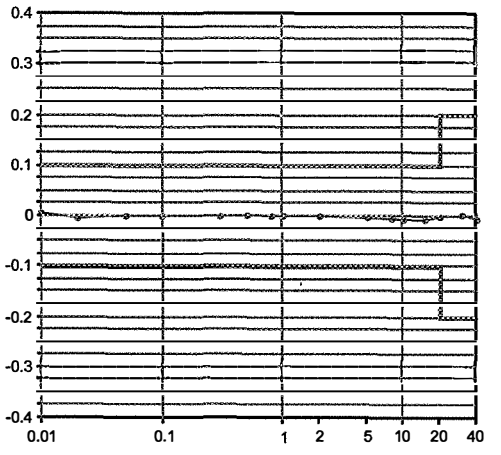


Frequency Response Range 0.2 V

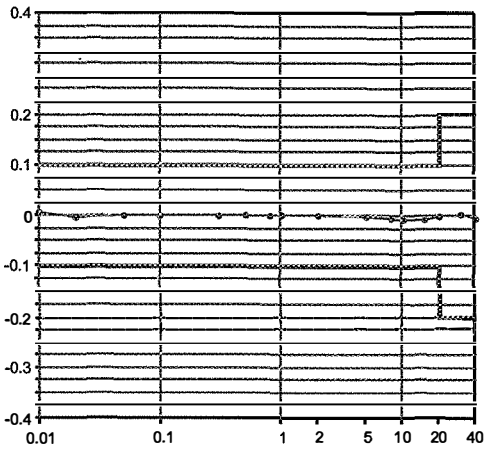
[dB] < Channel 9 >



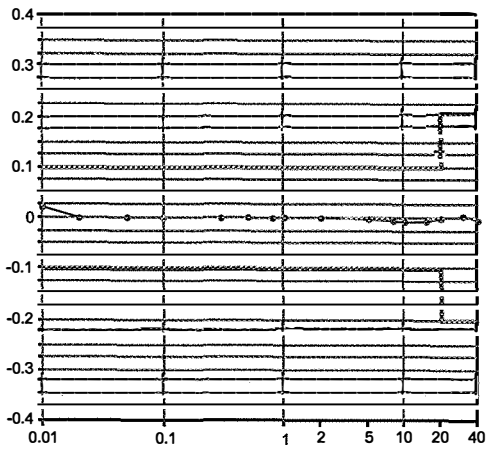
[dB] < Channel 10 >



[dB] < Channel 11 >



[dB] < Channel 12 >



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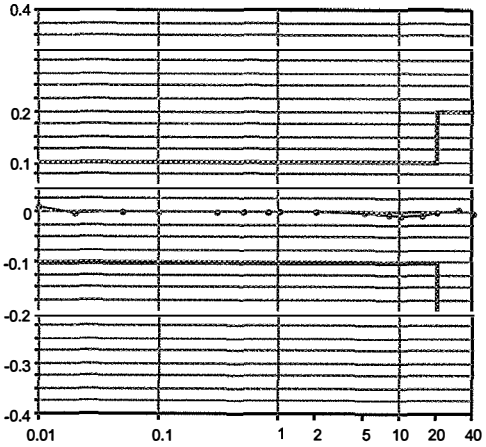
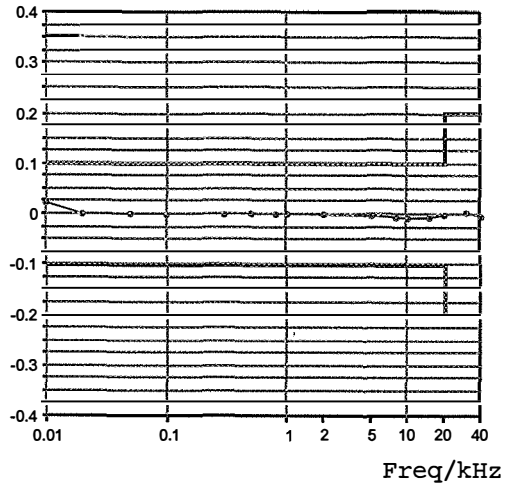
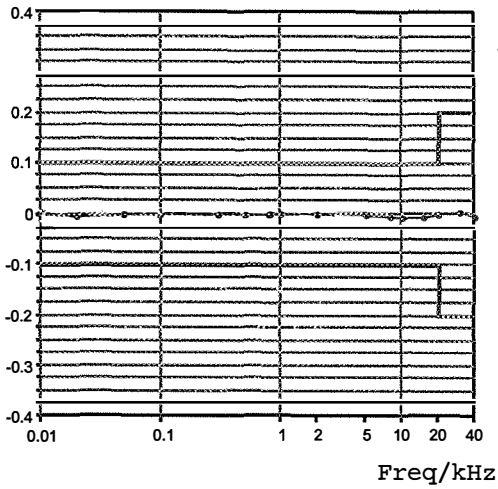


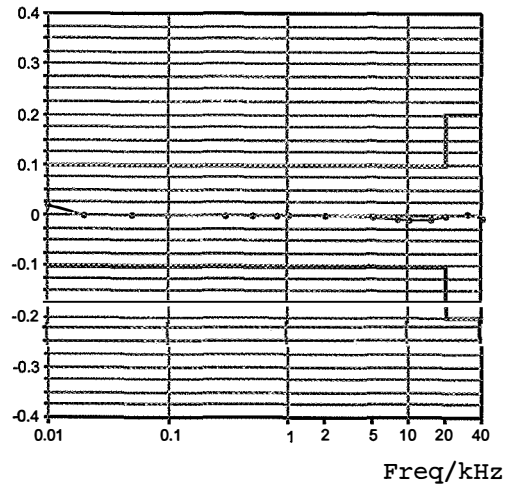
[dB] < Channel 14 >



[dB] < Channel 15 >

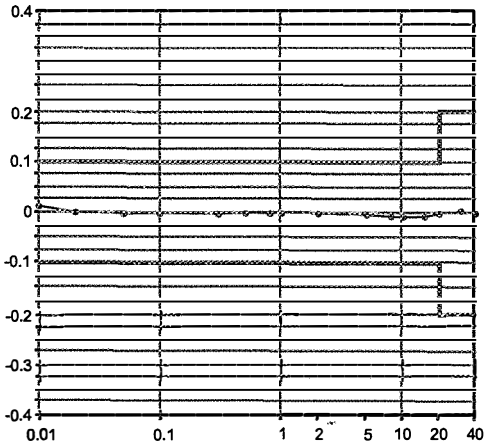


[dB] < Channel 16 >

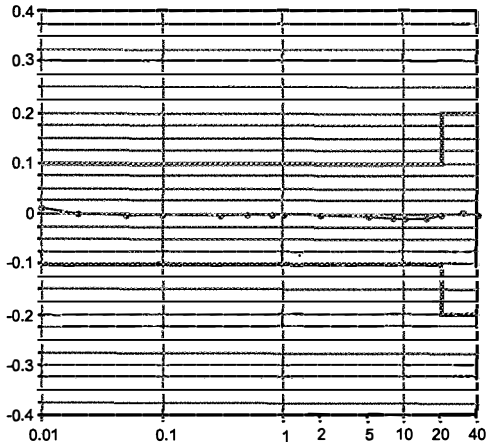


Frequency Response Range 3.0V

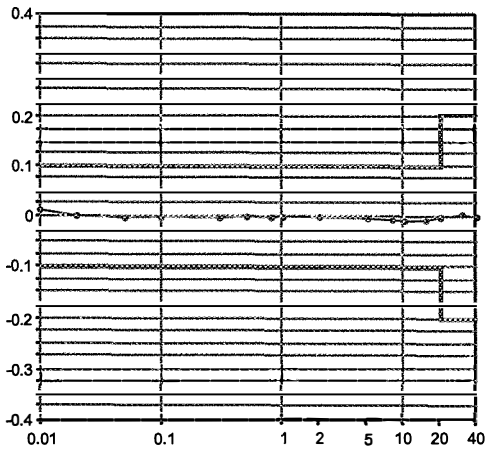
[dB] < Channel 9 >



[dB] < Channel 10 >



[dB] < Channel 11 >



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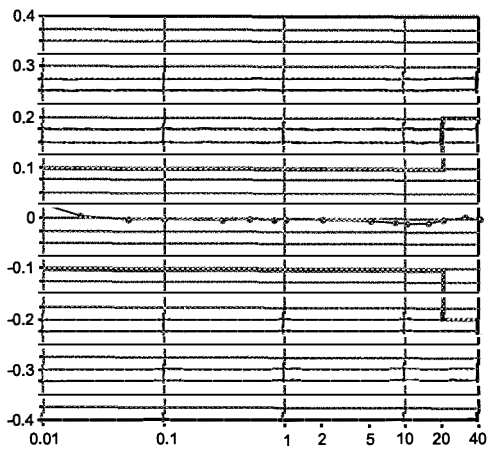

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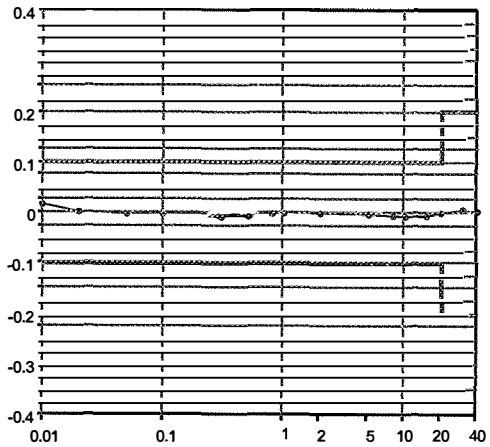
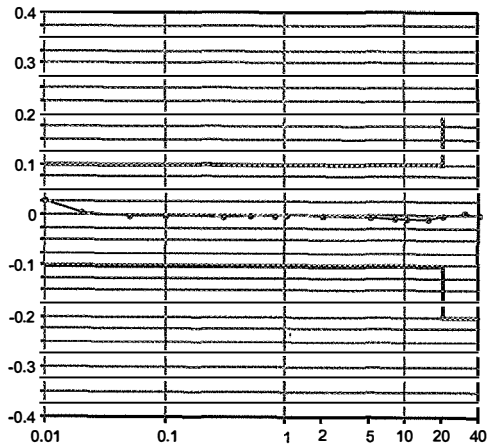
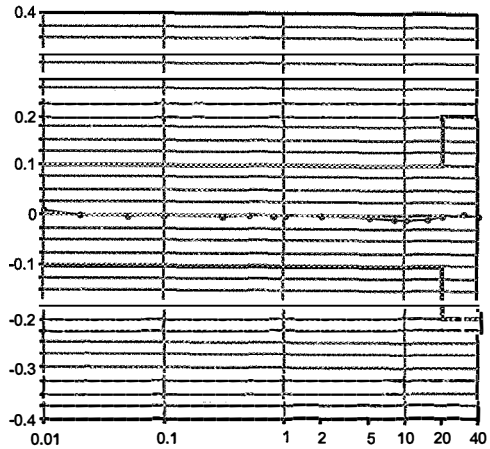


