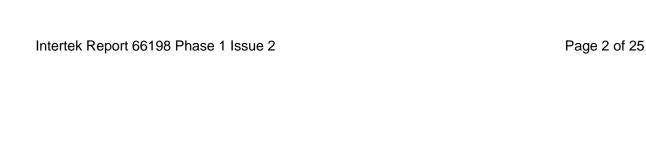


# **REPORT**

# Research Study of Energy Consumption of Digital Radios Upgrade Phase 1

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## **APPENDICES**

Appendix I Summary Table of Power Consumption Results

Appendix II List of Products

## **SUMMARY**

- Test data has been provided for 42 different brands
- Test data has been provided for 164 different models, covering over 50% of the market
- Table 1 below provides an overall summary of the average power consumption figures for all products
- Table 2 below provides an overall summary of the in-use and standby power consumption figures by product category
- Table 3 below provides an overall summary of the in-use and standby power consumption for current models versus older models
- Table 4 below provides an overall summary of the in-use and standby power consumption for tradebrands versus non-tradebrands

**Table 1 – Overall summary** 

	Average all products (W)
Power consumption in-use DAB	6.96
Power consumption in-use FM	9.80
Power consumption in-use FM	
only*	6.34
Power consumption internet	14.75
Standby power consumption	2.44

<sup>\*</sup> exc. Separates (Home Cinema Amplifier) - Code DAB 37

Table 2 – Summary of results by product

	Average in use power consumption (W)	% variance against FM only	Average standby power consumption (W)	% variance against FM only
Tabletop				
DAB	5.84	+79%	3.16	+50%
FM (in DAB)	6.55	+100%		
FM only	3.26		2.11	
Tabletop/portables				
DAB	4.68	138%	2.15	+90%
FM (in DAB)	4.74	141%		
FM only	1.97		1.13	
Mini/Micro/audio				
DAB	19.16	+84%	1.76	+2%
FM (in DAB)	18.02	+73%		
FM only	10.41		1.72	
Separates (& Home				
Cinema Amplifiers)	2.42	700/	0.4=	400/#
DAB	9.48	-76%	2.47	-46%*
FM (in DAB)	8.13	-80%		
FM only *	16.60		4.57	
FM only (all samples)	40.30		3.50	

<sup>\*</sup> exc. Separates (Home Cinema Amplifier) - Code DAB 37

Table 3 – Current models v older models (tabletops and tabletop/portables)

	Older models	Current models	% variance
No. of models tested	37	93	
Power consumption in-use DAB	6.51	4.71	-28%
Power consumption in-use FM	4.28	4.33	+1%
Standby power consumption	2.95	2.26	-23%

Table 4 – Tradebrands v non-tradebrands

	Tradebrands	Non Tradebrands
No. of models tested	38	126
Power consumption in-use DAB	5.93	7.19
Power consumption in-use FM	3.91	12.10
Standby power consumption	2.08	2.56

More detailed summary tables providing the results by category and trade brand versus non-trade brand are provided in **Appendix I** of this report.

## INTRODUCTION

Intertek Milton Keynes were commissioned by AEA Technology, to carry out research on behalf of the DEFRA Sustainable Products and Materials team to produce data on the energy performance of analogue and digital radio receivers and a model of the projected changes in energy consumption resulting from the proposed switchover to digital in 2015. This report covers Phase 1 of this study, specifically the energy consumption measurements of analogue and digital radios.

This is Issue 2 of the report and replaces Issue 1. Amendments and additional evaluation tables have been included in this issue.

This report should be read in conjunction with Excel spreadsheet '66198 DAB Radios Results Table Issue 2'.xls. This also replaces Issue 1 of the results table. Changes are highlighted in red.

Testing was carried out at Intertek Milton Keynes during March 2010.

The tests have been carried out in accordance with the test programme, and as such, the results are only applicable to the sample tested and the conditions of the test. Sample variability and changes in test conditions could influence some results, and the result(s) as stated may not be representative of the mean result if a number of different samples were tested under a variety of test conditions.

Taken on its own, this report should not be used for regulatory purposes e.g. declaring conformance with directives.

