



Information to customer

Fritz!Box 7270

Manufactured by AVM

Environmental Declaration

Support documentation

The present document is providing backup information to statements 1 to 4 reported in the Environmental Declaration of FRITZ!BOX AVM7270 of Telecom Italia.

The energy consumption of the product has been optimized following objectives, operation states and target values defined by the European Code of Conduct on Broadband Equipment, signed by Telecom Italia:

1. in ON state, the mean power consumption is less than 9,2 Watt
2. in LOW POWER state, the mean power consumption is less than 6,1 Watt
3. Considering an average yearly usage, the energy consumption per product is reduced by 25,4% in comparison to another equipment already aligned with the CoC
4. The power supply energy efficiency is high (more than 80%)

1 GENERAL INFORMATION

1.1 Product data

Name:	FRITZ!BOX FON WLAN 7270
S/N:	C391.361.00.029.256
MAC Adr.:	246511E319CA
Pn:	2000 2427
FW Version:	FRITZ!OS 05.23
HW Version:	v3
Supplier:	AVM
Test date:	January 2013



Photo1 – Equipment under test (EUT)



Photo2 – Equipment under test



Photo3 – EUT detail

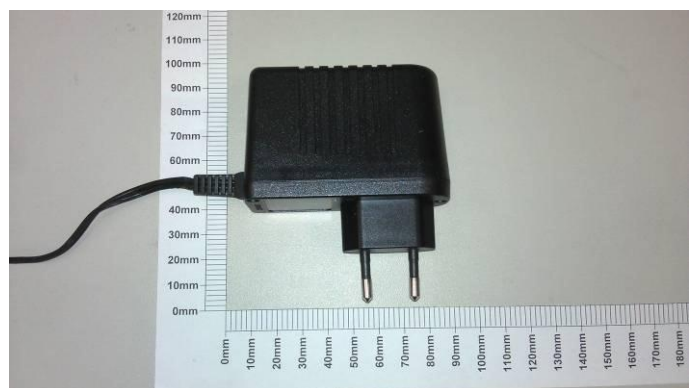


Photo4 – EUT power supply


1.1.1 External Power Supply

Specimen N.:	1
Manufacturer:	FWGB
Model:	311P0W068
Serial:	-
Eff. Lev:	V
Test Date:	22/01/2013
Ambient Temp:	23 °C +/- 3 °C
DC Output Cord Length [cm]:	150



Photo5 – External Power Supply

Rated Specifications	Value	Units
Input Voltage:	230	V~
Input Current:	200	mA
Input Frequency:	50/60	Hz
Output DC Voltage:	12	V=
Output DC Current:	1.4	A
Rated Output Power:	16.8	W

	Titolo: Energy Efficiency tests on Frritz!Box Fon WLAN 7270 manufactured by AVM, Firmware version FRITZ!OS: 05.23	Rev. 1
		State: APPROVED

1.2 Lab data

Lab identifier:	STO PSM
Address:	Via Reiss Romoli 274, 10148 Torino, ITALY
Lab responsible:	Infantino Marco 011 2285362
Test responsible:	Ballesio Federico 011 2287242

1.3 Identificazione del Servizio di Prova

The equipment FRITZIBOX FON WLAN 7270 v3 produced by AVM has been tested against the TI specification - TNTLAMHE1100007: Technical Requirements for CPE/Service Router NGN 3-play with FXS ports for Residential and Small Business services (AKA AG Plus) and - TTGWLNHN1100053-2: AG Plus 3Play - Technical Requirements amendment 1.

The tests have been performed on the basis of the following standards:

- DIRECTIVE 2009/125/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products
CEI EN 62301 Apparecchi elettrici per uso domestico - Misura del consumo di energia in stato di attesa.
- COMMISSION REGULATION (EC) No 278/2009 of 6 April 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies
- Code of Conduct on Energy Consumption of Broadband Equipment Version 4 – 10 February 2011

1.4 Uncertainty of measurements

The accuracy declared in this report is expressed in terms of extended uncertainty and is obtained multiplying the standard uncertainty by the coverage factor $k=2$; the extended uncertainty corresponds to a coverage with probability of 95%.

2 SUMMARY OF RESULTS

➤ AC power supply operation limits

The equipment is compliant to EN 60950-1 while is not compliant to R3.3 of TI specification "TNTLAMHE1100007", as there are degradations in the power supplying conditions at the lowest value of the tolerance range (99Vac).