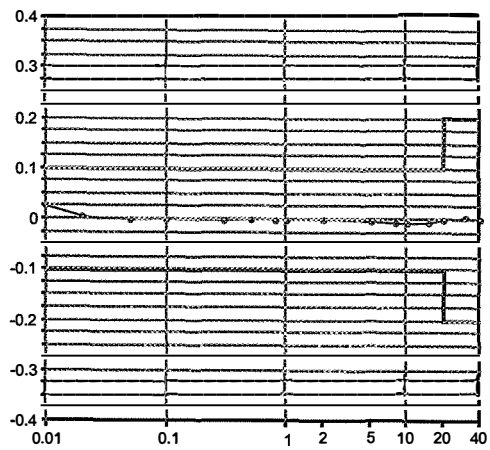
[dB] < Channel 14 >



[dB] < Channel 15 >

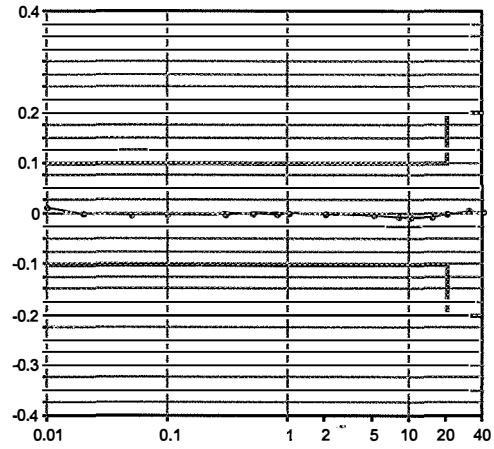


[dB] < Channel 16 >

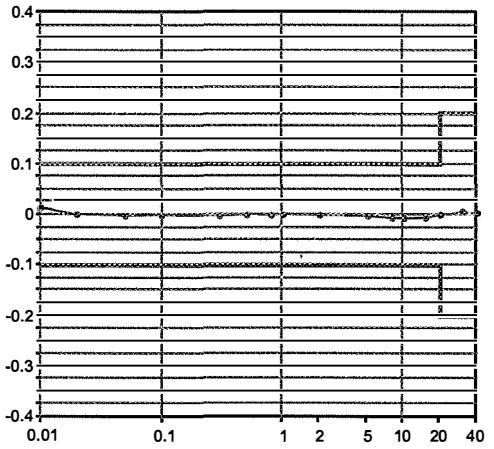


Frequency Response Range 12.0V

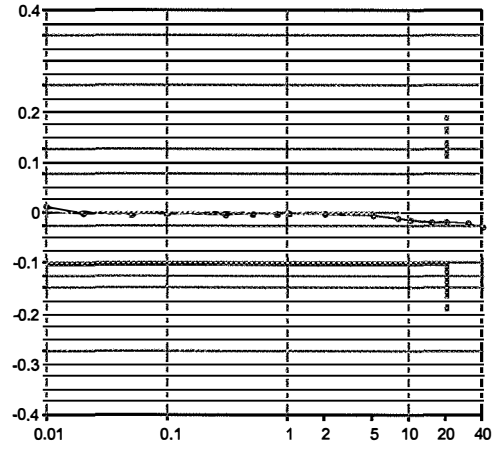
[dB] < Channel 9 >



[dB] < Channel 10 >



[dB] < Channel 11 >



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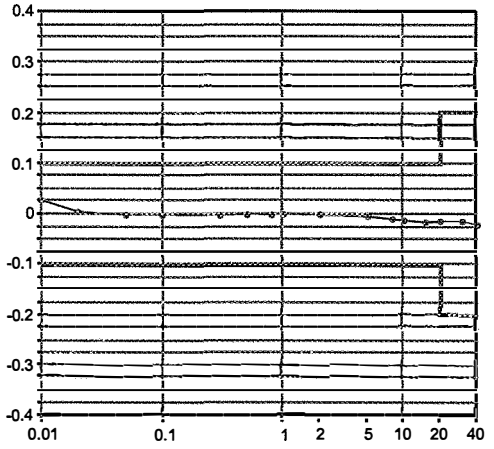
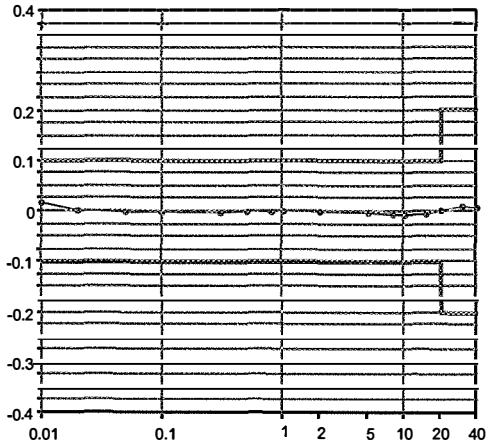


[dB] < Channel 13 >



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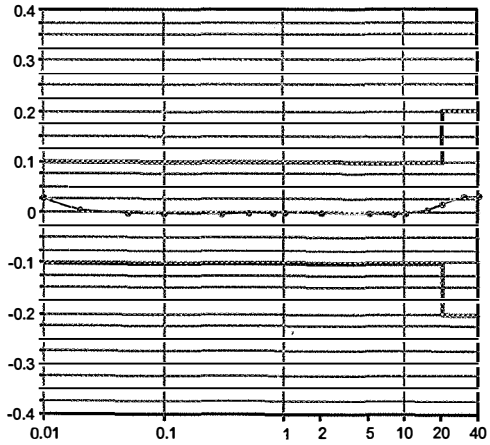

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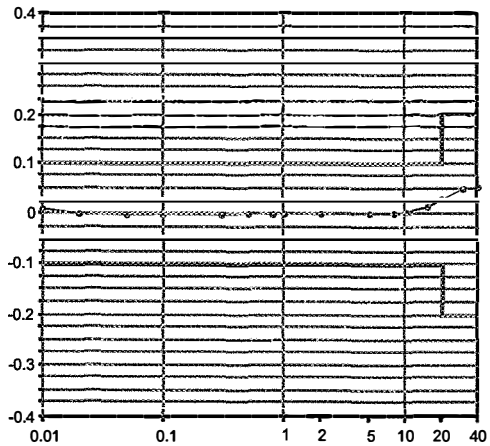

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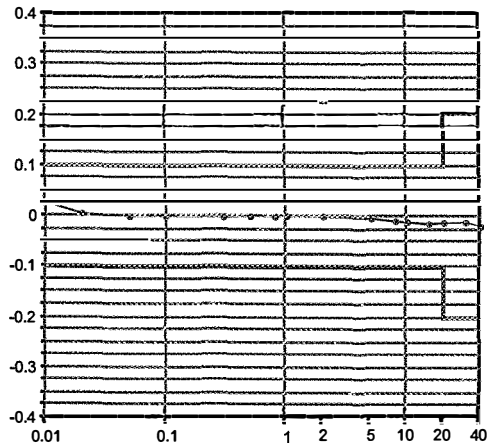
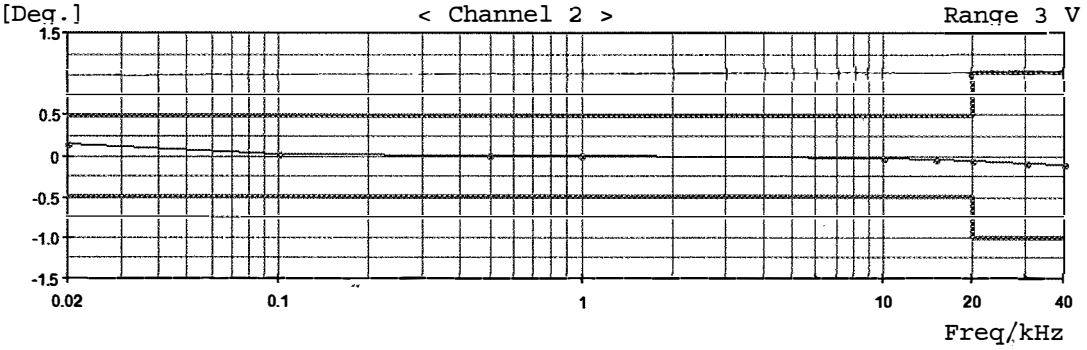


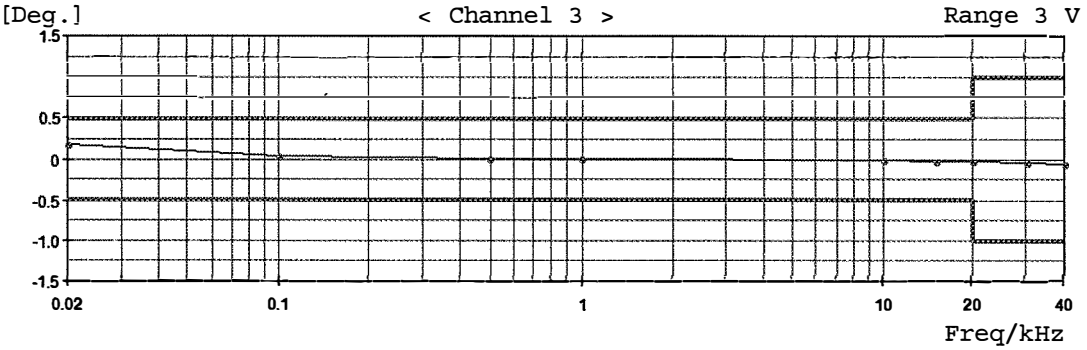
30. B48: Phase Synchronism

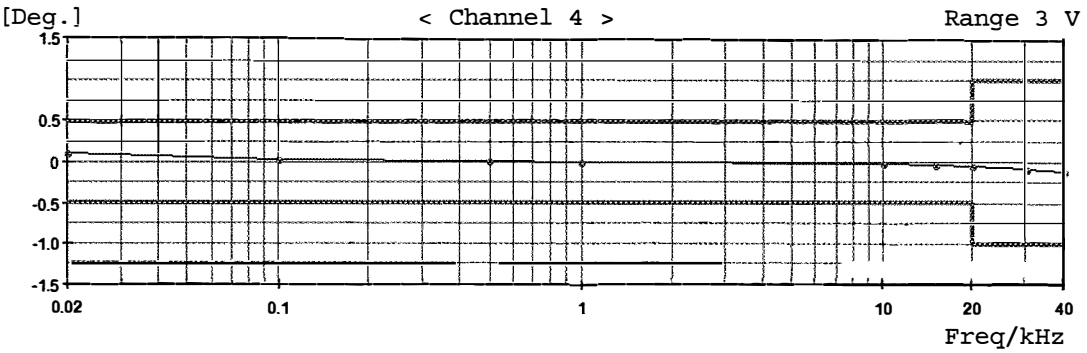
Range 3V

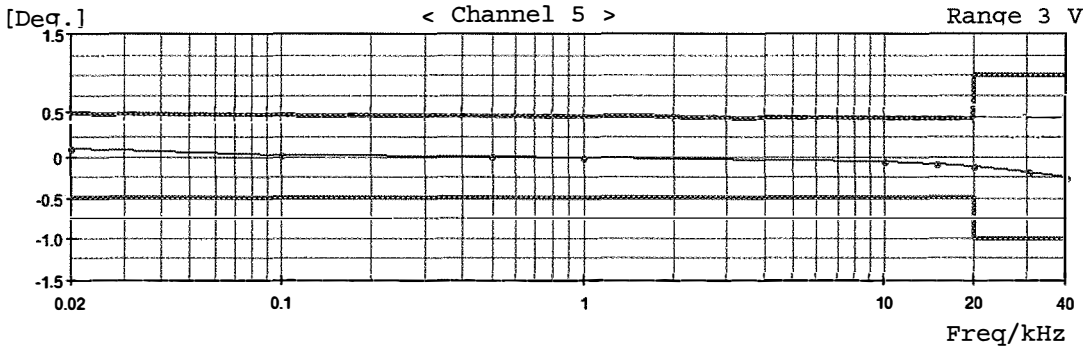
These values are only display indications with equal input signals to all channels. Measurement uncertainty (MU) see convention {c}

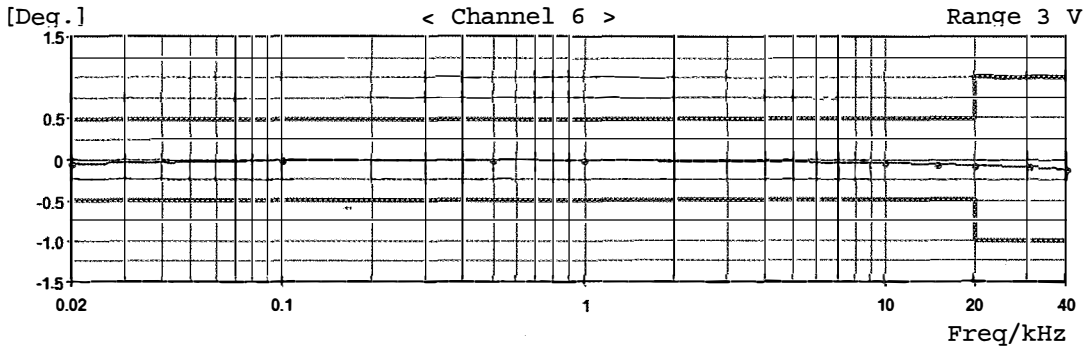
Channel 1 is reference

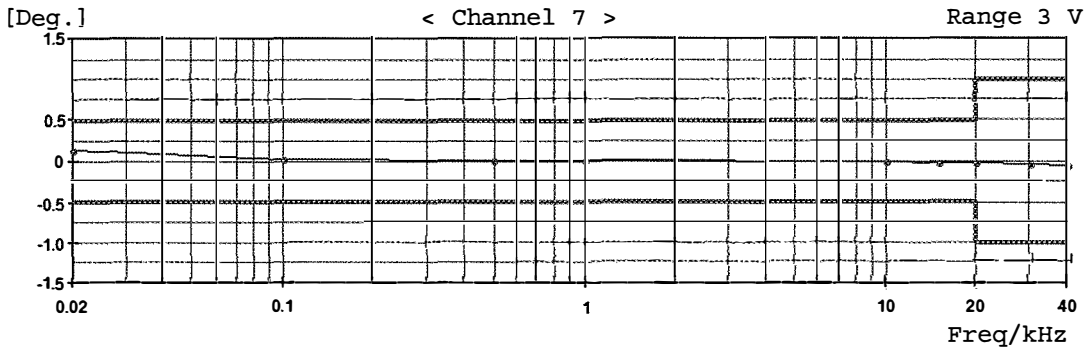







[Deg.]
< Channel 5 >
Range 3 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz


[Deg.]
< Channel 6 >
Range 3 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz


[Deg.]
< Channel 7 >
Range 3 V
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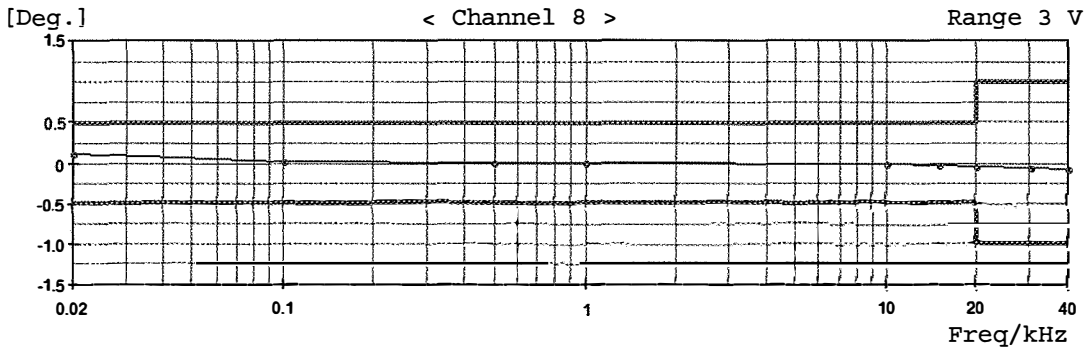
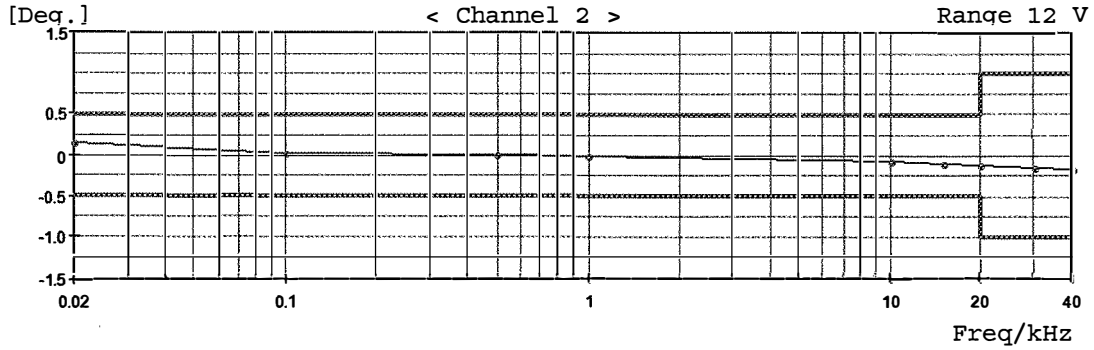
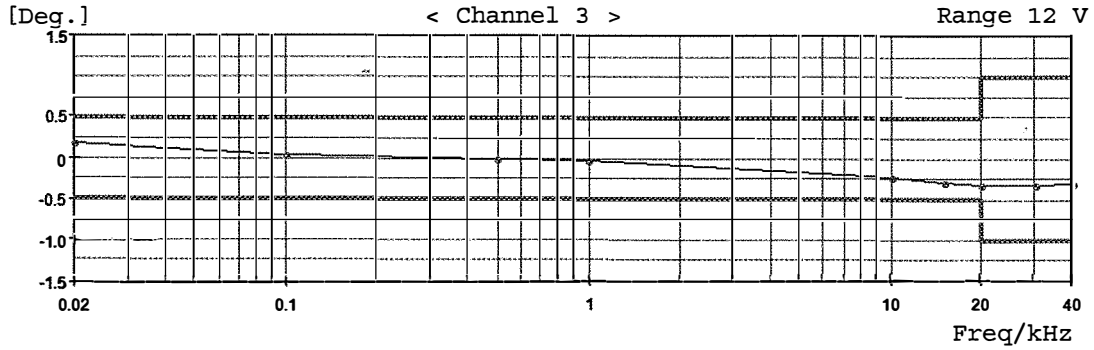
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz

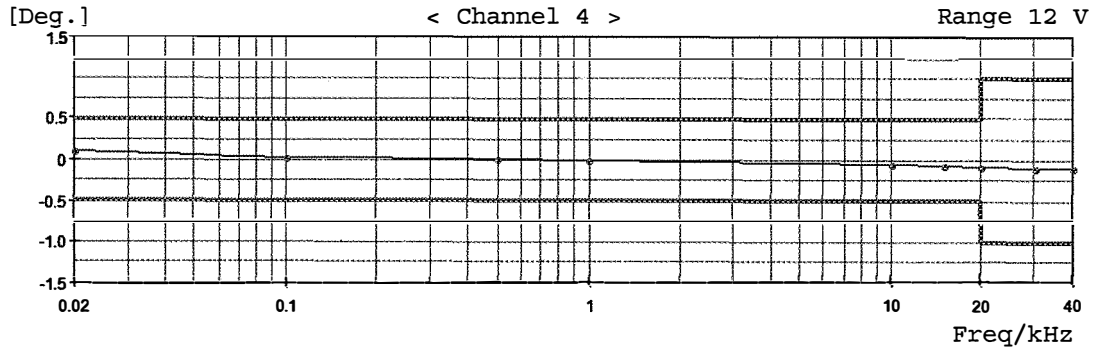

[Deg.]
< Channel 8 >
Range 3 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz

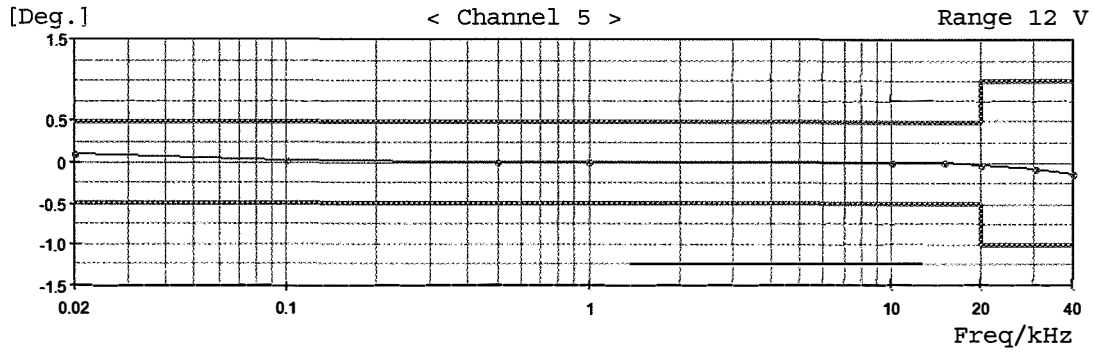
Range 12V

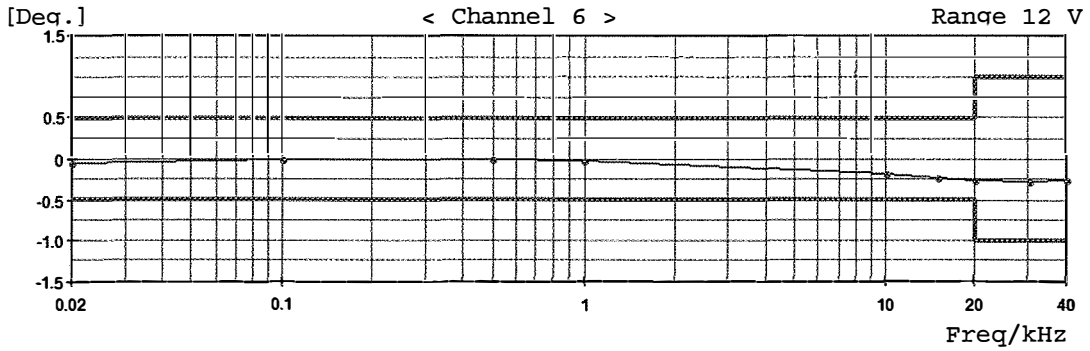
Channel 1 is reference

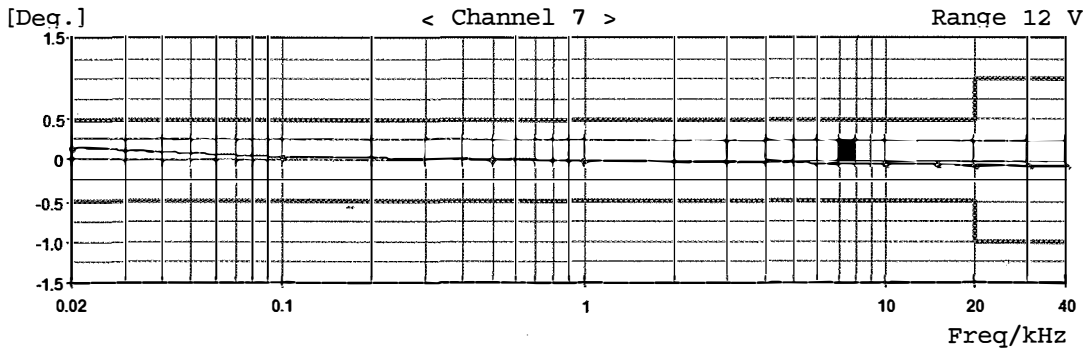


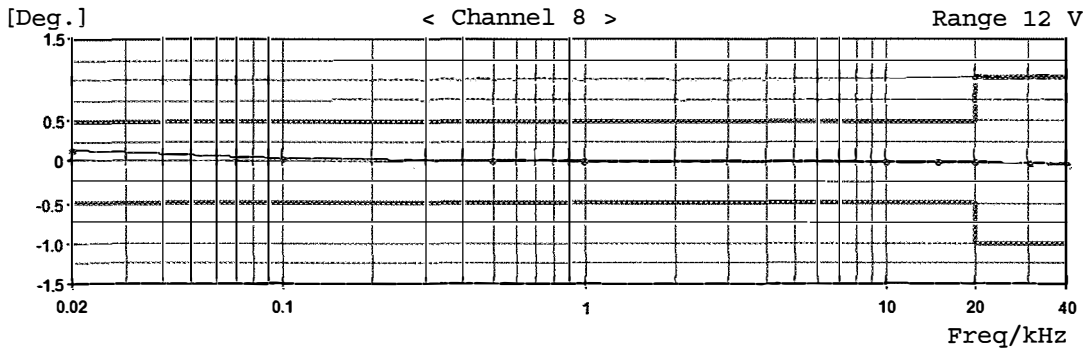






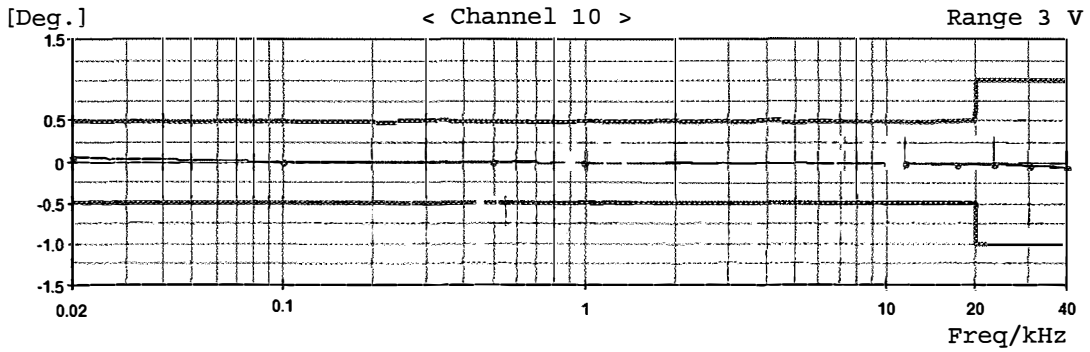


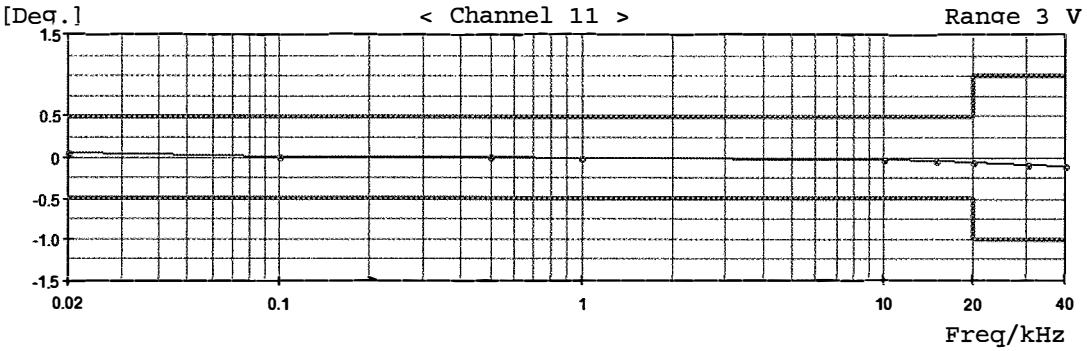


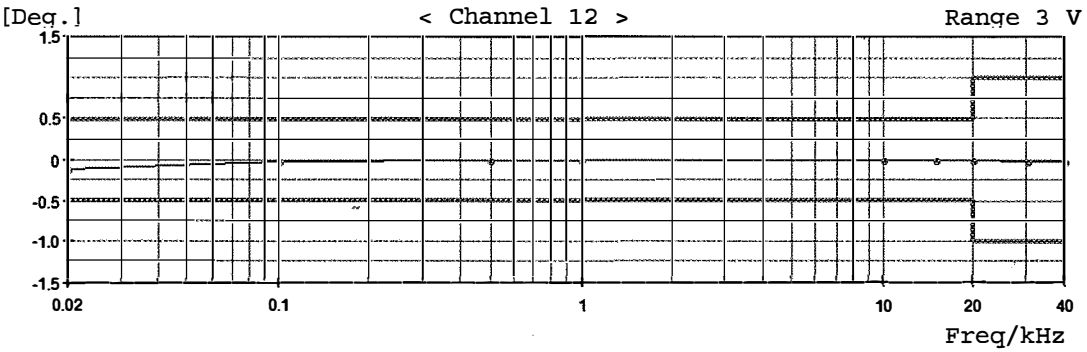


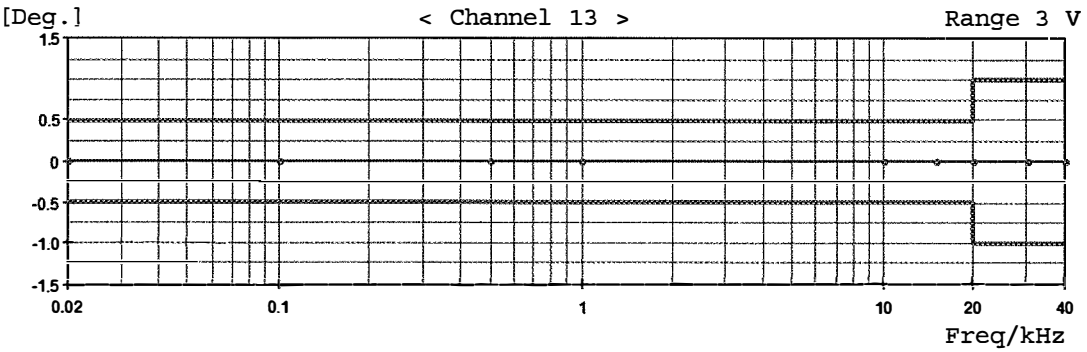
Range 3V

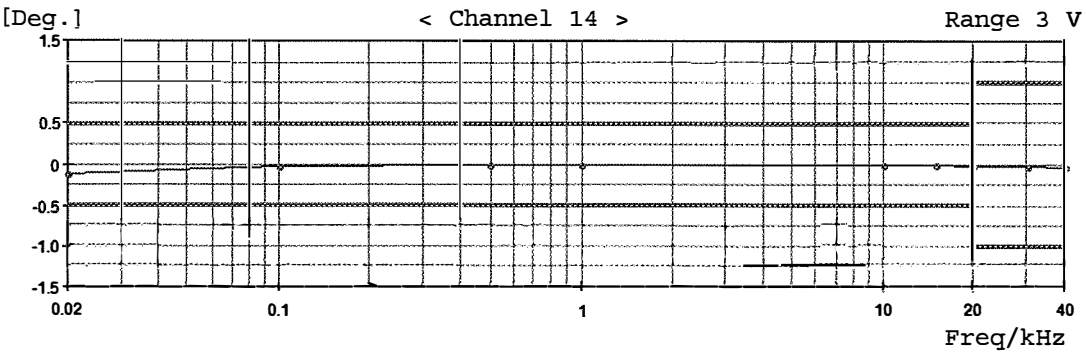
Channel 9 is reference

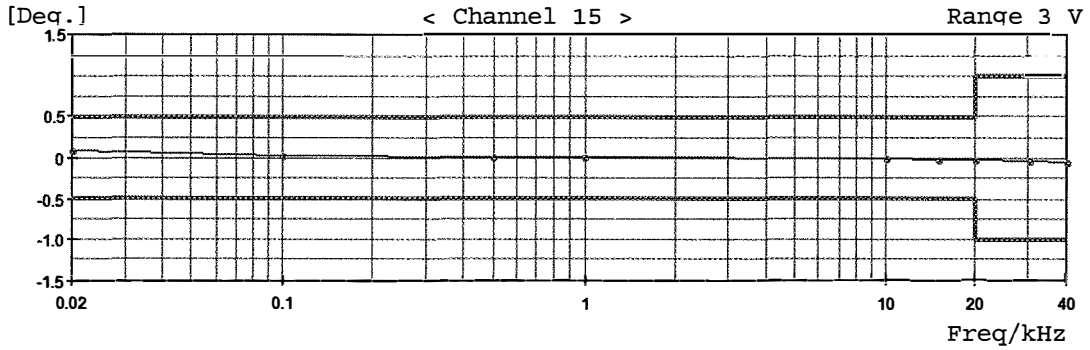


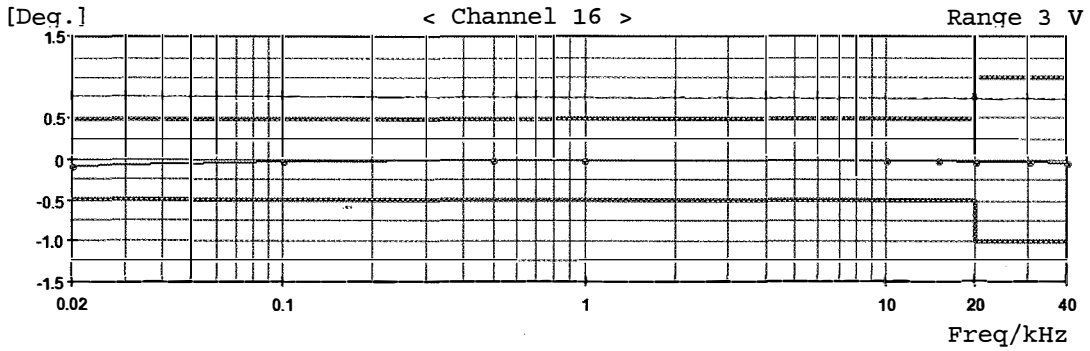

[Deg.]
< Channel 11 >
Range 3 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz


[Deg.]
< Channel 12 >
Range 3 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz


[Deg.]
< Channel 13 >
Range 3 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz

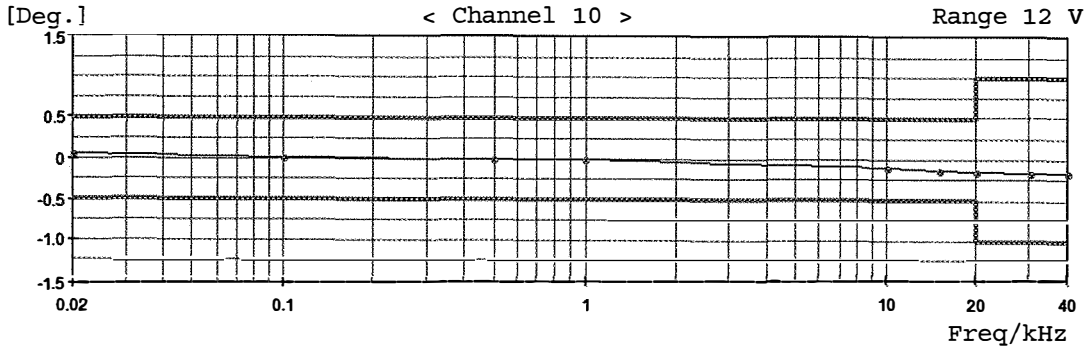

[Deg.]
< Channel 14 >
Range 3 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz

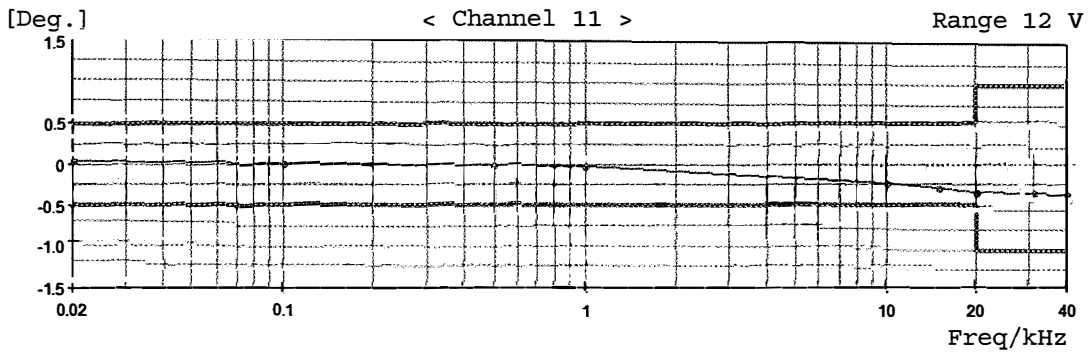


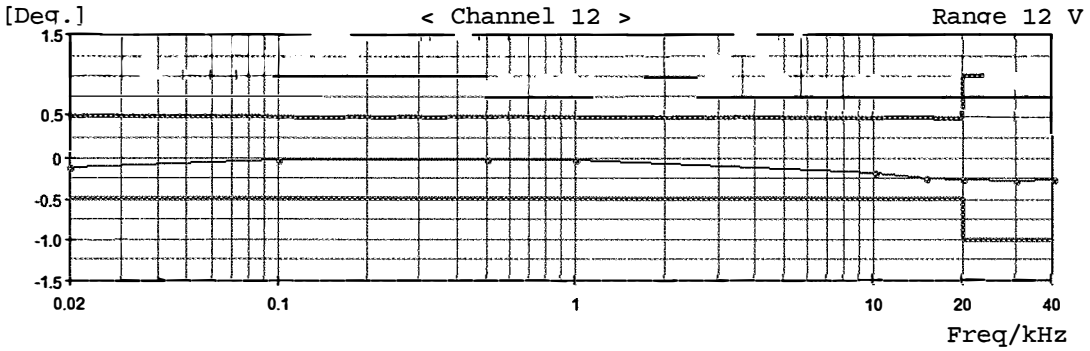


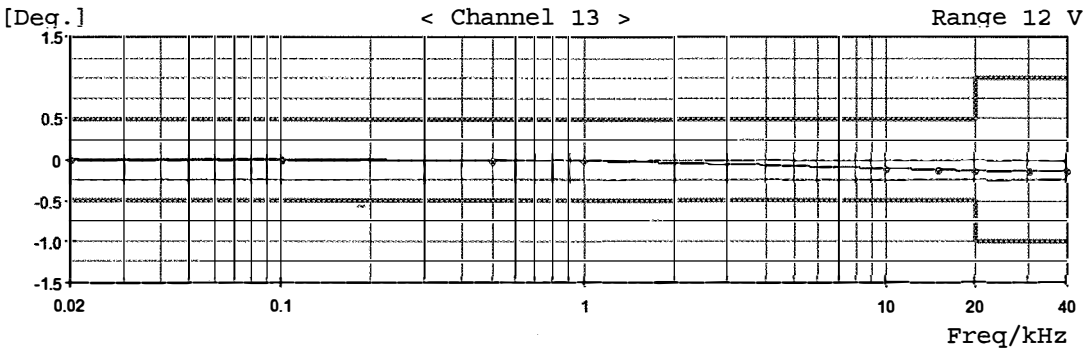
Range 12V

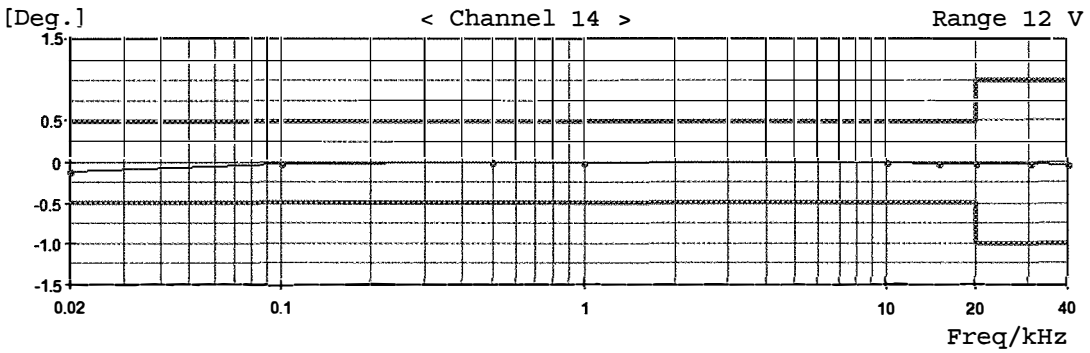
Channel 9 is reference

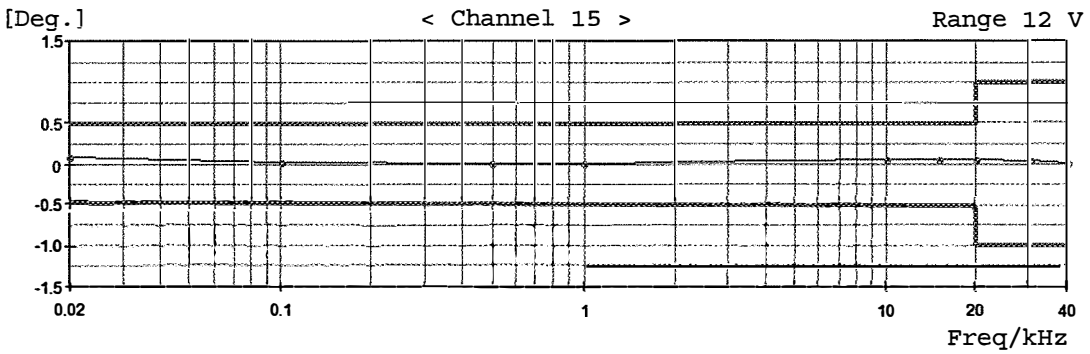


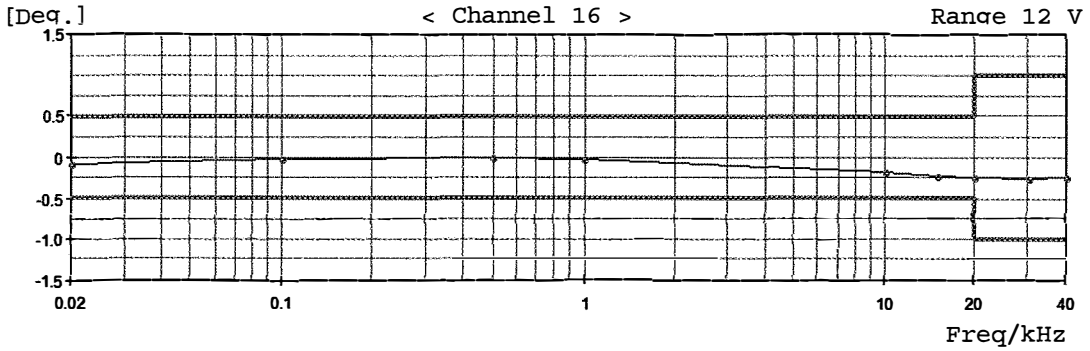



[Deg.]
< Channel 12 >
Range 12 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz


[Deg.]
< Channel 13 >
Range 12 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz


[Deg.]
< Channel 14 >
Range 12 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz


[Deg.]
< Channel 15 >
Range 12 V
1.5
0.5
0
-0.5
-1.0
-1.5
0.02
0.1
1
10
20
40
Freq/kHz



31. B48: THD+N Inherent Distortion

Total inherent distortion of analyzer and generator together.
Measurement uncertainty (MU) see convention {a}

Channel 1

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-100.6
3.0	2.5	0.02	bal	-94	-101.0
3.0	2.5	0.02	unb	-94	-101.4
0.8	0.6	0.02	bal	-94	-98.3
12.0	10.0	0.05	bal	-94	-100.8
3.0	2.5	0.05	bal	-94	-101.9
3.0	2.5	0.05	unb	-94	-100.7
0.8	0.6	0.05	bal	-94	-96.8
12.0	10.0	0.10	bal	-94	-99.9
3.0	2.5	0.10	bal	-94	-100.4
3.0	2.5	0.10	unb	-94	-100.8
0.8	0.6	0.10	bal	-94	-98.5
12.0	10.0	0.45	bal	-94	-98.9
3.0	2.5	0.45	bal	-94	-99.2
3.0	2.5	0.45	unb	-94	-99.3
0.8	0.6	0.45	bal	-94	-97.9
12.0	10.0	1.00	bal	-94	-98.7
3.0	2.5	1.00	bal	-94	-99.0
3.0	2.5	1.00	unb	-94	-99.0
0.8	0.6	1.00	bal	-94	-97.6
12.0	10.0	3.00	bal	-94	-98.4
3.0	2.5	3.00	bal	-94	-98.5
3.0	2.5	3.00	unb	-94	-98.6
0.8	0.6	3.00	bal	-94	-97.4
12.0	10.0	7.00	bal	-94	-98.9
3.0	2.5	7.00	bal	-94	-98.5
3.0	2.5	7.00	unb	-94	-98.5
0.8	0.6	7.00	bal	-94	-97.4
12.0	10.0	20.00	bal	-94	-105.7
3.0	2.5	20.00	bal	-94	-106.6
3.0	2.5	20.00	unb	-94	-107.2
0.8	0.6	20.00	bal	-94	-101.8

Channel 2

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-104.0
3.0	2.5	0.02	bal	-94	-105.8
3.0	2.5	0.02	unb	-94	-106.0
0.8	0.6	0.02	bal	-94	-100.5
12.0	10.0	0.05	bal	-94	-104.4
3.0	2.5	0.05	bal	-94	-106.5
3.0	2.5	0.05	unb	-94	-105.8
0.8	0.6	0.05	bal	-94	-100.3
12.0	10.0	0.10	bal	-94	-103.7
3.0	2.5	0.10	bal	-94	-105.1
3.0	2.5	0.10	unb	-94	-105.9
0.8	0.6	0.10	bal	-94	-100.8
12.0	10.0	0.45	bal	-94	-102.8
3.0	2.5	0.45	bal	-94	-103.1
3.0	2.5	0.45	unb	-94	-103.4
0.8	0.6	0.45	bal	-94	-100.5
12.0	10.0	1.00	bal	-94	-102.7
3.0	2.5	1.00	bal	-94	-103.0
3.0	2.5	1.00	unb	-94	-103.3
0.8	0.6	1.00	bal	-94	-100.0
12.0	10.0	3.00	bal	-94	-101.6
3.0	2.5	3.00	bal	-94	-101.8
3.0	2.5	3.00	unb	-94	-101.9
0.8	0.6	3.00	bal	-94	-99.4
12.0	10.0	7.00	bal	-94	-102.2
3.0	2.5	7.00	bal	-94	-101.8
3.0	2.5	7.00	unb	-94	-101.8
0.8	0.6	7.00	bal	-94	-99.8
12.0	10.0	20.00	bal	-94	-105.4
3.0	2.5	20.00	bal	-94	-106.6
3.0	2.5	20.00	unb	-94	-106.9
0.8	0.6	20.00	bal	-94	-101.4

Channel 3

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-102.8
3.0	2.5	0.02	bal	-94	-104.2
3.0	2.5	0.02	unb	-94	-103.9
0.8	0.6	0.02	bal	-94	-100.1
12.0	10.0	0.05	bal	-94	-102.9
3.0	2.5	0.05	bal	-94	-105.4
3.0	2.5	0.05	unb	-94	-104.6
0.8	0.6	0.05	bal	-94	-100.3
12.0	10.0	0.10	bal	-94	-102.9
3.0	2.5	0.10	bal	-94	-105.2
3.0	2.5	0.10	unb	-94	-105.3
0.8	0.6	0.10	bal	-94	-101.1
12.0	10.0	0.45	bal	-94	-102.7
3.0	2.5	0.45	bal	-94	-103.5
3.0	2.5	0.45	unb	-94	-103.9
0.8	0.6	0.45	bal	-94	-99.4
12.0	10.0	1.00	bal	-94	-102.9
3.0	2.5	1.00	bal	-94	-103.6
3.0	2.5	1.00	unb	-94	-104.1
0.8	0.6	1.00	bal	-94	-100.3
12.0	10.0	3.00	bal	-94	-102.5
3.0	2.5	3.00	bal	-94	-102.7
3.0	2.5	3.00	unb	-94	-103.0
0.8	0.6	3.00	bal	-94	-99.8
12.0	10.0	7.00	bal	-94	-103.4
3.0	2.5	7.00	bal	-94	-102.8
3.0	2.5	7.00	unb	-94	-103.1
0.8	0.6	7.00	bal	-94	-100.1
12.0	10.0	20.00	bal	-94	-105.4
3.0	2.5	20.00	bal	-94	-106.7
3.0	2.5	20.00	unb	-94	-107.0
0.8	0.6	20.00	bal	-94	-101.4

Channel 4

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-100.4
3.0	2.5	0.02	bal	-94	-101.5
3.0	2.5	0.02	unb	-94	-101.7
0.8	0.6	0.02	bal	-94	-98.2
12.0	10.0	0.05	bal	-94	-100.5
3.0	2.5	0.05	bal	-94	-102.6
3.0	2.5	0.05	unb	-94	-101.7
0.8	0.6	0.05	bal	-94	-97.1
12.0	10.0	0.10	bal	-94	-100.8
3.0	2.5	0.10	bal	-94	-101.4
3.0	2.5	0.10	unb	-94	-101.4
0.8	0.6	0.10	bal	-94	-98.9
12.0	10.0	0.45	bal	-94	-99.5
3.0	2.5	0.45	bal	-94	-99.9
3.0	2.5	0.45	unb	-94	-100.1
0.8	0.6	0.45	bal	-94	-97.6
12.0	10.0	1.00	bal	-94	-99.2
3.0	2.5	1.00	bal	-94	-99.8
3.0	2.5	1.00	unb	-94	-100.0
0.8	0.6	1.00	bal	-94	-98.0
12.0	10.0	3.00	bal	-94	-99.3
3.0	2.5	3.00	bal	-94	-99.4
3.0	2.5	3.00	unb	-94	-99.6
0.8	0.6	3.00	bal	-94	-97.9
12.0	10.0	7.00	bal	-94	-99.9
3.0	2.5	7.00	bal	-94	-99.5
3.0	2.5	7.00	unb	-94	-99.7
0.8	0.6	7.00	bal	-94	-97.9
12.0	10.0	20.00	bal	-94	-105.5
3.0	2.5	20.00	bal	-94	-106.7
3.0	2.5	20.00	unb	-94	-107.0
0.8	0.6	20.00	bal	-94	-101.5

Channel 5

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-101.6
3.0	2.5	0.02	bal	-94	-102.7
3.0	2.5	0.02	unb	-94	-103.0
0.8	0.6	0.02	bal	-94	-99.6
12.0	10.0	0.05	bal	-94	-102.3
3.0	2.5	0.05	bal	-94	-104.2
3.0	2.5	0.05	unb	-94	-103.2
0.8	0.6	0.05	bal	-94	-99.1
12.0	10.0	0.10	bal	-94	-102.4
3.0	2.5	0.10	bal	-94	-102.8
3.0	2.5	0.10	unb	-94	-103.3
0.8	0.6	0.10	bal	-94	-100.2
12.0	10.0	0.45	bal	-94	-101.1
3.0	2.5	0.45	bal	-94	-101.7
3.0	2.5	0.45	unb	-94	-101.7
0.8	0.6	0.45	bal	-94	-99.2
12.0	10.0	1.00	bal	-94	-101.4
3.0	2.5	1.00	bal	-94	-101.6
3.0	2.5	1.00	unb	-94	-101.6
0.8	0.6	1.00	bal	-94	-99.3
12.0	10.0	3.00	bal	-94	-100.5
3.0	2.5	3.00	bal	-94	-100.7
3.0	2.5	3.00	unb	-94	-100.7
0.8	0.6	3.00	bal	-94	-98.7
12.0	10.0	7.00	bal	-94	-101.0
3.0	2.5	7.00	bal	-94	-100.6
3.0	2.5	7.00	unb	-94	-100.6
0.8	0.6	7.00	bal	-94	-98.8
12.0	10.0	20.00	bal	-94	-105.4
3.0	2.5	20.00	bal	-94	-106.6
3.0	2.5	20.00	unb	-94	-106.6
0.8	0.6	20.00	bal	-94	-101.4