## 1 Market Analysis

Market analysis was carried out to ensure that the products chosen for testing represented the market both in terms of brand coverage and specific models of radio. The following resources were used:

- **1.1** All the major manufacturers of DAB and audio equipment and the major electrical retailers were contacted directly to request specific information regarding their most popular radio models. The response to this direct contact was poor.
- **1.2** GfK sales data from 2003 to 2007 was made available to Intertek through MTP (Market Transformation Programme). Although more recent data has been published by GfK, the client decided not to purchase this. Using 2007 sales data, the market share of brands was analysed within DAB and non-portable audio categories. The following tables summarise the data by brand for portable DAB radios and non-portable audio (covering both analogue and DAB products).

Tables 5 & 6 – Summary of market share by brand 2007 GfK Data by Brand – DAB 2007 Gfk Portables Portable

% Pure 36% Roberts 20% Sony 16% 7% Bush **Philips** 4% 3% intempo 2% Goodmans 2% Panasonic Alba 2% TEAC 1% 1% Denon JVC 1% Ministry of Sound 1% 1% Onkyo

2007 GfK Data by Brand - Non-Portable Audio

	%
Tradebrand	44%
Sony	14%
Philips	11%
Alba	8%
Panasonic	7%
Samsung	3%
LG	1%
Bush	1%
Goodmans	1%
Denon	1%
TEAC	1%
JVC	1%
Intempo	1%
Roberts	1%
Gear4	1%
Pure	1%
Sharp	0.40%

**1.3** More up to date data was provided by Intellect which detailed the five most popular models from four major manufacturers.

**1.4** A thorough search of major online retailers and price comparison websites was also undertaken to identify the most common brands and models currently on the market.

From these sources a list of currently available products was compiled (see **Appendix II**). All products were organised into brands and categories to enable short listing of products. The list of available products was compared with results that were available from previous testing and care was taken to avoid testing duplicate or similar models. We also ensured that there was good coverage of trade brands and non-trade brands as well as a range of price points.

# 2 Existing Data

Power consumption data for a range of older, as well as existing, radio products (over 100 models), belonging to other Intertek clients was made available to this project, after obtaining consent from these clients. These products were incorporated into the main database of available products and, from this list, 70 new models were selected for testing. The selection of models to test was based on a number of factors:

- good representation of the major DAB brands (as per GfK data). 72% of the market for DAB radios is held by three brands
- coverage of the majority of brands in the market. Data is available for 42 different brands.
- good representation of the various trade brands, given their high percentage share of the portable audio market
- good coverage of the different types of radio receiver, eg portable/tabletop, clock radios, Hi-Fi separates, CD players, iPod docks etc

# 3 Purchase of Samples

The samples selected for testing were purchased through normal consumer channels, either via the internet or from high street retailers. Two of the 70 models selected were either out of stock or discontinued at the time of purchase and, due to time constraints, could not be replaced.

# 4 Product Categories

The radios selected for testing were categorised into the following groups:

**Tabletop:** Unit has integrated loudspeakers and mains powered only, Figures 1 and 2.



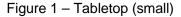




Figure 2 – Tabletop (large)

**Tabletop/Portable:** Unit has integrated loudspeakers and can be mains or battery powered. It is small/light enough to carry when battery powered and may have a carrying handle, recess or groove, Figure 3.



Figure 3 – Tabletop/Portable

**Mini/Micro/Audio:** The unit has separate loudspeakers and is likely to be a multifunction device probably incorporating a CD player or iPod docking mechanism, Figure 4. It is also mains powered only.



Figure 4 – Mini/Micro System

**Separates (including Home Cinema Amplifiers):** The unit is not supplied with and will not produce sound until connected to a set of loudspeakers or as part of a larger system e.g. to an external amplifier with loudspeakers, Figure 5. In addition the home cinema amplifier is capable of driving a minimum of five loudspeakers designated front L/R, rear L/R, centre and sub or is supplied with six loudspeakers with the same designation, Figure 6. They are also mains powered only.



Figure 5 – Separates



Figure 6 – Home Cinema Amplifier (rear view)

**In-car:** This device will only work when connected to a car's DC battery system, Figure 7. It may convert DAB to FM or connect a DAB receiver directly to a previously installed FM receiver via the line input.



Figure 7 – In-car adapter

# 4 Power Consumption Measurements

Standby and off-mode measurements have been measured according to BS EN 62301: 2005. Where power saving features were available (e.g. dimming of displays, clock display on/off etc) measurements have been made at the minimum and maximum settings for standby mode and at the default setting for 'on-modes'. Where two figures are entered in the results table for standby power, the first figure is the default, 'as delivered' setting.