➤ No load power consumption of the power supply unit

The external power supply of FRITZ!BOX FON WLAN 7270 V3 is compliant to the EU regulation 278/2009/CE with regards to ecodesign requirements for no-load condition electric power consumption.

➤ Power supply efficiency

The external power supply of FRITZ!BOX FON WLAN 7270 V3 is compliant to the EU regulation 278/2009/CE with regards to ecodesign requirements for the average active efficiency of external power supplies.

➤ CoC Broadband Equipment

The product FRITZ!BOX FON WLAN 7270 V3 with FW version FRITZ!OS 05.23:

- is compliant to requirements of Code of Conduct on Energy Consumption of Broadband Equipment ver. 4 - Tier 2011-2012, for "Idle State" and "On State" energy consumption.

3 DETAILED TEST REPORT

3.1 AC power supply operational limits

3.1.1 Uncertainty of measurements

Uncertainty of measurements depends on uncertainty of test equipment.

3.1.2 Test equipment

Instrument	Mftr.	Model	CSELT Ref.
Power Analyzer	YOKOGAWA	Wt3000	S2532
AC Source	CHROMA	6215	200012811
Anemometer	TESTO	410-2	S2533
Thermo-hygrograph	SALMORAGHI	1750-1/Q	S0647
AC/DC Electronic Load	PRODIGIT	3251	19991185
Multimeter	HP	34401A	19991071

3.1.3 Required requirement

Correct operation in a power supply range from 230 Vac +/-10%.

TI TNTLAMHE1100007 R3.3 requirements: the operation range is to be included between tra 99 V (110V~ - 10%) and 254,4V (240V~ + 6%).

3.1.4 Results

VAC: 207 V~ (230V~ - 10%) → no degradation on normal operation

VAC: 253 V~ (230V~ + 10%) → no degradation on normal operation

VAC: 99 V~ (110V~ - 10%) → degradation on normal operation

VAC: 254.4 V~ (240V~ + 6%) → no degradation on normal operation

	100 % of rated output current		
	@ AC Input Voltage 207 Vrms	@ AC Input Voltage 230 Vrms	@ AC Input Voltage 254.4 Vrms
DC Output Current (A)	1.390	1.390	1.390
DC Output Voltage (V)	11.825	11.876	11.840
DC Output Power (W)	16.437	16.508	16.458

The adapter is a Switching power supply, class II.

3.2 Compliance to (CE) Regulation N. 278/2009

3.2.1 Uncertainty of measurements

Uncertainty of measurements depends on uncertainty of test equipment. For measurements accuracy the EN 62301, paragraph 4.5 limits have been applied.

3.2.2 Test equipment

Instrument	Mftr.	Model	CSELT Ref.
Power Analyzer	YOKOGAWA	Wt3000	S2532
AC Source	CHROMA	6215	200012811
Anemometer	TESTO	410-2	S2533
Thermo-hygrograph	SALMORAGHI	1750-1/Q	S0647
AC/DC Electronic Load	PRODIGIT	3251	19991185
Multimeter	HP	34401A	19991071

Measurements have been performed in compliance to EN 62301 ed.1 2006-11.

3.2.3 Required requirement

The EU regulation 278/2009/CE defines the ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies; with reference to EUT ($P_o=16.8W$):

Applicability period: from 01/04/2011:

- no load consumption less than **0,30 W**
- mean efficiency in active mode not less than **80 %**

3.2.4 Results

The external power supply - model 311P0W068 manufactured by FWGB, **is compliant to** 278/2009/CE:

- No load power consumption equal to 274.0 ± 3.7 mW;
- 4 points energy efficiency (efficiency at 25 %, 50 %, 75 % and 100 % of full rated output current) is 80.8 %.