Channel 6

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-102.7
3.0	2.5	0.02	bal	-94	-105.7
3.0	2.5	0.02	unb	-94	-105.7
0.8	0.6	0.02	bal	-94	-100.6
12.0	10.0	0.05	bal	-94	-103.9
3.0	2.5	0.05	bal	-94	-105.8
3.0	2.5	0.05	unb	-94	-106.1
0.8	0.6	0.05	bal	-94	-103.8
12.0	10.0	0.10	bal	-94	-104.0
3.0	2.5	0.10	bal	-94	-105.5
3.0	2.5	0.10	unb	-94	-105.5
0.8	0.6	0.10	bal	-94	-101.3
12.0	10.0	0.45	bal	-94	-104.0
3.0	2.5	0.45	bal	-94	-104.3
3.0	2.5	0.45	unb	-94	-104.5
0.8	0.6	0.45	bal	-94	-100.8
12.0	10.0	1.00	bal	-94	-104.6
3.0	2.5	1.00	bal	-94	-104.9
3.0	2.5	1.00	unb	-94	-104.9
0.8	0.6	1.00	bal	-94	-101.2
12.0	10.0	3.00	bal	-94	-102.5
3.0	2.5	3.00	bal	-94	-102.8
3.0	2.5	3.00	unb	-94	-102.8
0.8	0.6	3.00	bal	-94	-100.1
12.0	10.0	7.00	bal	-94	-103.0
3.0	2.5	7.00	bal	-94	-102.7
3.0	2.5	7.00	unb	-94	-102.7
0.8	0.6	7.00	bal	-94	-100.3
12.0	10.0	20.00	bal	-94	-105.3
3.0	2.5	20.00	bal	-94	-106.7
3.0	2.5	20.00	unb	-94	-106.8
0.8	0.6	20.00	bal	-94	-101.4

Channel 7

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-100.6
3.0	2.5	0.02	bal	-94	-101.4
3.0	2.5	0.02	unb	-94	-101.4
0.8	0.6	0.02	bal	-94	-99.3
12.0	10.0	0.05	bal	-94	-101.2
3.0	2.5	0.05	bal	-94	-102.7
3.0	2.5	0.05	unb	-94	-101.3
0.8	0.6	0.05	bal	-94	-98.1
12.0	10.0	0.10	bal	-94	-101.4
3.0	2.5	0.10	bal	-94	-101.5
3.0	2.5	0.10	unb	-94	-102.1
0.8	0.6	0.10	bal	-94	-99.4
12.0	10.0	0.45	bal	-94	-100.8
3.0	2.5	0.45	bal	-94	-100.8
3.0	2.5	0.45	unb	-94	-101.1
0.8	0.6	0.45	bal	-94	-98.9
12.0	10.0	1.00	bal	-94	-100.2
3.0	2.5	1.00	bal	-94	-100.4
3.0	2.5	1.00	unb	-94	-100.9
0.8	0.6	1.00	bal	-94	-98.3
12.0	10.0	3.00	bal	-94	-99.9
3.0	2.5	3.00	bal	-94	-99.8
3.0	2.5	3.00	unb	-94	-100.3
0.8	0.6	3.00	bal	-94	-98.0
12.0	10.0	7.00	bal	-94	-100.5
3.0	2.5	7.00	bal	-94	-99.8
3.0	2.5	7.00	unb	-94	-100.1
0.8	0.6	7.00	bal	-94	-98.1
12.0	10.0	20.00	bal	-94	-105.3
3.0	2.5	20.00	bal	-94	-106.2
3.0	2.5	20.00	unb	-94	-106.8
0.8	0.6	20.00	bal	-94	-101.4

Channel 8

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-98.5
3.0	2.5	0.02	bal	-94	-99.1
3.0	2.5	0.02	unb	-94	-99.0
0.8	0.6	0.02	bal	-94	-97.8
12.0	10.0	0.05	bal	-94	-98.9
3.0	2.5	0.05	bal	-94	-100.2
3.0	2.5	0.05	unb	-94	-99.0
0.8	0.6	0.05	bal	-94	-96.4
12.0	10.0	0.10	bal	-94	-99.1
3.0	2.5	0.10	bal	-94	-99.2
3.0	2.5	0.10	unb	-94	-99.6
0.8	0.6	0.10	bal	-94	-98.1
12.0	10.0	0.45	bal	-94	-98.7
3.0	2.5	0.45	bal	-94	-98.9
3.0	2.5	0.45	unb	-94	-99.1
0.8	0.6	0.45	bal	-94	-97.7
12.0	10.0	1.00	bal	-94	-98.6
3.0	2.5	1.00	bal	-94	-98.7
3.0	2.5	1.00	unb	-94	-98.9
0.8	0.6	1.00	bal	-94	-97.4
12.0	10.0	3.00	bal	-94	-98.4
3.0	2.5	3.00	bal	-94	-98.4
3.0	2.5	3.00	unb	-94	-98.6
0.8	0.6	3.00	bal	-94	-97.1
12.0	10.0	7.00	bal	-94	-98.8
3.0	2.5	7.00	bal	-94	-98.3
3.0	2.5	7.00	unb	-94	-98.5
0.8	0.6	7.00	bal	-94	-97.0
12.0	10.0	20.00	bal	-94	-105.4
3.0	2.5	20.00	bal	-94	-106.6
3.0	2.5	20.00	unb	-94	-106.9
0.8	0.6	20.00	bal	-94	-101.2

Channel 9

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-100.0
3.0	2.5	0.02	bal	-94	-100.7
3.0	2.5	0.02	unb	-94	-100.7
0.8	0.6	0.02	bal	-94	-99.1
12.0	10.0	0.05	bal	-94	-100.3
3.0	2.5	0.05	bal	-94	-101.2
3.0	2.5	0.05	unb	-94	-101.8
0.8	0.6	0.05	bal	-94	-101.5
12.0	10.0	0.10	bal	-94	-100.4
3.0	2.5	0.10	bal	-94	-100.9
3.0	2.5	0.10	unb	-94	-101.0
0.8	0.6	0.10	bal	-94	-99.2
12.0	10.0	0.45	bal	-94	-100.1
3.0	2.5	0.45	bal	-94	-100.3
3.0	2.5	0.45	unb	-94	-100.7
0.8	0.6	0.45	bal	-94	-98.8
12.0	10.0	1.00	bal	-94	-100.0
3.0	2.5	1.00	bal	-94	-100.2
3.0	2.5	1.00	unb	-94	-100.5
0.8	0.6	1.00	bal	-94	-99.1
12.0	10.0	3.00	bal	-94	-99.7
3.0	2.5	3.00	bal	-94	-99.8
3.0	2.5	3.00	unb	-94	-99.9
0.8	0.6	3.00	bal	-94	-98.5
12.0	10.0	7.00	bal	-94	-100.2
3.0	2.5	7.00	bal	-94	-99.5
3.0	2.5	7.00	unb	-94	-99.7
0.8	0.6	7.00	bal	-94	-98.5
12.0	10.0	20.00	bal	-94	-105.6
3.0	2.5	20.00	bal	-94	-107.0
3.0	2.5	20.00	unb	-94	-107.3
0.8	0.6	20.00	bal	-94	-102.8

Channel 10

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-102.7
3.0	2.5	0.02	bal	-94	-103.9
3.0	2.5	0.02	unb	-94	-104.0
0.8	0.6	0.02	bal	-94	-101.0
12.0	10.0	0.05	bal	-94	-103.3
3.0	2.5	0.05	bal	-94	-104.2
3.0	2.5	0.05	unb	-94	-105.2
0.8	0.6	0.05	bal	-94	-103.5
12.0	10.0	0.10	bal	-94	-103.2
3.0	2.5	0.10	bal	-94	-103.9
3.0	2.5	0.10	unb	-94	-104.2
0.8	0.6	0.10	bal	-94	-101.3
12.0	10.0	0.45	bal	-94	-102.5
3.0	2.5	0.45	bal	-94	-102.7
3.0	2.5	0.45	unb	-94	-103.2
0.8	0.6	0.45	bal	-94	-100.5
12.0	10.0	1.00	bal	-94	-102.5
3.0	2.5	1.00	bal	-94	-102.7
3.0	2.5	1.00	unb	-94	-103.0
0.8	0.6	1.00	bal	-94	-100.6
12.0	10.0	3.00	bal	-94	-101.7
3.0	2.5	3.00	bal	-94	-101.5
3.0	2.5	3.00	unb	-94	-101.7
0.8	0.6	3.00	bal	-94	-100.0
12.0	10.0	7.00	bal	-94	-102.3
3.0	2.5	7.00	bal	-94	-101.3
3.0	2.5	7.00	unb	-94	-101.6
0.8	0.6	7.00	bal	-94	-99.9
12.0	10.0	20.00	bal	-94	-105.6
3.0	2.5	20.00	bal	-94	-107.1
3.0	2.5	20.00	unb	-94	-107.4
0.8	0.6	20.00	bal	-94	-102.4

Channel 11

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-100.1
3.0	2.5	0.02	bal	-94	-100.9
3.0	2.5	0.02	unb	-94	-100.9
0.8	0.6	0.02	bal	-94	-98.9
12.0	10.0	0.05	bal	-94	-100.0
3.0	2.5	0.05	bal	-94	-101.6
3.0	2.5	0.05	unb	-94	-102.0
0.8	0.6	0.05	bal	-94	-101.2
12.0	10.0	0.10	bal	-94	-100.8
3.0	2.5	0.10	bal	-94	-101.4
3.0	2.5	0.10	unb	-94	-101.5
0.8	0.6	0.10	bal	-94	-99.1
12.0	10.0	0.45	bal	-94	-100.5
3.0	2.5	0.45	bal	-94	-100.9
3.0	2.5	0.45	unb	-94	-101.3
0.8	0.6	0.45	bal	-94	-99.2
12.0	10.0	1.00	bal	-94	-100.6
3.0	2.5	1.00	bal	-94	-100.9
3.0	2.5	1.00	unb	-94	-101.2
0.8	0.6	1.00	bal	-94	-99.1
12.0	10.0	3.00	bal	-94	-100.1
3.0	2.5	3.00	bal	-94	-100.4
3.0	2.5	3.00	unb	-94	-100.7
0.8	0.6	3.00	bal	-94	-98.9
12.0	10.0	7.00	bal	-94	-100.9
3.0	2.5	7.00	bal	-94	-100.3
3.0	2.5	7.00	unb	-94	-100.5
0.8	0.6	7.00	bal	-94	-98.9
12.0	10.0	20.00	bal	-94	-105.3
3.0	2.5	20.00	bal	-94	-106.9
3.0	2.5	20.00	unb	-94	-107.2
0.8	0.6	20.00	bal	-94	-102.1

Channel 12

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-98.1
3.0	2.5	0.02	bal	-94	-99.3
3.0	2.5	0.02	unb	-94	-99.3
0.8	0.6	0.02	bal	-94	-98.0
12.0	10.0	0.05	bal	-94	-98.7
3.0	2.5	0.05	bal	-94	-100.0
3.0	2.5	0.05	unb	-94	-100.2
0.8	0.6	0.05	bal	-94	-100.5
12.0	10.0	0.10	bal	-94	-99.7
3.0	2.5	0.10	bal	-94	-99.8
3.0	2.5	0.10	unb	-94	-99.8
0.8	0.6	0.10	bal	-94	-98.0
12.0	10.0	0.45	bal	-94	-99.1
3.0	2.5	0.45	bal	-94	-99.3
3.0	2.5	0.45	unb	-94	-99.6
0.8	0.6	0.45	bal	-94	-98.1
12.0	10.0	1.00	bal	-94	-98.9
3.0	2.5	1.00	bal	-94	-99.2
3.0	2.5	1.00	unb	-94	-99.4
0.8	0.6	1.00	bal	-94	-98.1
12.0	10.0	3.00	bal	-94	-98.7
3.0	2.5	3.00	bal	-94	-98.8
3.0	2.5	3.00	unb	-94	-98.9
0.8	0.6	3.00	bal	-94	-97.7
12.0	10.0	7.00	bal	-94	-99.3
3.0	2.5	7.00	bal	-94	-98.7
3.0	2.5	7.00	unb	-94	-98.8
0.8	0.6	7.00	bal	-94	-97.7
12.0	10.0	20.00	bal	-94	-105.3
3.0	2.5	20.00	bal	-94	-107.0
3.0	2.5	20.00	unb	-94	-107.3
0.8	0.6	20.00	bal	-94	-102.3

