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International Electrical Approvals

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Electromagnetic Compatibility

Test of: Cable Glands

Applicant: CMP Products

Test Type: Assessment of EMC performance

Test Specification: None

SGS Serial Number: DUR23743/EMC/KH/02

Date of Receipt: 22nd January 2002

Date of Test(s): 26th February 2002

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Issue Number: 2

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This report refers only to the sample submitted for test.

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Authorised Signatory

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1. Client Information

Company Name: CMP Products - Glands Division

Address: Glasshouse Street,
St. Peters,
Newcastle-upon-tyne,
NE6 1BE.

Contact Name: Malcolm Graham

Telephone: 0191 265 7411

Facsimile: 0191 265 0581

2. Equipment Under Test (EUT)

2.1 Identification of EUT

Name: Cable Glands

- Model No.:
- 1, CMP 25 T3CDS 2000
with BICOGENERAL braided electric cable.
 - 2, CMP 25 T3CDS 2000
with NEXANS SWA electric cable.
 - 3, CMP 20/16 T3CDS
with UNTEL DIN braided electric cable.
 - 4, CMP 20/16 T3CDS
with ALCATEL SWA electric cable.
 - 5, CMP 75 T3CDS
with SWA cable as supplied by the client.

2.2 Description of EUT

The EUT is a cable gland used to terminate a shielded cable when entering a metallic structure.

2.3 Support Equipment

- I, Shielded cables as supplied by the client of sizes such that the cable glands could be attached.
- II, A Comparison Noise Emitter (CNE) was connected to an inner conductor in the cable.
- III, Two metallic boxes as supplied by the client for terminating either end of the shielded cables.

3. Test Specification, Methods and Procedures

3.1 Test Specification(s)

None.

3.2 Purpose Of Test

To perform the relevant tests and assess the products EMC performance.

3.3 Methods and Procedures

To assess the EMC performance of a cable gland a radiated emissions test was carried out with the following procedure.

1. Tests were performed within the SGS anechoic chamber.
2. The shielded cable was 1 metre in length, both ends of the cable were fed into a metal box and the glands terminated to the enclosure.
3. Inside one of the boxes was a comparison noise emitter (CNE), this was connected to one of the cable conductors.
4. Inside the other box, the same conductor was terminated to the metal box with a 50 ohm resistor.
5. The two boxes were grounded on to a reference Ground plane located on the floor of the anechoic chamber floor with the shielded cable extended in a straight line between the two boxes.
6. Radiated emission measurements were performed in the frequency range 30 MHz to 1 GHz with the antenna positioned 3 metres from the line of the shielded cable.
7. The radiated emissions detected from this set up were then compared to emissions when the gland was loosened such that no contact with the metal box was made.
8. This procedure was repeated for each of the cables/glands supplied.

4. Operation of the EUT During Testing

4.1 Configuration and Peripherals

See test method in section 3 for configuration and peripherals.

4.2 Environmental Conditions

The operating modes and environmental conditions used for each individual test are described in the test results section of this report.