For the on-mode measurements, a pink noise based simulated programme test signal was used as the input to the radios via a DAB or FM generator, the volume was then adjusted to achieve a sound pressure level of 70dBA measured in our standard <sup>1</sup> listening room. The measurement was recorded at 0.5 metre, 1 metre or 3 metres depending on the type of unit. For small radios and clock radios the distance used was 0.5 metres. For tabletop radios the sound level was measured at a distance of 1 metre. For mini Hi-Fi units and larger amplifiers the distance used was 3 metres.

For systems that were not supplied with speakers, 6 ohm dummy load resistors (typical nominal speaker impedance) were used instead of speakers. The volume of the unit was adjusted to obtain a reading of 1 watt across one of the resistors, measured with a true RMS voltmeter.

To ensure the units under test were correctly warmed up and electronically stable, each unit was turned on and allowed to settle for at least 30 minutes. The units were tuned to a signal and had their clocks set to ensure they were not 'hunting' for signals. For standby measurements the samples were switched to standby after a minimum of 30 minutes in 'on-mode'. The samples were then left for 15 minutes in standby before the power was tested and recorded. For 'on-mode' measurements the same 30 minute warm up period was employed before the readings were recorded for FM and/or DAB and/or Internet Radio modes.

## 4.1 Equipment Used

E10418 Kikusui Power Supply PCR1000

E10616 Yokogawa WT210 Power Meter

E10617 Yokogawa WT210 Power Meter

E10355 Voltech PM100 Power Meter

E10403 RS 206-3744 Thermometer

<sup>1</sup> IEC 60268-13

E10317 Airflow TA5 Anemometer

E10182 Vaisala HMI31 Humidity & Temperature Sensor

E10122 Hewlett Packard 3478A Multimeter

#### 4.2 Conditions

All power consumption measurements were completed under controlled conditions. Throughout the testing procedure, the ambient temperature, relative humidity, airspeed and condition of the mains supply were monitored and controlled where necessary to ensure they complied with the requirements of BS EN 62301: 2005 and IEC 62087: 2008.

Voltage: 230v ±1% at 50Hz ±1%

Total Harmonic Distortion of voltage supply: < 0.2%

Temperature: 23°C ±5°

Relative Humidity: Between 10% and 80%

Airspeed: < 0.5m/s

#### 4.3 Test Results

The power consumption test results are presented in Excel Spreadsheet '66198 DAB Radios Results Table Issue 2'.xls.

A summary of results is contained in **Appendix I.** 

# Appendix I

**Summary Table of Power Consumption Results** 

# Power Consumption – All Brands

Category	Number of products tested in	Mains power consumption (W) - in use at reference listening level						Mains power supply (W) - standby mode		Mains power supply (W)
	category	DAB Range	DAB Average	FM Range	FM Average	Internet Range	Internet Average	Range	Average	Off mode Average
All Brands – Table	top									
DAB	41	1.62 – 13.5	5.84	1.7 – 11	6.55	N/A	N/A	0.52 – 9.6	3.16	N/A
FM	11	N/A	N/A	1.4 – 8.3	3.26	N/A	N/A	0.42 – 7.16	2.11	0.84
Internet	13	2.1 – 14.9	5.82	4.6 – 14.2	7.45	2.9 – 14.2	7.03	0.95 – 7.0	3.76	N/A
All Brands – Table	top/Portable	9		T	I	I	T			
DAB	50	1.19 – 11.4	4.68	2.1 – 12.0	4.74	N/A	N/A	0 – 10.0	1.88	0.83
FM	12	N/A	N/A	0.58 – 3.51	1.97	N/A	N/A	0.29 – 2.06	1.13	0.33
Internet	3	5.3 – 5.8	5.53	N/T	N/T	N/T	N/T	3.3 – 5.0	4.3	N/A
All Brands – Mini/N	Micro/Audio									
DAB	9	6.6 – 38.7	19.16	5.3 – 35.8	18.02	N/A	N/A	0.18 – 7.57	1.76	N/A
FM	14	N/A	N/A	2.6 – 23.9	10.41	N/A	N/A	0.59 – 7.79	1.72	1.7
Internet	2	64.3	64.3	23.7 – 62.3	43.0	24.0 – 67.3	45.65	N/A	N/A	<0.01

