

## **(prov.)Produktinformation / product information BVS 14-69**

**Hausanschlussverstärker / CATV-Amplifier, KDG 1 TS 140 volle Last, D(4.4)**



Hausanschlußverstärker, 40 dB Verstärkung, Gussgehäuse  
 CATV amplifier, 40 dB gain, die-Cast housing

- ablesbare Dämpfungssteller & Entzerrer (AXING-Platinenschalter)  
 readable attenuator & equalizer (AXING PCB switch)
- interstage Dämpfung & Entzerrung steckbar  
 interstage attenuation & equalization pluggable
- aktiver/passiver Rückkanal / active/passive return path
- integriertes Schaltnetzteil / built-in switching power supply

### **Betriebsdaten / Operational data:**

Betriebsspannung / Operating voltage : 100...240 V~ / 50...60 Hz / 14 Watt  
 Impedanz / Impedance: 75 Ω  
 Anschlüsse / Connectors: F  
 Class A

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Typische Meßwerte / Typical measured values:

Frequenzbereich (Downstream)	Frequency range (Downstream)	(MHz)	85 – 1006
Verstärkung	Gain	(dB)	40
Welligkeit	Gain ripple	(dB)	± 1.0
Einstellbare Dämpfung-15 Schritte	Attenuator adjustment range-15 steps	(dB)	0 – 15
Einstellbare Entzerrung-15 Schritte	Equalizer adjustment range-15 steps	(dB)	0 – 15
Interstage Dämpfung steckbar	Interstage attenuation pluggable	(dB)	0 / 2 / 4 / 6
Interstage Entzerrung steckbar	Interstage equalization pluggable	(dB)	0 / 2 / 4 / 6
Rauschmaß	Noise figure	(dB)	≤ 7
Meßbuchse Eingangsseite	Test point Input	(dB)	-20 (±2.5)
Meßbuchse Ausgangsseite	Test point Output	(dB)	-20 (±1)
CSO / CTB, max. Ausgangspegel Cenelec, f=862 MHz, 41 K. Intermodulationsabstand 60 dB	CSO / CTB, maximum output level Cenelec, f=862 MHz, 41 ch. intermod. 60 dB	(dBµV)	111
Rückflußdämpfung Eingang / Ausgang	Return loss at input / output	(dB)	≥ 18 -1.5dB/ Octave, ≥ 11

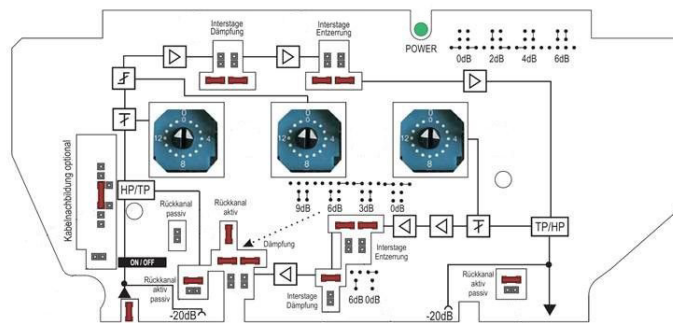
Rückkanal (Upstream)	Return path (Upstream)	(MHz)	5 – 65
Verstärkung	Gain	(dB)	30
Welligkeit	Gain ripple	(dB)	± 1.0
Dämpfung (passiv)	Attenuation (passive)	(dB)	2
Einstellbare Dämpfung-15 Schritte	Attenuator adjustment range-15 steps	(dB)	0 – 15
Interstage Verstärkung steckbar	Interstage gain pluggable	(dB)	24 / 30
Interstage Entzerrung steckbar	Interstage equalization pluggable	(dB)	0 / 3 / 6 / 9
Dämpfung am Ausgang steckbar	Attenuation at output pluggable	(dB)	0 / 3 / 6 / 9
Rauschmaß	Noise figure	(dB)	≤ 7
Meßbuchse Eingangsseite	Test point Input	(dB)	-20 (±1)
Maximaler Ausgangspegel Störprodukte 2. Ordnung, 60 dB IMA	Maximum output level disturbance 2 <sup>nd</sup> order, intermod. 60 dB	(dBµV)	105
Maximaler Ausgangspegel Störprodukte 3. Ordnung 60 dB KMA	Maximum output level disturbance 3 <sup>rd</sup> order cross-mod. 60 dB	(dBµV)	112
Rückflußdämpfung Eingang / Ausgang	Return loss at input / output	(dB)	≥ 18 -1.5dB/ Octave
Nach KDG 1 TS 140 volle Last, D(4.4)	According KDG 1 TS 140 full load,D(4.4)	120 dBµV / ≤ 1E-6	