IEC 62301 Test Report

IEC62301 First Edition compliance

Appliance(equipment) Details

<Details of manufacture marked on the product>

AC/DC Switching Power Supply for AVM Fritz!Box 7270
Type: FW7577/EU/12/B
Input: 230 Vac / 50-60 Hz / 200 mA
Output: 12 Vdc / 1.4 A / 16.8 W
Efficiency Lev.: V

Item	Appliance	Equipment
Brand	FWGB	YOKOGAWA
Model	311P0W068	760302-11-SV
Type	AC/DC Switching Power Supply	Firmware Ver.F5.13
Serial Number	-	0
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	20mA

Test Parameters

<Information and documentation on the instrumentation>

Power Accuracy: +/- 3.7 mW

Item	Data
THD *(Upper Limit)	0.121 % (2.000 %)
Crest Factor *(Range)	1.415 - 1.415 (1.34 - 1.49)
Ambient temperature	22.4 degree
Test voltage / frequency	230.097 V / 50.000 Hz

Measured data, for each mode as applicable

<Description of how the appliance mode>

(CE) No. 278/2009 - No Load
Power Target: <= 0.3 W

Stable Measurement period (01 :00 :00)

Item	Data
Power variation *(Upper Limit)	2.074 % (5.000 %)
Max Power Value	0.277 W
Last Power Value	0.274 W

Unstable load Measurement period (01 :00 :00)

Item	Data
Accumulated energy	0.274 Wh
Average Power	0.274 W

Detail Measured data

Item	Data
Apparent Power	1.060 VA
Real Power Factor	0.258

Test and laboratory details

<Laboratory name and address>
STO PSM
<Test officer(s)>
PWR/ITE

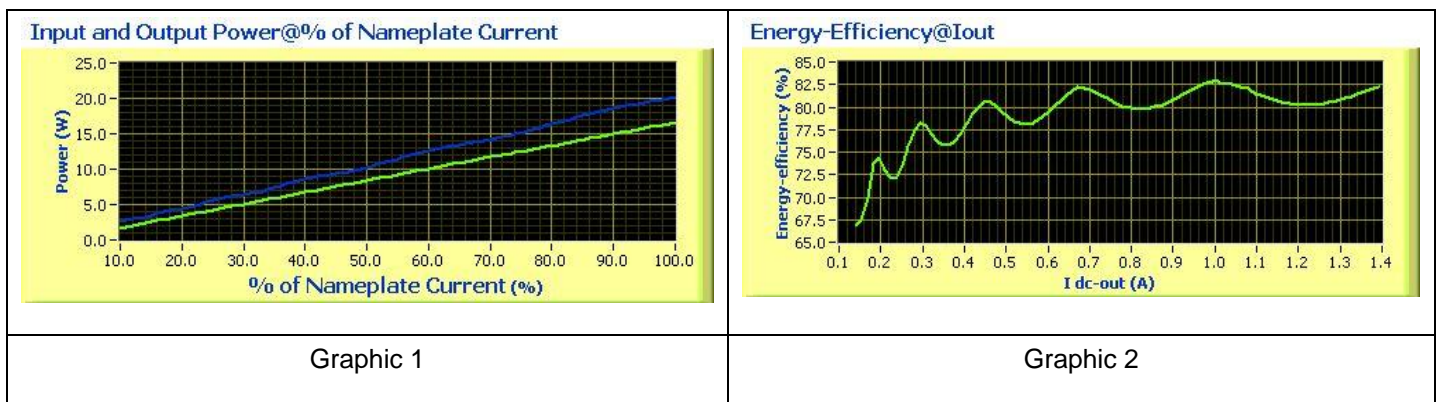
Item	Data
Test report No./reference	HHI - Eco 2013
Date of test	22 / 01 / 2013 12:00

Mean energy efficiency:

	100 % of Nameplate Current	75 % of Nameplate Current	50 % of Nameplate Current	25 % of Nameplate Current	Average
DC Output Current (A)	1.390	1.040	0.700	0.350	
DC Output Voltage (V)	11.876	12.048	12.118	12.173	
DC Output Power (W)	16.508	12.530	8.483	4.260	
AC Input Voltage rms (V)	230.000	230.010	230.030	230.050	
AC Input Current rms (A)	0.176	0.140	0.103	0.062	
AC Input Power (W)	20.050	15.168	10.315	5.609	
Voltage THD (%) to H49	1.090	1.090	1.049	0.991	1.055
Current THD (%) to H49	169.290	183.710	202.780	232.000	196.945
AC Input Frequency (Hz)	49.991	49.992	49.992	49.991	49.992
Power Consumed by UUT (W)	3.542	2.638	1.832	1.348	
Power Factor	0.497	0.469	0.437	0.394	
Calculated Efficiency (%)	82.332	82.610	82.237	75.960	80.785
Required Efficiency (%)					79.975