5. Test Results

5.1 General Comments

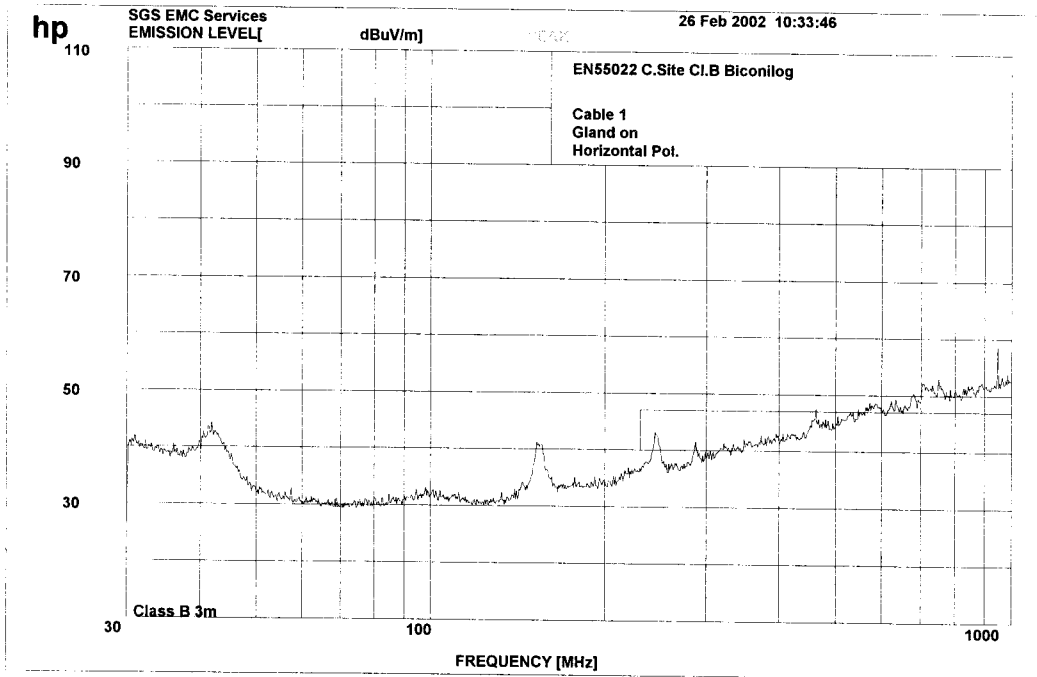
The Radiated Emissions as shown in the plots are compared with the limits as given in the specification EN 55022 : 1998 for a 3 metre Class B radiated emissions measurement.

5.2 Modifications Made to the EUT

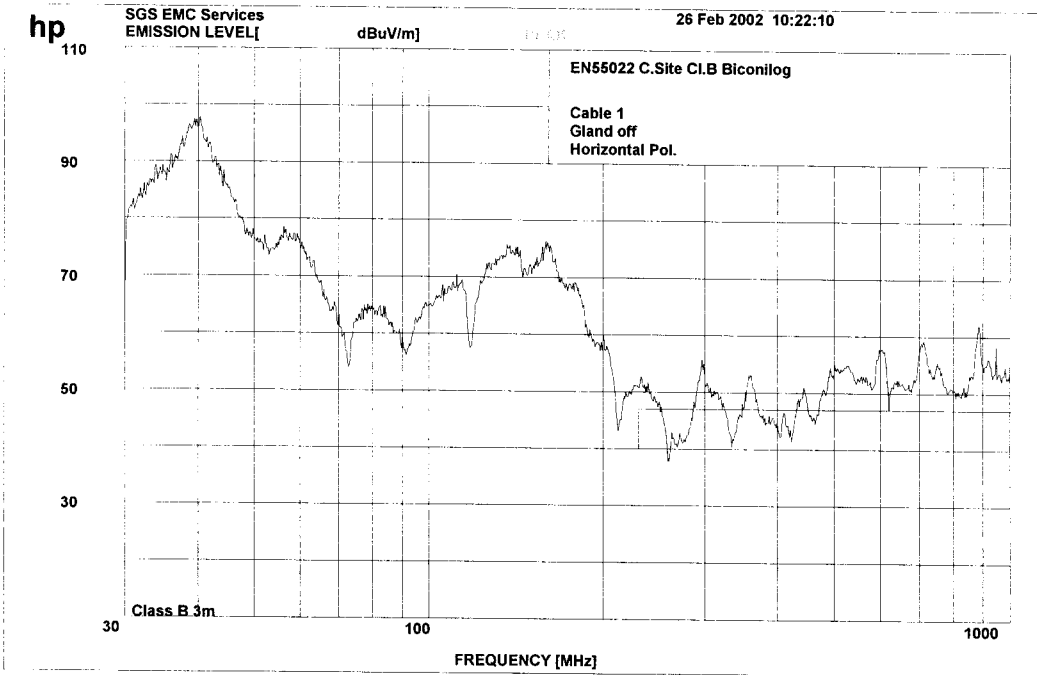
No modifications were made to the EUT during the testing process.

