CERN MIT L3 A&C/AMS

CARLO GAVAZZI SPACE SpA

AMS02-PDS

NON CONFORMANCE REPORT

NCR ref: Doc.Nº: NCR-PDS-CGS-C-142 | Rev.: 1 | Date: 16/09/2009 | Page 1 of 1 attach: A, B

2 NCR Title: PDS radiated E-field emissions out of specified limits

IDENTIFICATION

3 Supplier	4 Purchase Order Nº	5 Model	6 Subsystem	7 Procedure/Work Item Nº
CGS	N.A.	PFM	N.A.	N.A.

8 NO ITEM Identification	9 Drawing Nº / Rev.	10 P.N. / C.I. Nº	11 Serial Nº
AMS02 Power Distribution System Assembly	10-AMS02PDS-000.00 /	10-AMS02PDS-000.00 / PDS18	FM01

12 Next Higher Unit Id.	13 Drawing Nº / Rev.	14 P.N. / C.I. Nº	15 Serial Nº
N.A.	N.A.	N.A.	N.A.

DESCRIPTION

16 NON CONFORMANCE Detected During:

RECEIVING INSP. [ ] MANUFACT. [ ] ASSEMBLY/INTEGRATION [ ] FINAL INSPECTION [ ] TEST [X] OTHER [ ]

17 Initiator, Dept., Date, Signature: R. Grossi, DT/PE, 16/09/2009

18 Description of NON CONFORMANCE

PDS radiated emissions have been found out of specified limits in the low range of frequency spectrum (from about 70kHz up to about 25MHz) for both side A and side B of unit.
Shielding cable bundles with aluminium foil does reduce emission amplitude (see Annex A for details), though it is not enough to meet the requirement..

19 Requirements violated

¶ 3.2.3.1.2.1. of SSP 30237 "Space Station Electromagnetic Emission and Susceptibility Requirements"

INTERNAL NRB DISPOSITIONS

20 INTERNAL NRB Dispositions:

The out-of-spec. value is most probably originated by the use of not shielded cables; shielding performed by wrapping cable bundles with aluminium foil can not be considered as an equivalent solution.
Additionally, it is underlined that overall test representativeness is jeopardised by unavailability of flight harness.

1. CGS proposal is to use the unit "as it is", issuing a waiver for PDS radiated emissions behaviour considering that out of limit frequency range is outside band of intentional emitters.

21 Verifications

1) SEE ANNEX B AND PDS-WV-CGS-004 Iss. 1

22 Suspected cause of NC: HANDLING [ ] TRANSPORTATION [ ] TEST EQUIPMENT [ ] TOOLS [ ] SW [ ] DESIGN [X] OPERATOR/PROCEDURE ERROR [ ] PART [ ] MATERIAL [ ] PROCESS [ ] TEST [ ] OTHER [ ]

23 Classification: MINOR [ ] MAJOR [X]

Corrective/Preventive Actions: 24

25 REQUEST FOR WAIVER: YES [X] NO [ ] Nº PDS-WV-CGS-004 Iss. 1

26 Analysis Required: YES [ ] NO [ ] Nº

27 Other related documents:

Department:	28 P.A.	29 Syal Engineering	30	30 P.M.	31 C.C.
Name:	Franchi E.	Alle S		Olivier M.	Cinquegrani C.
Signature:					
Date:					

CUSTOMER/HIGHER LEVEL CONTRACTOR NRB DISPOSITIONS

32 CUSTOMER/HIGHER LEVEL CONTRACTOR NRB Dispositions (Close Major Only):

21 Verifications

33 Finally determined Cause of NC

34 Corrective/Preventive Actions:

35 Customer/HLContractor Approval:

Department:	AMS	ASI	ASI	
Name:	M. CAPELL	E. MARCHETTI	E. [illegible]	
Signature:	M. Capell	[illegible]	[illegible]	
Date:	30 Sep 09	28 Set 09	28 Set 09	

36 CLOSE OUT CERTIFICATION

CGS PA/QA: E. FRANCINI 30/09/09

PA/QA Stamp: CQ 2 C.G.S.

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Mod. NCR-1001 (Instructions: doc.GD-WI-CGS-004)

CARLO GAVAZZI SPACE SpA

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AMS02 Power Distribution System Assembly	10-AMS02PDS-000.00 /	10-AMS02PDS-000.00 / PDS18	FM01
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DESCRIPTION

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Corrective/Preventive Actions: 24

25 REQUEST FOR WAIVER YES [X] NO [ ] Nº PDS-WV-CGS-004 IS. 1

26 Analysis Required YES [ ] NO [ ] Nº

27 Other related documents:

Department:	28 P.A.	29 Syst. Engineering	30	30 P.M.	31 C.C.
Name:	Francini E.	Alia S.		Olivier M.	Cinquepalmi C.
Signature:					
Date:	16/09/09	16/09/09		16/09/2009	16/9/09

CUSTOMER/HIGHER LEVEL CONTRACTOR NRB DISPOSITIONS

32 CUSTOMER/HIGHER LEVEL CONTRACTOR NRB Dispositions (Class Major Only):

21 Verifications

33 Finally determined Cause of NC

34 Corrective/Preventive Actions:

35 Customer/HLContractor Approval:

Department:				
Name:				
Signature:				
Date:				

