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EQUIPMENT UNDER TEST: APPARECCHIO IN PROVA:

PROGRAMMABLE INSPECTOR WITH GSM WISMO Q2426B WITH FUNCTION OF ALARM AIR CONTACT

REFERENCE STANDARDS:

NORME DI RIFERIMENTO:

FCC RULES PART 22 and 24

MODEL: AIR CONTACT

Customer:

RICHIEDENTE:

ATLAS COPCO AIRPOWER NV 1. Dept. / Firm:

Ente / Società':

Sig. Claudio Guariso Mr.:

Sig.:

Boomsesteenweg 957, B-2610 Wilrijk, Belgium Address:

Indirizzo:

Tel.: Telefax +39 011 6404277 • E-mail: +39 011 6827211 • claudio.guariso@primaelectronics.com

Telefono: Fax:

Site of test execution:

Via Campagna, 92 - 22020 Gaggino Faloppio (CO) - Italy

Località esecuzione prove:

Date of test samples receipt: 07/12/2006 Date of start test: 11/05/2007

Data ricevimento campioni:

Data inizio prove:

Data fine prove:

Date of end test: 14/05/2007

Witness to the test:

Signature of the engineers:

Presenti alle prove: Firma esecutore prove: Signature of the Laboratory Director:

Firma Direttore Laboratori:

Nobody / Nessuno

Giovanni Molteni

Massimo Maltempi

The test results recorded in this Test Report are exclusively referred to the tested samples.

I risultati del presente rapporto di prova si riferiscono esclusivamente al campione sottoposto a prova.

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1. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

1.1 Identification

Brand name: ATLAS COPCO AIRPOWER NV

Manufacturer: PRIMA ELECTRONIC S.P.A.

Equipment: GSM / GPRS Module

Model name : AIR CONTACT

Country of manufacturer: ITALY

1.2 Technical data

Class: FCC RULES PART 22 and 24

FCC ID: UXQAIRCONTACT

Supply voltage: 100-240V 50-60Hz 10VA

EUT standing: Wall
EUT single or system: Single

EUT dimensions: 130 x 55 x 120 mm

GSM module manufacturer WAVECOM

Module type: WISMO Q2426B

External;Dedicated

Frequency range TX - GSM 850 824.2 - 848.80 MHzFrequency range TX - PCS 1850.2 - 1909.8 MHzFrequency range RX - GSM 850 869.2 - 893.8 MHz

Frequency range RX – PCS 1930.2 – 1989.8 MHz

Antenna gain -1 dBi
Power supply 3.7 V
Operating mode Duplex

Type of modulation GMSK (GSM modulation)

Emission GXW

Software Fully GSM software Stack
Temperature range Operating: -20°C to +55°C

Storage: -30°C to +85°C

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1.3 Modifications incorporated in E.U.T.

The following items are the modifications introduced in the equipment under test:

None

1.4 Ports identification

This section contains descriptions of all signal ports and AC/DC power input/output ports, the length and the type of the cable provided by manufacturer needed for the tests.

Moreover it is specified if the ports are ever or optionally connected.

Port		Description	Connection
1	Enclosure	PLASTIC	SCREW
2	AC power input/output ports	100-240 Vac, 50-60 Hz , 10 VA	CONNECTOR
3	DC power input/output ports	NOT PRESENT	
4	Signals ports	Serial 232 port	Connector D-SUB 9 Pin male
5	Telecomm. Ports	CAN OPEN	Connector D-SUB 9 Pin Female

Note: During the tests all cables must be what provided the manufacturer or the same that used in the real employment of the EUT.

1.5 Auxiliary equipment

No auxiliary equipment

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2. TEST CONDITIONS

2.1 Operating test modes and test conditions

The equipment has been tested according to the operative conditions described in the user/installation manual provided by the manufacturer and by following reference standards:

Reference Standard:

FCC Part 22, 24, 2

Measurements for frequency stability according to §2.1055

In the following table there are the operating conditions adopted during tests identified by an indicator (#..) at which has been referred the item "Operating condition of the equipment under test" of all technical sheets of the tests (see Section 4)

Operating condition	Description
#1	Continuous transmission

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3. Summary of test results

3.1 Tests

Name of test	Paragraph	Result
frequency stability	2.1055	Test passed

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4. TEST RESULTS

frequency stability (temperature)	8	3
frequency stability (voltage)	<u>c</u>)

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TEST 1.