5.3 Radiated Emissions Test Results

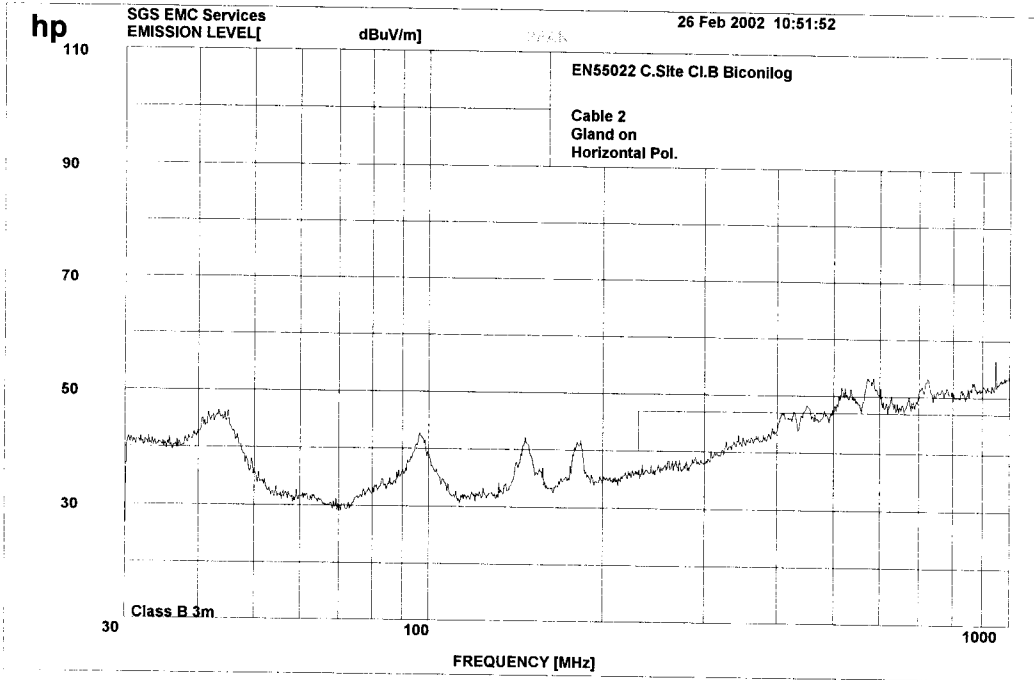
Cable 1 (Sealed Gland)



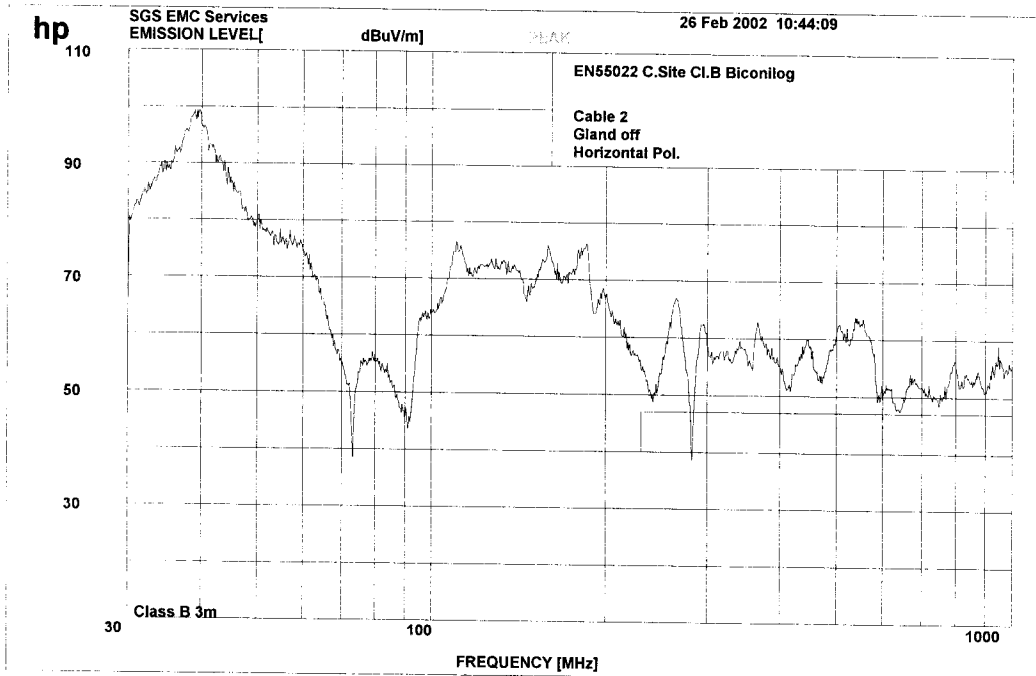
Cable 1 (Loosened Gland)