36 CLOSE OUT CERTIFICATION

CGS PA/QA	PA/QA Stamp

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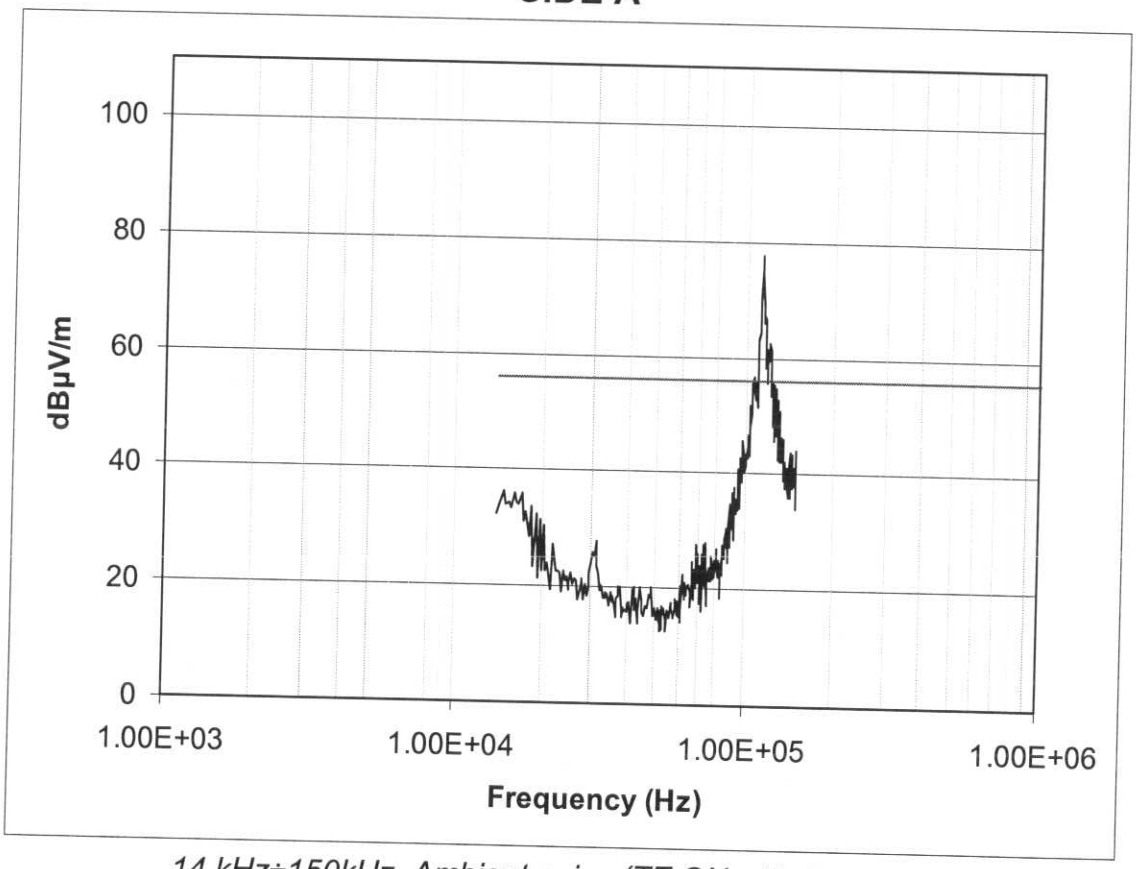
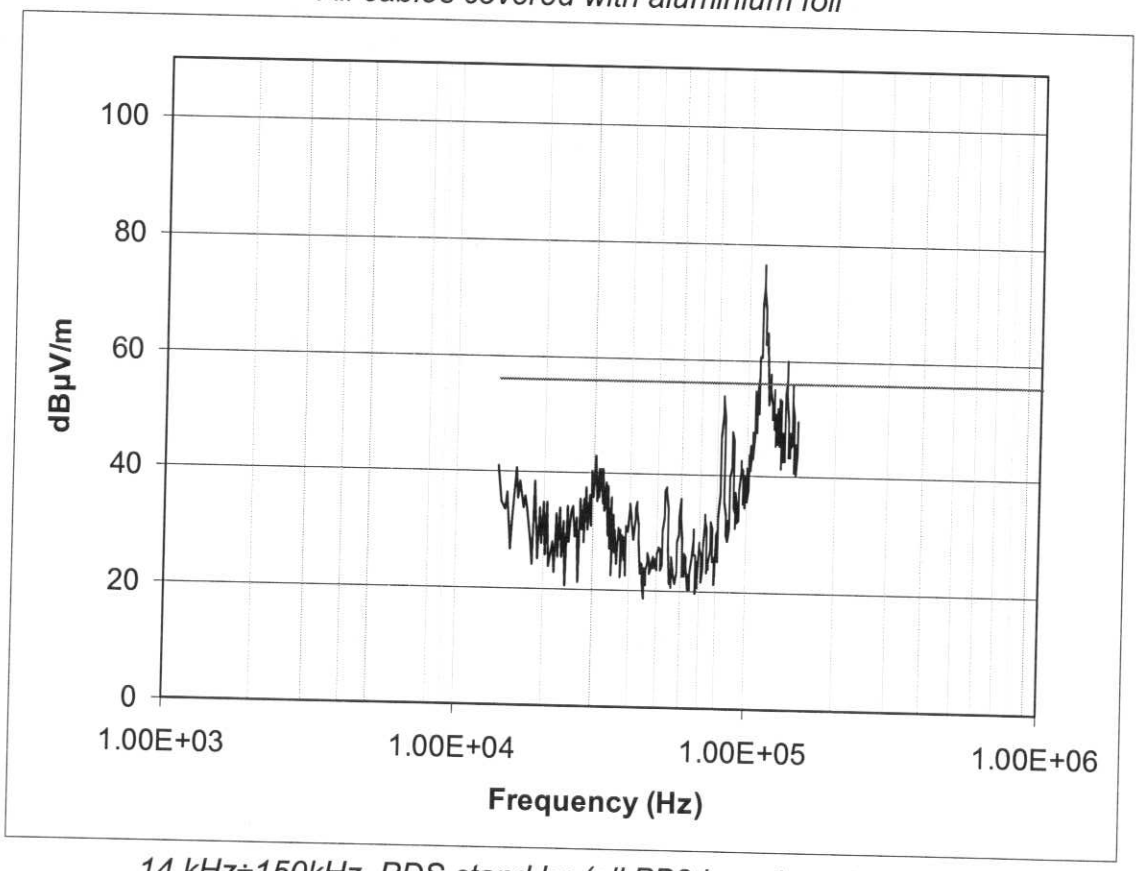
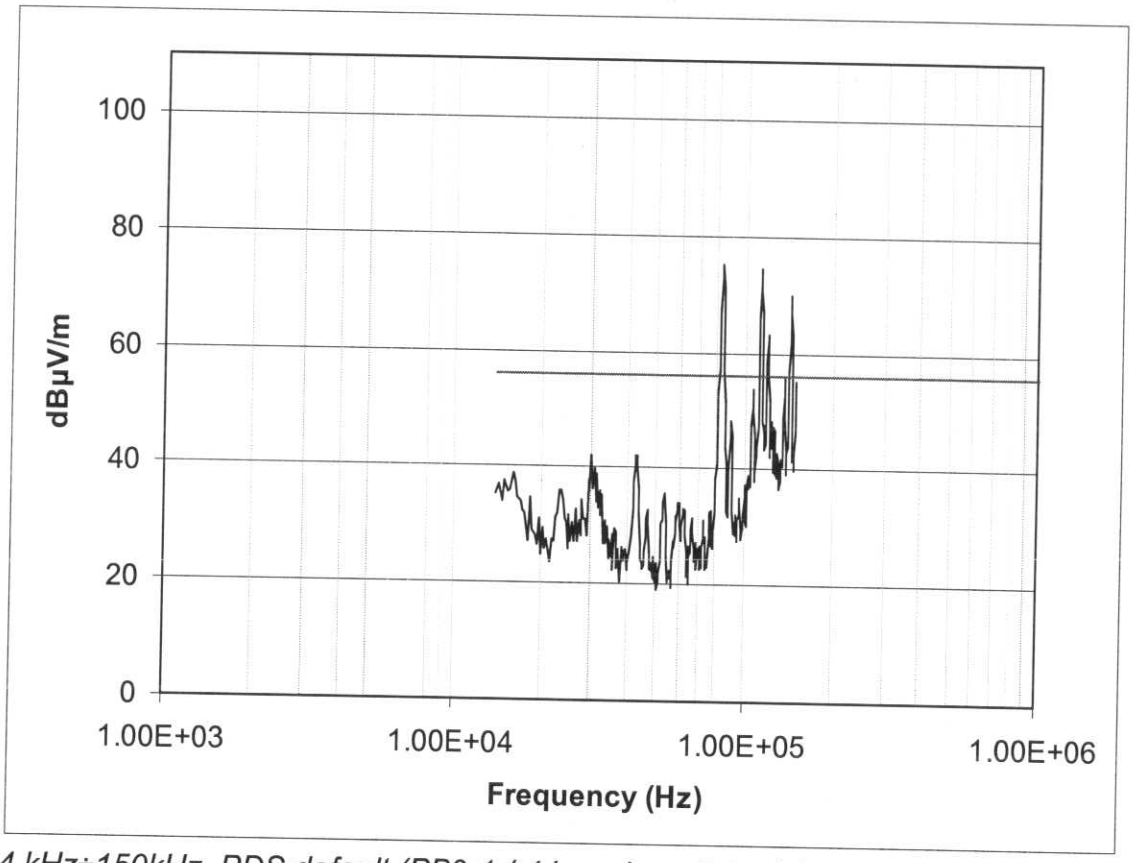
SIDE A