Channel 13

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-100.4
3.0	2.5	0.02	bal	-94	-101.2
3.0	2.5	0.02	unb	-94	-101.3
0.8	0.6	0.02	bal	-94	-99.3
12.0	10.0	0.05	bal	-94	-100.3
3.0	2.5	0.05	bal	-94	-101.8
3.0	2.5	0.05	unb	-94	-102.8
0.8	0.6	0.05	bal	-94	-102.2
12.0	10.0	0.10	bal	-94	-100.7
3.0	2.5	0.10	bal	-94	-101.5
3.0	2.5	0.10	unb	-94	-101.3
0.8	0.6	0.10	bal	-94	-99.4
12.0	10.0	0.45	bal	-94	-99.8
3.0	2.5	0.45	bal	-94	-100.4
3.0	2.5	0.45	unb	-94	-100.5
0.8	0.6	0.45	bal	-94	-98.7
12.0	10.0	1.00	bal	-94	-99.7
3.0	2.5	1.00	bal	-94	-100.2
3.0	2.5	1.00	unb	-94	-100.3
0.8	0.6	1.00	bal	-94	-98.7
12.0	10.0	3.00	bal	-94	-99.4
3.0	2.5	3.00	bal	-94	-99.8
3.0	2.5	3.00	unb	-94	-99.9
0.8	0.6	3.00	bal	-94	-98.3
12.0	10.0	7.00	bal	-94	-100.1
3.0	2.5	7.00	bal	-94	-99.7
3.0	2.5	7.00	unb	-94	-99.8
0.8	0.6	7.00	bal	-94	-98.4
12.0	10.0	20.00	bal	-94	-105.1
3.0	2.5	20.00	bal	-94	-106.9
3.0	2.5	20.00	unb	-94	-107.2
0.8	0.6	20.00	bal	-94	-102.4

Channel 14

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-103.2
3.0	2.5	0.02	bal	-94	-104.0
3.0	2.5	0.02	unb	-94	-104.2
0.8	0.6	0.02	bal	-94	-100.9
12.0	10.0	0.05	bal	-94	-103.5
3.0	2.5	0.05	bal	-94	-104.9
3.0	2.5	0.05	unb	-94	-105.6
0.8	0.6	0.05	bal	-94	-103.7
12.0	10.0	0.10	bal	-94	-103.5
3.0	2.5	0.10	bal	-94	-104.1
3.0	2.5	0.10	unb	-94	-104.0
0.8	0.6	0.10	bal	-94	-101.3
12.0	10.0	0.45	bal	-94	-102.0
3.0	2.5	0.45	bal	-94	-102.0
3.0	2.5	0.45	unb	-94	-102.5
0.8	0.6	0.45	bal	-94	-100.3
12.0	10.0	1.00	bal	-94	-101.8
3.0	2.5	1.00	bal	-94	-101.8
3.0	2.5	1.00	unb	-94	-102.2
0.8	0.6	1.00	bal	-94	-100.3
12.0	10.0	3.00	bal	-94	-100.7
3.0	2.5	3.00	bal	-94	-100.7
3.0	2.5	3.00	unb	-94	-100.8
0.8	0.6	3.00	bal	-94	-99.3
12.0	10.0	7.00	bal	-94	-101.2
3.0	2.5	7.00	bal	-94	-100.4
3.0	2.5	7.00	unb	-94	-100.8
0.8	0.6	7.00	bal	-94	-99.4
12.0	10.0	20.00	bal	-94	-105.5
3.0	2.5	20.00	bal	-94	-106.9
3.0	2.5	20.00	unb	-94	-106.9
0.8	0.6	20.00	bal	-94	-102.0

Channel 15

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-100.6
3.0	2.5	0.02	bal	-94	-101.8
3.0	2.5	0.02	unb	-94	-102.0
0.8	0.6	0.02	bal	-94	-99.5
12.0	10.0	0.05	bal	-94	-101.1
3.0	2.5	0.05	bal	-94	-102.9
3.0	2.5	0.05	unb	-94	-103.4
0.8	0.6	0.05	bal	-94	-102.0
12.0	10.0	0.10	bal	-94	-101.0
3.0	2.5	0.10	bal	-94	-102.0
3.0	2.5	0.10	unb	-94	-102.1
0.8	0.6	0.10	bal	-94	-99.7
12.0	10.0	0.45	bal	-94	-100.2
3.0	2.5	0.45	bal	-94	-100.6
3.0	2.5	0.45	unb	-94	-101.2
0.8	0.6	0.45	bal	-94	-98.9
12.0	10.0	1.00	bal	-94	-100.3
3.0	2.5	1.00	bal	-94	-100.5
3.0	2.5	1.00	unb	-94	-101.0
0.8	0.6	1.00	bal	-94	-98.8
12.0	10.0	3.00	bal	-94	-99.9
3.0	2.5	3.00	bal	-94	-100.0
3.0	2.5	3.00	unb	-94	-100.4
0.8	0.6	3.00	bal	-94	-98.5
12.0	10.0	7.00	bal	-94	-100.6
3.0	2.5	7.00	bal	-94	-99.9
3.0	2.5	7.00	unb	-94	-100.4
0.8	0.6	7.00	bal	-94	-98.6
12.0	10.0	20.00	bal	-94	-105.5
3.0	2.5	20.00	bal	-94	-107.0
3.0	2.5	20.00	unb	-94	-107.3
0.8	0.6	20.00	bal	-94	-102.1

Channel 16

Range /V	U_in /V	Freq /kHz	OutType	DUL /dB	Actual /dB
12.0	10.0	0.02	bal	-94	-99.5
3.0	2.5	0.02	bal	-94	-99.8
3.0	2.5	0.02	unb	-94	-99.9
0.8	0.6	0.02	bal	-94	-98.5
12.0	10.0	0.05	bal	-94	-99.7
3.0	2.5	0.05	bal	-94	-100.6
3.0	2.5	0.05	unb	-94	-100.9
0.8	0.6	0.05	bal	-94	-100.9
12.0	10.0	0.10	bal	-94	-99.4
3.0	2.5	0.10	bal	-94	-99.9
3.0	2.5	0.10	unb	-94	-100.1
0.8	0.6	0.10	bal	-94	-98.7
12.0	10.0	0.45	bal	-94	-98.3
3.0	2.5	0.45	bal	-94	-98.5
3.0	2.5	0.45	unb	-94	-98.6
0.8	0.6	0.45	bal	-94	-97.6
12.0	10.0	1.00	bal	-94	-98.1
3.0	2.5	1.00	bal	-94	-98.2
3.0	2.5	1.00	unb	-94	-98.5
0.8	0.6	1.00	bal	-94	-97.6
12.0	10.0	3.00	bal	-94	-97.6
3.0	2.5	3.00	bal	-94	-97.6
3.0	2.5	3.00	unb	-94	-97.7
0.8	0.6	3.00	bal	-94	-96.9
12.0	10.0	7.00	bal	-94	-98.0
3.0	2.5	7.00	bal	-94	-97.5
3.0	2.5	7.00	unb	-94	-97.7
0.8	0.6	7.00	bal	-94	-96.8
12.0	10.0	20.00	bal	-94	-105.2
3.0	2.5	20.00	bal	-94	-106.7
3.0	2.5	20.00	unb	-94	-107.2
0.8	0.6	20.00	bal	-94	-102.2

32. B48: MOD DIST Inherent Distortion

No meassurement uncertainty stated see convention {a}.

Channel	TotalVolt /V	Upper Freq /kHz	Lower Freq /Hz	DUL /dB	Actual /dB
1	2.5	7	60	-80	-89.1
2	2.5	7	60	-80	-95.5
3	2.5	7	60	-80	-97.4
4	2.5	7	60	-80	-90.2
5	2.5	7	60	-80	-90.7
6	2.5	7	60	-80	-96.5
7	2.5	7	60	-80	-90.3
8	2.5	7	60	-80	-87.7

Channel	TotalVolt /V	Upper Freq /kHz	Lower Freq /Hz	DUL /dB	Actual /dB
9	2.5	7	60	-80	-89.2
10	2.5	7	60	-80	-92.0
11	2.5	7	60	-80	-90.4
12	2.5	7	60	-80	-88.4
13	2.5	7	60	-80	-89.8
14	2.5	7	60	-80	-92.1
15	2.5	7	60	-80	-90.6
16	2.5	7	60	-80	-88.0

33. B48: DFD Inherent Distortion

DFD-D2 IEC 268

No meassurement uncertainty stated see convention {a}.

Channel	TotalVolt /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
1	2.0	7	500	-100	-113.4
2	2.0	7	500	-100	-112.5
3	2.0	7	500	-100	-116.8
4	2.0	7	500	-100	-118.1
5	2.0	7	500	-100	-115.5
6	2.0	7	500	-100	-113.3
7	2.0	7	500	-100	-115.5
8	2.0	7	500	-100	-118.8

DFD-D3 IEC 268

No meassurement uncertainty stated see convention {a}.

Channel	TotalVolt /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
1	2.0	7	500	-90	-103.8
2	2.0	7	500	-90	-121.3
3	2.0	7	500	-90	-117.1
4	2.0	7	500	-90	-105.4
5	2.0	7	500	-90	-106.0
6	2.0	7	500	-90	-124.1
7	2.0	7	500	-90	-104.3
8	2.0	7	500	-90	-101.6

DFD-D2 IEC 268

Channel	TotalVolt /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
9	2.0	7	500	-100	-114.6
10	2.0	7	500	-100	-113.4
11	2.0	7	500	-100	-116.5
12	2.0	7	500	-100	-115.6
13	2.0	7	500	-100	-118.2
14	2.0	7	500	-100	-111.6
15	2.0	7	500	-100	-118.5
16	2.0	7	500	-100	-111.9

DFD-D3 IEC 268

Channel	TotalVolt /V	Meanfreq /kHz	Diff Freq /Hz	DUL /dB	Actual /dB
9	2.0	7	500	-90	-103.6
10	2.0	7	500	-90	-108.2
11	2.0	7	500	-90	-104.1
12	2.0	7	500	-90	-102.1
13	2.0	7	500	-90	-104.0
14	2.0	7	500	-90	-109.4
15	2.0	7	500	-90	-105.5
16	2.0	7	500	-90	-102.6

34. B48: DC Error

Range 3 V

Channel 1

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.054	0.001
-3.0	±1.200	0.066	0.001
+2.0	±1.300	0.048	0.001
-2.0	±1.300	0.066	0.001
+1.0	±1.600	0.040	0.001
-1.0	±1.600	0.076	0.001
+0.3	±3.000	-0.002	0.001
-0.3	±3.000	0.117	0.001

Channel 2

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.069	0.001
-3.0	±1.200	0.045	0.001
+2.0	±1.300	0.073	0.001
-2.0	±1.300	0.038	0.001
+1.0	±1.600	0.092	0.001
-1.0	±1.600	0.022	0.001
+0.3	±3.000	0.175	0.001
-0.3	±3.000	-0.060	0.001

Channel 3

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.079	0.001
-3.0	±1.200	0.073	0.001
+2.0	±1.300	0.079	0.001
-2.0	±1.300	0.071	0.001
+1.0	±1.600	0.085	0.001
-1.0	±1.600	0.067	0.001
+0.3	±3.000	0.108	0.001
-0.3	±3.000	0.042	0.001

Channel 4

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.088	0.001
-3.0	±1.200	0.066	0.001
+2.0	±1.300	0.091	0.001
-2.0	±1.300	0.059	0.001
+1.0	±1.600	0.110	0.001
-1.0	±1.600	0.041	0.001
+0.3	±3.000	0.193	0.001
-0.3	±3.000	-0.043	0.001

Channel 5

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.098	0.001
-3.0	±1.200	0.090	0.001
+2.0	±1.300	0.098	0.001
-2.0	±1.300	0.086	0.001
+1.0	±1.600	0.106	0.001
-1.0	±1.600	0.080	0.001
+0.3	±3.000	0.136	0.001
-0.3	±3.000	0.050	0.001