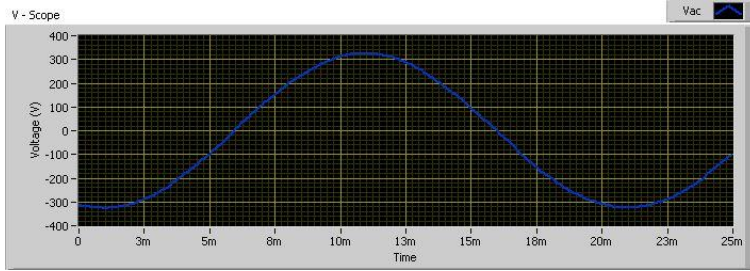
Energy efficiency target for active mode: 79.974687 (%)
 Measured Level: 80.784764 (%)

:



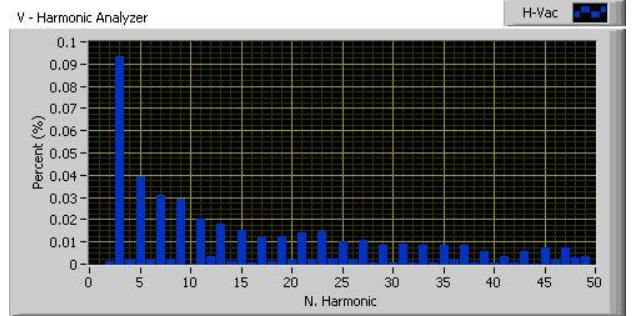
Following cuves registered at 100% of the maximum rated current:

Power Supply Vac Curve



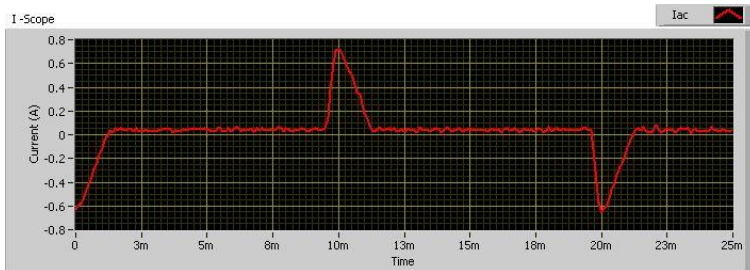
Graphic 3

Voltage-Harmonics (H2 to H49)



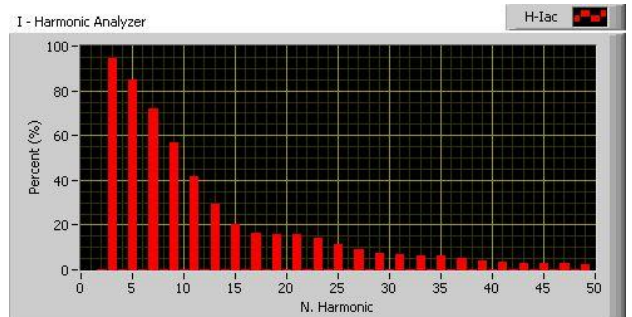
Graphic 4

Power Supply Iac Curve



Graphic 5

Current-Harmonics (H2 to H49)



Graphic 6

3.3 Code of Conduct on Energy Consumption of Broadband Equipment

3.3.1 Incertezza di misura

Uncertainty of measurements depends on uncertainty of test equipment. Tests have been performed in compliance to CEI EN 62301 "Apparecchi elettrici per uso domestico - Misura del consumo di energia in stato di attesa".

3.3.2 Test equipment

Instrument	Mftr.	Model	CSELT Ref.
Power Analyzer	YOKOGAWA	Wt3000	S2532
AC Source	CHROMA	6215	200012811
Anemometer	TESTO	410-2	S2533
Thermo-hygrograph	SALMORAGHI	1750-1/Q	S0647

3.3.3 Requirement

Following the "Code of Conduct on Energy Consumption of Broadband Equipment":

EUT Operation state	Power Target: Tier 2011-2012: 1.1.2011- 31.12.2012	Power Target: Tier 2013-2014: 1.1.2013 - 31.12.2014
	[W]	[W]
Idle state	7	5.4
On state	12.2	10

3.3.4 Results

The EUT, FRITZ!BOX FON WLAN 7270 v3 manufactured by AVM, FW version FRITZ!OS 05.23:

is compliant to the Code of Conduct on Energy Consumption of Broadband Equipment ver. 4 - Tier 2011-2012.