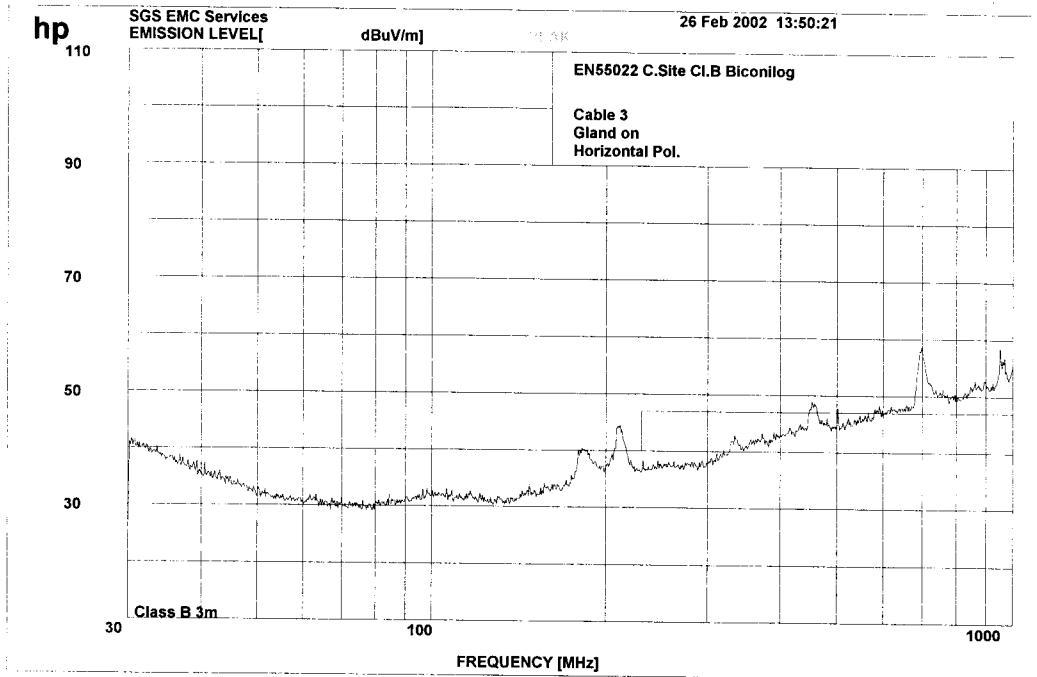
Cable 2 (Sealed Gland)



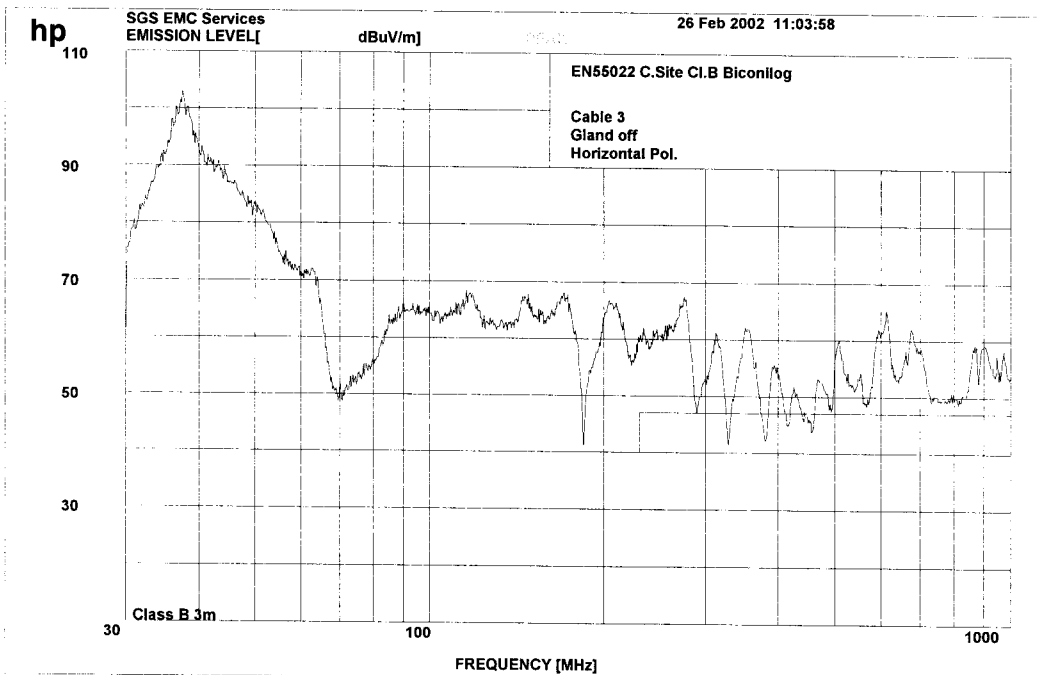
Cable 2 (Loosened Gland)