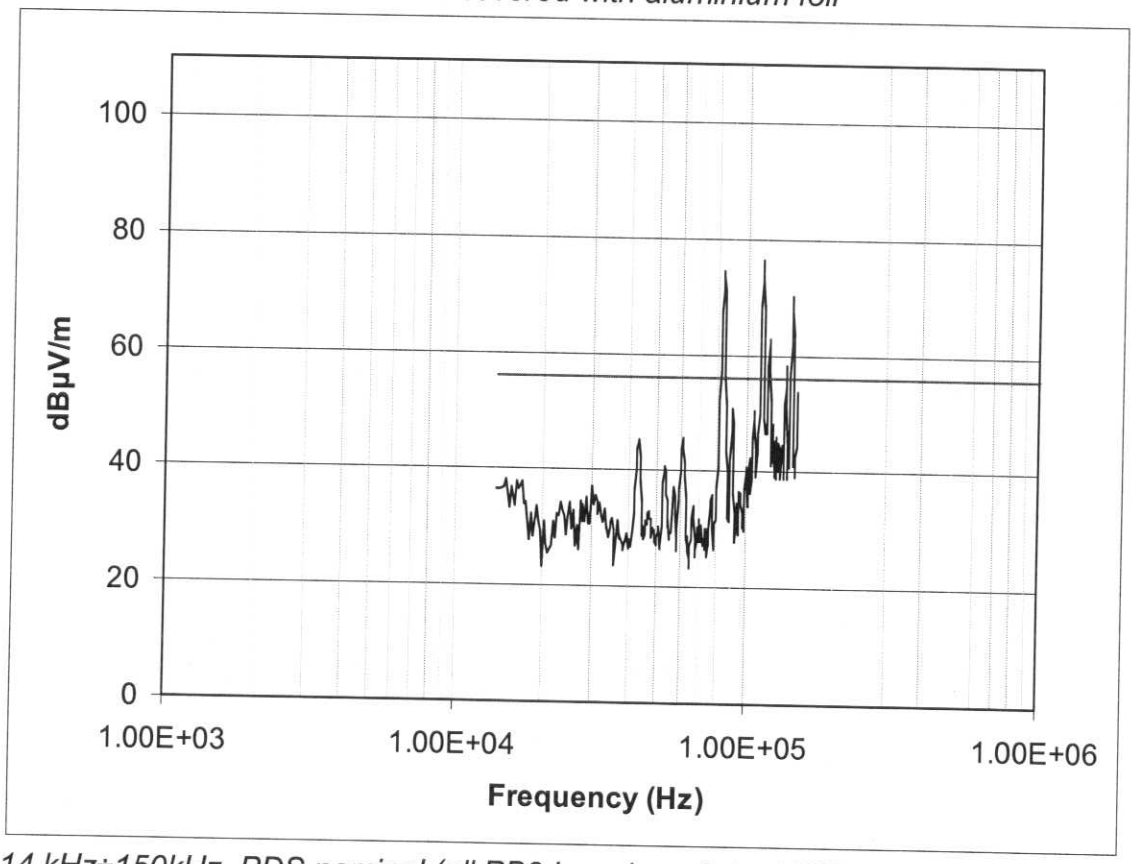
14 kHz÷150kHz, Ambient noise (TE ON with PDS OFF)
All cables covered with aluminium foil



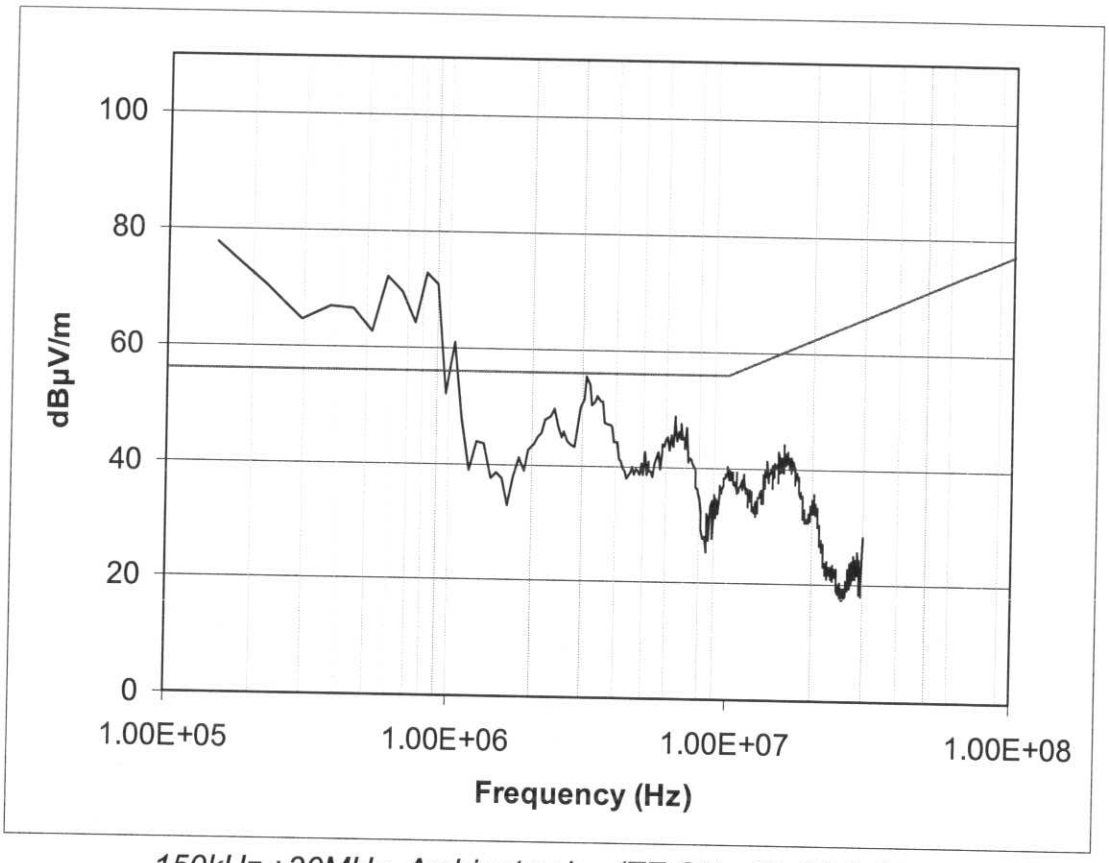
14 kHz÷150kHz, PDS stand by (all PB2 boards switched off)
All cables covered with aluminium foil