Category	Number of products tested in	Mains power consumption (W) - in use at reference listening level							Mains power supply (W) - standby mode		
	category	DAB Range	DAB Average	FM Range	FM Average	Internet Range	Internet Average	Range	Average	Off mode Average	
All Brands – Separ	All Brands – Separates (& Home Cinema Amplifiers)										
DAB	4	4.8 – 14.3	9.48	3.6 – 14.9	8.13	N/A	N/A	0.91 – 4.9	2.47	0.01	
FM	4	N/A	N/A	4.6 – 111.4	40.3	N/A	N/A	0.28 - 8.34	3.50	<0.01	
All Brands – In-Car	All Brands – In-Car DAB										
DAB	1	2.76	2.76	N/A	N/A	N/A	N/A	N/A	N/A	0.09	

# Power Consumption – Trade Brands

Category	Number of products tested in	Mains power consumption (W) - in use at reference listening level							Mains power supply (W) - standby mode	
	category	DAB Range	DAB Average	FM Range	FM Average	Internet Range	Internet Average	Range	Average	Off mode Average
Trade Brands – Ta	bletop									
DAB	9	2.9 – 10	5.77	3.0 – 10.0	6.5	N/A	N/A	1.06 – 8.4	2.75	N/A
FM	4	N/A	N/A	1.4 – 2.5	2.0	N/A	N/A	0.77 – 1.72	1.39	N/A
Internet	2	N/A	N/A	5.0 – 6.0	5.5	5.6 – 8.3	6.95	1.65 – 4.83	3.24	N/A
Trade Brands - Ta	bletop/Porta	able								
DAB	11	2.29 – 7.65	5.03	2.3 – 3.2	2.83	N/A	N/A	0.38 – 6.67	2.13	1.14
FM	6	N/A	N/A	1.1 – 3.51	1.98	N/A	N/A	0.92 - 2.06	1.29	N/A
Trade Brands - Mi	ni/Micro/Au	dio								
DAB	1	17.4	17.4	15.3	15.3	N/A	N/A	0.62	0.62	N/A
FM	5	N/A	N/A	2.6 – 6.2	4.44	N/A	N/A	1.91 – 2.43	2.2	1.7

# Power Consumption – Non-Trade Brands

Category	Number of products tested in	Mains power consumption (W) - in use at reference listening level							Mains power supply (W) - standby mode	
	category	DAB Range	DAB Average	FM Range	FM Average	Internet Range	Internet Average	Range	Average	Off mode Average
Non-Trade Brands	- Tabletop									
DAB	32	1.62 – 13.5	5.86	1.7 – 11	6.55	N/A	N/A	0.52 – 9.6	3.28	N/A
FM	7	N/A	N/A	1.8 – 8.3	3.98	N/A	N/A	0.42 – 7.16	2.59	0.84
Internet	11	2.1 – 14.9	5.82	4.6 – 14.2	9.4	2.9 – 14.2	7.05	0.95 – 7.0	3.86	N/A
Non-Trade Brands	- Tabletop	/Portable	I	1					I	
DAB	40	1.19 – 11.4	4.58	2.1 – 12.0	5.70	N/A	N/A	0 – 10.0	1.81	0.51
FM	6	N/A	N/A	0.58 – 3.40	1.97	N/A	N/A	0.29 – 1.37	0.95	0.33
Internet	3	5.3 – 5.8	5.53	N/A	N/A	N/A	N/A	3.3 – 5.0	4.3	N/A
Non-Trade Brands	- Mini/Micr	o/Audio								
DAB	8	6.6 – 38.7	19.38	5.3 – 35.8	18.36	N/A	N/A	0.18 – 7.57	1.9	N/A
FM	9	N/A	N/A	7.0 – 23.9	13.73	N/A	N/A	0.59 – 7.79	1.56	N/A
Internet	2	64.3	64.3	23.7 – 62.3	43.0	24.0 – 67.3	45.65	5.85 – 14.12	9.99	<0.01

