




<b>Prüfbericht - Nr.: 50001072 003</b>			Seite 1 von 8		
Test Report No.:			Page 1 of 8		
<b>Auftraggeber:</b>		KYOCERA Document Solutions Inc.			
Client:		1-2-28 Tamatsukuri, Chuo-ku ,Osaka-shi,Osaka,540-8585 Japan			
<b>Gegenstand der Prüfung: Multi Function Printer</b>					
Test item:					
<b>Bezeichnung:</b>		ECOSYS M3560idn		<b>Serien-Nr.:</b>	
Identification:				Serial No.:	
<b>Wareneingangs-Nr.:</b>		A000028355-1		<b>Eingangsdatum:</b>	
Receipt No.:				Date of receipt:	
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b>			Prüfmuster vollständig und unbeschädigt		
Condition of the test item at delivery:			Test item complete and undamaged		
<b>Prüfort:</b>		TÜV Rheinland Japan Ltd.			
Testing location:		4-25-2, Kita-Yamata, Tuzuki-ku, Yokohama 224-0021, Japan			
		Phone:+81-45-914-0239 Fax:+81-45-914-3347 e-mail: telecom-lab@jpn.tuv.com			
<b>Prüfgrundlage:</b>		EG 201 120 V1.1.1 (1998 - 01)			
Test specification:					
<b>Prüfergebnis:</b>		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).			
Test Result:		The test item passed the test specification(s).			
<b>Prüflaboratorium:</b>		TÜV Rheinland Japan Ltd.			
Testing Laboratory:		4-25-2, Kita-Yamata, Tuzuki-ku, Yokohama 224-0021, Japan			
		Phone:+81-45-914-0239 Fax:+81-45-914-3347 e-mail: telecom-lab@jpn.tuv.com			
<b>geprüft/ tested by:</b>			<b>kontrolliert/ reviewed by:</b>		
2013-11-26, Y.Miura 			2013-11-26, T.Kuriyama 		
Datum	Name/Stellung	Unterschrift	Datum	Name/Stellung	Unterschrift
Date	Name/Position	Signature	Date	Name/Position	Signature
<b>Sonstiges/ Other Aspects:</b>					
Accredited Testing Laboratory under the terms of ISO 17025 D-PL-12059-01-03					
 Deutsche Akkreditierungsstelle					
* Legende: 1 = sehr gut      2 = gut      3 = befriedigend      4 = ausreichend      5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n)      F(ail) = entspricht nicht o.g. Prüfgrundlage(n)      N/A = nicht anwendbar      N/T = nicht getestet Legend: 1 = very good      2 = good      3 = satisfactory      4 = sufficient      5 = poor P(ass) = passed a.m. test specification(s)      F(ail) = failed a.m. test specification(s)      N/A = not applicable      N/T = not tested					
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.					

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## Test result:

No deviations have been found from the technical requirements during the tests. ☒

The deviations from the technical requirements found during the tests are enclosed this report. ☐

### Climatic conditions during testing

Temperature: 23 - 25 °C  
Air pressure: 1020 - 1020 hPa  
Humidity: 45 - 55 %

### Appliance documentation

Hardware: -  
Software: -  
User manual: ECOSYS M3560idn Specifications  
Circuit diagram: FAX SUB PCB(1/1)

### Test system configuration

Hardware: ECOSYS M3560idn  
Software: 001.006

### Test Sample Configuration

☐ One - Port - TE (only a1/b1)  
☒ Two - Port TE (a1/b1 and a2/b2)

☒ DTMF dialling function  
☐ Decadic pulse dialling function

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## Measurement equipment list

Measuring instrument	Identification	
Automatic Measurement System AMS from ESP-Telekom	TL-9000	
Outband Receiver and Ringer Amplifier ARE1000 from ESP-Telekom	TL-9001	
International Feeding Bridge ISB1000 from ESP-Telekom	TL-9002	
Digital Multimeter Fluke	TL-9108	
Oscilloscope Tektronix TDS210	TL-9008	
Task probe I / II / Voltage Probe I / II	TL-9036, TL-9037	
Connector Box	TL-9010	
Resistor Box	TL-9011	
Reference Impedance Zref-quer TBR21, Type28	TL-9020, TL-9021	
Reference Impedance Zref-längs TBR21, Type 29	TL-9022	
Reference Impedance 150 Ohm crosswise, Type 50	TL-9033	
Polarity Switch	TL-9042	
Reference Impedance Z-Ref.\EG201120 - 4k Ohm crosswise	TL-9047	
Reference Impedance Z-Ref.\EG201120 - 4k Ohm length balanced	TL-9048	

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## Measurement uncertainties

	Measuring	Measurement Uncertainty K=2
6.2-1	Resistance to earth	Resistance : $\pm 0.19 \text{ M}\Omega$
6.2-2	Impedance to earth at 50 Hz	Impedance Z : $\pm 2 \%$
6.2-3	DC resistance	DC Voltage : $\pm 0.81 \text{ V}$ Current : $\pm 1.5 \mu\text{A}$
6.2-4	Lowest impedance at 25Hz and 50Hz	Impedance : $\pm 54 \Omega$
6.2 - 5 a	Lowest impedance 0.3 – 3.4kHz, Z(f)	Impedance : $\pm 35 \Omega$
6.2 - 5 b	Lowest impedance at 12kHz and 16kHz	Impedance : $\pm 35 \Omega$
6.2 - 6	DC current during ringing	DC Voltage : $\pm 0.55 \text{ V}$ DC current : $\pm 0.094 \text{ mA}$
6.2 - 7-1	Lowest unbalance loss about earth 50-3400Hz (Quiescent, Loop)	Impedance unbalance: $\pm 1.1 \text{ dB}$
6.2 - 7-2	Lowest unbalance loss about earth 50-3400Hz (Transferred)	Impedance unbalance: $\pm 1.1 \text{ dB}$
6.2 - 8-1	Noise (Quiescent)	"Limit = -80dB: Voltage: $\pm 0.02 \text{ mV}$ Limit = -37dB: Voltage: $\pm 1.56 \text{ mV}$ "
6.2 - 8-2	Noise (Transferred)	"Limit = -80dB Voltage: $\pm 0.02 \text{ mV}$ Limit = -37dB Voltage: $\pm 1.56 \text{ mV}$ "
6.3.2 – 1	DC series resistance	DC current : $\pm 0.2 \text{ mA}$ Resistance : $\pm 1.0 \Omega$
6.3.2 – 2	Insertion loss at 25Hz and 50Hz	Insertion loss : $\pm 0.095 \text{ dB}$
6.3.2 – 2	Insertion loss 0.3 – 3.4 kHz	Insertion loss : $\pm 0.095 \text{ dB}$
	Insertion loss 12kHz and 16kHz	Insertion loss : $\pm 0.095 \text{ dB}$

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## Summary Report: EG 201 120

Table 1 : Parallel aspects of parallel/series connection						
Requirements					N/A N/T fail OK	Appendix A
<b>Resistance to earth - TBR 21, A.4.4.4</b>					<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1
Measurement results:						
Wire	U	I	R	LF (1,000/R)		
1	100 V	< 2 µA	> 50 MΩ	20 LU		
2	100 V	< 2 µA	> 50 MΩ	20 LU		
<b>Impedance to earth at 50 Hz - ETS 300 001, A.9.2.2.1</b>					<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	-
Measurement results:						
Wire	U	I	Z	LF (20,000/Z)		
1	100 Vrms	< 5 µA	>20 kΩ	10 LU		
2	100 Vrms	< 5 µA	>20 kΩ	10 LU		
<b>DC resistance - TBR 21, A.4.4.1</b>					<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	2
Measurement results:						
U <sub>DC</sub> (Normal)		I <sub>max</sub>	R <sub>TE</sub>	LF (100/R)		
25 V		< 2.5 µA	> 10 MΩ	10 LU		
100 V		< 10.0 µA	> 10 MΩ	10 LU		
U <sub>DC</sub> (Inverse)		I <sub>max</sub>	R <sub>TE</sub>	LF (100/R)		
25 V		< 2.5 µA	> 10 MΩ	10 LU		
100 V		< 10.0 µA	> 10 MΩ	10 LU		
<b>Lowest Impedance at 25 Hz and 50 Hz - TBR 21, A.4.4.2.1</b>					<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3
Measurement results:						
f	U		Z <sub>TE</sub>	LF (400/Z <sub>TE</sub> )		
25 Hz	> 30 Vrms		49.2 kΩ	8.1 LU		
50 Hz	> 30 Vrms		48.3 kΩ	8.3 LU		
<b>Lowest Impedance in the range 0.3 - 3.4 kHz - ETS 300 001, A.4.1.1</b>					<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	4-5
Measurement results:						
frequency range	U		Z (min.)	LF (1,000/Z)		
300 Hz – 3400 Hz	1.0 Vrms		50.9 kΩ	19.6 LU		
<b>Lowest Impedance at 12 kHz and 16 kHz ± 1% - ETS 300 001, A.4.1.1</b>					<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6-9
Measurement results:						
frequency range	U		Z (min.)	LF (1,000/Z)		
11.88 kHz - 12.12 kHz	1.0 Vrms		14.5 kΩ	69.0		
15.84 kHz - 16.16 kHz	1.0 Vrms		10.8 kΩ	92.6		

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Table 1 : Parallel aspects of parallel/series connection				
Requirements			N/A N/T fail OK	Appendix A
<b>DC current during ringing - TBR 21, A.4.4.2.3</b>  Measurement results: f $I_{DC}$ (max.) LF ( $100 \times I_{DC} / 0.6$ ) 25 Hz < 0.06 mA 10 LU 50 Hz < 0.06 mA 10 LU			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	10
<b>Lowest unbalance loss about earth - TBR 21, A.4.4.3 Quiescent state</b>  Measurement results: frequency range LCL (min.) LF ( $100 \times 10^{(46-LCL)/20}$ ) 50 Hz - 3,400 Hz 57.9 dB 25.4 LU			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	11-13
<b>Lowest unbalance loss about earth - TBR 21, A.4.7.4 Loop state</b>  Measurement results: frequency range LCL (min.) LF ( $100 \times 10^{(46-LCL)/20}$ ) 50 Hz - 3,400 Hz 62.8 dB 14.5 LU			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	14-16
<b>Lowest unbalance loss about earth – ETS 300 001, A.4.2.2.2 Transferred state</b>  Measurement results: frequency range LCL (min.) LF ( $100 \times 10^{(46-LCL)/20}$ ) 50 Hz - 3,400 Hz 59.5 dB 21.1 LU			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	17-20
<b>Inband Noise (Psophometrically weighted) - ETS 300 001, A.4.5.1</b>  Measurement results: Quiescent state N LF ( $100 \times 10^{(64+N)/20}$ ) -102.2 dBmp 0.01 LU Loop state -92.8 dBmp 0.13 LU			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	21-22
Maximum Loading factor: 92.6 LU			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	-