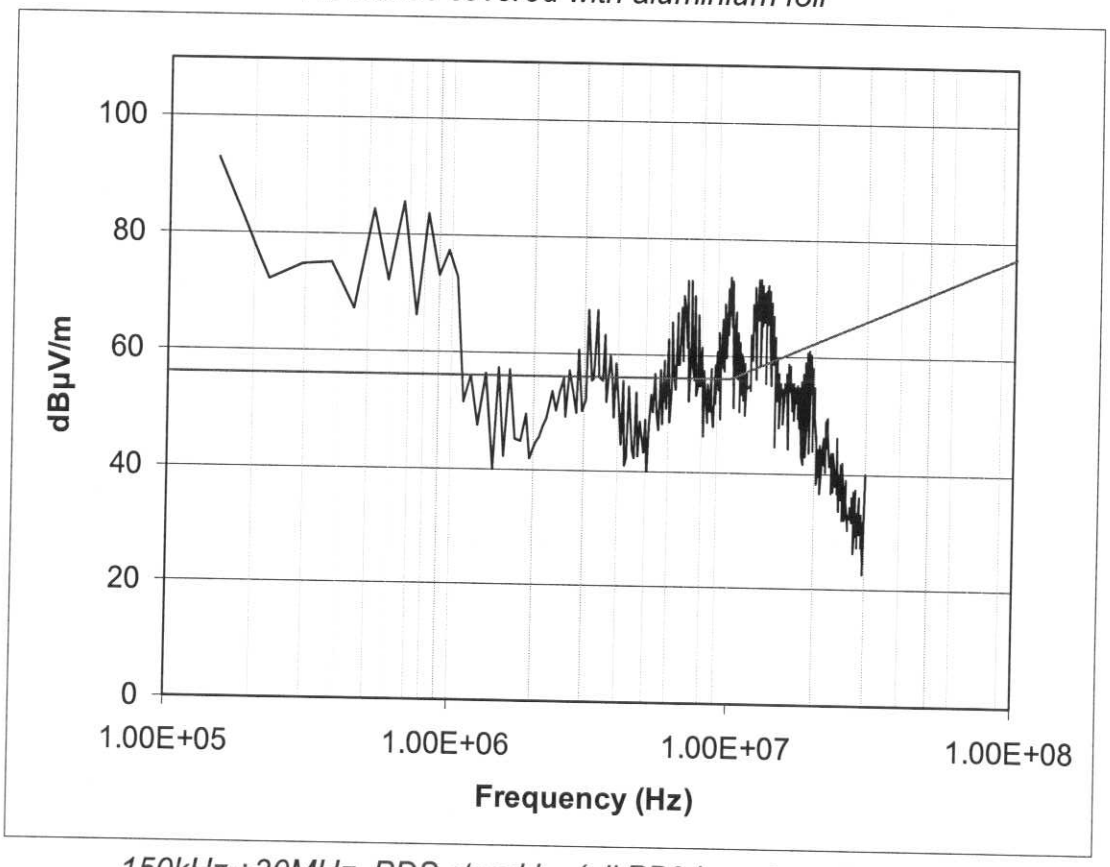
14 kHz÷150kHz, PDS default (PB2-1 /-4 boards switched ON, with both JPD loads)
All cables covered with aluminium foil



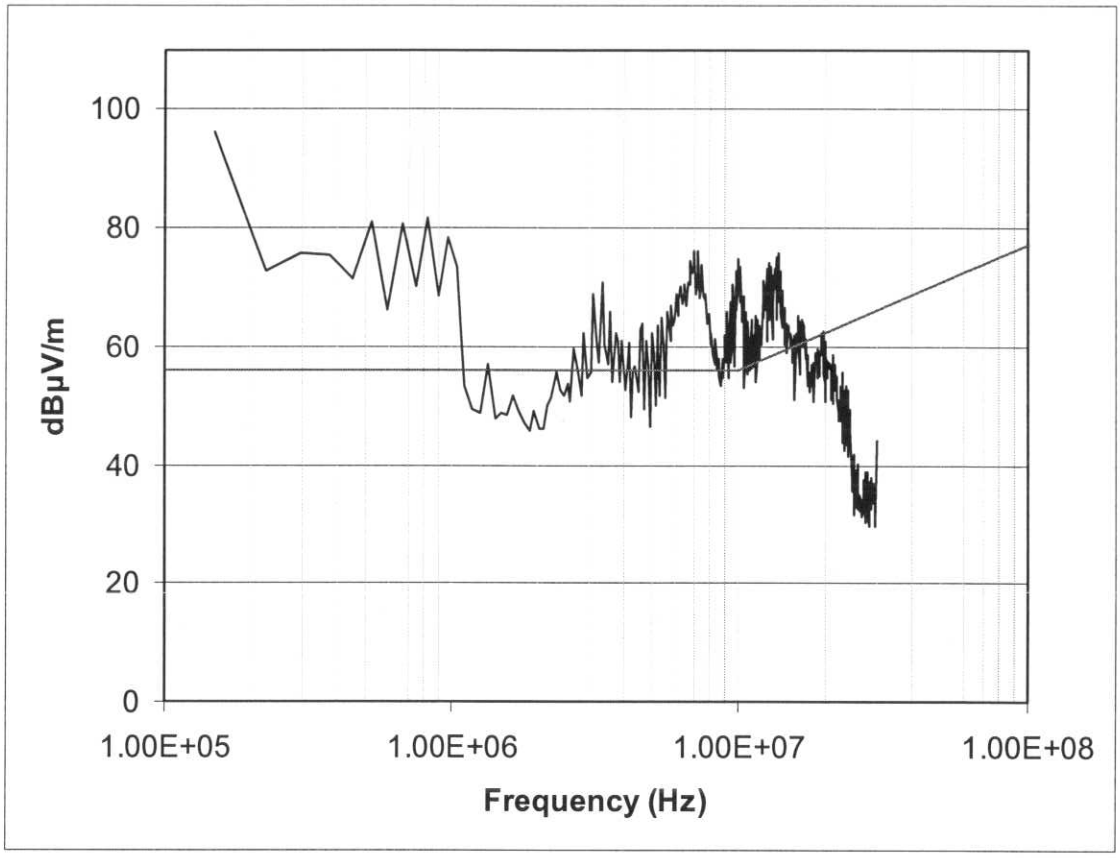
14 kHz÷150kHz, PDS nominal (all PB2 boards switched ON, with nominal loads)
All cables covered with aluminium foil