Note. The product is not compliant to the, Tier 2013-2014 of CoC, but it was designed and launched on the market during the first reference Tier and any comparison with the second Tier is not correct.

State	Power [W]	CoC Tier 2011-2012 [W]	Result
Idle State	6.034 ± 0.040	≤ 7	Compliant
On State	9.174 ± 0.043	≤ 12.2	Compliant

IEC 62301 Test Report

IEC62301 First Edition compliance

Appliance(equipment) Details:

<Product description>

Fritz!Box Fon WLAN 7270 v3
 FW: FRITZ!OS 05.23
 Sn: C391.361.00.029.256
 Pn: 2000 2427
 MAC Adr.: 246511E319CA

Item	Appliance	Equipment
Brand	AVM	YOKOGAWA
Model	Fritz!Box Fon WLAN 7270	760302-11-SV
Type	Modem/Router Adsl	Firmware Ver F5.13
Serial Number	-	0
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	200mA

Test Parameters:

<Information and documentation on the instrumentation>

Power Accuracy: +/- 40 mW

Item	Data
THD % (Upper Limit)	0.119 % (2.000 %)
Crest Factor (Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	21.8 degree
Test voltage / frequency	230.072 V / 50.000 Hz

Measured data, for each mode as applicable

<Description of how the appliance mode>

Code of Conduct on Energy Consumption of Broadband Equipment Version 4
 10 February 2011
 Idle State

<Any notes regarding the operation>

- Idle State:
 Central functions: not processing user traffic
 ADSL WAN interfaces: idle (link established but not user traffic transmission).
 LAN Eth. ports: ports not connected but with Eth. link detection active
 WiFi: Beacon on, but no user traffic transmitted, no client associated.
 FXS: 1 phone connected on-hook; other ports without phone
 FXO: no active call, incoming call detection enabled
 DECT interface: no active call, incoming call detection enabled
 USB: No devices connected, detection devices active

Stable Measurement		Unstable load Measurement period (01:00:00)	
Item	Data	Item	Data
Power variation % (Upper Limit)	3.773 % (5.000 %)	Accumulated energy	8.034 Wh
Max Power Value	8.226 W	Average Power	8.034 W
Last Power Value	8.000 W		

Detail Measured data

Item	Data
Apparent Power	15.063 VA
Real Power Factor	0.398

Test and laboratory details:

<Laboratory name and address>

STO PSM
 <Test officer(s)>
 PWR/ITE

Item	Data
Test report No./reference	HHL - Eco 2013
Date of test	23 / 01 / 2013 14:08

Idle State Report

IEC 62301 Test Report

IEC62301 First Edition compliance

Appliance(equipment) Details:

<Product description>

Fritz!Box Fon WLAN 7270 v3
 FW: FRITZ!OS 05.23
 Sn: C391.361.00.029.256
 Pn: 2000 2427
 MAC Adr.: 246511E319CA

Item	Appliance	Equipment
Brand	AVM	YOKOGAWA
Model	Fritz!Box Fon WLAN 7270	760302-11-SV
Type	Modem/Router Adsl	Firmware Ver F5.13
Serial Number	-	0
Rated voltage / frequency	230 V / 50 Hz	-
Voltage Range	-	300V
Current Range	-	200mA

Test Parameters:

<Information and documentation on the instrumentation>

Power Accuracy: +/- 43 mW

Item	Data
THD % (Upper Limit)	0.117 % (2.000 %)
Crest Factor (Range)	1.415 - 1.416 (1.34 - 1.49)
Ambient temperature	21.8 degree
Test voltage / frequency	230.060 V / 49.999 Hz

Measured data, for each mode as applicable

<Description of how the appliance mode>

Code of Conduct on Energy Consumption of Broadband Equipment Version 4
 10 February 2011
 On State

<Any notes regarding the operation>

- On State:
 Central functions: Processing user traffic present on the WAN and LAN interfaces
 WAN interfaces: ADSL active (link established and passing user traffic).
 LAN Eth. ports: All ports active, link established with 10Mbps in Up&Down stream.
 WiFi: Beacon on, with user traffic @ 10Mbps in Up&Down stream (5GHz - Ch.40)
 FXS: 1 phone connected, off-hook, 1 active call; other ports without phone
 FXO: n.a
 DECT: 1 phone connected, 1 active call;
 USB: No devices connected, detection devices active