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Table 2 : Recommended maximum values for series connected TEs			
Requirements	N/A N/T fail OK	Appendix A	
<b>DC series resistance - ETS 300 001, A.2.5</b> Recommended maximum value: 50 $\Omega$ (DC feeding voltage: 50 Vdc, RL = 360 $\Omega$ )  Measurement results: U 50 Vdc R 50 $\Omega$	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	23	
<b>Insertion loss at 25 Hz and 50 Hz - ETS 300 001, A.4.3</b> Recommended maximum value: 0.4 dB (Z = 4 k $\Omega$ )  Measurement results: U <sub>1</sub> 30 Vrms IL (20×logU <sub>1</sub> /U <sub>2</sub> ) 0.28 dB	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	24-25	
<b>Insertion loss in the range 0.3 - 3.4 kHz - ETS 300 001, A.4.3</b> Recommended maximum value: 0.4 dB (Z = ZR)  Measurement results: frequency range 300 Hz - 3400 Hz IL (max.) (20×logU <sub>1</sub> /U <sub>2</sub> ) 0.34 dB	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	26-27	
<b>Insertion loss at 12 kHz and 16 kHz ± 1% - ETS 300 001, A.4.3</b> Recommended maximum value: 0.4 dB (Z = 200 $\Omega$ )  Measurement results: frequency range 11.88 kHz - 12.12 kHz 15.84 kHz - 16.16 kHz IL (max.) (20×logU <sub>1</sub> /U <sub>2</sub> ) 0.31 dB 0.28 dB	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	28-31	



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**Anlage A**  
Appendix A

**Messergebnisse**  
Measuring results

# Protocol for Resistance to earth

EG201120 - 6.2 Resistance to earth in quiescent and transfer state

=====

Model No. : M3560idn  
 TEUT : MFP Feeding bridge : TBR21  
 Number of TEUT: 214043018  
 Manufacturer : KYOCERA DS Inc.  
 Date : 18.11.13  
 Time : 16:58.04  
 Data Set : EG201120-6.2  
 Requirement : If a connection to earth is intended, the DC resistance between  
 each line terminal of TE and earth shall be not less than  
 10 MOhm.  
 ("E" means the socket "Plane" on the front side of the ARE1000.)

Remark : -

Verdict : PASS

Uf V	Rf Ω	Polarity	Ut V	Rt Ω	Measure	Limit MΩ	Current uA	Resistance MΩ
50.0	230	Normal	100.0	10000	b - E	10	< 2.0	> 50
50.0	230	Normal	-100.0	10000	b - E	10	< 2.0	> 50
50.0	230	Normal	100.0	10000	a - E	10	< 2.0	> 50
50.0	230	Normal	-100.0	10000	a - E	10	< 2.0	> 50
50.0	230	Inverted	100.0	10000	b - E	10	< 2.0	> 50
50.0	230	Inverted	-100.0	10000	b - E	10	< 2.0	> 50
50.0	230	Inverted	100.0	10000	a - E	10	< 2.0	> 50
50.0	230	Inverted	-100.0	10000	a - E	10	< 2.0	> 50

# Protocol for DC resistance quiescent condition

EG201120 - 6.2 DC resistance in quiescent and transfer state

Model No. : M3560idn  
 TEUT : MFP Gain (internal) : +20.0 dB  
 Number of TEUT: 214043018  
 Manufacturer : KYOCERA DS Inc.  
 Date : 18.11.13  
 Time : 17:04.32

Data set : EG201120-6.2  
 Requirement : The current drawn by the TE shall not exceed that which would be drawn by a 1 MOhm resistor replacing the TE.

Remark : -

Verdict : PASS

Vt [V]	Rt [Ohm]	Polarity	Rl< [MOhm]	R [MOhm]			
25.0	1000	Normal	1.0	> 10	<	2.5	uA
25.0	1000	Inverted	1.0	> 10	<	2.5	uA
50.0	1000	Normal	1.0	> 10	<	5.0	uA
50.0	1000	Inverted	1.0	> 10	<	5.0	uA
100.0	1000	Normal	1.0	> 10	<	10.0	uA
100.0	1000	Inverted	1.0	> 10	<	10.0	uA

Protocol for Impedance of ringing devices

EG201120 - 6.2 Impedance of ringing devices

=====

Model No.	: M3560idn	Feeding voltage	: 50.0 V
TEUT	: MFP	Feeding resistor	: 2050.0 Ohm
Number of TEUT	: 214043018		
Manufacturer	: KYOCERA DS Inc.		
Date	: 18.11.13		
Time	: 17:09.25		

Data set : EG201120-6.2  
Requirement : The impedance Z of the TE at frequencies of 25 Hz and 50 Hz shall not be less than 4.0 ... 999.0 kΩ when tested at 30 V rms.

Remark : -

Verdict : PASS

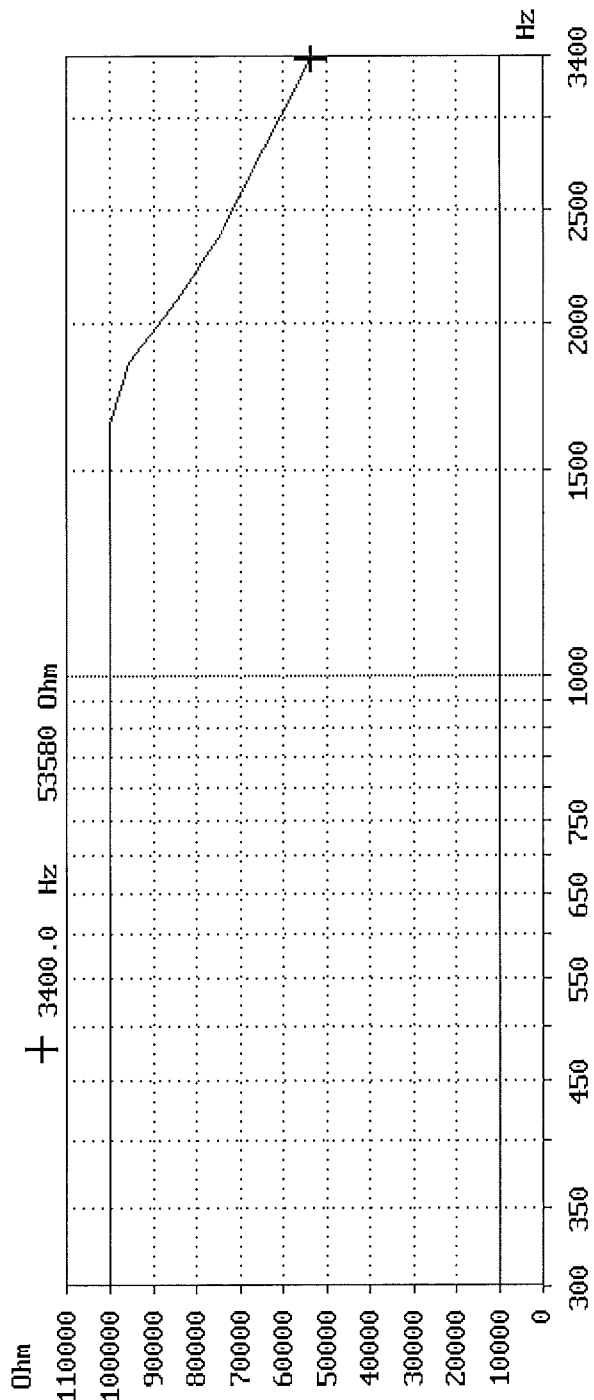
f Hz	U <sub>te</sub> V	Z kΩ
25	30.0	49.2
50	30.0	48.3

# Modulus of impedance Z(f)

EG 201 120/6.2

Test Job	: 214043018	Current Limitation	: 100.0 mA
TEUT	: MFP	Feeding Voltage	: 50.0 V
Manufacturer	: KYOCERA DS Inc.	Dropping Resistor	: 2050.0 Ohm
Operator	: Y. Miura	Polarity	: Normal
Date	: 18.11.13	Level	: +0.0 dBV
Time	: 17:12.34		

Remark : -  
Mask violations : 0  
Verdict : PASS



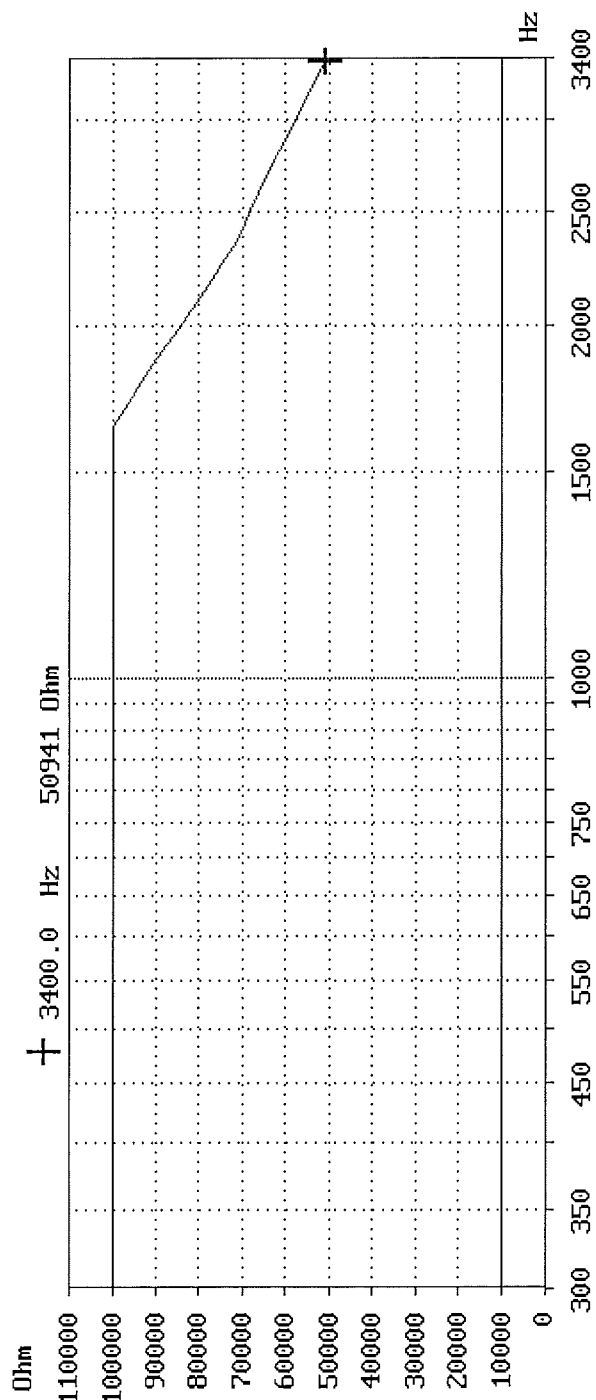
# Modulus of impedance Z(f)

EG 201 120/6.2

Test Job : 214043018  
 TEUT : MFP  
 Manufacturer : KYOCERA DS Inc.  
 Operator : Y. Miura  
 Date : 18.11.13  
 Time : 17:15.21

Current Limitation : 100.0 mA  
 Feeding Voltage : 50.0 V  
 Dropping Resistor : 2050.0 Ohm  
 Polarity : Inverted  
 Level : +0.0 dBV