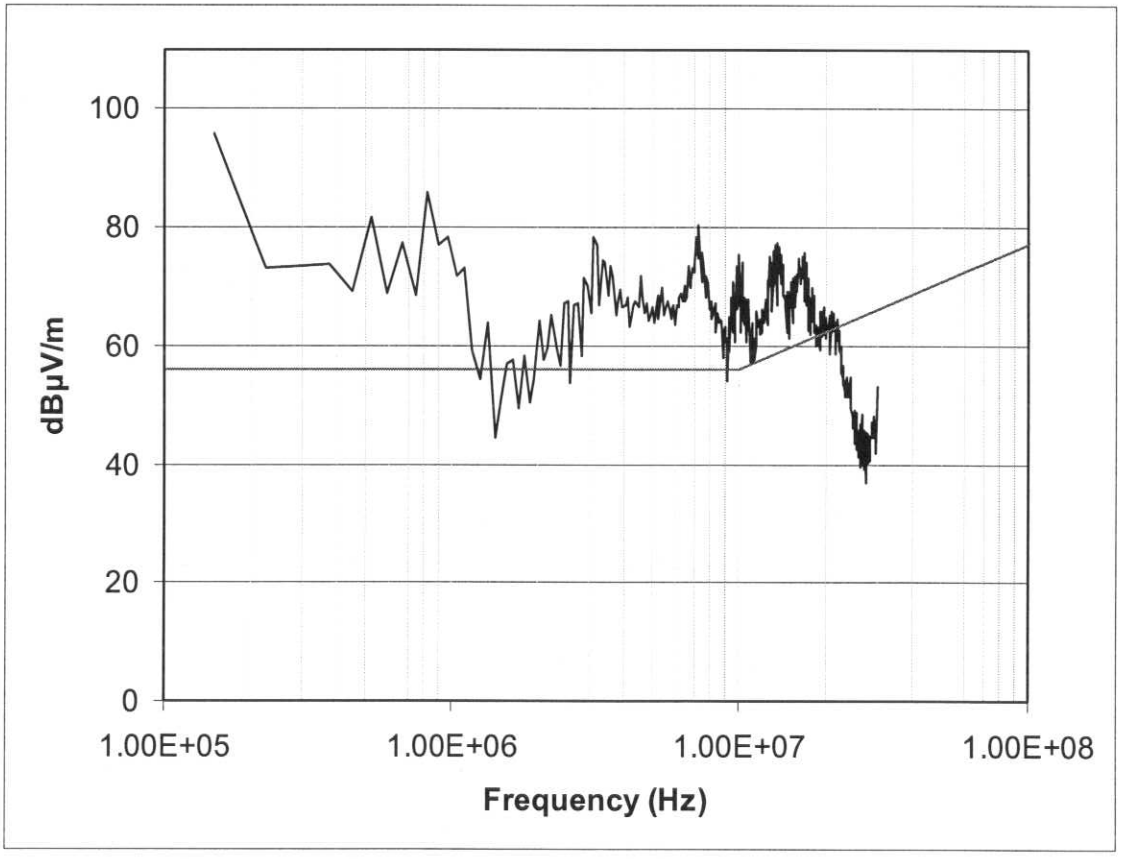
150kHz ÷30MHz, Ambient noise (TE ON with PDS OFF)
All cables covered with aluminium foil



150kHz ÷30MHz, PDS stand by (all PB2 boards switched off)
All cables covered with aluminium foil

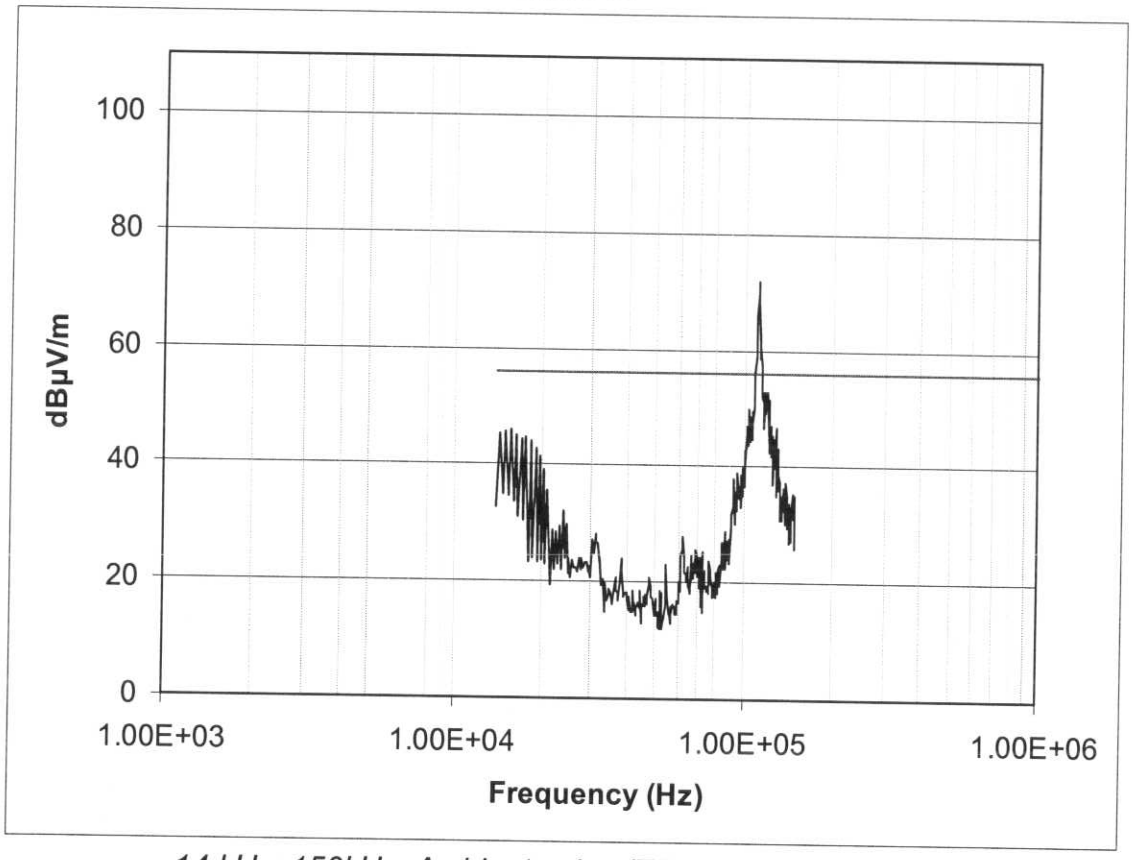


150kHz ÷30MHz, PDS default (PB2-1 /-4 boards switched ON, with both JPD loads)
All cables covered with aluminium foil



150kHz ÷30MHz, PDS nominal (all PB2 boards switched ON, with nominal loads)
All cables covered with aluminium foil

SIDE B



14 kHz÷150kHz, Ambient noise (TE ON with PDS OFF)
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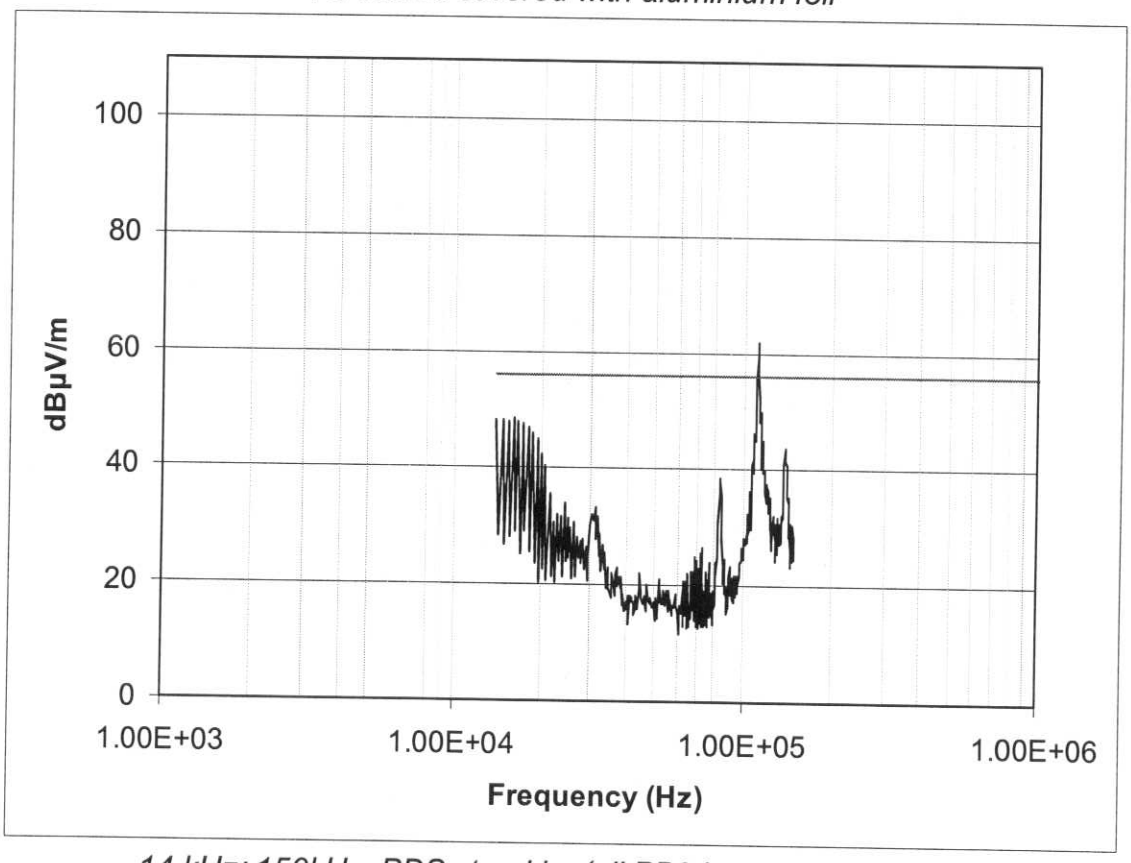