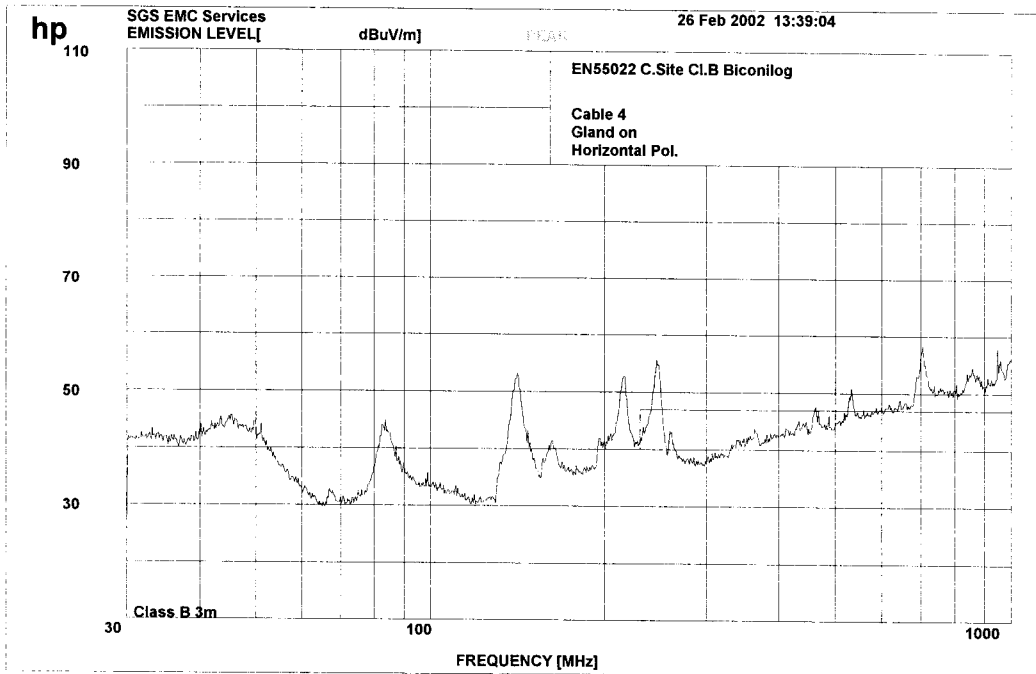
Cable 3 (Sealed Gland)