Remark : -  
 Mask violations : 0  
 Verdict : PASS

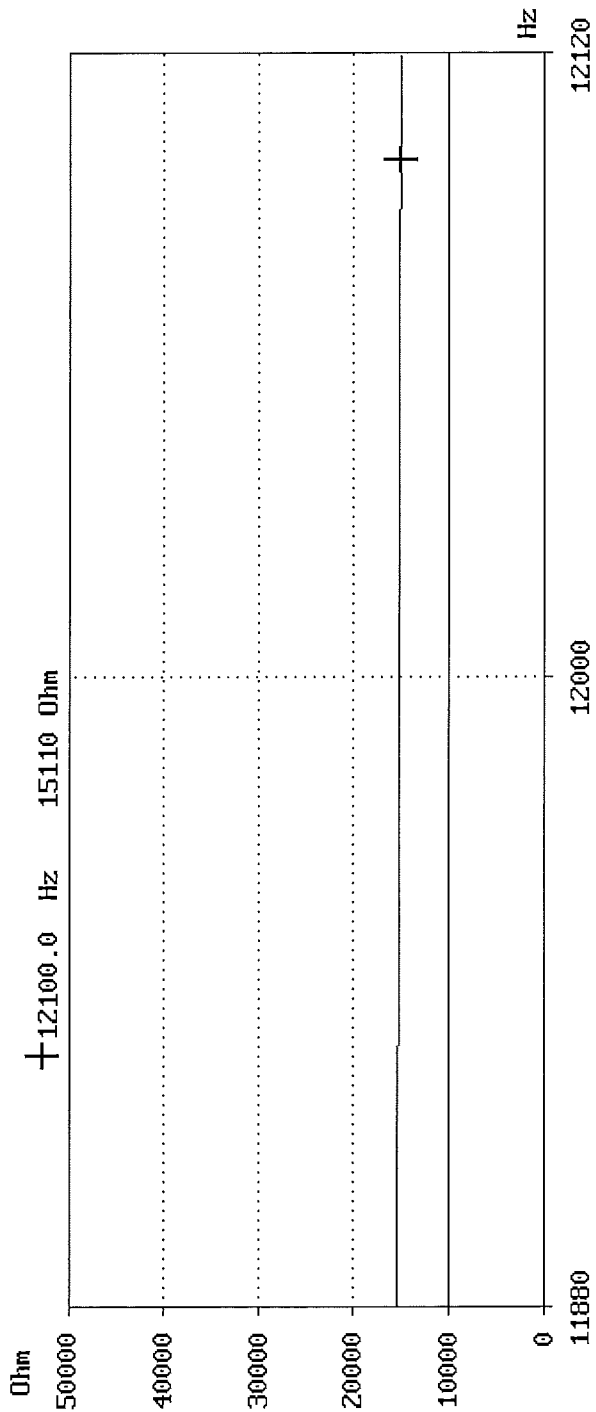


# Modulus of impedance Z(f)

EG 201 120/6.2

Test Job	: 214043018	Current Limitation	: 100.0 mA
TEUT	: MFP	Feeding Voltage	: 50.0 V
Manufacturer	: KYOCERA DS Inc.	Dropping Resistor	: 2050.0 Ohm
Operator	: Y. Miura	Polarity	: Normal
Date	: 18.11.13	Level	: +0.0 dBu
Time	: 17:17.40		

Remark : -  
Mask violations : 0  
Verdict : PASS

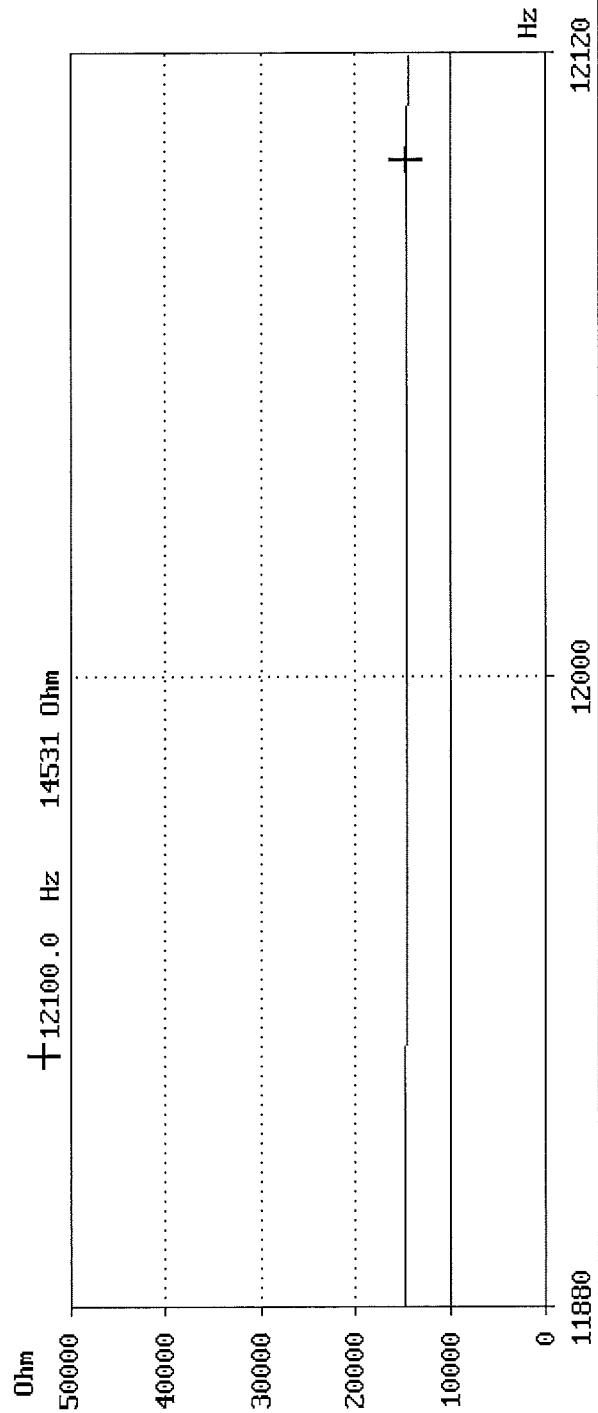


# Modulus of impedance Z(f)

EG 201 120/6.2

Test Job	: 214043018	Current Limitation	: 100.0 mA
TEUT	: MFP	Feeding Voltage	: 50.0 V
Manufacturer	: KYOCERA DS Inc.	Dropping Resistor	: 2050.0 Ohm
Operator	: Y. Miura	Polarity	: Inverted
Date	: 18.11.13	Level	: +0.0 dBV
Time	: 17:19.06		

Remark : -  
Mask violations : 0  
Verdict : PASS



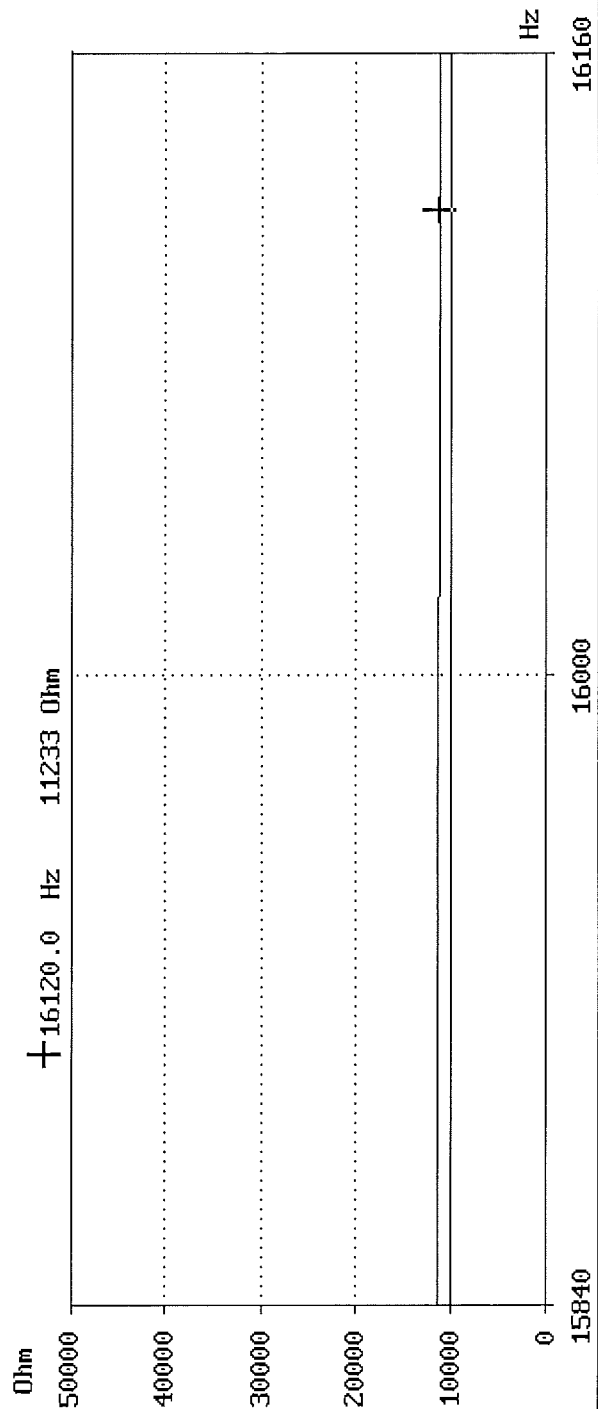


# Modulus of impedance Z(f)

EG 201 120/6.2

Test Job	: 214043018	Current Limitation	: 100.0 mA
TEUT	: MFP	Feeding Voltage	: 50.0 V
Manufacturer	: KYOCERA DS Inc.	Dropping Resistor	: 2050.0 Ohm
Operator	: Y. Miura	Polarity	: Normal
Date	: 18.11.13	Level	: +0.0 dBV
Time	: 17:20:36		

Remark : -  
Mask violations : 0  
Verdict : PASS

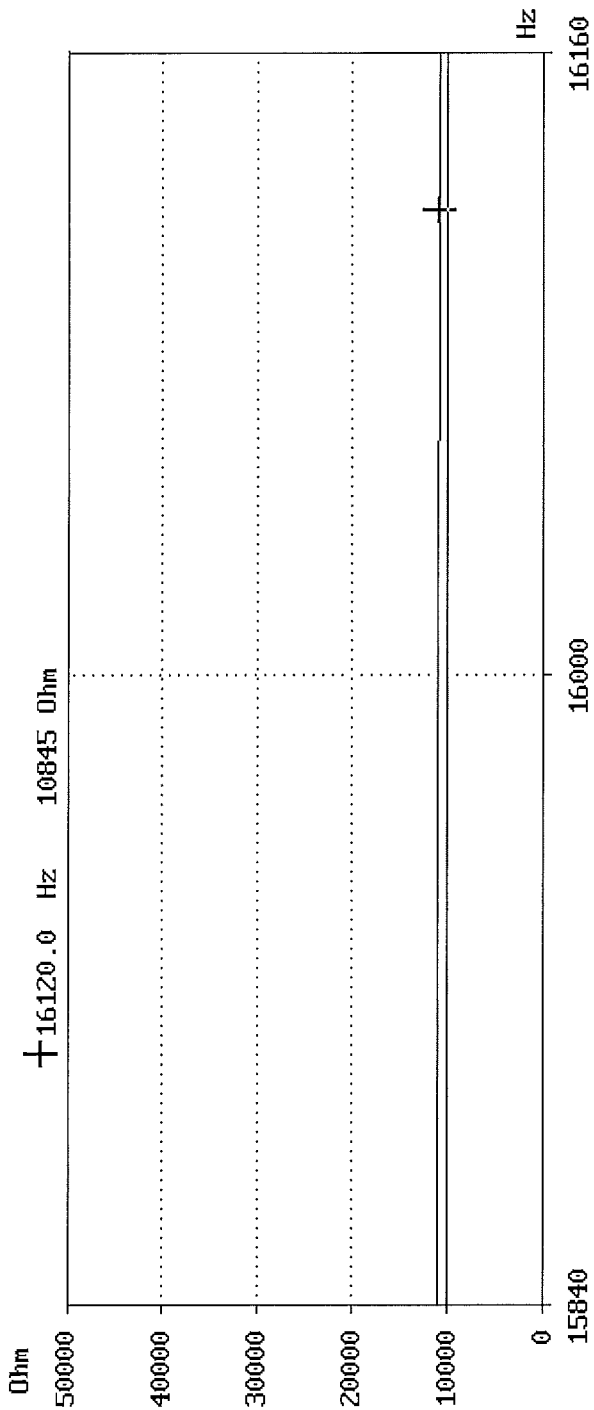


# Modulus of impedance Z(f)

EG 201 120/6.2

Test Job	: 214043018	Current Limitation	: 100.0 mA
TEUT	: MFP	Feeding Voltage	: 50.0 V
Manufacturer	: KYOCERA DS Inc.	Dropping Resistor	: 2050.0 Ohm
Operator	: Y. Miura	Polarity	: Inverted
Date	: 18.11.13	Level	: +0.0 dBV
Time	: 17:21.57		