Channel 6

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.082	0.001
-3.0	±1.200	0.081	0.001
+2.0	±1.300	0.081	0.001
-2.0	±1.300	0.080	0.001
+1.0	±1.600	0.084	0.001
-1.0	±1.600	0.080	0.001
+0.3	±3.000	0.090	0.001
-0.3	±3.000	0.074	0.001

Channel 7

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.067	0.001
-3.0	±1.200	0.087	0.001
+2.0	±1.300	0.059	0.001
-2.0	±1.300	0.090	0.001
+1.0	±1.600	0.044	0.001
-1.0	±1.600	0.105	0.001
+0.3	±3.000	-0.024	0.001
-0.3	±3.000	0.174	0.001

Channel 8

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.089	0.001
-3.0	±1.200	0.091	0.001
+2.0	±1.300	0.084	0.001
-2.0	±1.300	0.088	0.001
+1.0	±1.600	0.082	0.001
-1.0	±1.600	0.089	0.001
+0.3	±3.000	0.078	0.001
-0.3	±3.000	0.089	0.001

Channel 9

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.001	0.001
-3.0	±1.200	0.030	0.001
+2.0	±1.300	-0.008	0.001
-2.0	±1.300	0.038	0.001
+1.0	±1.600	-0.030	0.001
-1.0	±1.600	0.059	0.001
+0.3	±3.000	-0.133	0.001
-0.3	±3.000	0.162	0.001

Channel 10

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.021	0.001
-3.0	±1.200	0.010	0.001
+2.0	±1.300	0.023	0.001
-2.0	±1.300	0.009	0.001
+1.0	±1.600	0.031	0.001
-1.0	±1.600	0.000	0.001
+0.3	±3.000	0.068	0.001
-0.3	±3.000	-0.035	0.001

Channel 11

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.026	0.001
-3.0	±1.200	0.003	0.001
+2.0	±1.300	0.031	0.001
-2.0	±1.300	-0.002	0.001
+1.0	±1.600	0.049	0.001
-1.0	±1.600	-0.022	0.001
+0.3	±3.000	0.132	0.001
-0.3	±3.000	-0.107	0.001

Channel 12

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.024	0.001
-3.0	±1.200	0.003	0.001
+2.0	±1.300	0.027	0.001
-2.0	±1.300	-0.001	0.001
+1.0	±1.600	0.042	0.001
-1.0	±1.600	-0.018	0.001
+0.3	±3.000	0.113	0.001
-0.3	±3.000	-0.087	0.001

Channel 13

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	-0.001	0.001
-3.0	±1.200	-0.013	0.001
+2.0	±1.300	0.000	0.001
-2.0	±1.300	-0.015	0.001
+1.0	±1.600	0.008	0.001
-1.0	±1.600	-0.026	0.001
+0.3	±3.000	0.048	0.001
-0.3	±3.000	-0.066	0.001

Channel 14

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	-0.014	0.001
-3.0	±1.200	0.002	0.001
+2.0	±1.300	-0.020	0.001
-2.0	±1.300	0.008	0.001
+1.0	±1.600	-0.034	0.001
-1.0	±1.600	0.019	0.001
+0.3	±3.000	-0.095	0.001
-0.3	±3.000	0.083	0.001

Channel 15

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	0.022	0.001
-3.0	±1.200	-0.045	0.001
+2.0	±1.300	0.037	0.001
-2.0	±1.300	-0.059	0.001
+1.0	±1.600	0.086	0.001
-1.0	±1.600	-0.109	0.001
+0.3	±3.000	0.311	0.001
-0.3	±3.000	-0.334	0.001

Channel 16

Level /V	DL /%	Actual /%	MU /%
+3.0	±1.200	-0.022	0.001
-3.0	±1.200	-0.021	0.001
+2.0	±1.300	-0.025	0.001
-2.0	±1.300	-0.019	0.001
+1.0	±1.600	-0.026	0.001
-1.0	±1.600	-0.020	0.001
+0.3	±3.000	-0.033	0.001
-0.3	±3.000	-0.015	0.001

35. B48: Inherent Noise

These values are only display indications.
Measurement uncertainty (MU) see convention {c}

Range 200 mV;

Channel	Function	Pre Filter	DUL /µV	Actual /µV
1	RMS	CCIR unwtd	2.0	1.43
2	RMS	CCIR unwtd	2.0	1.40
3	RMS	CCIR unwtd	2.0	1.43
4	RMS	CCIR unwtd	2.0	1.40
5	RMS	CCIR unwtd	2.0	1.42
6	RMS	CCIR unwtd	2.0	1.46
7	RMS	CCIR unwtd	2.0	1.50
8	RMS	CCIR unwtd	2.0	1.48
1	RMS	A Weighting	1.5	1.02
2	RMS	A Weighting	1.5	1.07
3	RMS	A Weighting	1.5	1.06
4	RMS	A Weighting	1.5	1.10
5	RMS	A Weighting	1.5	1.08
6	RMS	A Weighting	1.5	1.11
7	RMS	A Weighting	1.5	1.06
8	RMS	A Weighting	1.5	1.00

Channel	Function	Pre Filter	DUL /µV	Actual /µV
9	RMS	CCIR unwtd	2.0	1.45
10	RMS	CCIR unwtd	2.0	1.46
11	RMS	CCIR unwtd	2.0	1.47
12	RMS	CCIR unwtd	2.0	1.44
13	RMS	CCIR unwtd	2.0	1.45
14	RMS	CCIR unwtd	2.0	1.42
15	RMS	CCIR unwtd	2.0	1.47
16	RMS	CCIR unwtd	2.0	1.39
9	RMS	A Weighting	1.5	1.04
10	RMS	A Weighting	1.5	1.09
11	RMS	A Weighting	1.5	1.10
12	RMS	A Weighting	1.5	1.03
13	RMS	A Weighting	1.5	1.07
14	RMS	A Weighting	1.5	1.04
15	RMS	A Weighting	1.5	1.07
16	RMS	A Weighting	1.5	1.05

36. B48: Peakdetector

Channel	Peakdetector	Nominal	Actual
1	function	pass	PASS
2	function	pass	PASS
3	function	pass	PASS
4	function	pass	PASS
5	function	pass	PASS
6	function	pass	PASS
7	function	pass	PASS
8	function	pass	PASS

Channel	Peakdetector	Nominal	Actual
9	function	pass	PASS
10	function	pass	PASS
11	function	pass	PASS
12	function	pass	PASS
13	function	pass	PASS
14	function	pass	PASS
15	function	pass	PASS
16	function	pass	PASS

37. B48: Cross Talk Attenuation

Level 10 V; Freq 20 kHz

Channel 1

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 1	100	146.46	1
BAL	10	other channels -> CH 1	100	116.57	1

Channel 2

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 2	100	111.34	1
BAL	10	other channels -> CH 2	100	109.43	1

Channel 3

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 3	100	108.35	1
BAL	10	other channels -> CH 3	100	109.45	1

Channel 4

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 4	100	110.73	1
BAL	10	other channels -> CH 4	100	109.39	1

Channel 5

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 5	100	107.18	1
BAL	10	other channels -> CH 5	100	109.22	1

Channel 6

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 6	100	110.78	1
BAL	10	other channels -> CH 6	100	109.27	1

Channel 7

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 7	100	108.22	1
BAL	10	other channels -> CH 7	100	109.50	1

Channel 8

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 8	100	111.32	1
BAL	10	other channels -> CH 8	100	116.93	1

Channel 9

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 1	100	115.83	1
BAL	10	other channels -> CH 1	100	116.35	1

Channel 10

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 2	100	110.70	1
BAL	10	other channels -> CH 2	100	109.20	1

Channel 11

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 3	100	108.07	1
BAL	10	other channels -> CH 3	100	109.29	1

Channel 12

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 4	100	110.57	1
BAL	10	other channels -> CH 4	100	109.28	1

Channel 13

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 5	100	107.14	1
BAL	10	other channels -> CH 5	100	109.15	1

Channel 14

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 6	100	110.74	1
BAL	10	other channels -> CH 6	100	109.12	1

Channel 15

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 7	100	108.12	1
BAL	10	other channels -> CH 7	100	109.37	1

Channel 16

OUTPUT	Ro /Ohm	Direction	DLL /dB	Actual /dB	MU /dB
UNB	5	other channels -> CH 8	100	111.11	1
BAL	10	other channels -> CH 8	100	116.75	1

38. B48: Common Mode Rejection CMRR

Channel 1

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	88.8	0.19
DC	20	3	0.2	50	76.2	0.19
DC	1	3	3	50	64.7	0.19
DC	20	3	3	50	57.6	0.19

Channel 2

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	90.7	0.19
DC	20	3	0.2	50	70.2	0.19
DC	1	3	3	50	67.4	0.19
DC	20	3	3	50	63.5	0.19

Channel 3

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	97.0	0.19
DC	20	3	0.2	50	71.5	0.19
DC	1	3	3	50	85.7	0.19
DC	20	3	3	50	61.0	0.19

Channel 4

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	100.0	0.19
DC	20	3	0.2	50	84.5	0.19
DC	1	3	3	50	77.3	0.19
DC	20	3	3	50	63.2	0.19

Channel 5

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	95.6	0.19
DC	20	3	0.2	50	74.0	0.19
DC	1	3	3	50	74.1	0.19
DC	20	3	3	50	69.7	0.19

Channel 6

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	94.8	0.19
DC	20	3	0.2	50	71.0	0.19
DC	1	3	3	50	74.3	0.19
DC	20	3	3	50	62.5	0.19

Channel 7

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	93.5	0.19
DC	20	3	0.2	50	71.0	0.19
DC	1	3	3	50	71.1	0.19
DC	20	3	3	50	68.6	0.19

Channel 8

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	92.3	0.19
DC	20	3	0.2	50	66.6	0.19
DC	1	3	3	50	84.2	0.19
DC	20	3	3	50	63.7	0.19

Channel 9

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	104.7	0.19
DC	20	3	0.2	50	81.6	0.19
DC	1	3	3	50	82.2	0.19
DC	20	3	3	50	70.9	0.19

Channel 10

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	97.6	0.19
DC	20	3	0.2	50	72.5	0.19
DC	1	3	3	50	86.0	0.19
DC	20	3	3	50	75.8	0.19

Channel 11

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	90.3	0.19
DC	20	3	0.2	50	75.0	0.19
DC	1	3	3	50	67.4	0.19
DC	20	3	3	50	66.6	0.19

Channel 12

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	93.3	0.19
DC	20	3	0.2	50	83.4	0.19
DC	1	3	3	50	66.9	0.19
DC	20	3	3	50	66.7	0.19

Channel 13

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	98.0	0.19
DC	20	3	0.2	50	74.5	0.19
DC	1	3	3	50	79.8	0.19
DC	20	3	3	50	67.1	0.19

Channel 14

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	95.4	0.19
DC	20	3	0.2	50	69.8	0.19
DC	1	3	3	50	88.2	0.19
DC	20	3	3	50	78.2	0.19

Channel 15

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	94.5	0.19
DC	20	3	0.2	50	70.0	0.19
DC	1	3	3	50	73.5	0.19
DC	20	3	3	50	63.7	0.19

Channel 16

Coupling	Freq /kHz	Input /V	Range /V	DLL /dB	Actual /dB	MU /dB
DC	1	3	0.2	50	93.5	0.19
DC	20	3	0.2	50	67.8	0.19
DC	1	3	3	50	89.5	0.19
DC	20	3	3	50	69.2	0.19

39. B48: Input Impedance

Channel	Ri /Ohm	DLL /Ohm	DUL /Ohm	Actual /Ohm	MU
1	200000	198000.0	202000.0	200094.3	4.16
2	200000	198000.0	202000.0	200071.0	4.16
3	200000	198000.0	202000.0	200067.9	4.16
4	200000	198000.0	202000.0	200070.8	4.16
5	200000	198000.0	202000.0	200062.5	4.16
6	200000	198000.0	202000.0	200085.7	4.16
7	200000	198000.0	202000.0	200050.7	4.16
8	200000	198000.0	202000.0	200048.0	4.16

Channel	Ri /Ohm	DLL /Ohm	DUL /Ohm	Actual /Ohm	MU /Ohm
9	200000	198000.0	202000.0	200076.1	4.16
10	200000	198000.0	202000.0	200042.8	4.16
11	200000	198000.0	202000.0	200018.7	4.16
12	200000	198000.0	202000.0	200007.9	4.16
13	200000	198000.0	202000.0	200060.7	4.16
14	200000	198000.0	202000.0	200041.0	4.16
15	200000	198000.0	202000.0	200081.5	4.16
16	200000	198000.0	202000.0	200014.1	4.16