Stable Measurement		Unstable load Measurement period (01:00:00)	
Item	Data	Item	Data
Power variation % (Upper Limit)	7.448 % (5.000 %)	Accumulated energy	9.174 Wh
Max Power Value	9.602 W	Average Power	9.174 W
Last Power Value	9.114 W		

Detail Measured data

Item	Data
Apparent Power	21.269 VA
Real Power Factor	0.429

Test and laboratory details:

<Laboratory name and address>

STO PSM
 <Test officer(s)>
 PWR/ITE

Item	Data
Test report No./reference	HHL - Eco 2013
Date of test	23 / 01 / 2013 15:33

On State Report



Information to customer

Fritz!Box 7270

Manufactured by AVM

Environmental Declaration

Support documentation

The present document is providing backup information to statements 5 and 8 reported in the Environmental Declaration of FRITZ!BOX AVM7270 of Telecom Italia.

5. The plastic material adopted for the case is homogeneous and does not contain any halogenated compound
8. The package is mono-material and the cardboard used is not plasticized and 90% recycled

1 Declaration on materials used for FRITZ!BOX 7270

In the following pages a document provided by the manufacturer is reported, describing the main features of the plastic material adopted for the case and the cardboard selected for the package FRITZ!BOX 7270.

The complete documentation is currently available in german language only and will be made available in a second version of this support documentation.



Telecom Italia S.p.A.
Luca Giacomello
Via G Reiss Romoli 274
10148 Torino
Italy

GCR

4.3.2013

AVM – dichiarazione ambientale

AVM nell'ambito della sua attività manifatturiera di CPE e dispositivi broadband ha sempre mirato all'ottimizzazione delle risorse ed alla preservazione dell'ambiente.

Con l'obiettivo di raggiungere e migliorare le performance indicate dalla Comunità Europea nelle specifiche CoC, i prodotti AVM sono costruiti nel rispetto delle risorse e con grande attenzione al risparmio energetico. Questo si concretizza nell'impiego di materiali idonei, quanto più possibili riciclati e riciclabili, come pure nell'ottimizzazione del software volta a ridurre i consumi e, conseguentemente, le emissioni di CO2.

In particolare, relativamente al prodotto FRITZ!Box 7270:

1. Il materiale plastico utilizzato per la scocca è omogeneo e riciclabile e privo di composti alogenati
2. L'imballo è monomateriale e il cartone utilizzato per l'imballo del prodotto è non plastificato e riciclato al 90%

Distinti saluti
Giovanni Crisi

Key Account Manager

AVM GmbH for International Communication Technology

Mobile Germany +49 (0)173 6286237

Mobile Italy +39 335 1357 460

Email: g.cristi@avm.de

Internet: <http://www.avm.de>



Information to customer

Fritz!Box 7270

Manufactured by AVM

Environmental Declaration

Support documentation

The present document is providing backup information to statements 6 and 7 reported in the Environmental Declaration of FRITZ!BOX AVM7270 of Telecom Italia.

- 6.** The weight of the plastic material used for the case has been reduced of more than 52% in peso in comparison to a Telecom Italia product having similar functionalities
- 7.** The product's case is composed by 3 components and all connections between parts are implemented without screws and with adoption of snap fits, so that disassembling time has been reduced of 72,5% in comparison to a Telecom Italia product having similar functionalities

TEST REPORT

DISASSEMBLING TEST FOR FRITZ!BOX 7270

Tests performed in Telecom Italia Lab 12/02/2013

The test procedure consists in measuring the time of disassembling, considering to separate plastic case, screws and electronic board.

All single parts have been weighted after the disassembling procedure and compared with the previous Telecom Italia product used as a reference in this Environmental Declaration.

Product	Case weight (g)	Number of screws	Disassembling time (s)
Alice Gate VoIP Plus 2 Wi-Fi	463,04	7	200
FRITZ!BOX 7270	224	0	55

As summary of the test:

- The plastic parts have been reduced by 52%
- Screws have been completely avoided
- The disassembling time has been reduced by 72,5%.