Remark : -  
Mask violations : 0  
Verdict : PASS



Protocol for DC current during ringing

EG201120 - 6.2 DC current during ringing

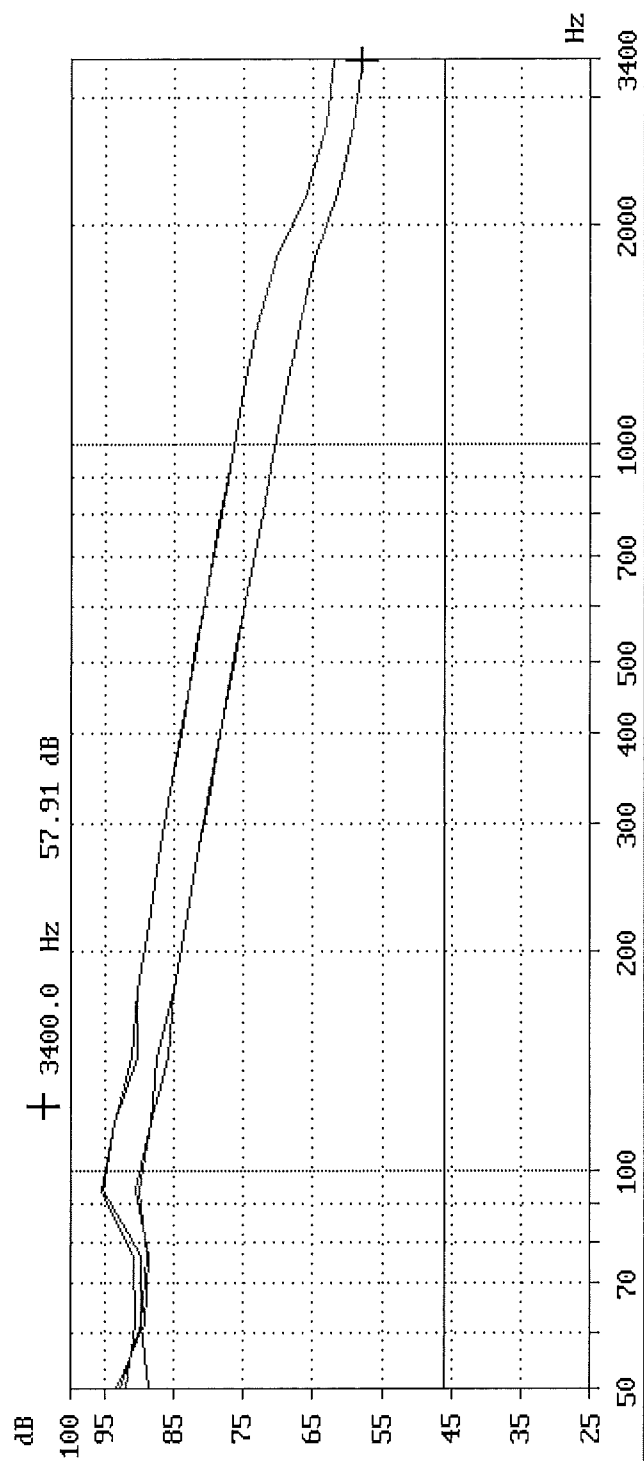
=====

Model No.	: M3560idn	Feeding voltage	: 60.0 V
TEUT	: MFP	Feeding resistor	: 850 Ohm
Number of TEUT	: 214043018	Polarity	: Normal
Manufacturer	: KYOCERA DS Inc.		
Date	: 18.11.13		
Time	: 17:23.08		
Data set	: EG201120-6.2		
Requirement	: The resulting DC current during the ringing signal shall be less 0.60 mA.		
Remark	: -		

Verdict : PASS

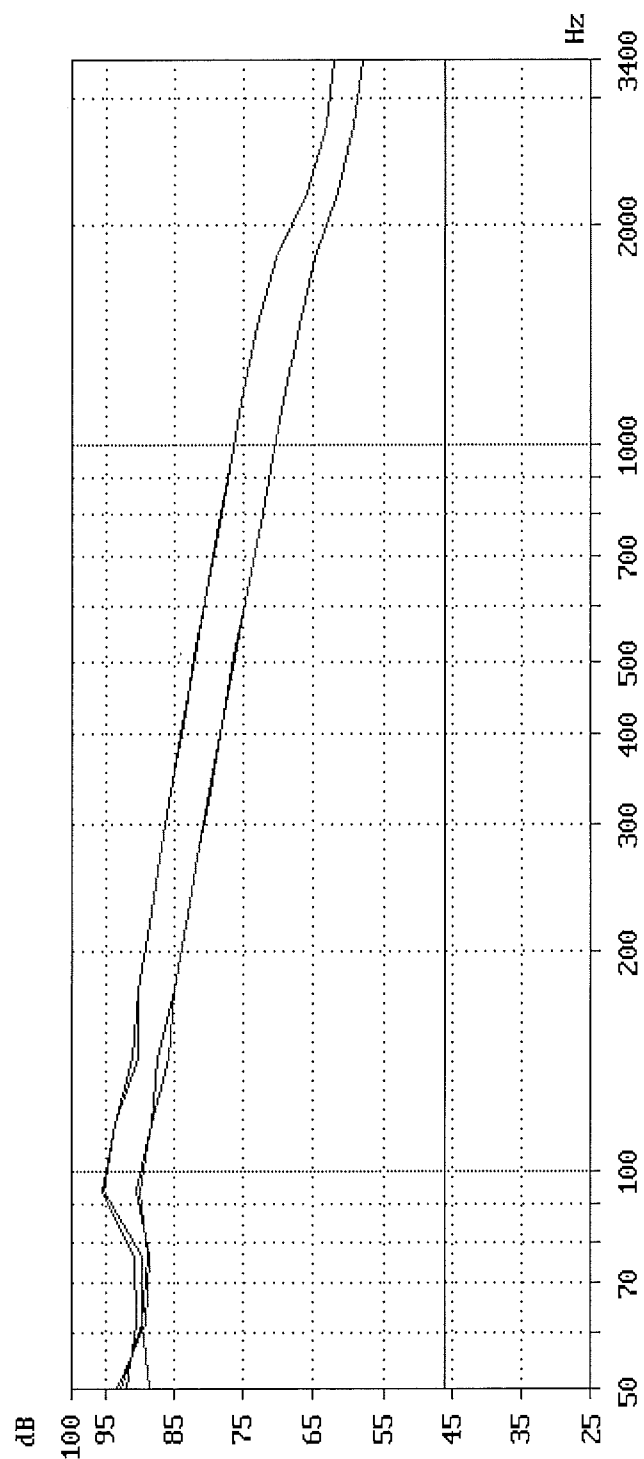
f Hz	Uac V	R kΩ	I mA
25	90.0	> 1Meg	< 0.06
50	90.0	> 1Meg	< 0.06

EG 201 120



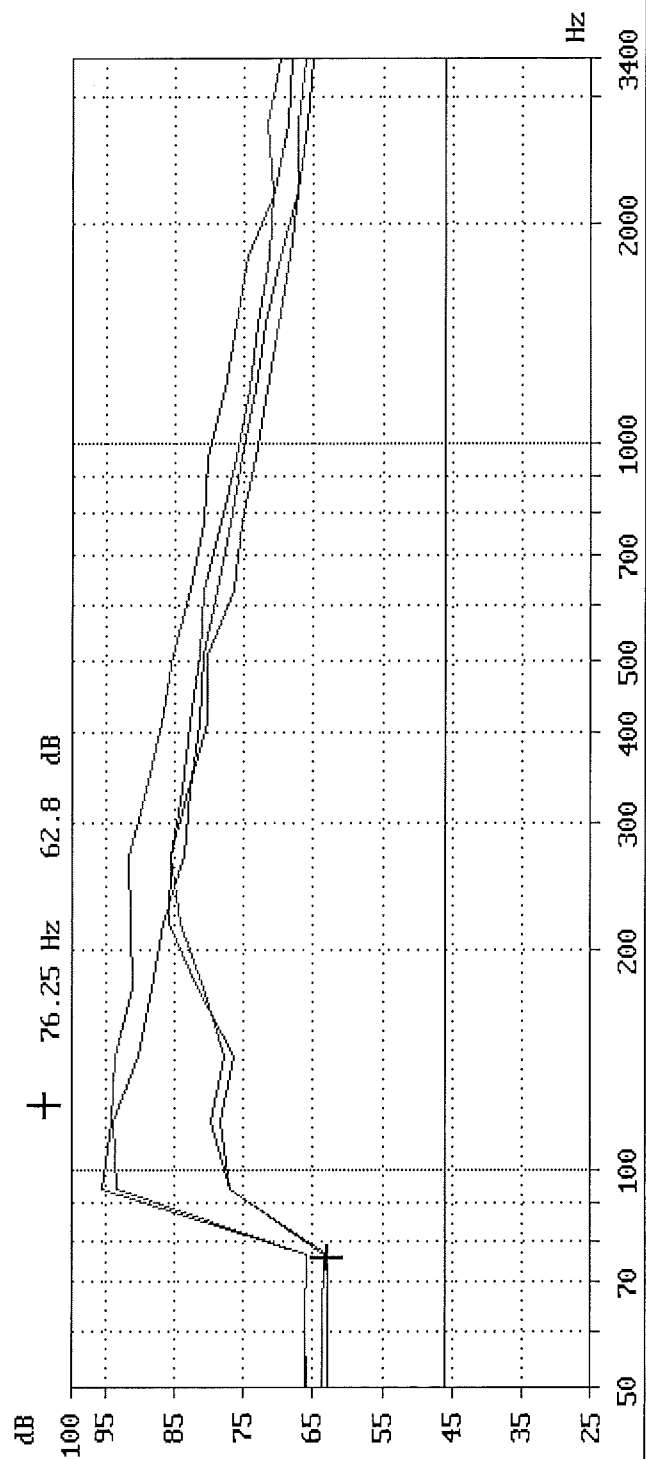
EG 201 120

Comission : 214043018  
Printing time : 18.11.13 17:27.16  
Graph 1 \_\_\_\_\_  
Graph 2 \_\_\_\_\_  
Graph 3 \_\_\_\_\_  
Graph 4 \_\_\_\_\_