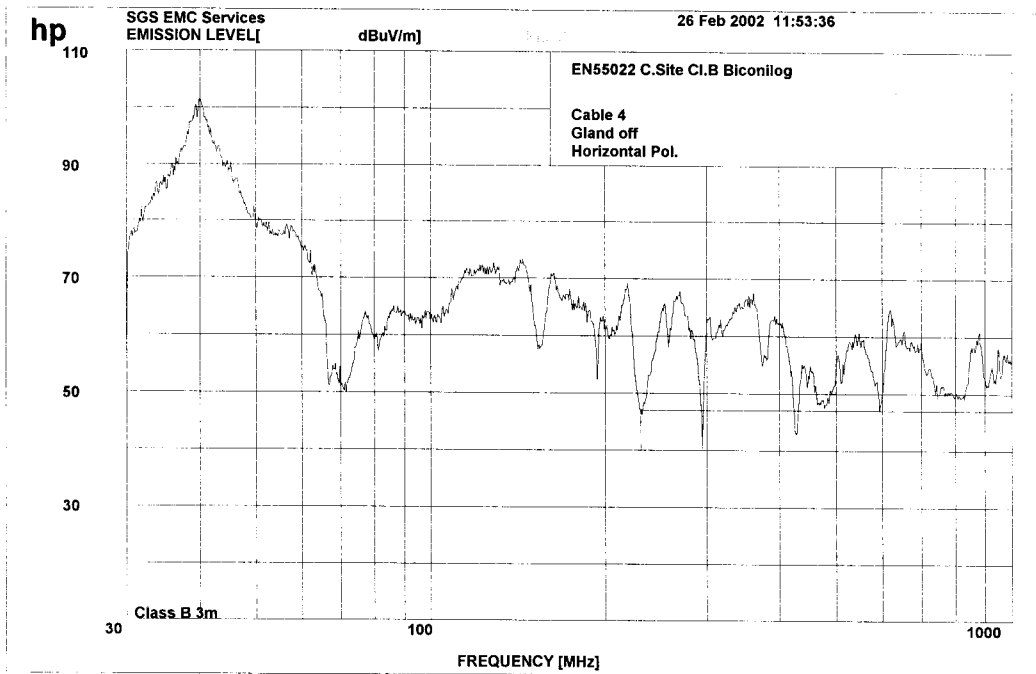
Cable 3 (Loosened Gland)



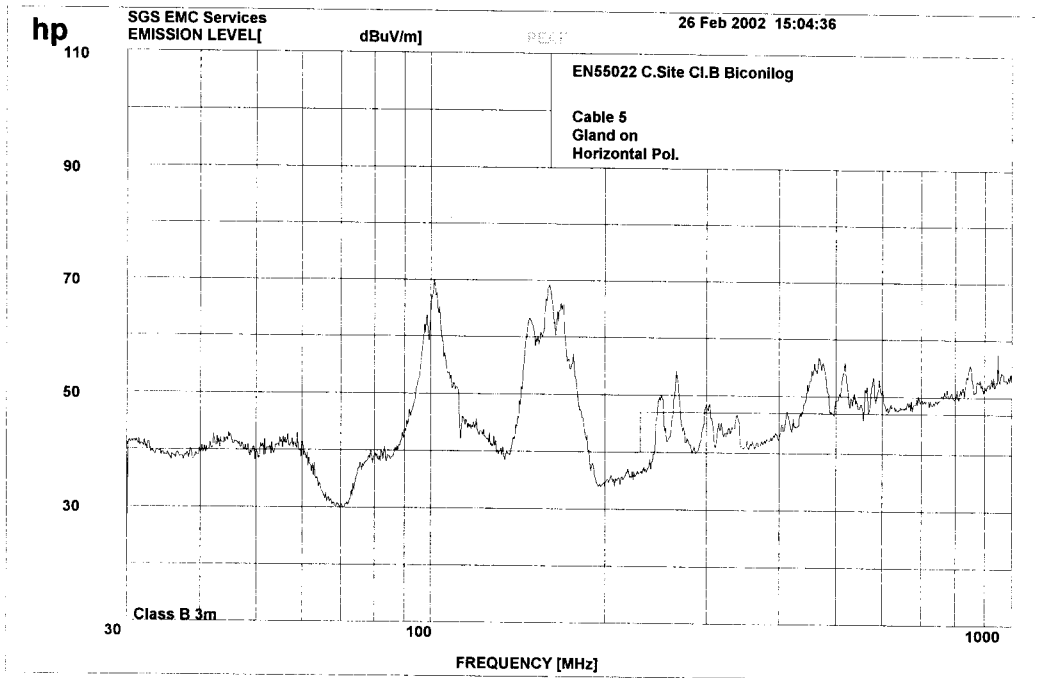
Cable 4 (Sealed Gland)