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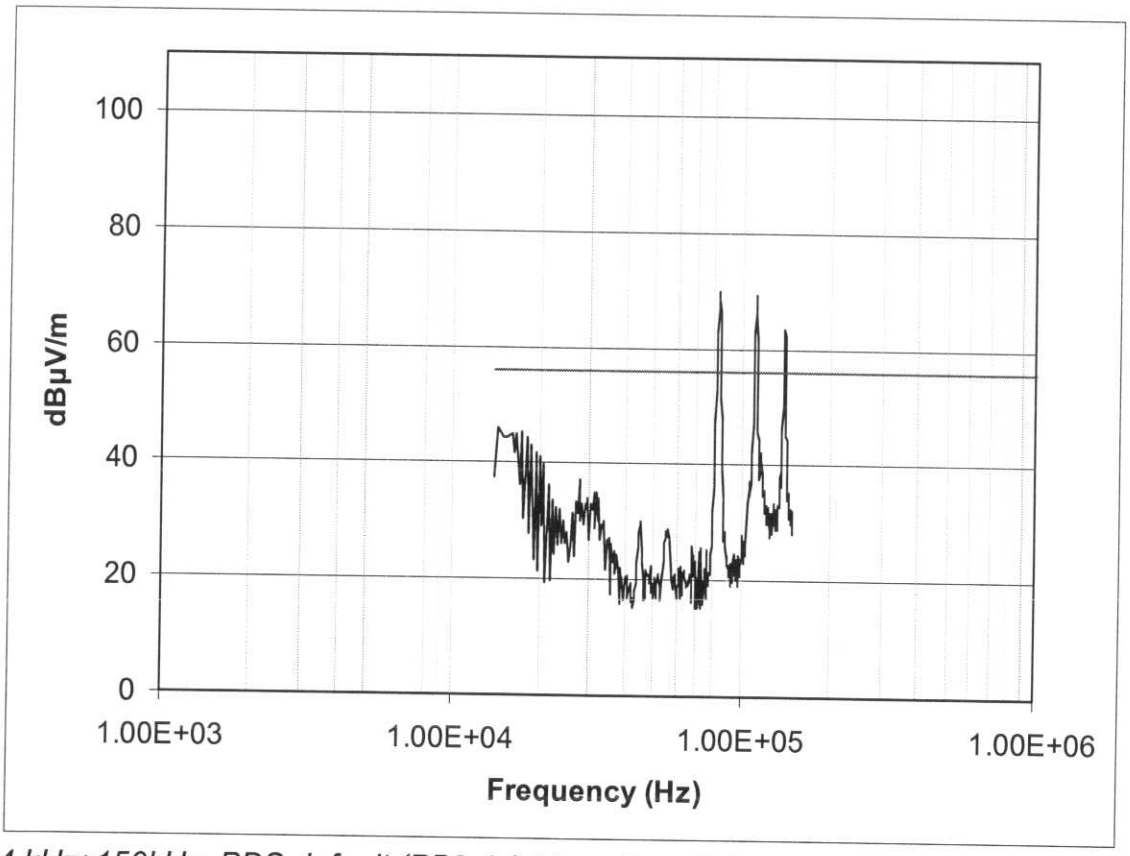

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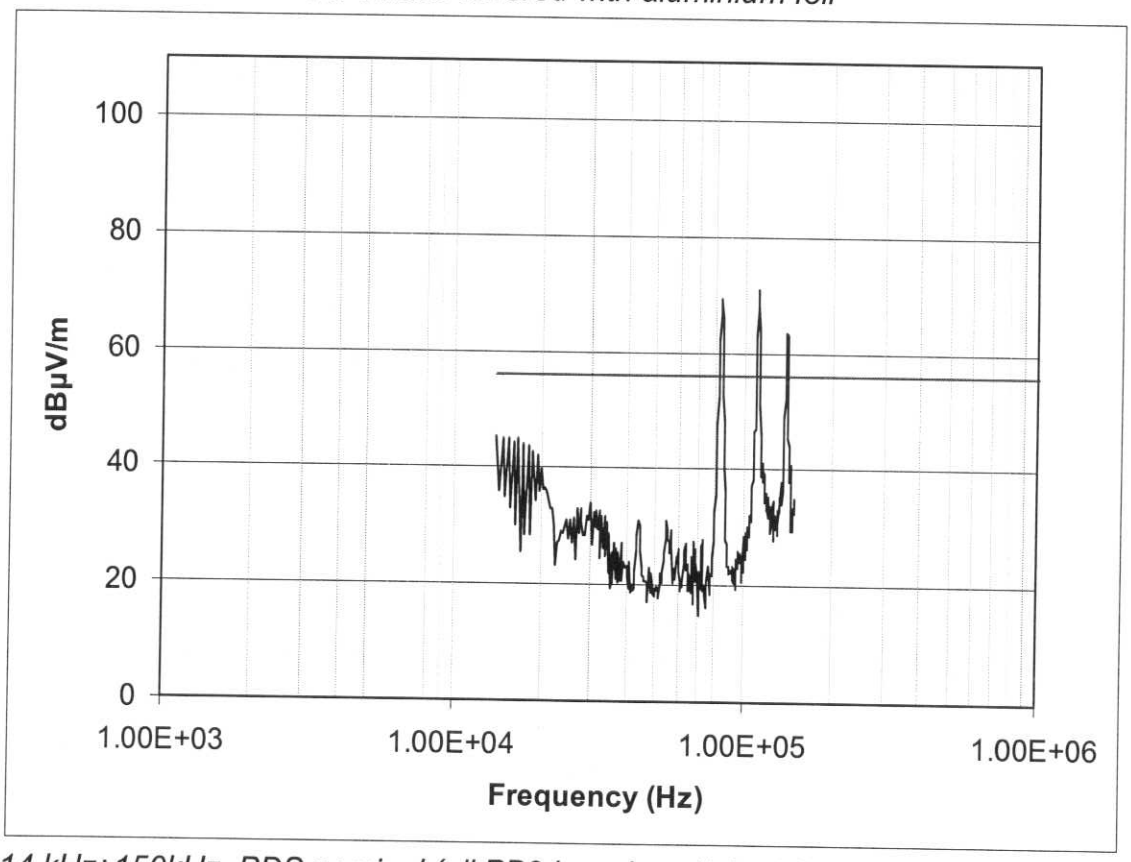