Category	Number of products tested in	Ма	Mains power consumption (W) - in use at reference listening level							Mains power supply (W)	
	category	DAB Range	DAB Average	FM Range	FM Average	Internet Range	Internet Average	Range	Average	Off mode Average	
Non-Trade Brands	Non-Trade Brands – Separates (& Home Cinema Amplifiers)										
DAB	4	4.8 – 14.3	9.48	3.6 – 14.9	8.13	N/A	N/A	0.91 – 4.90	2.47	0.01	
FM	4	N/A	N/A	4.6 – 111.4	40.3	N/A	N/A	0.28 - 8.34	3.50	<0.01	
Non-Trade Brands	Non-Trade Brands – In-Car DAB										
DAB	1	2.76	2.76	N/A	N/A	N/A	N/A	N/A	N/A	0.09	

Appendix II

**List of Products** 

## **List of Products Tested – Past and Present**

Intertek Code	Brand	Model	Category
Argos - own brands			, ,
DRG01	Acoustic Solutions	pd2	Tabletop
DRA01	Argos	NE-3107	Tabletop
DABT01	Argos	Value Range CDAB8R	Tabletop/portable
DAB 1	Argos	CD-87	Mini/micro/audio
DRD01	Bush	KRDAB801BLK	Tabletop/portable
PTB1	Bush	TR2006DAB	Tabletop/portable
EAR1	Bush	TR130	Tabletop/portable
EAR2	Bush	RA02	Tabletop/portable
DABW01	Bush	TR04DABBLK	Tabletop/portable
DRE01	Bush	TR82DAB	Tabletop/portable
DABX01	Bush	Touch DAB FM Radio with iPod	Tabletop
DAB 20	Goodmans	MICRO14671	Mini/micro/audio
DRS01	Wharfedale	NE-3003 Radio Alarm Clock	Tabletop
Asda - own brands			
DRB01	Asda	Alarm Clock DAB Radio CRDB10	Tabletop
DAB 3	Asda	E80170	Tabletop/portable
DAB 4	Asda	E80197	Tabletop
DAB 5	Asda	DS-454	Tabletop
DAB 6	Asda	KS-3398C	Mini/micro/audio
Audiowave			
DRC01	Audiowave	DAB-907	Tabletop/portable
Cambridge Audio		·	
DAB 7	Cambridge Audio	Azur 640T DAB/FM Tuner V2.0	Separates (& home cinema amplifiers)
Comet - own brands			
DRG01	Proline	DAB401	Tabletop/portable
EAR5	Proline	R200	Tabletop/portable
DAB 47	Proline	CR97DAB2	Tabletop
EAR3	Ferguson	FRG R101	Tabletop/portable
Currys/Dixons - owr	n brands		
DAB 9	Lava	Lava 40	Tabletop/portable
DRF01/2	Logik	LOGR118D	Tabletop/portable
DAB 10	Matsui	MATR404	Tabletop/portable
DAB 11	Matsui	CR503	Tabletop
DAB 12	Matsui	MHFCD09	Mini/micro/audio

## Key:

Intertek Code	Brand	Model	Category
Denon			
DAB 13	Denon	RCD-M37DAB	Mini/micro/audio
DAB 14	Denon	TU-1800DAB	Separates (& home cinema amplifiers)
DAB 15	Denon	TU-1500AE	Separates (& home cinema amplifiers)
Dualit			
DRE01	Dualit	DLR-1	Tabletop/portable
Eton			
DRF01	Eton	Sound 102	Tabletop
DAB 16	Eton	E5	Tabletop/portable
DAB 17	Eton	Sound 100	Tabletop
Gear4			
DAB 18	Gear4	KRG-D50	Tabletop
DAB 19	Gear4	PG296	Tabletop
Grundig			
EAR4	Grundig	NR01R	Tabletop/portable
iLuv			
DAB 21	iLuv	iMM173	Tabletop
DAB 22	iLuv	i9200	Mini/micro/audio
intempo			
PTD1	intempo	PP-01	Tabletop/portable
DRB01/02	intempo	TRS 01	Tabletop/portable
DDK01	intempo	GX-01	Tabletop
DRH01	Intempo	PG-02	Tabletop
DABZ01	Intempo	RDi	Tabletop
JVC			
DAB 23	JVC	CA-UXG250D	Mini/micro/audio
DAB 24	JVC	CA-UXLP5	Mini/micro/audio
LG			
DAB 25	LG	FA163-B0P	Mini/micro/audio
DAB 26	LG	FA164-DOP	Mini/micro/audio
Logitech			
DAB 27	Logitech	Squeezebox radio x-r0001	Tabletop
Magicbox			
PTE1	Magicbox	Lagio	Tabletop
DAB-M1	Magicbox	Touch DAB Radio	Tabletop/portable
DAB 28	Magicbox	CM6 1DA	Tabletop
DAB 29	Magicbox	Clarus Plus 212018	Tabletop
Marantz			
DAB 30	Marantz	M-CR502DAB	Mini/micro/audio
Marks & Spencer - owr	n brands		
DAB 31	Revo (M&S)	iBlik WiFi	Tabletop
DAB 32	Revo (M&S)	Pico Wi-Fi	Tabletop