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Blockschaltbild

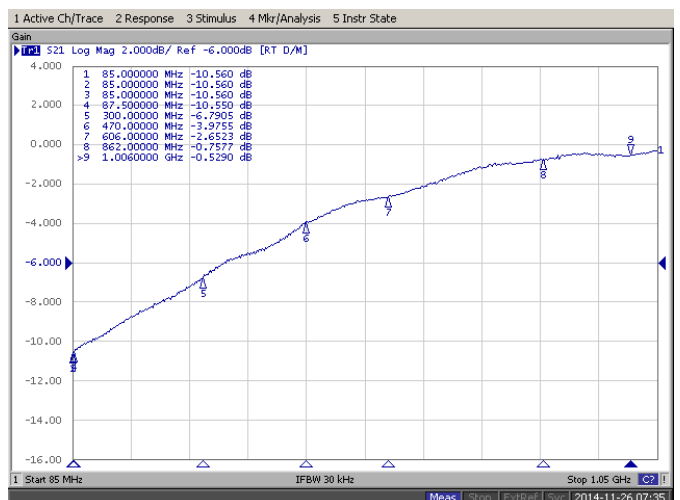
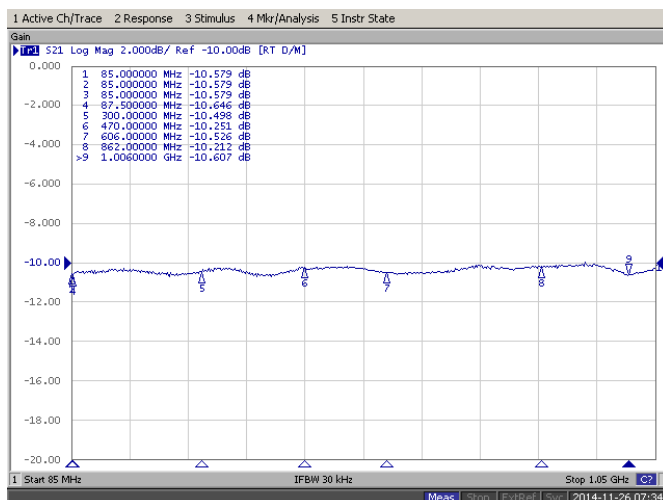
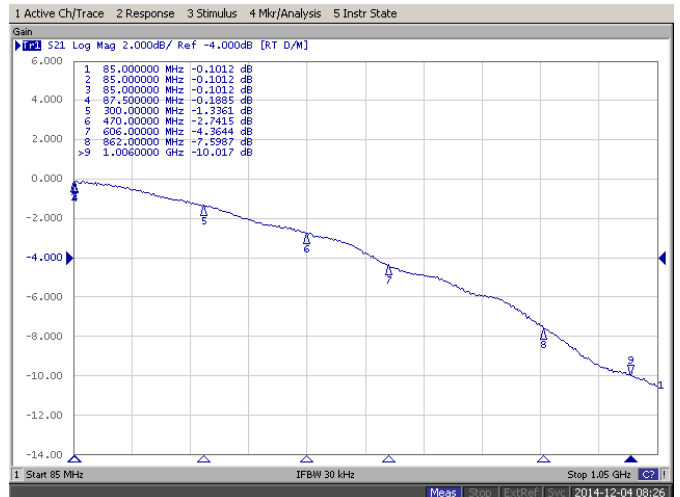
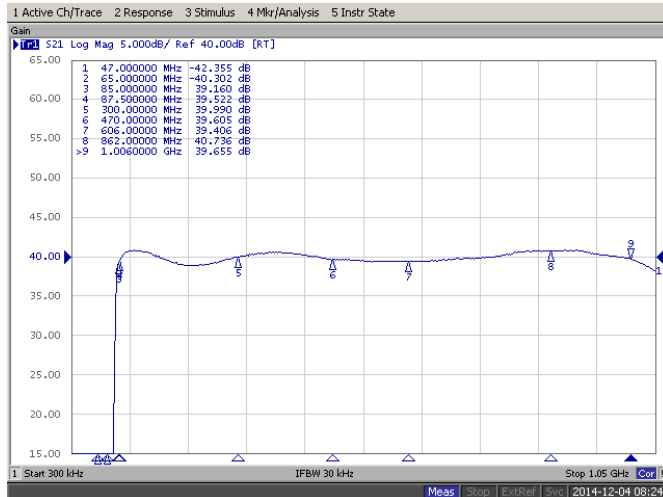
Block diagram



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Gain:



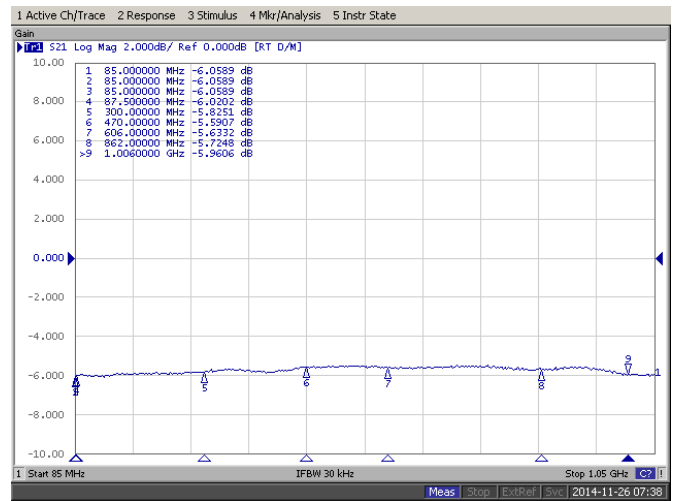
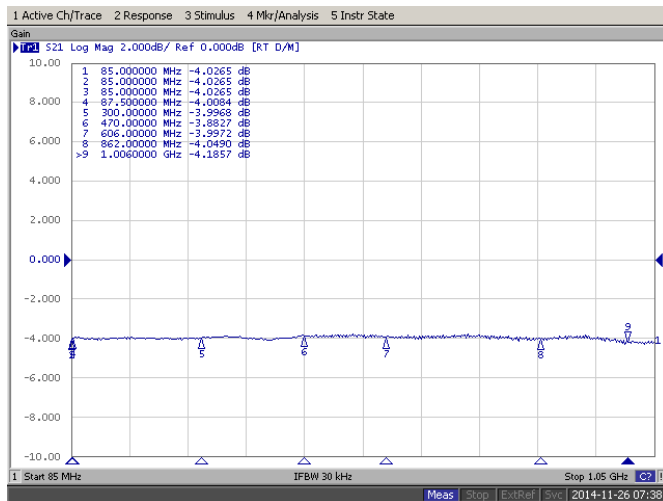
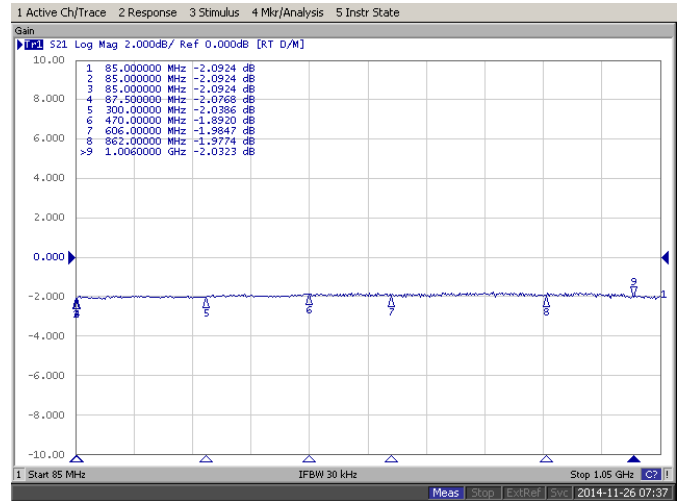
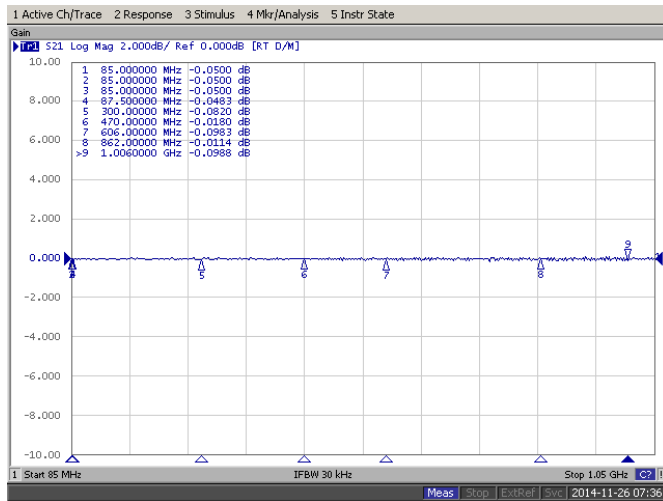
Top: Gain 40 dB  
Bottom: Gain (Rotary sw. att. = 10 dB, Rotary sw. equ. = 0 dB)