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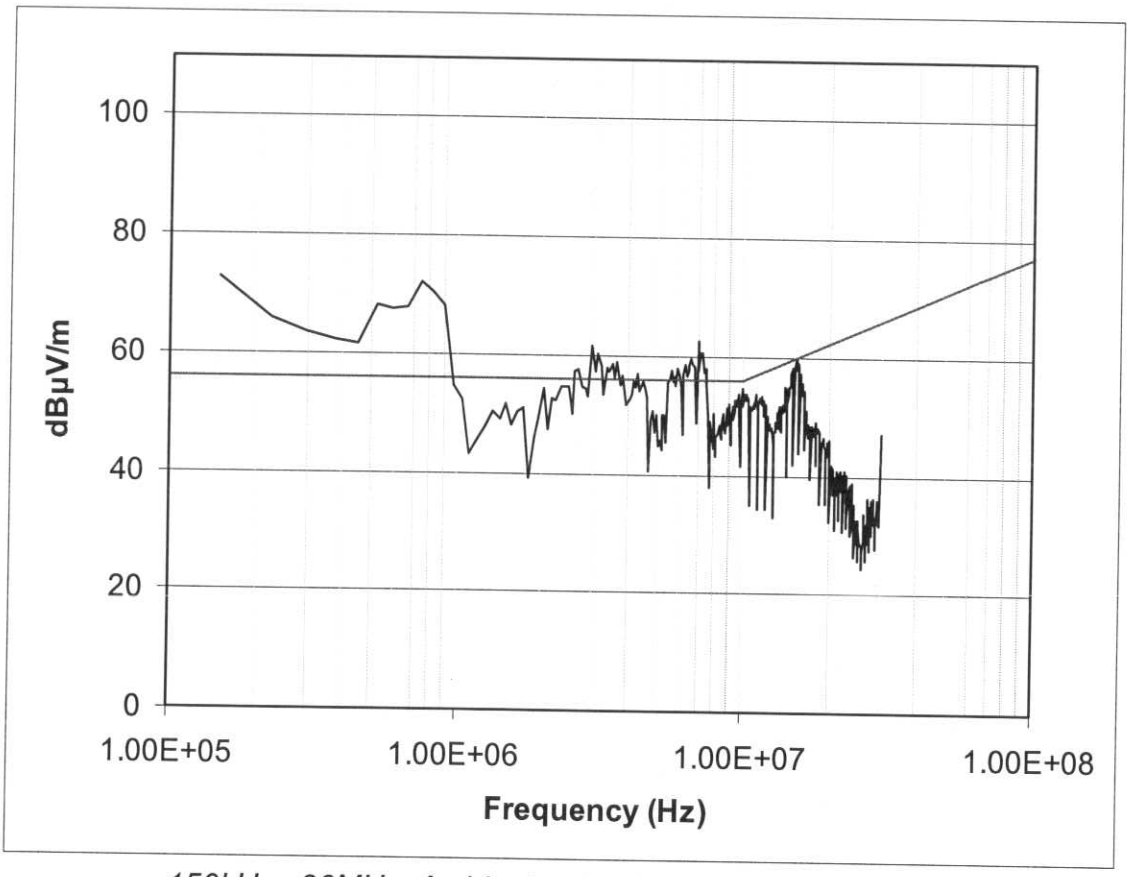

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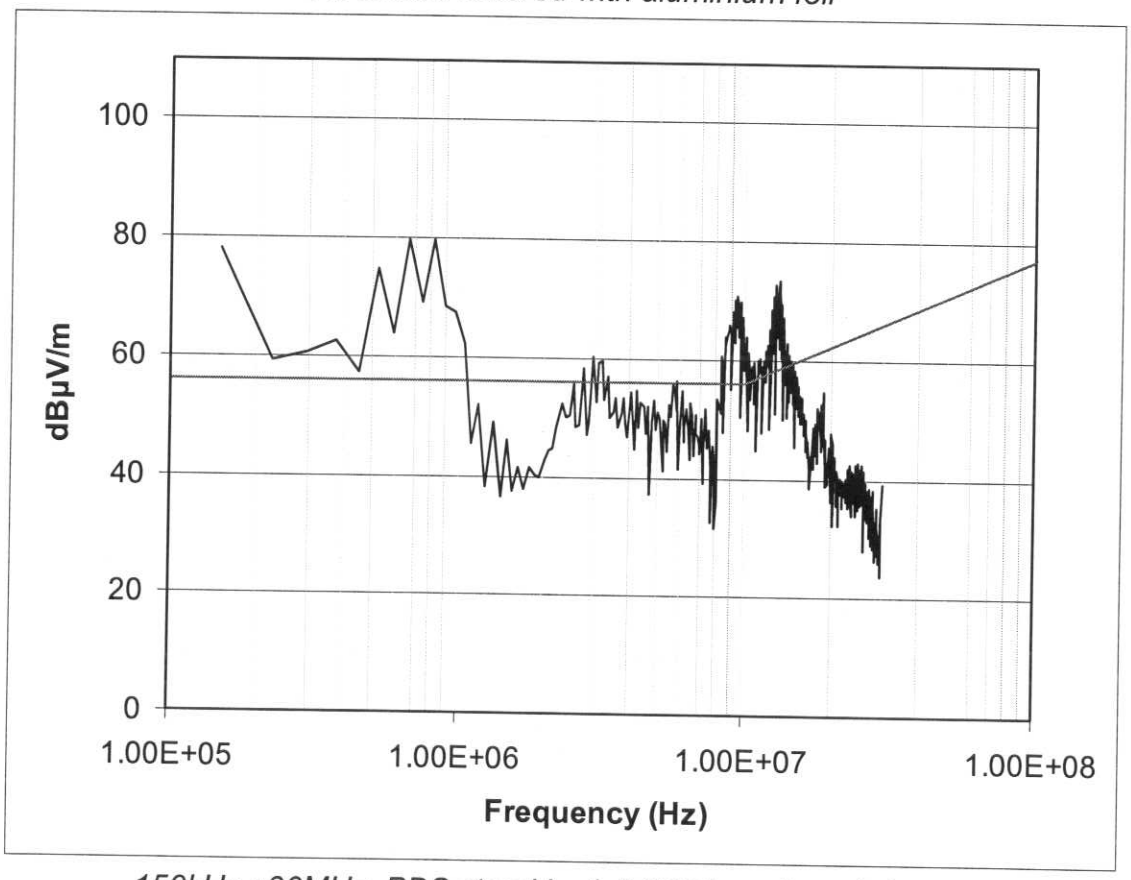