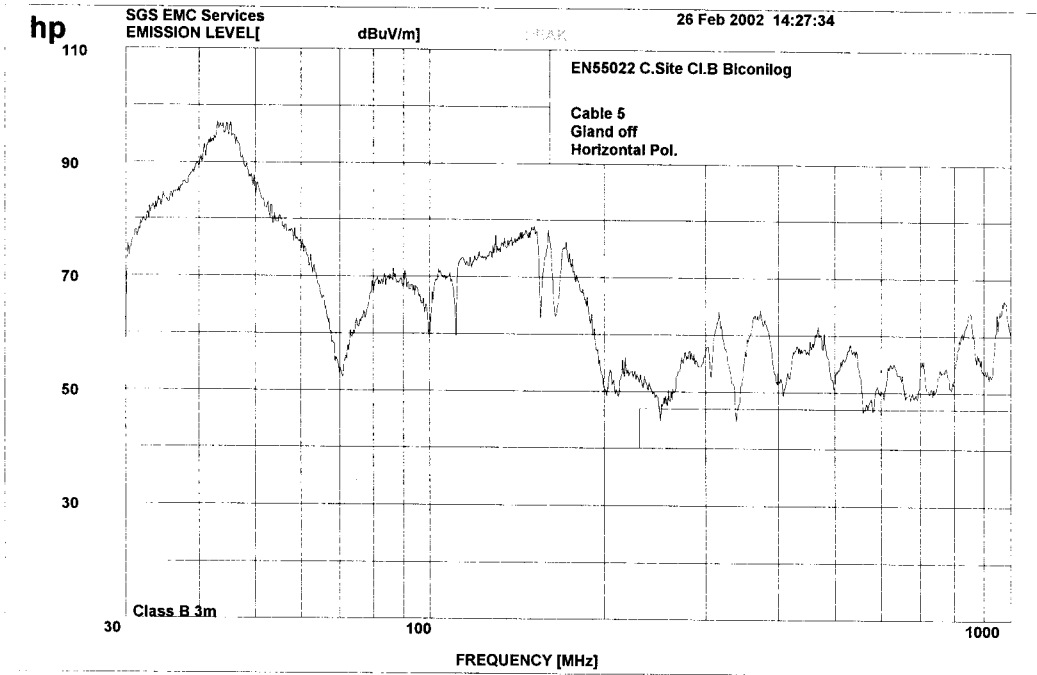
Cable 4 (Loosened Gland)



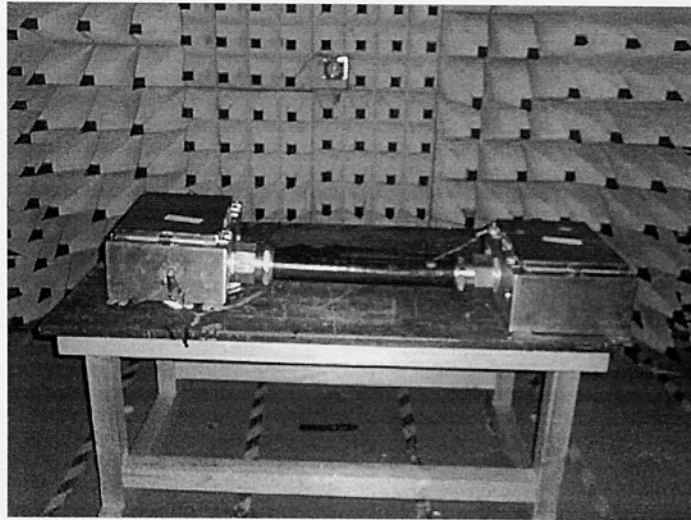
Cable 5 (Sealed Gland)



Cable 5 (Loosened Gland)



Radiated Emissions Test Configuration



Radiated Emissions Environmental Conditions

| | |
|---------------------|---------|
| Temperature | 17.5 °C |
| Relative Humidity | 40 % |
| Barometric Pressure | 1012 mb |

Radiated Emissions Measurement Uncertainties

| | |
|-----------|----------|
| Frequency | ± 200kHz |
| Amplitude | ± 4.6dB |

The uncertainties stated are calculated in accordance with the requirements of UKAS with a confidence level of 95%.

Test Equipment Used

| Equipment Type | Model Number |
|-----------------------|--------------|
| Antenna | EMCO 3142 |
| CNE | 02 |
| HP Spectrum Analyser | 8567A |
| HP Preselector | 85685A |
| HP Quasi-Peak Adapter | 85650A |