Top: Cable simulator 10 dB  
Bottom: Gain (Rotary sw. att. = 0 dB, Rotary sw. equ. = 10 dB)

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DS Att. Interstage:



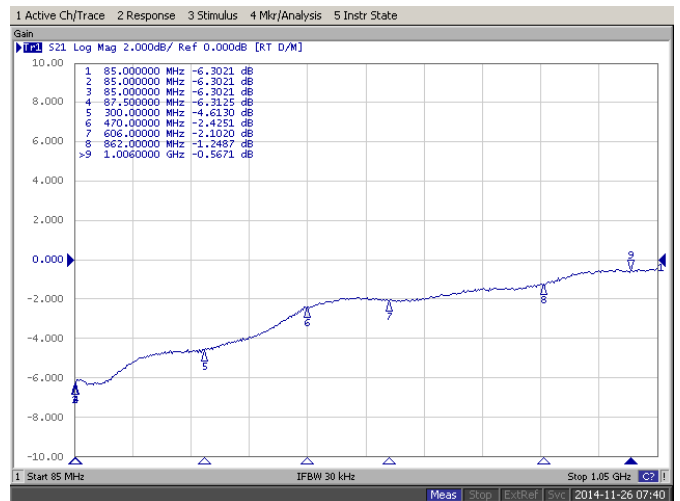
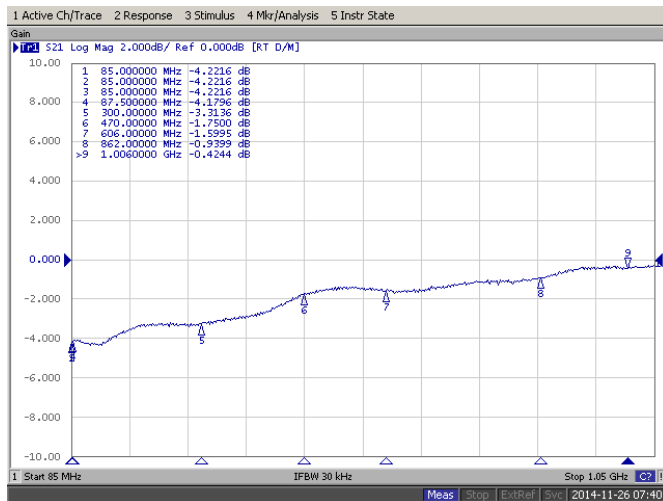
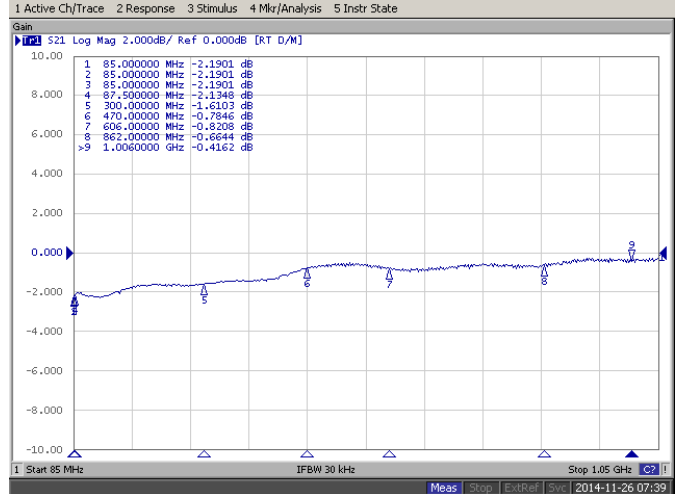
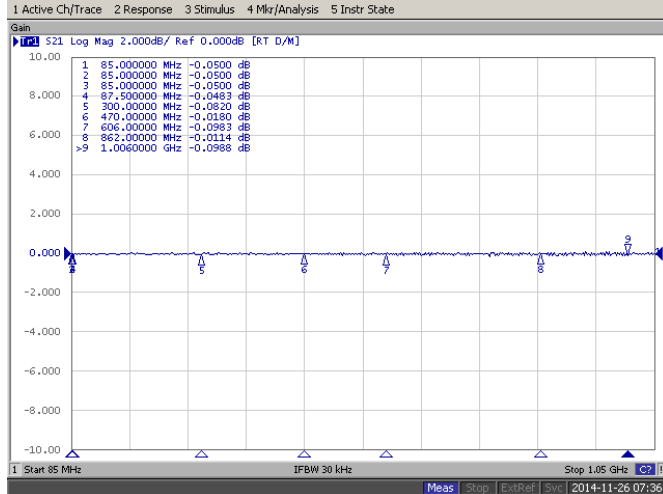
Top: Gain DS 40 dB normalized  
Bottom: Att. DS 4 dB

Top: Att. DS 2 dB  
Bottom: Att. DS 6 dB

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DS Slope Interstage:



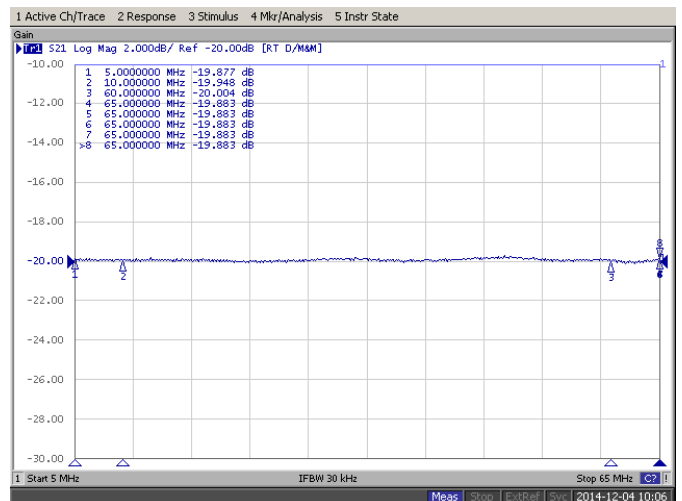
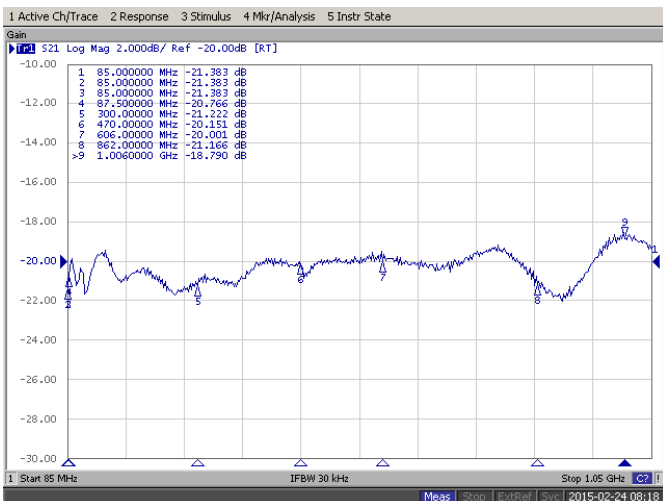
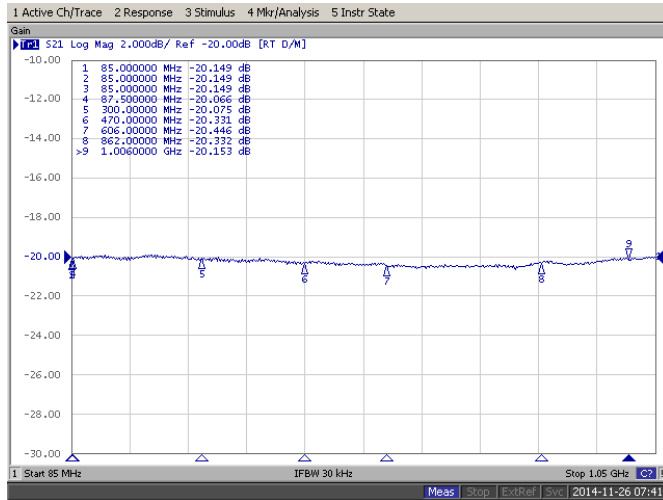
Top: Gain DS 40 dB normalized  
Bottom: Slope DS 4 dB

Top: Slope DS 2 dB  
Bottom: Slope DS 6 dB

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Testpoint:



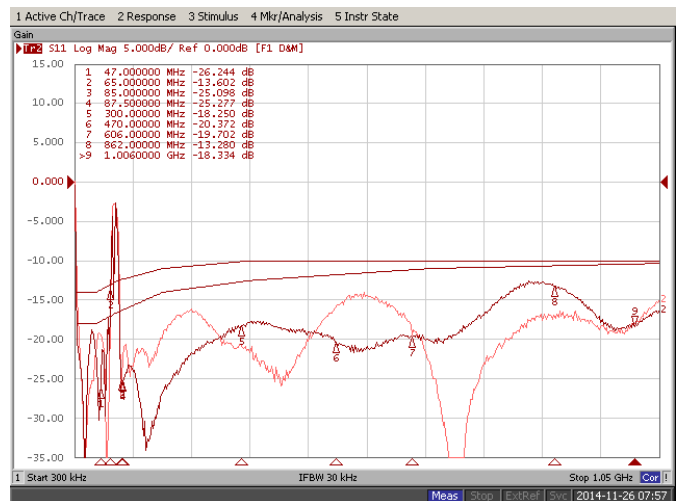
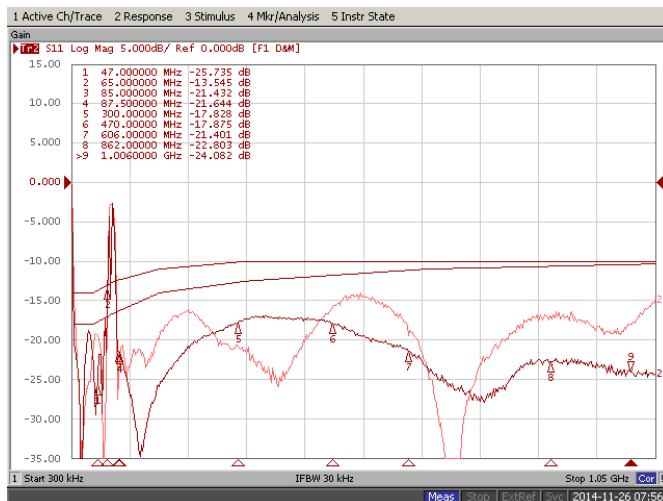
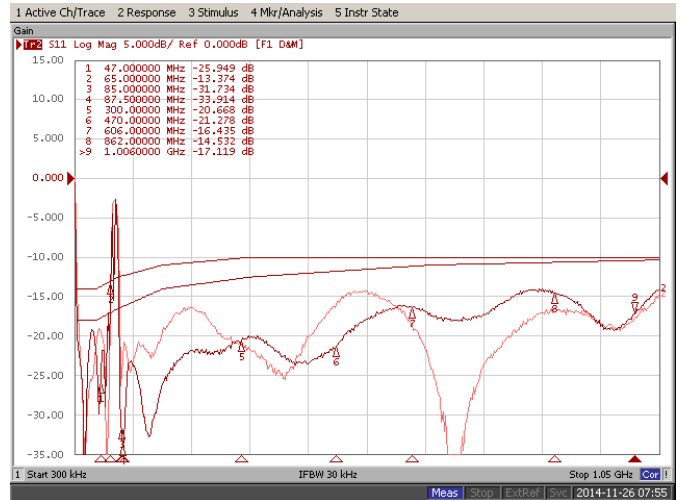
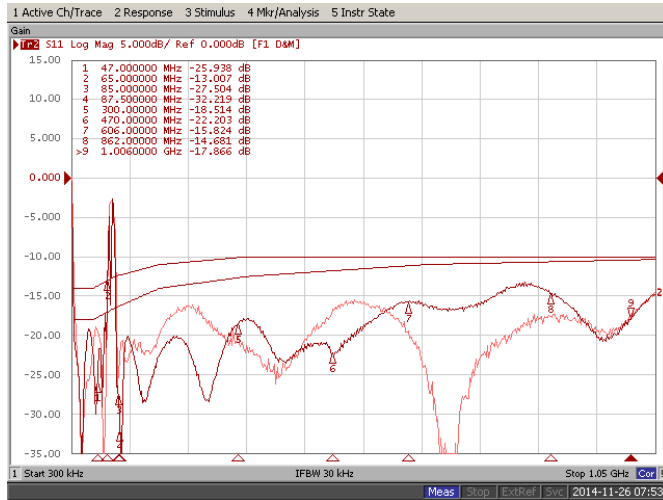
Top: Output -20 dB normalized  
Bottom: Input -20 dB