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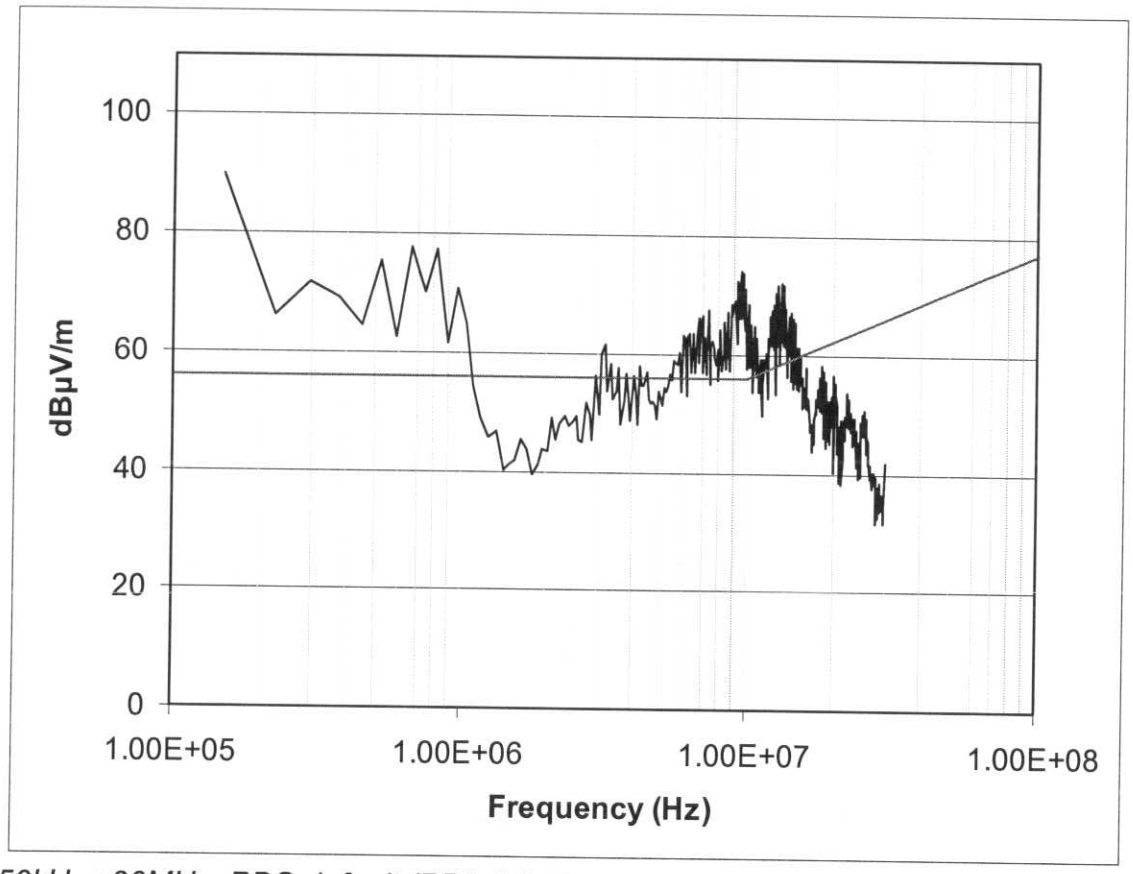

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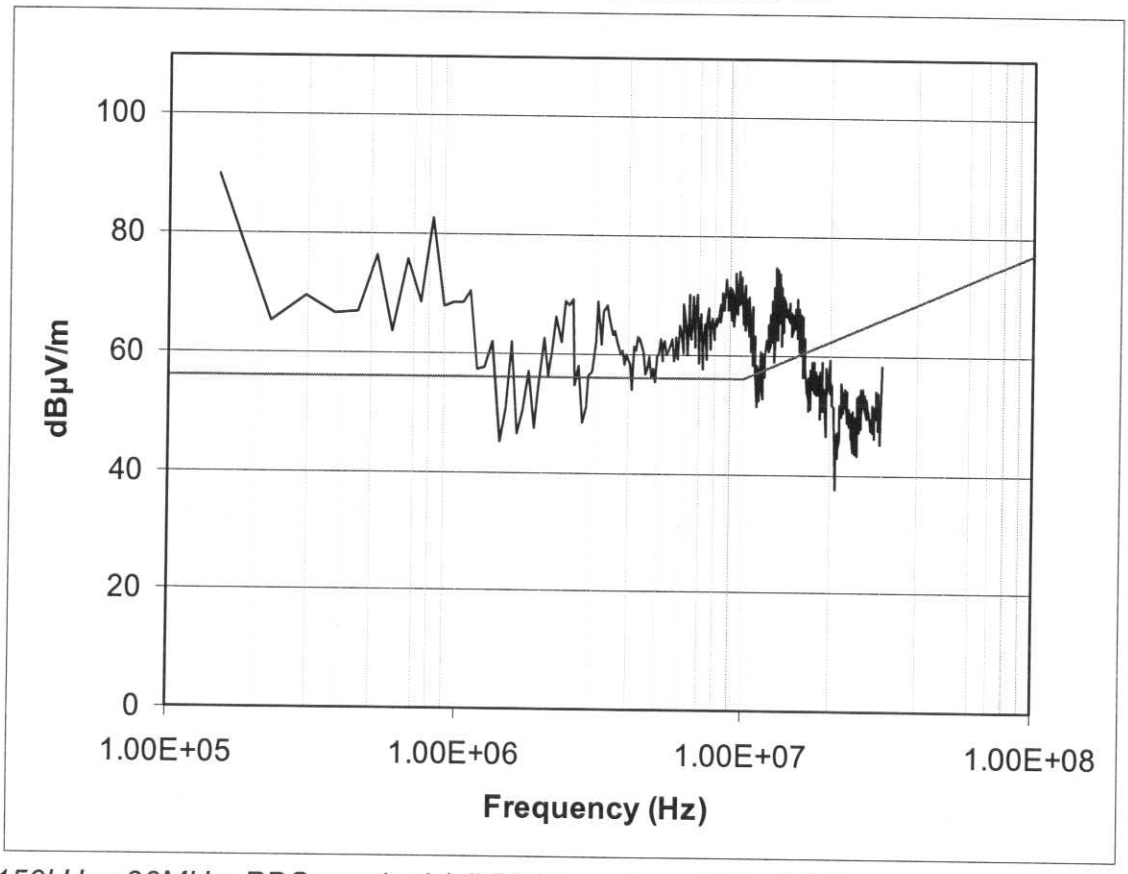

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All cables covered with aluminium foil

Massimiliano Olivier

Da: Mike Capell [Michael.Capell@cern.ch]
Inviato: martedì 22 settembre 2009 21.33
A: molivier@cgspace.it
Cc: Sergio Alia; Roberto Grossi; efrancini@cgspace.it
Oggetto: RE: NCR-PDS-CGS-C-142 Title: PDS radiated E-field emissions out of specified limits
Categorie: CERN SpamKiller Note: -50

Max,

After discussion with both Tim and Vladimir (after he had discussed
with you and Sergio) we accept the mentioned NCR and follow on wavier.

-Mike.

Mike Capell +41 22 767 4706

From: Massimiliano Olivier [mailto:molivier@cgspace.it]
Sent: Wednesday, 16 September 2009 16:30
To: Mike Capell
Cc: 'Sergio Alia'; 'Roberto Grossi'; efrancini@cgspace.it
Subject: NCR-PDS-CGS-C-142 Title: PDS radiated E-field emissions out of specified limits

Dear Mike,

In annex the NCR related to PDS radiated E-field emissions.
Please review and inform us as soon as possible on acceptability of our proposal for a waiver.

Thankyou

Massimiliano