FREQUENCY STABILITY (TEMPERATURE)

Frequency Stability vs Temperature

REFERENCE DOCUMENT FCC 2.1055, 22.355

1.1 Test procedure

The equipment under test was connected to power supply and the RF output was connected to a test set. The EUT was placed inside the temperature chamber. The AC leads and RF output cable, exited the chamber through an opening made for that purpose.

After the temperature stabilized the frequency output was recorded from the test set.

1.2 Test Result

PCS 1900

Temp. (°C)	Frequency Error (Hz)	Frequency error (ppm)
50	80	0,0426
40	76	0,0404
30	70	0,0372
20	81	0,0431
10	83	0,0441
0	85	0,0452
-10	78	0,0415
-20	75	0,0399

Note: operating range up to -20°C as declared by manufacturer

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GSM 850

Temp. (°C)	Frequency Error (Hz)	Frequency error (ppm)
50	48	0,0574
40	44	0,0526
30	39	0,0467
20	37	0,0443
10	35	0,0419
0	33	0,0395
-10	36	0,0431
-20	40	0,0478

Limit: ± 2091 Hz

Note: The measured frequency stability vs. temperature is identical (%difference) in all

bands the above table since the Tx frequency is locked to the same TCXO.

FREQUENCY STABILITY (VOLTAGE)

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2.

Frequency Stability vs voltage

REFERENCE DOCUMENT FCC 2.1055, 22.355

1.3 Test procedure

The equipment under test was connected to an variac power supply and the RF output was connected to a test set. The EUT was placed inside the temperature chamber. The AC leads and RF output cable, exited the chamber through an opening made for that purpose.

Vary primary supply voltage from 85 to 115 percent of the nominal value (120-230V). The output frequency was recorded for each power value the frequency output was recorded from the test set.

1.4 Test Result

PCS 1900

Voltage (V)	Frequency Error (Hz)	Frequency error (ppm)
195	44	0,0234
230	40	0,0213
265	42	0,0223

GSM 850

Voltage (V)	Frequency Error (Hz)	Frequency error (ppm)
195	38	0,0455
230	30	0,0359
265	32	0,0383

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PCS 1900

Voltage (V)	Frequency Error (Hz)	Frequency error (ppm)
102	40	0,0213
120	37	0,0197
138	41	0,0218

GSM 850

Voltage (V)	Frequency Error (Hz)	Frequency error (ppm)
102	32	0,0383
120	28	0,0335
138	30	0,0359

5. LIST OF EQUIPMENT USED

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Description	Manufacturer	Model No.
Climatic chamber	Mazzali	Climatest
Wireless communications test set	Agilent	8960 series 10 (E5515C)
Frequency counter	Hewlett Packard	5350B
Spectrum Analyzer	Rohde & Schwarz	FSP (9kHz – 40 GHz)

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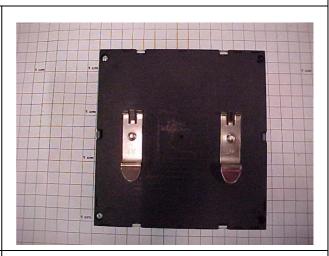


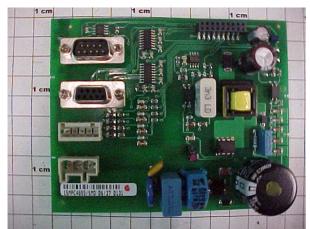
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.PHOTOGRAPHIC DOCUMENTATION

PHOTO N° 1 -EUT IDENTIFICATION

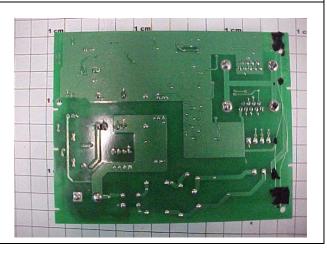












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