Bottom: Input Return Path, -20 dB

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Return loss:



Top: Return loss (input/output, Gain=40 dB)

Bottom: Return loss (input/output, (Rotary sw. att. =10 dB, Rotary sw. equ.=0 dB)

Top: Return loss (input/output, Gain=34 dB, 6dB att. interst.)

Bottom: Return loss (input/output, (Rotary sw. att. =0 dB, Rotary sw. equ.=10 dB)

- The characteristic curves provided with reference markers refer to the input.

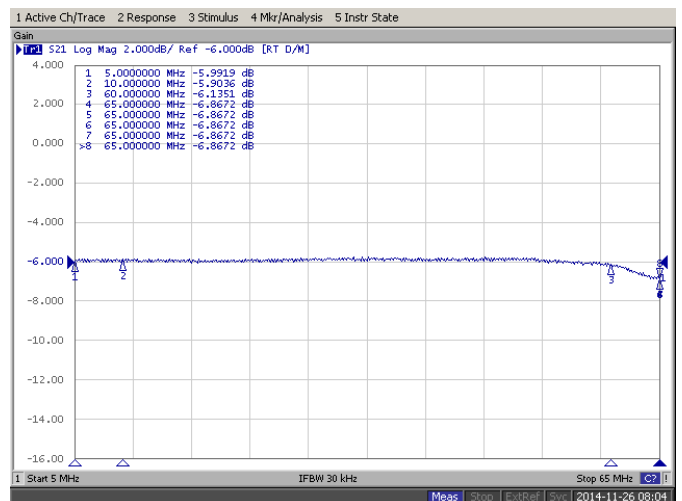
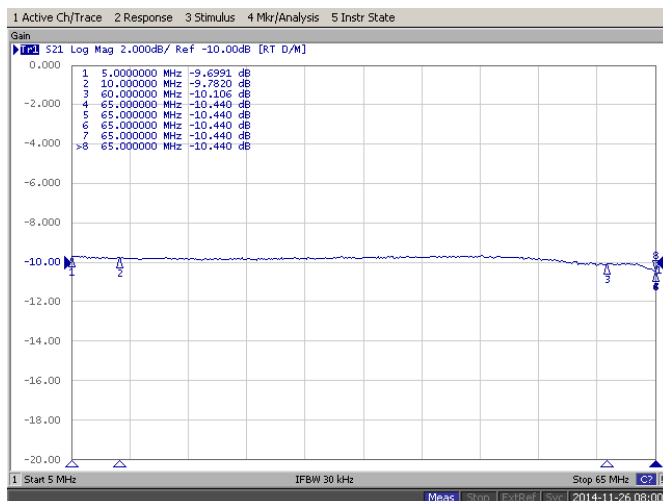
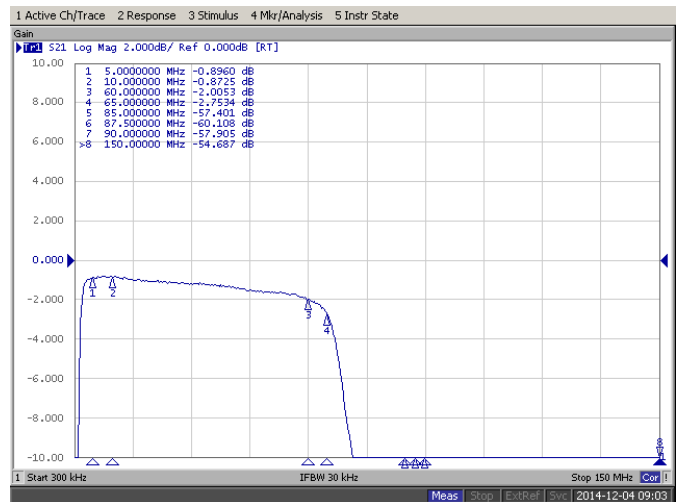
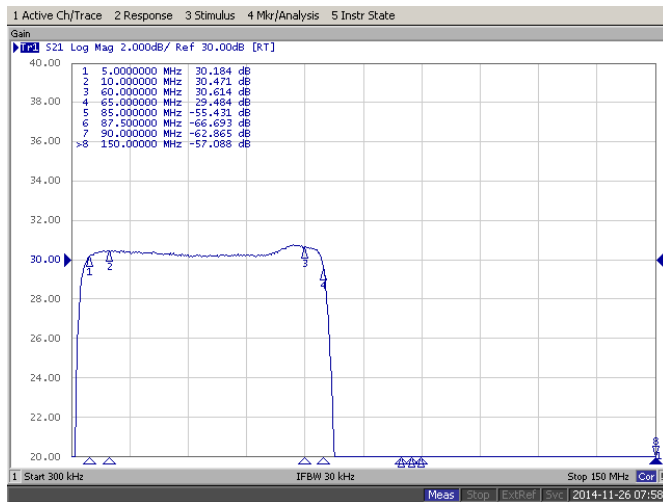


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Return Path:

Gain (US):