#### Key:

	Model	Category
NAD	C 425	Separates (& home
		cinema amplifiers)
NAD	C 445	Separates (& home
		cinema amplifiers)
-		Mini/micro/audio
Onkyo	TX-SR507	Separates (& home
		cinema amplifiers)
Danasaria	DE DEED K	Tableton /n autoble
		Tabletop/portable
		Mini/micro/audio
		Tabletop/portable
Panasonic	SA-PM5	Mini/micro/audio
		Tabletop/portable
		Tabletop/portable
· •		Tabletop/portable
		Tabletop
		Mini/micro/audio
· ·		Tabletop
· •		Mini/micro/audio
Philips	MCi500H/05	Mini/micro/audio
Pure	bug too	Tabletop
Pure		Tabletop
Pure		Tabletop/portable
Pure	CHRONOS CD	Tabletop
Pure	CHRONOS IDOCK	Tabletop
Pure	Elan II	Tabletop/portable
Pure	Evoke Mio	Tabletop/portable
Pure	Evoke-1S	Tabletop/portable
Pure	Evoke-2S	Tabletop/portable
Pure	Highway	In-car
Pure	Move	Tabletop/portable
Pure	One Classic	Tabletop/portable
Pure	One Elite	Tabletop/portable
Pure	One Mini	Tabletop/portable
Pure	Chronos iDock Series II	Tabletop
Pure	Chronos CD Series II	Tabletop
Pure	Chronos II	Tabletop
		Tabletop
		Tabletop
		Tabletop/portable
. 4.0		• •
Pure	Sensia	Tabletop/portable
	NAD  Onkyo Onkyo Onkyo  Panasonic Philips Philips Philips Philips Philips Philips Philips Philips Pure Pure Pure Pure Pure Pure Pure Pure	Onkyo CR-435UKD Onkyo TX-SR507  Panasonic RF-D5EB-K Panasonic SA-PM38DB Panasonic SA-PM5  Philips AJ5100/05 Philips AE5000/05 Philips DCB210/05 Philips MCB275/05 Philips MCB275/05 Philips MCB275/05 Philips MC500H/05  Philips MC500H/05  Philips PWM154/12 Philips MC500H/05  Pure Dug too Pure Tempus-1XT Pure Élan RV40 Pure CHRONOS CD Pure CHRONOS CD Pure Elan II Pure Evoke Mio Pure Evoke-1S Pure Highway Pure Move Pure One Classic Pure One Mini Pure Chronos IDock Series II Pure Chronos CD Series II Pure Chronos CD Series II Pure Chronos CD Series II Pure Siesta Pure Siesta Pure Siesta Pure Chronos IDock Series II Pure Chronos CD Series II Pure Chronos II Pure Siesta Pure Avanti Flow