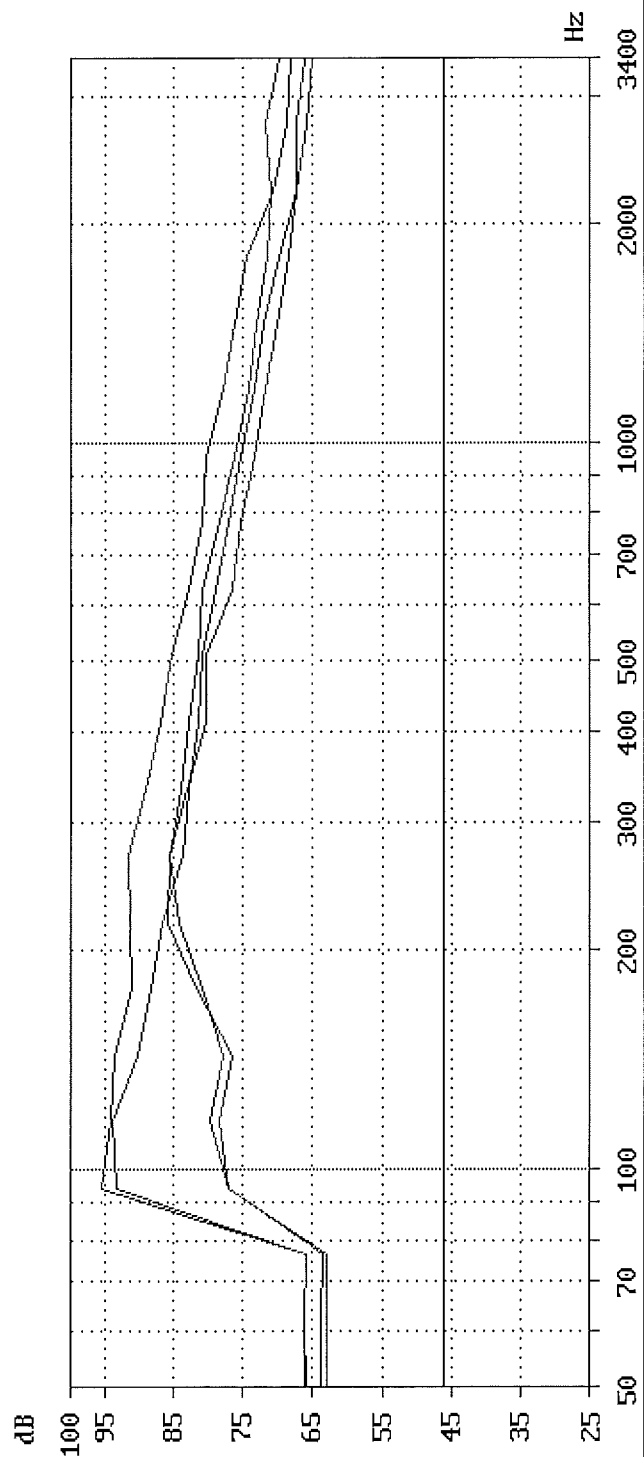
Longitudinal conversion loss Comission : 214043018		Printing time : 18.11.13 17:27.16	
Graph 1		Graph 2	
Test Job	Longitudinal conversion loss 214043018	Longitudinal conversion loss	214043018
TEUT	MFP	MFP	
Manufacturer	KYOCERA DS Inc.	KYOCERA DS Inc.	
Operator	Y. Miura	Y. Miura	
Date	18.11.13	18.11.13	
Time	17:24.51	17:25.17	
Tol.mask violations	0	0	
Verdict	PASS	PASS	
Current Limitation	60.0 mA	60.0 mA	
Feeding Voltage	50.0 V	50.0 V	
Feeding Bridge	TBR21	TBR21	
Feeding resistor	3200 Ohm	2050 Ohm	
Level	+0.0 dB(0.775 V)	+0.0 dB(0.775 V)	
Remark	Quiescent	-	
Graph 3		Graph 4	
Test Job	Longitudinal conversion loss 214043018	Longitudinal conversion loss	214043018
TEUT	MFP	MFP	
Manufacturer	KYOCERA DS Inc.	KYOCERA DS Inc.	
Operator	Y. Miura	Y. Miura	
Date	18.11.13	18.11.13	
Time	17:25.41	17:26.05	
Tol.mask violations	0	0	
Verdict	PASS	PASS	
Current Limitation	60.0 mA	60.0 mA	
Feeding Voltage	50.0 V	50.0 V	
Feeding Bridge	TBR21	TBR21	
Feeding resistor	850 Ohm	230 Ohm	
Level	+0.0 dB(0.775 V)	+0.0 dB(0.775 V)	
Remark	-	-	

EG 201 120



EG 201 120

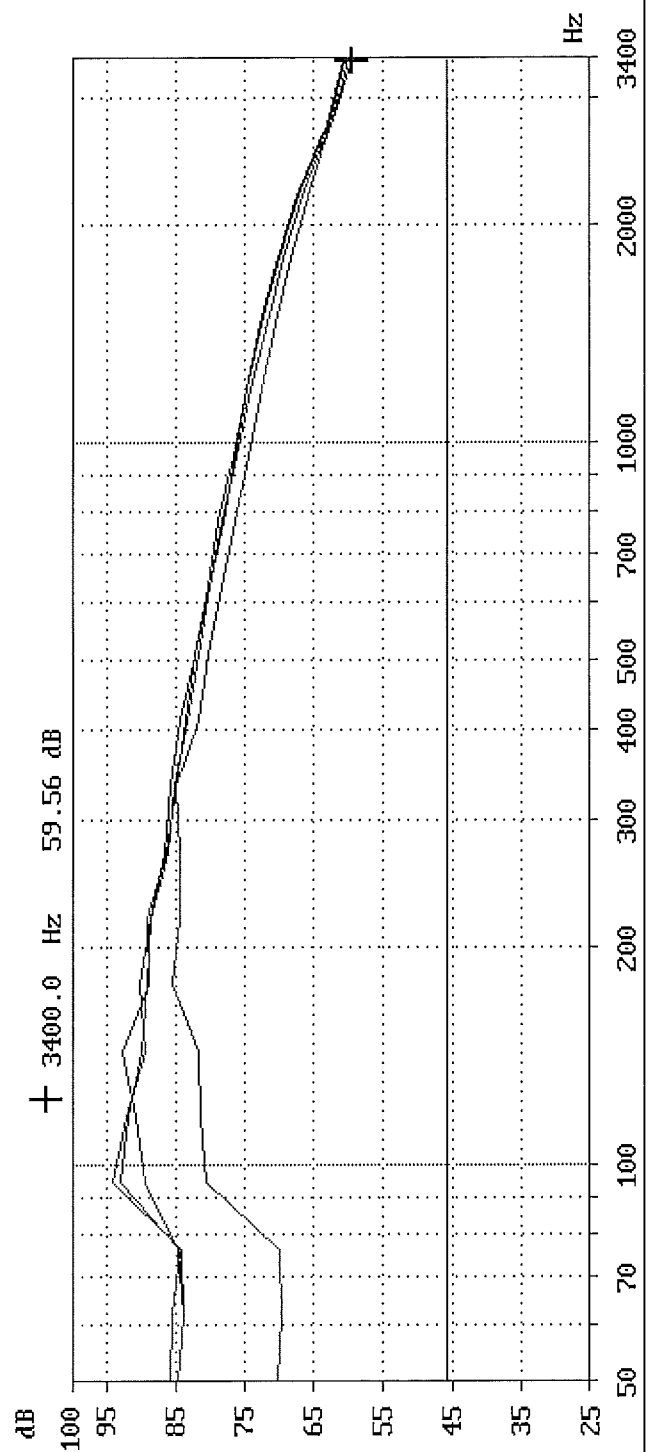
Comission : 214043018  
Printing time : 18.11.13 17:29.56  
Graph 1  
Graph 2  
Graph 3  
Graph 4





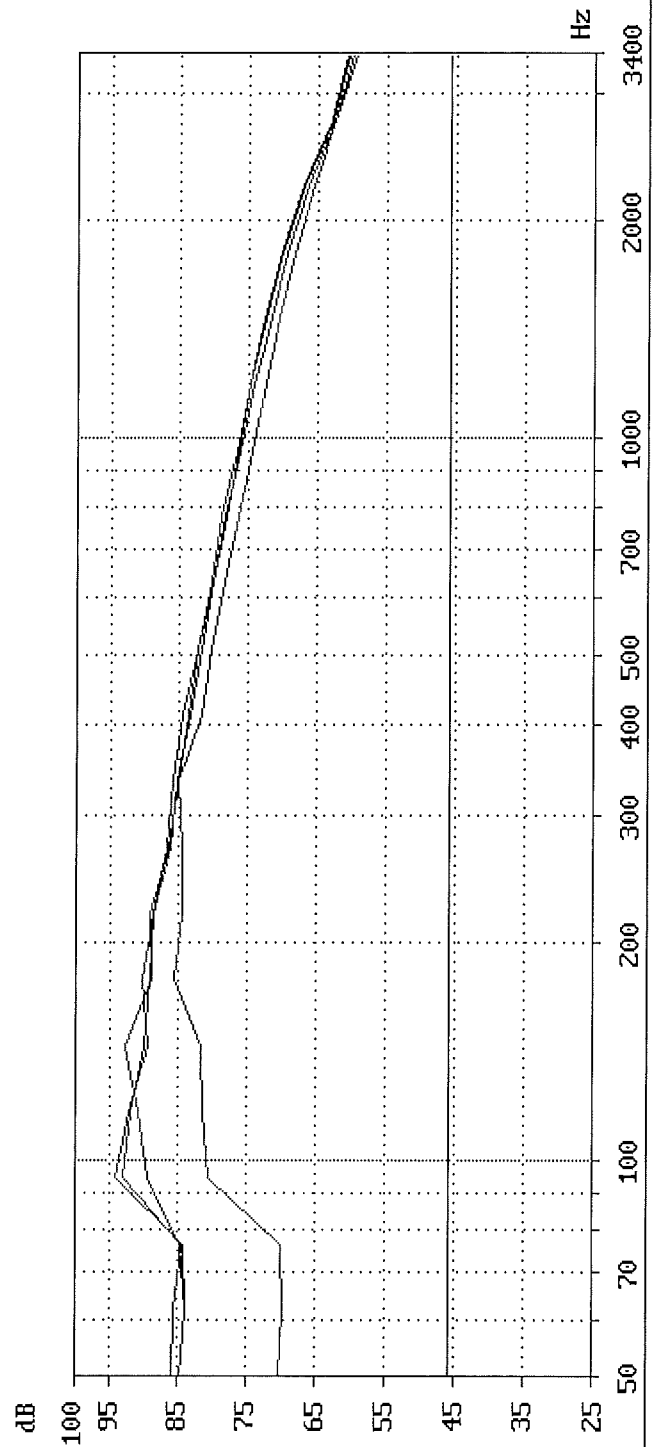
Longitudinal conversion loss Comission : 214043018		Printing time : 18.11.13 17:29.56	
Graph 1		Graph 2	
Test Job	Longitudinal conversion loss	Longitudinal conversion loss	Longitudinal conversion loss
TEUT	214043018	214043018	214043018
Manufacturer	MFP	MFP	MFP
Operator	KYOCERA DS Inc.	KYOCERA DS Inc.	KYOCERA DS Inc.
Date	Y. Miura	Y. Miura	Y. Miura
Time	18.11.13	18.11.13	18.11.13
Tol.mask violations	17:27.54	17:28.17	17:28.17
Verdict	0	0	0
Current Limitation	PASS	PASS	PASS
Feeding Voltage	60.0 mA	60.0 mA	60.0 mA
Feeding Bridge	50.0 V	50.0 V	50.0 V
Feeding resistor	TBR21	TBR21	TBR21
Level	3200 Ohm	2050 Ohm	2050 Ohm
Remark	+0.0 dB(0.775 V)	+0.0 dB(0.775 V)	+0.0 dB(0.775 V)
	Loop	-	-
Graph 3		Graph 4	
Test Job	Longitudinal conversion loss	Longitudinal conversion loss	Longitudinal conversion loss
TEUT	214043018	214043018	214043018
Manufacturer	MFP	MFP	MFP
Operator	KYOCERA DS Inc.	KYOCERA DS Inc.	KYOCERA DS Inc.
Date	Y. Miura	Y. Miura	Y. Miura
Time	18.11.13	18.11.13	18.11.13
Tol.mask violations	17:28.38	17:28.59	17:28.59
Verdict	0	0	0
Current Limitation	PASS	PASS	PASS
Feeding Voltage	60.0 mA	60.0 mA	60.0 mA
Feeding Bridge	50.0 V	50.0 V	50.0 V
Feeding resistor	TBR21	TBR21	TBR21
Level	850 Ohm	230 Ohm	230 Ohm
Remark	+0.0 dB(0.775 V)	+0.0 dB(0.775 V)	+0.0 dB(0.775 V)
	-	-	-

EG 201 120



EG 201 120

Comission : 214043018  
Printing time : 18.11.13 17:34.16  
Graph 1 \_\_\_\_\_  
Graph 2 \_\_\_\_\_  
Graph 3 \_\_\_\_\_  
Graph 4 \_\_\_\_\_



Longitudinal conversion loss 4-wire		Printing time : 18.11.13 17:34.16
Comission : 214043018		
Graph 1		
Test Job	Longitudinal conversion loss 4-wire	
TEUT	214043018	
Manufacturer	MFP	
Operator	KYOCERA DS Inc.	
Date	Y. Miura	
Time	18.11.13	
Tol.mask violations	17:32.26	
Verdict	0	
Current Limitation	PASS	
Feeding Voltage	100.0 mA	
Feeding Bridge	50.0 V	
Feeding resistor	germany	
Drop resistor HC	3200 Ohm	
Termination	300 Ohm	
Level	600 Ohm	
Remark	+0.0 dB(0.775 V)	
	-	
Graph 2		
Test Job	Longitudinal conversion loss 4-wire	
TEUT	214043018	
Manufacturer	MFP	
Operator	KYOCERA DS Inc.	
Date	Y. Miura	
Time	18.11.13	
Tol.mask violations	17:32.51	
Verdict	0	
Current Limitation	PASS	
Feeding Voltage	100.0 mA	
Feeding Bridge	50.0 V	
Feeding resistor	germany	
Drop resistor HC	2050 Ohm	
Termination	300 Ohm	
Level	600 Ohm	
Remark	+0.0 dB(0.775 V)	
	-	
Graph 3		
Test Job	Longitudinal conversion loss 4-wire	
TEUT	214043018	
Manufacturer	MFP	
Operator	KYOCERA DS Inc.	
Date	Y. Miura	
Time	18.11.13	
Tol.mask violations	17:33.13	
Verdict	0	
Current Limitation	PASS	
Feeding Voltage	100.0 mA	
Feeding Bridge	50.0 V	
Feeding resistor	germany	
Drop resistor HC	850 Ohm	
Termination	300 Ohm	
Level	600 Ohm	
Remark	+0.0 dB(0.775 V)	
	-	

Longitudinal conversion loss 4-wire  
Comission : 214043018

Printing time : 18.11.13 17:34.16

Graph 4

Test Job	Longitudinal conversion loss 4-wire
TEUT	214043018
Manufacturer	MFP
Operator	KYOCERA DS Inc.
Date	Y. Miura
Time	18.11.13
Tol.mask violations	17:33.34
Verdict	0
Current Limitation	PASS
Feeding Voltage	100.0 mA
Feeding Bridge	50.0 V
Feeding resistor	germany
Drop resistor HC	230 Ohm
Termination	300 Ohm
Level	600 Ohm
Remark	+0.0 dB(0.775 V)
	-

# Protocol for Noise level sending 2-wire

Noise level sending 2-wire  
EG 201 120, 6.2

Date : 18.11.13  
Time : 17:30.30  
Operator : Y. Miura  
Commission : 214043018  
TEUT : MFP  
Manufacturer: KYOCERA DS Inc.

Current Limitation : 100.0 mA  
Feeding Voltage : 50.0 V  
Feeding Bridge : TBR21  
Receiver Impedance : 600 Ohm  
Filter : Psophometric  
Time Constant :  $\tau = 200$  msec  
Limit :  $\leq -64.0$  dBmp

Remark : -

Verdict : PASS

ps  
[dBmp]

Rf  
[ $\Omega$ ]

Polarity

-105.1	3200	Inverted
-102.2	2050	Normal
-104.8	850	Inverted
-102.2	230	Normal

# Protocol for Noise level sending 4-wire

Noise level sending 4-wire  
EG 201 120, 6.2

Date : 18.11.13  
Time : 17:34.55  
Operator : Y. Miura  
Commission : 214043018  
TEUT : MFP  
Manufacturer: KYOCERA DS Inc.

Current Limitation : 100.0 mA  
Feeding Voltage : 50.0 V  
Feeding Bridge : TBR21  
Termination Za : 600 Ohm  
Drop resistor of HC: 300 Ohm  
Filter : Psophometric  
Time Constant :  $\tau = 200$  msec  
Receiver Impedance : 600 Ohm  
Limit :  $\leq -64.0$  dBmp

Remark : -

Verdict : PASS

ps  
[dBmp]

Rf  
[Ω]

Polarity

-103.2	3200	Inverted
-98.1	2050	Normal
-105.3	850	Inverted
-92.8	230	Normal

# Protocol for Series DC resistance

Series DC resistance  
EG 201120, 6.3.1

Date	: 18.11.13	Feeding Voltage	: 50.0 V
Time	: 19:04.29	Feed current/limit	: 100.0 mA
Operator	: Y. Miura	Trigger I [mA]	: 5 mA
Test Job	: 214043018	Termination	: 600 Ohm
TEUT	: MFP	Verdict	: PASS
Parameter set	: EG 201120, 6.3.1		
Remark	: -		

Limit		: Rs1 < 50 Ohm	Rs2 < 50 Ohm	Rs < 50 Ohm			
Rf Ohm	Polarity	I mA	Vs1 V	Vs2 V	Rs1 Ohm	Rs2 Ohm	Rs Ohm
230	Inverted	56.416	0.211	2.601	4	46	50



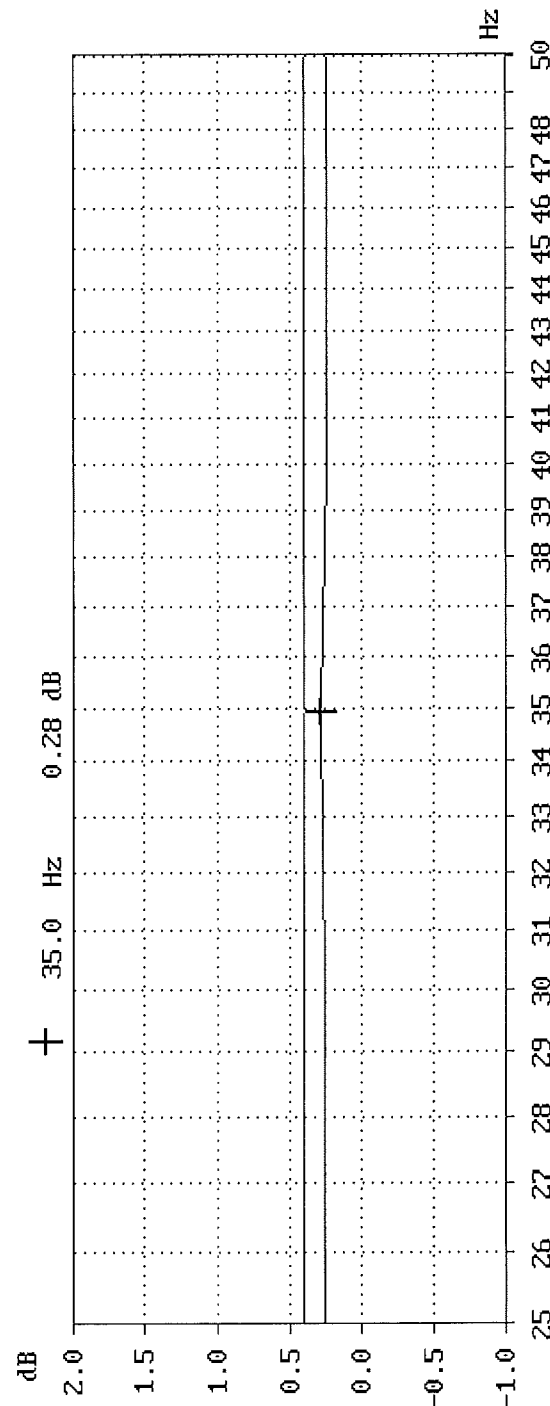
# Insertion loss 4-wire

EG 201 120/6.3.1

Test job	: 214043018	Level	: +20.0 dBu
TEUT	: MFP	Generator imp.	: 4 kOhm symmetrical
Manufacturer:	KYOCERA DS Inc.	Input impedance	: 4 kOhm
Operator	: Y. Miura	Feeding voltage	: 50.0 V
Date	: 18.11.13	Feeding resistor Rf	: 2050.0 Ohm
Time	: 19:07.31	Drop resistor of HC	: 300 Ohm
Remark	: -	Feeding current: 100.0 mA	
		Polarity	: Normal
		Direction	: Normal

Tol.mask violations: 0

Verdict : PASS



# Insertion loss 4-wire

EG 201 120/6.3.1

Test job : 214043018

TEUT : MFP

Manufacturer: KYOCERA DS Inc.

Operator : Y. Miura

Date : 18.11.13

Time : 19:08.29

Remark : -

Tol.mask violations: 0

Verdict : PASS

Level : +20.0 dBu

Generator imp. : 4 kOhm symmetrical

Input impedance : 4 kOhm

Feeding voltage : 50.0 V

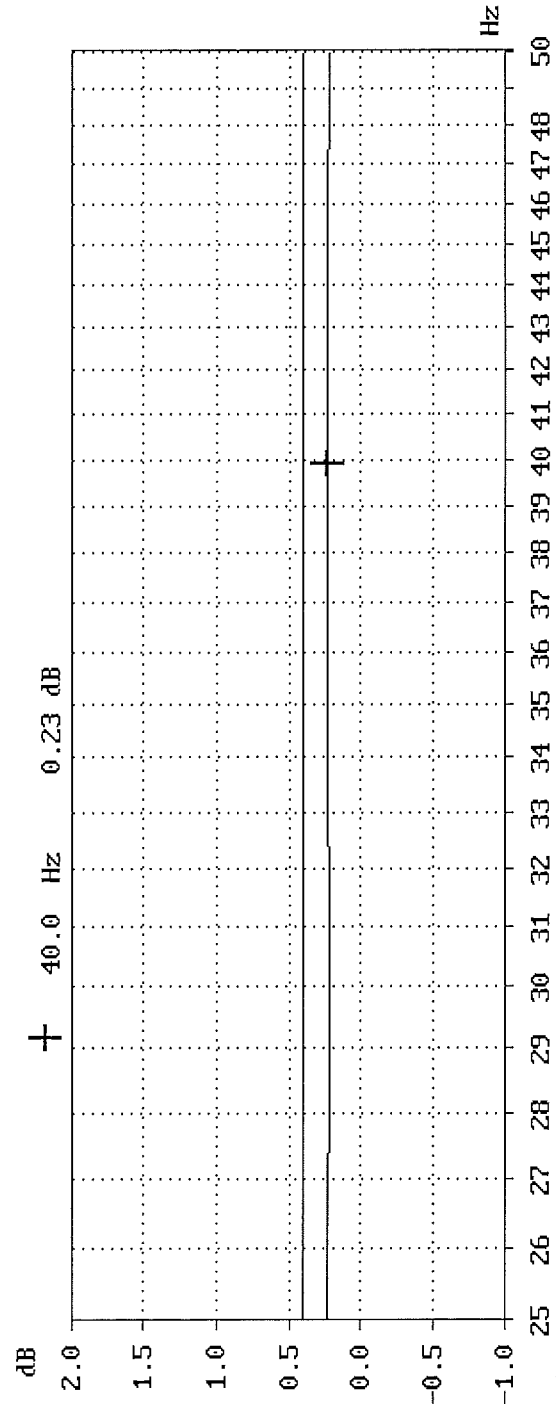
Feeding resistor Rf: 2050.0 Ohm

Drop resistor of HC: 300 Ohm

Direction : Normal

Feeding current: 100.0 mA

Polarity : Inverted



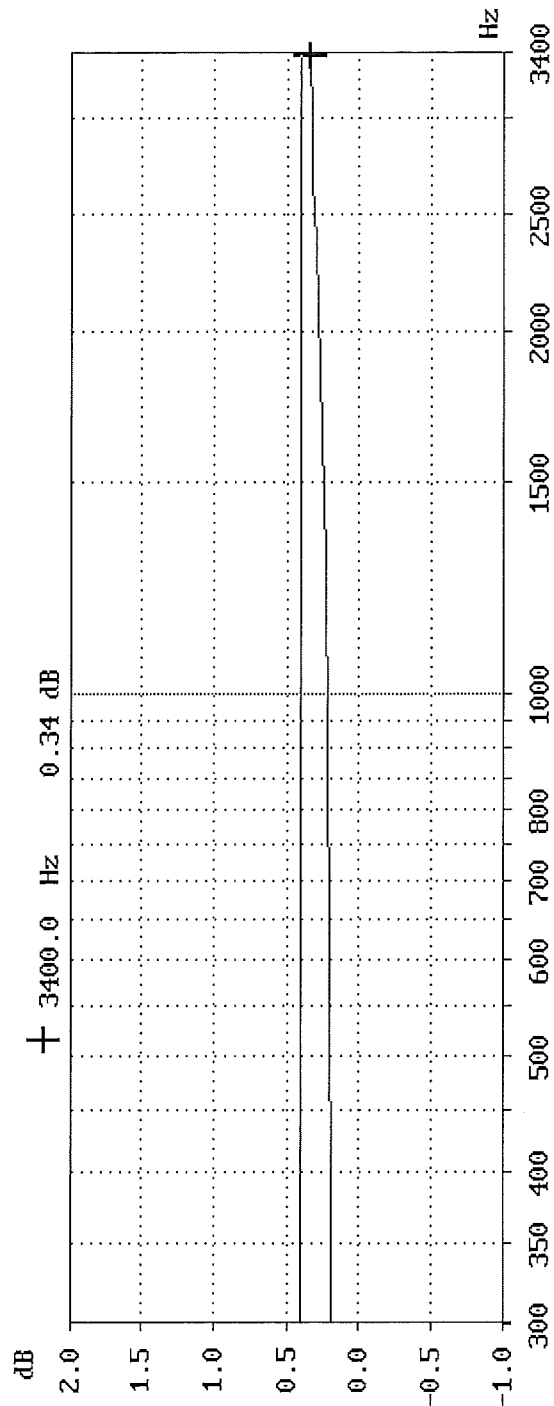
# Insertion loss 4-wire

EG 201 120/6.3.1

Test job	: 214043018	Level	: +0.0 dBu
TEUT	: MFP	Generator imp.	: Zr TBR21 symmetrical
Manufacturer:	KYOCERA DS Inc.	Input impedance	: Zr TBR21
Operator	: Y. Miura	Feeding voltage	: 50.0 V
Date	: 18.11.13	Feeding current:	100.0 mA
Time	: 19:09.25	Feeding resistor Rf:	2050.0 Ohm
		Polarity	: Normal
Drop resistor of HC:	300 Ohm		
Direction	: Normal		

Remark : -

Tol.mask violations: 0  
Verdict : PASS

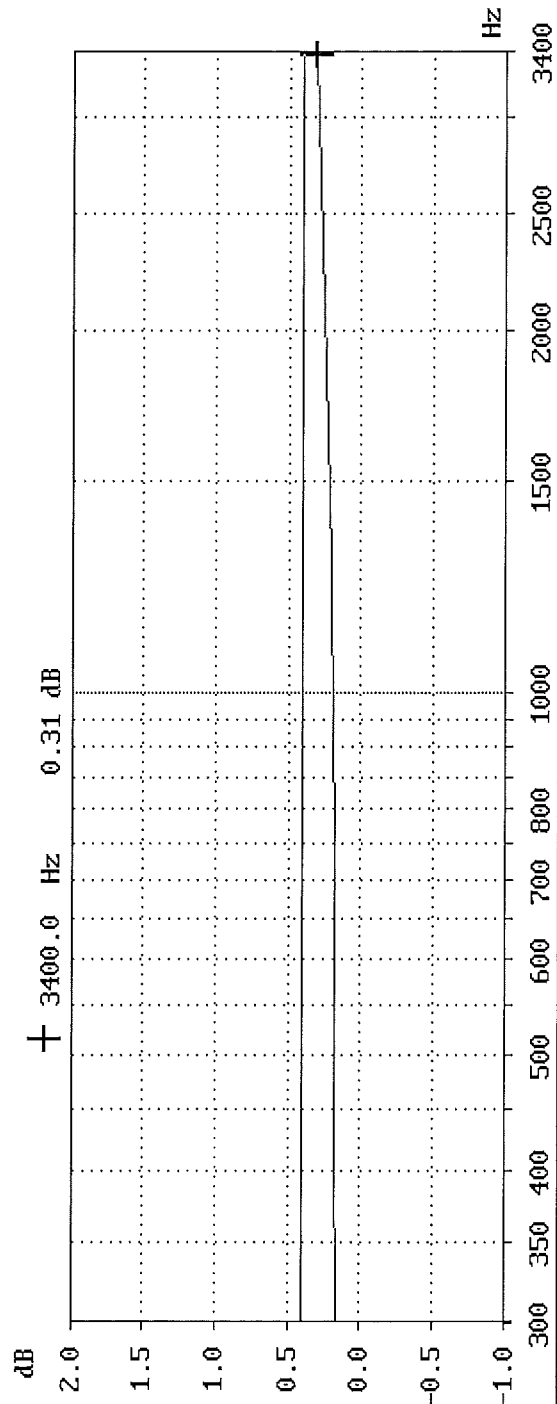


# Insertion loss 4-wire

EG 201 120/6.3.1

Test job	: 214043018	Level	: +0.0 dBu
TEUT	: MFP	Generator imp.	: Zr TBR21 symmetrical
Manufacturer:	KYOCERA DS Inc.	Input impedance	: Zr TBR21
Operator	: Y. Miura	Feeding voltage	: 50.0 V
Date	: 18.11.13	Feeding resistor Rf	: 2050.0 Ohm
Time	: 19:10.14	Drop resistor of HC	: 300 Ohm
Remark	: -	Direction	: Normal
		Feeding current:	100.0 mA
		Polarity	: Inverted

Tol.mask violations: 0  
Verdict : PASS



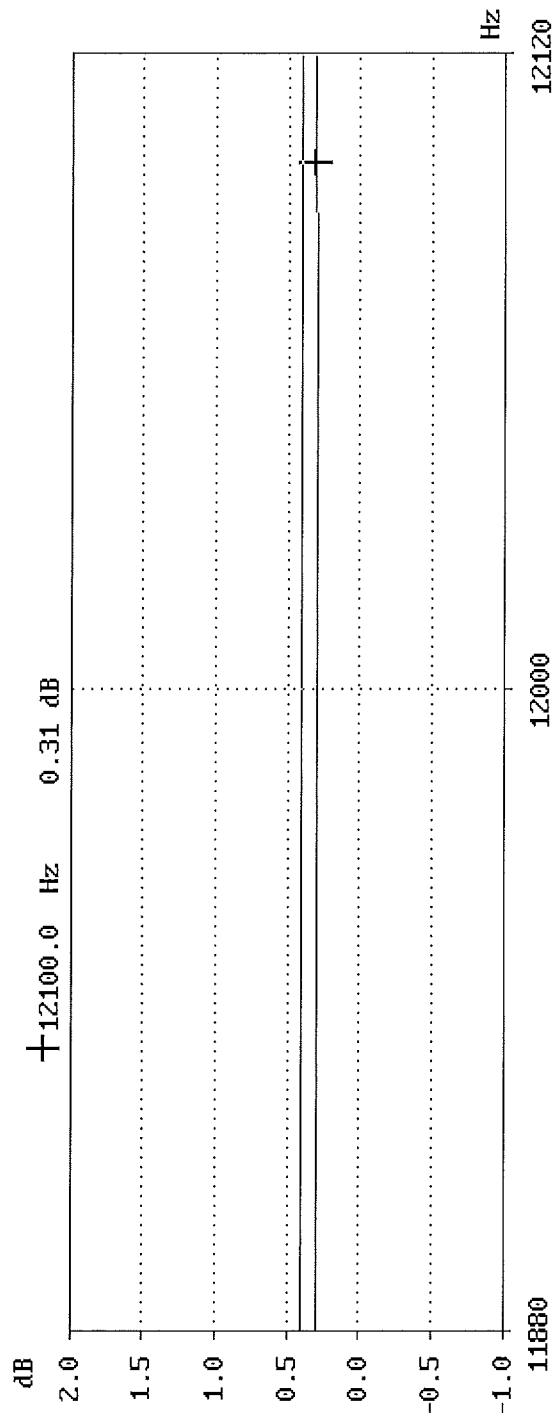
# Insertion loss 4-wire

EG 201 120/6.3.1

Test job	: 214043018	Level	: +0.0 dBu
TEUT	: MFP	Generator imp.	: 200 Ohm symmetrical
Manufacturer	: KYOCERA DS Inc.	Input impedance	: 200 Ohm
Operator	: Y. Miura	Feeding voltage	: 50.0 V
Date	: 18.11.13	Feeding resistor Rf	: 2050.0 Ohm
Time	: 19:11.25	Drop resistor of HC	: 300 Ohm
Remark	: -	Direction	: Normal
		Feeding current	: 100.0 mA
		Polarity	: Normal

Tol.mask violations: 0

Verdict : PASS



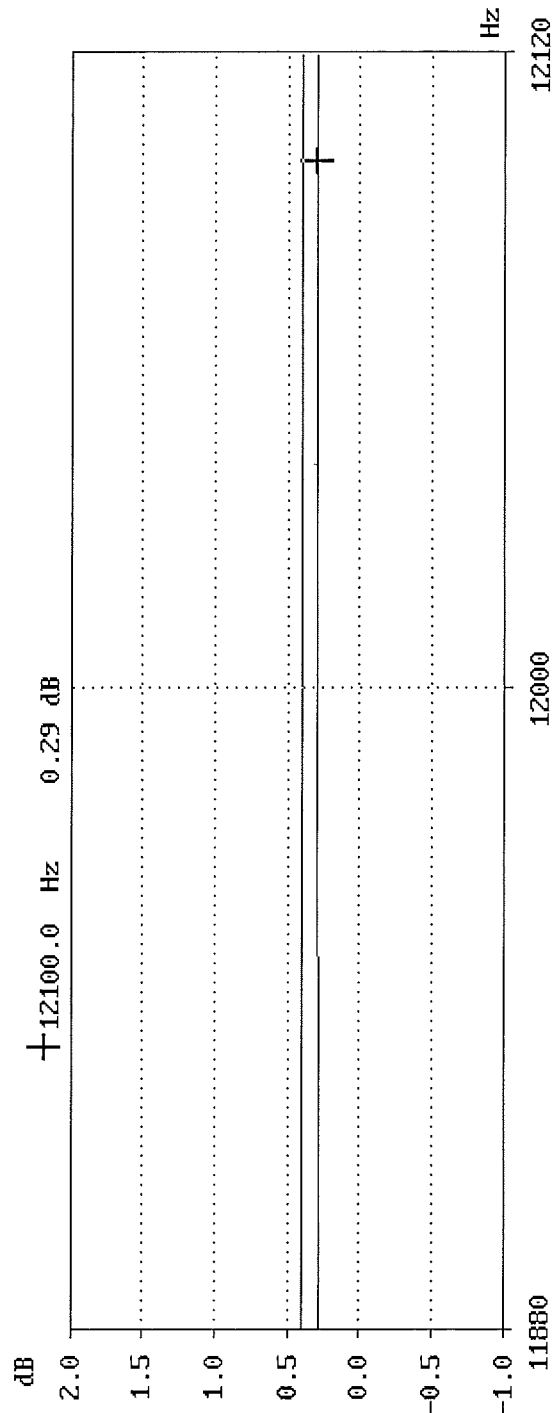
# Insertion loss 4-wire

EG 201 120/6.3.1

Test job	: 214043018	Level	: +0.0 dBV
TEUT	: MFP	Generator imp.	: 200 Ohm symmetrical
Manufacturer:	KYOCERA DS Inc.	Input impedance	: 200 Ohm
Operator	: Y. Miura	Feeding voltage	: 50.0 V
Date	: 18.11.13	Feeding resistor Rf	: 2050.0 Ohm
Time	: 19:12.17	Drop resistor of HC	: 300 Ohm
Remark	: -	Direction	: Normal
		Feeding current:	100.0 mA
		Polarity	: Inverted

Tol.mask violations: 0

Verdict : PASS

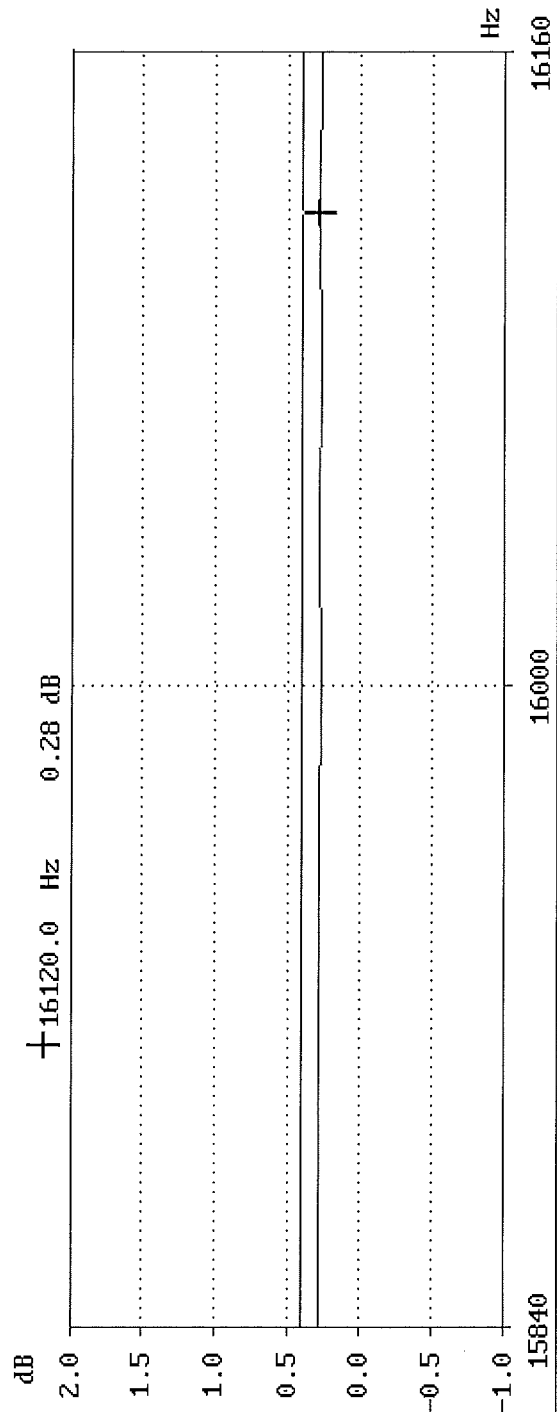


# Insertion loss 4-wire

EG 201 120/6.3.1

Test job	: 214043018	Level	: +0.0 dBu
TEUT	: MFP	Generator imp.	: 200 Ohm symmetrical
Manufacturer:	KYOCERA DS Inc.	Input impedance	: 200 Ohm
Operator	: Y. Miura	Feeding voltage	: 50.0 V
Date	: 18.11.13	Feeding resistor Rf	: 2050.0 Ohm
Time	: 19:16.00	Drop resistor of HC	: 300 Ohm
Remark	: -	Direction	: Normal
		Feeding current:	100.0 mA
		Polarity	: Normal

Tol.mask violations: 0  
Verdict : PASS



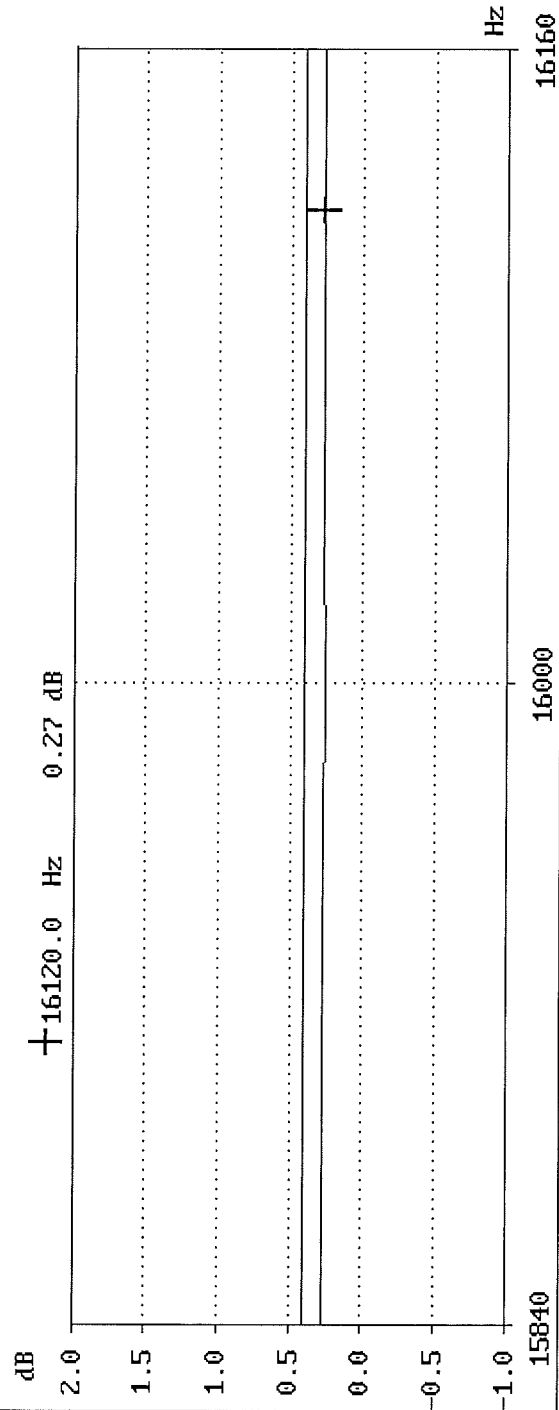
# Insertion loss 4-wire

EG 201 120/6.3.1

Test job	: 214043018	Level	: +0.0 dBu
TEUT	: MFP	Generator imp.	: 200 Ohm symmetrical
Manufacturer:	KYOCERA DS Inc.	Input impedance	: 200 Ohm
Operator	: Y. Miura	Feeding voltage	: 50.0 V
Date	: 18.11.13	Feeding resistor Rf	: 2050.0 Ohm Polarity : Inverted
Time	: 19:15.17	Drop resistor of HC	: 300 Ohm
Remark	: -	Direction	: Normal

Tol.mask violations: 0

Verdict : PASS





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**Prüfbericht - Nr.:**  
*Test Report No.:*

**50001072 003**

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**Anlage B**  
Appendix B

**Produktbeschreibung**  
Description of Equipment

Refer to test report 50001072 001

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**Prüfbericht - Nr.:**  
*Test Report No.:*

**50001072 003**

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**Anlage C**  
Appendix C

**Schaltpläne**  
Circuit diagrams

Refer to test report 50001072 001

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**Prüfbericht - Nr.:**  
*Test Report No.:*

**50001072 003**

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**Anlage D**  
Appendix D

**Fotos**  
Photographs

Refer to test report 50001072 001