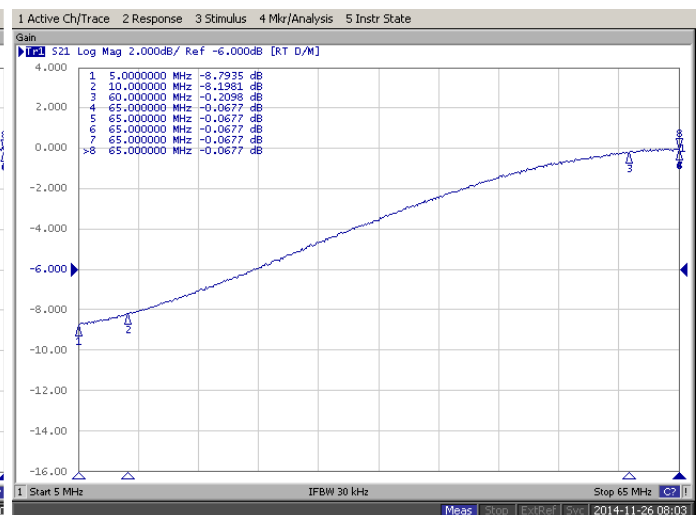
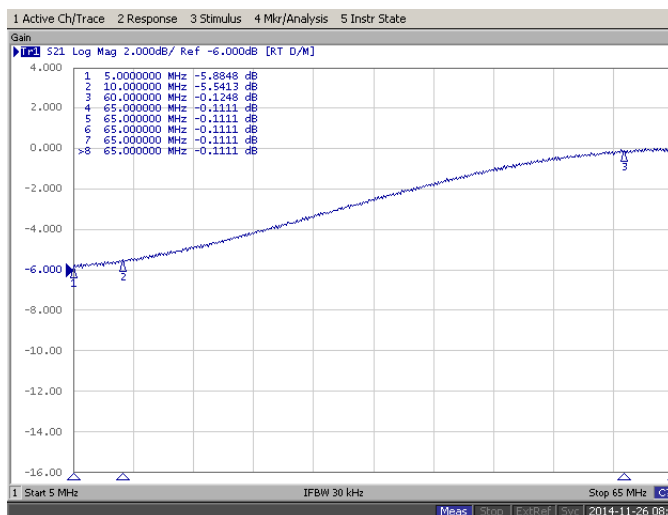
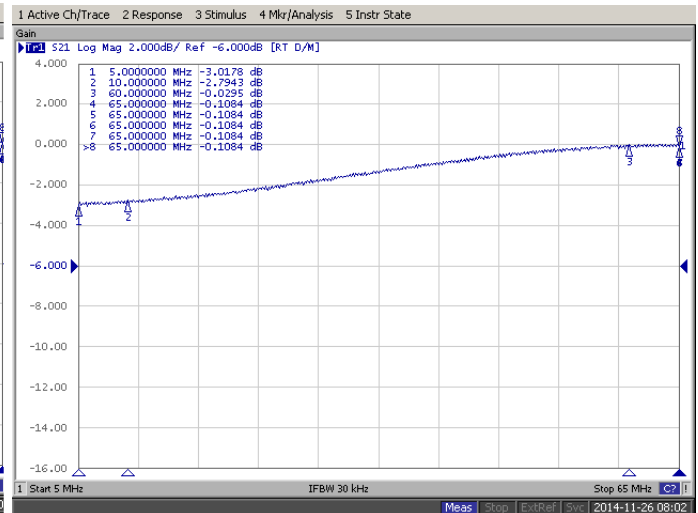
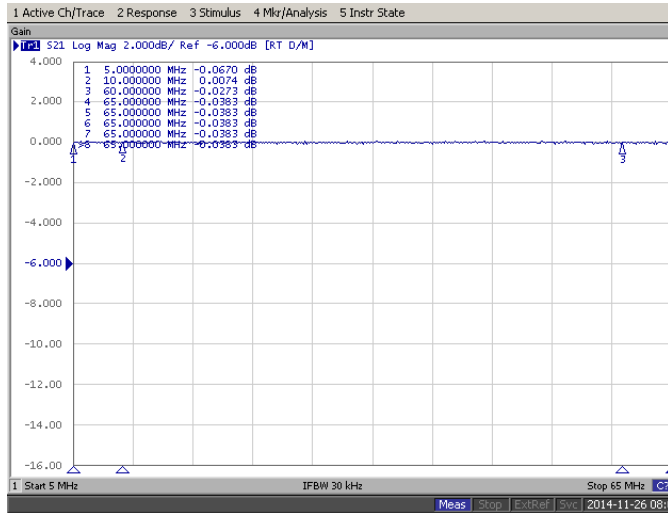
Top: Gain 30 dB US  
Bottom: Gain US normalized (Rotary sw. att. =10 dB, equalizer=0 dB)

Top: US (passive)  
Bottom: Gain US normalized (attenuator interstage = 6dB)

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US Slope Interstage:



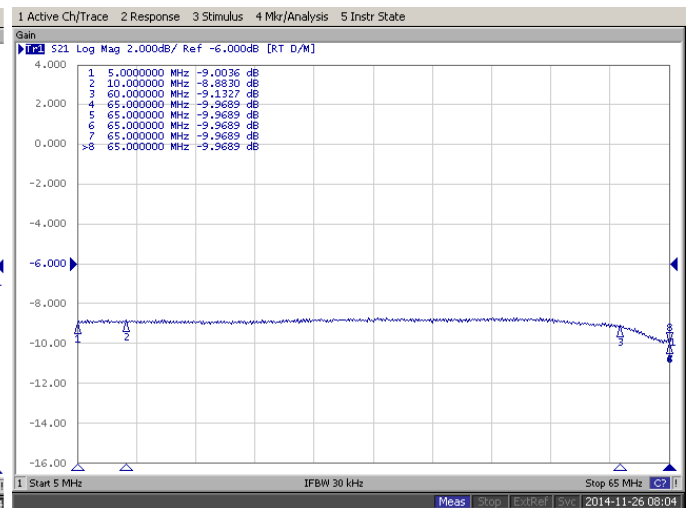
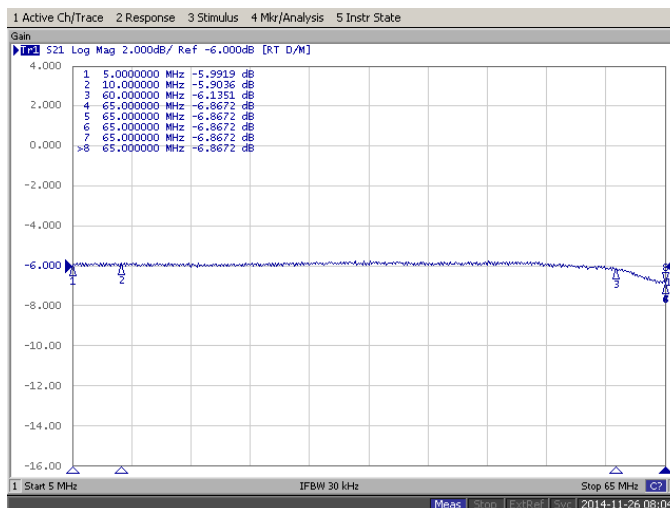
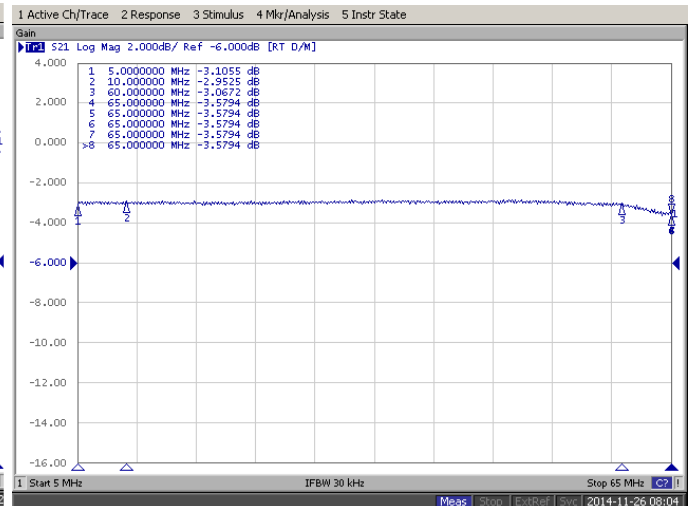
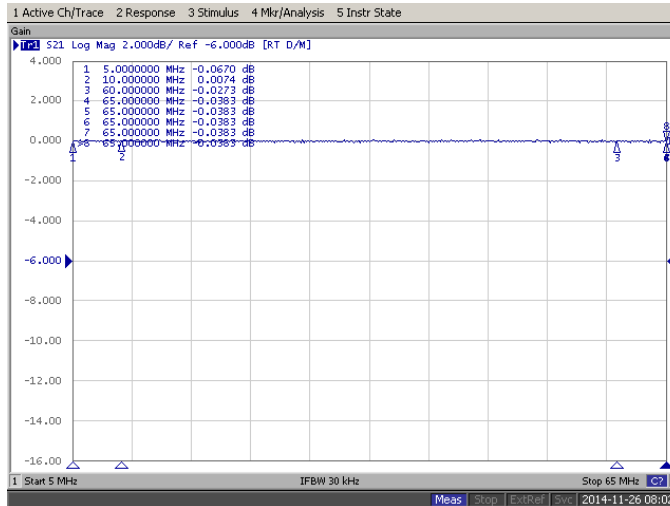
Top: Gain US 30 dB normalized  
Bottom: Slope US 6 dB

Top: Slope US 3 dB  
Bottom: Slope US 9 dB

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US Att. At Output:



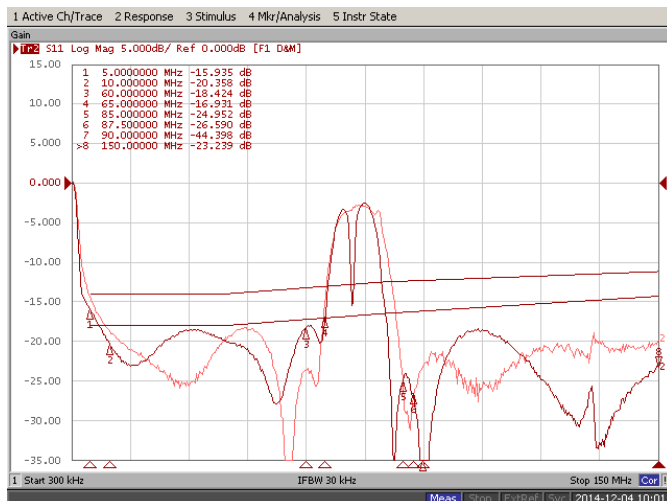
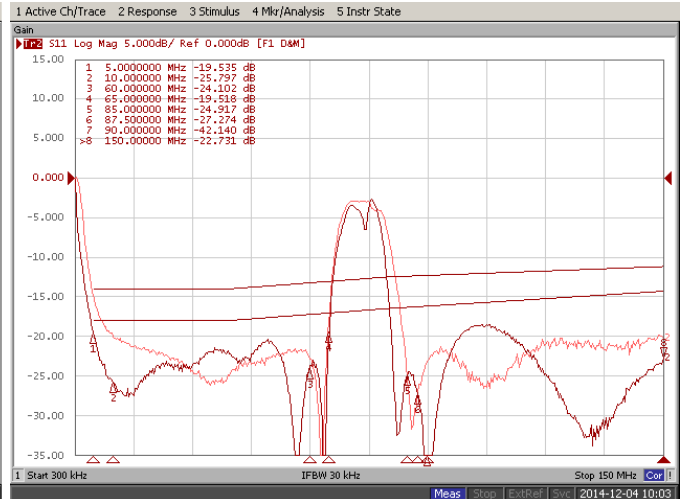
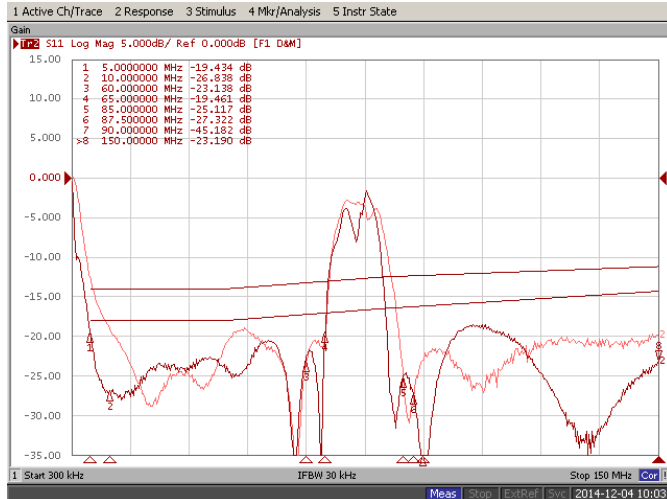
Top: Gain US 30 dB normalized  
Bottom: Att. US 6 dB

Top: Att. US 3 dB  
Bottom: Att. US 9 dB

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Return loss (US):



Top: Return loss (input/output, Gain=30 dB)  
 Top: Return loss (input/output, US passive)

Top: Return loss (input/output, Rotary switch att. =10 dB)

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## CSO/CTB:

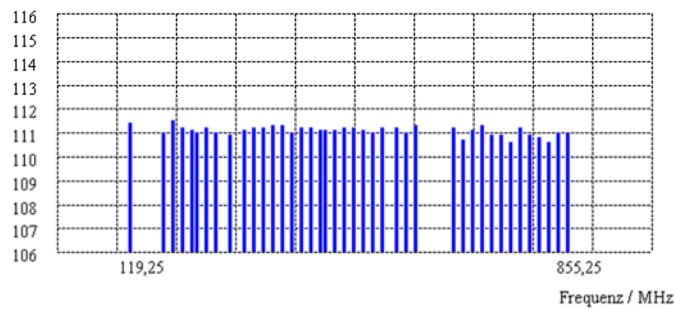


**Hersteller:** AXING

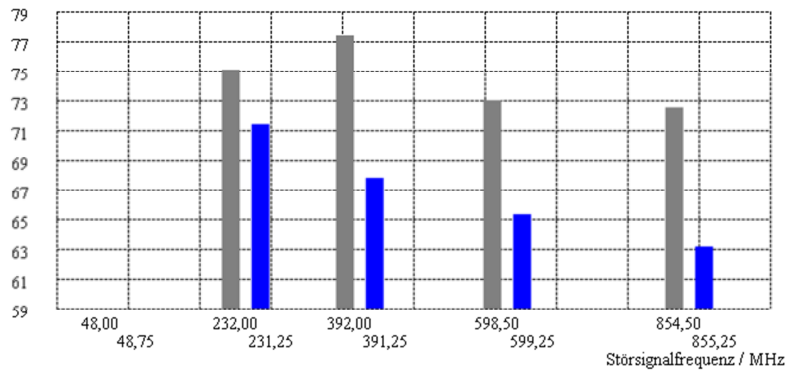
Modell: BVS 14-69  
 Beschreibung: HAV  
 Seriennummer: Nr.: 1 (E1)  
 Notizen:

Datum: 31.10.2014  
 Dateiname: BVS14-69\_111\_E1-1\_0\_vcv  
 Prüfer: Ma

Kalibrierspektrum / dBuV



Intermodulationsabstand (IMA) / dB



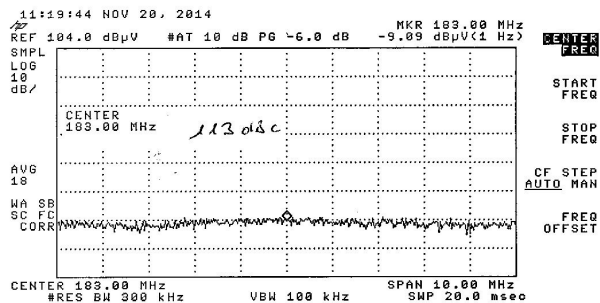
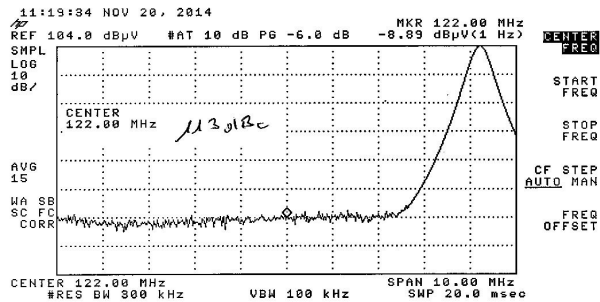
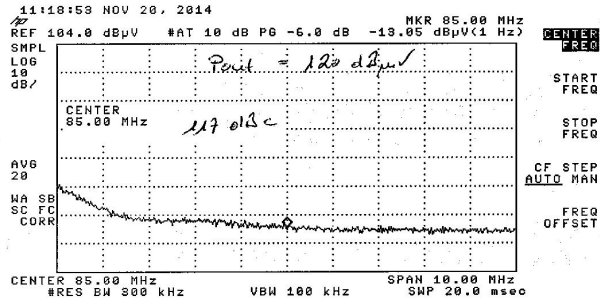
Meßkanal / MHz	K2/48,25	S11/231,25	S32/391,25	K37/599,25	K69/855,25
CSO_IMA/dB bei Pout=111,2dBuV	0	75,1	77,4	73	72,5
CTB_IMA/dB bei Pout=111,1dBuV	0	71,4	67,8	65,3	63,2

CSO, CTB - Messung nach DIN EN 50083-3 (alle Meßwerte in dBuV)  
 Kanalbelegung bis 606MHz: 29 Kanäle, bis 862MHz: 42 Kanäle (CENELEC)  
 Meßgeräte: ASX-16, HP 8594E, VC-04 (Filter Matrix), Software: ASXSsoft-16

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## dBc /BER nach KDG 1TS140



### R&S ETL Digital Overview S/N 100665, FW 2.66

Ch: --- RF 61.000000 MHz J83 A

\* Att 40 dB  
 ExpLvl 116.25 dBuV

Fail	Limit	<	Results	<	Limit	Unit
Level	48.8	*	120.1		120.0	dBuV
Constellation			16QAM / normal			
MER (rms)	24.0	*	23.4		-----	dB
MER (peak)	10.0	*	9.7		-----	dB
EVM (rms)	-----	*	5.05		4.40	%
EVM (peak)	-----	*	24.53		22.00	%
BER before RS			4.8e-8(100/100)		1.0e-6	
BER after RS			0.0e-8(285/1K00)		1.0e-10	
Packet Error Ratio			0.0e-6(285/1K00)		1.0e-8	
Packet Errors			0		1	/s
Carrier Freq Offset	-30000.0		3451.4		30000.0	Hz
Ideal Symbol Rate			2.7830000			MSymb/s
Symbol Rate Offset	-10000.0		-26.7		10000.0	Symb/s
MPEG Ts Bitrate			10.258803			Mbit/s
Lvl 120.1dBuV   BER 4.8e-8   MER 23.4dB DEMOD MPEG						

Date: 20.NOV.2014 12:11:34