#### Key

Intertek Code	Brand	Model	Category
Sainsbury - own bra	ands		
DAB 2	Red	583 352	Tabletop
DAB 65	Red	583 163 DAB iPOD dock Micro Hi Fi	Mini/micro/audio
Revo			
DABP01	Revo	Domino D3	Tabletop
DRT01	Revo	Blik Radiostation	Tabletop
DRJ01	Revo	Pico 1.1	Tabletop/portable
DDJ01	Revo	Mondo Wi-Fi	Tabletop
Roberts			
PTH1	Roberts	RD-76 Rambler	Tabletop/portable
PTP1	Roberts	RD-49 (Gemini 49)	Tabletop/portable
DRK01	Roberts	MP-SOUND 23	Tabletop
DDF01	Roberts	Gemini 59 RD-59	Tabletop/portable
DDH01	Roberts	WM-201 Wi-Fi internet radio	Tabletop
Lab Ref	Roberts	RSR55	Tabletop/portable
DRT01	Roberts	Ecologic 1	Tabletop/portable
DRV01	Roberts	Ecologic 2	Tabletop/portable
DRW01	Roberts	Ecologic 3	Tabletop/portable
DAB 51	Roberts	Ecologic 4 (RD-21)	Tabletop/portable
DABD01	Roberts	Elise	Tabletop/portable
DABC01	Roberts	Duologic	Tabletop/portable
DRF01	Roberts	Gemini 45 RD-45	Tabletop/portable
DRG01/02	Roberts	Gemini 21 RD-21	Tabletop/portable
DRP01	Roberts	RD-60	Tabletop/portable
DDB01	Roberts	RD-41	Tabletop/portable
DAB-G1	Roberts	MP-Sound 43	Tabletop
DAB-B1	Roberts	MP-Sound 53	Tabletop
DRU01	Roberts	Gemini 55 RD-55	Tabletop/portable
DRL01	Roberts	Gemini 46 RD-46	Tabletop/portable
DRD01	Roberts	RD-78	Tabletop
DRN01/02	Roberts	SolarDAB	Tabletop/portable
DAB 52	Roberts	CR9971	Tabletop
DABG01	Roberts	Ecologic 6	Tabletop
DAB 53	Roberts	DreamTime	Tabletop
DAB-L1	Roberts	CRD-42 iDream	Tabletop
DABJ1	Roberts	Gemini 37 CRD-37	Tabletop

## Key:

Intertek Code	Brand	Model	Category
Roberts			
DAB-N1	Roberts	CRD-51	Tabletop
DABB01	Roberts	Sound 80	Tabletop
DAB-I1	Roberts	WM-202	Tabletop/portable
DABE01	Roberts	Streamtime	Tabletop
EAR6	Roberts	R9954	Tabletop/portable
EAR7	Roberts	R9928	Tabletop/portable
Samsung			• •
DAB 54	Samsung	MM-G25R/EDC	Mini/micro/audio
DAB 55	Samsung	HT-X720G	Mini/micro/audio
Sony			
DRM01	Sony	XDR-S50	Tabletop/portable
EAR8	Sony	ICF 704 L	Tabletop/portable
DDC01	Sony	XDR-S55DAB	Tabletop/portable
DRH01	Sony	XDR-S10DAB	Tabletop
DRQ01	Sony	XDR-S100CD	Tabletop/portable
DAB-E1	Sony	XDR-C705DAB	Tabletop
DAB 56	Sony	HCD-BX70DBi	Mini/micro/audio
DAB 57	Sony	ICF-C218	Tabletop
DAB 58	Sony	NAS-Z200DiR	Tabletop
DAB 59	Sony	HCD-EH10	Mini/micro/audio
tangent	Corry	TIOD-EITIO	Willi/Tillero/addio
DRN01	tangent	DAB table radio	Tabletop
DINIOI	tangent	Item No. 11062	Tabletop
TEAC		10	
DAB 60	TEAC	SR-3DAB	Tabletop
DAB 61	TEAC	PD-H380 T-H380DNT-B	Mini/micro/audio
		A-H380	
DAB 62	TEAC	T-R610DAB	Separates (& home cinema amplifiers)
DAB 63	TEAC	AG-790A	Separates (& home cinema amplifiers)
Tesco - own brands	S	·	
DRA01	Technika	DAB-206	Tabletop/portable
DDD01	Technika	DAB-307	Tabletop/portable
DAB 64	Technika	DAB-109F	Tabletop
DDE01	Technika	DAB-407	Tabletop
DAB 66	Technika	SP-109	Tabletop
DAB 67	Technika	MC-307	Mini/micro/audio
Tivoli			
DRQ01	Tivoli Audio	SongBook 100	Tabletop/portable
DAB 68	Tivoli Audio	MODEL ONE	Tabletop
vitaaudio			
DRJ01	vitaaudio	R2 DAB FM STEREO	Tabletop
DRC01	vitaaudio	R1	Tabletop
Yamaha			·
DAB 70	Yamaha	TSX-120	Tabletop
DAB 71	Yamaha	CRX-D430	Mini/micro/audio
Kev:			

Key: