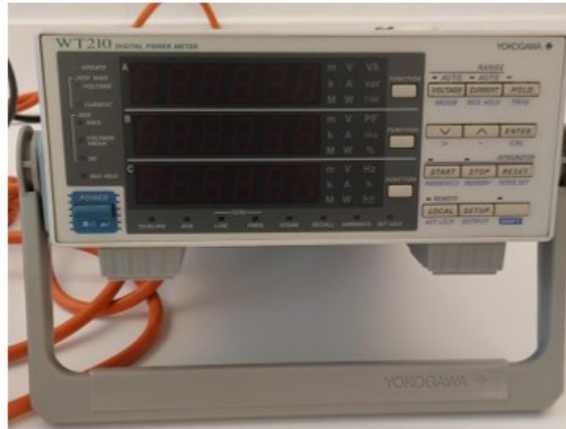


THE CENTRE OF UK DIGITAL TV



Test Introduction

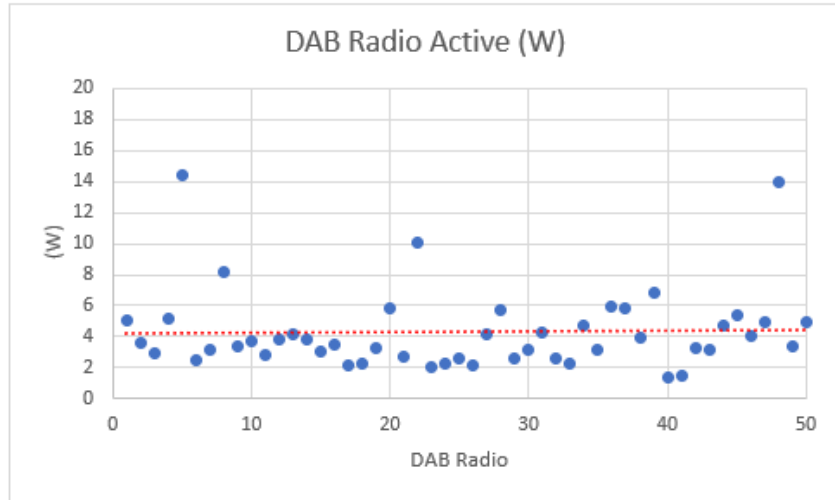
Equipment



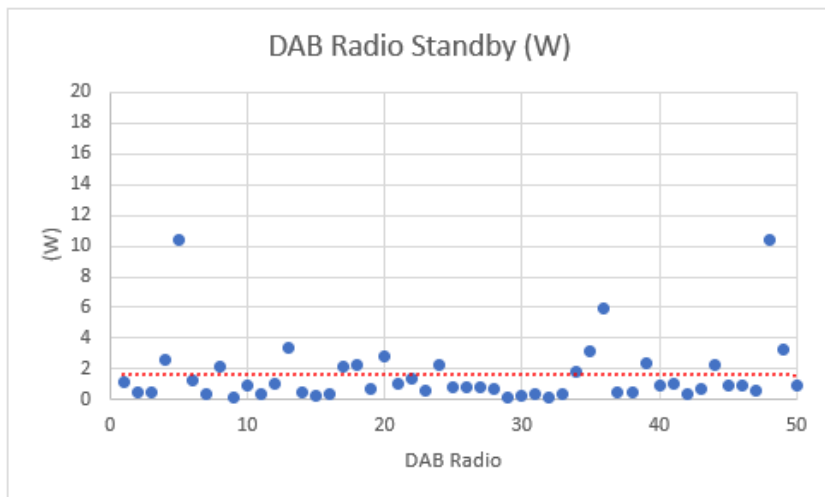
- GTEM Cell (one directional anechoic chamber)
- R&S SFU and SFE100 for signal source
- WT210 Power Meter - readings
- Amprobe SM-10 - for volume setting
- ThermaData – Temp and Humidity tracker



Test Results – DAB RADIO



Graph 1 DAB Radio active power consumption measurements with trend line.



Graph 2 DAB Radio Standby power consumption measurements with trend line.

Active testing done using a 1kHz Sine Wave set with speakers set to 75dBa± 5dBA on channel 5A 174.928Mhz. The trend line indicates a draw of a little over 4W.

Standby testing was done post active test with devices given 5 minutes to enter deep-standby. Battery powered devices were charged for 24hrs before testing commenced.

DAB v FM v Smart Speaker

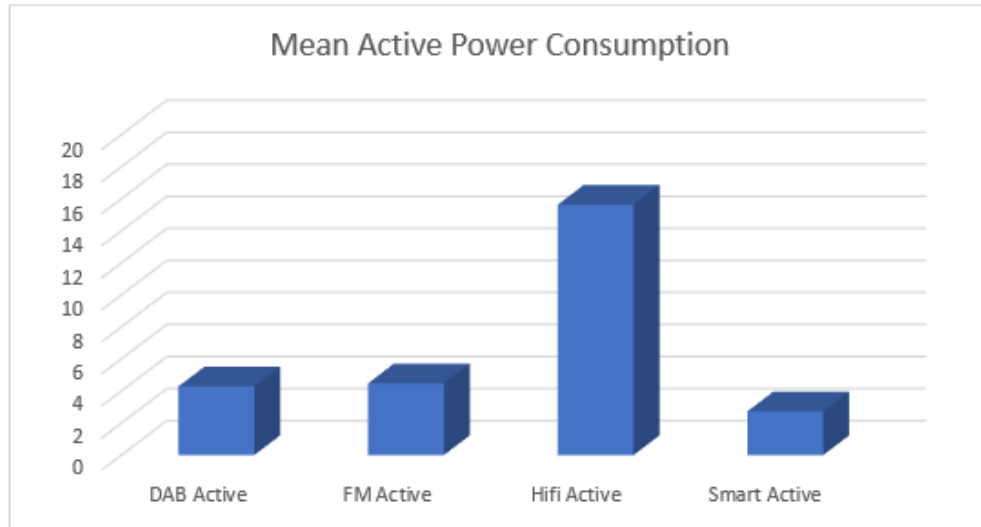


Figure 19: Mean Active Power Consumption Comparison

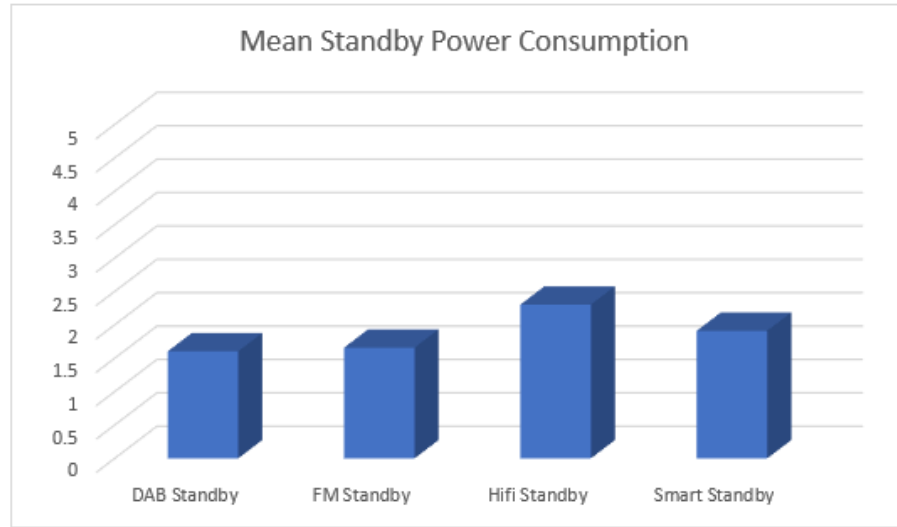
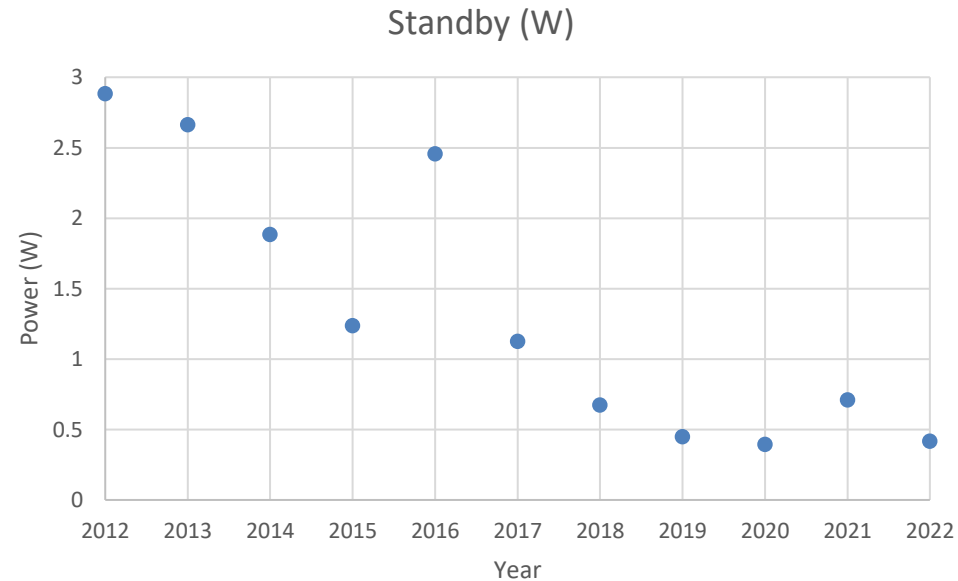
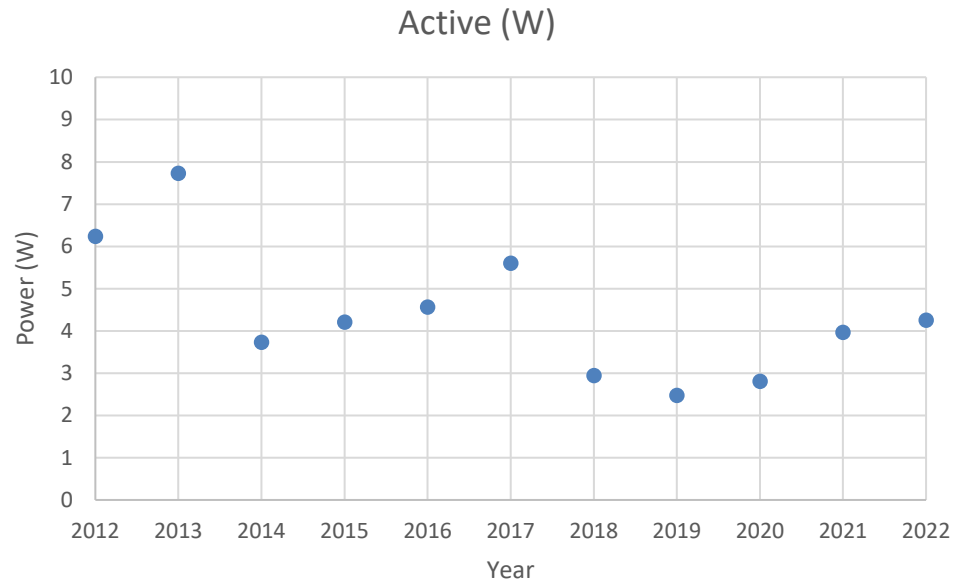


Figure 20: Mean Standby Power Consumption Comparison

Despite DAB+ devices looking comparable, due to the age of some of the DAB+ devices not all of them meet the new $<0.5\text{W}$ requirements for standby. However all modern Radio Products tested did, indicating that going forward DAB+ remains more efficient to Smart Speaker in standby.

DAB energy efficiency over time

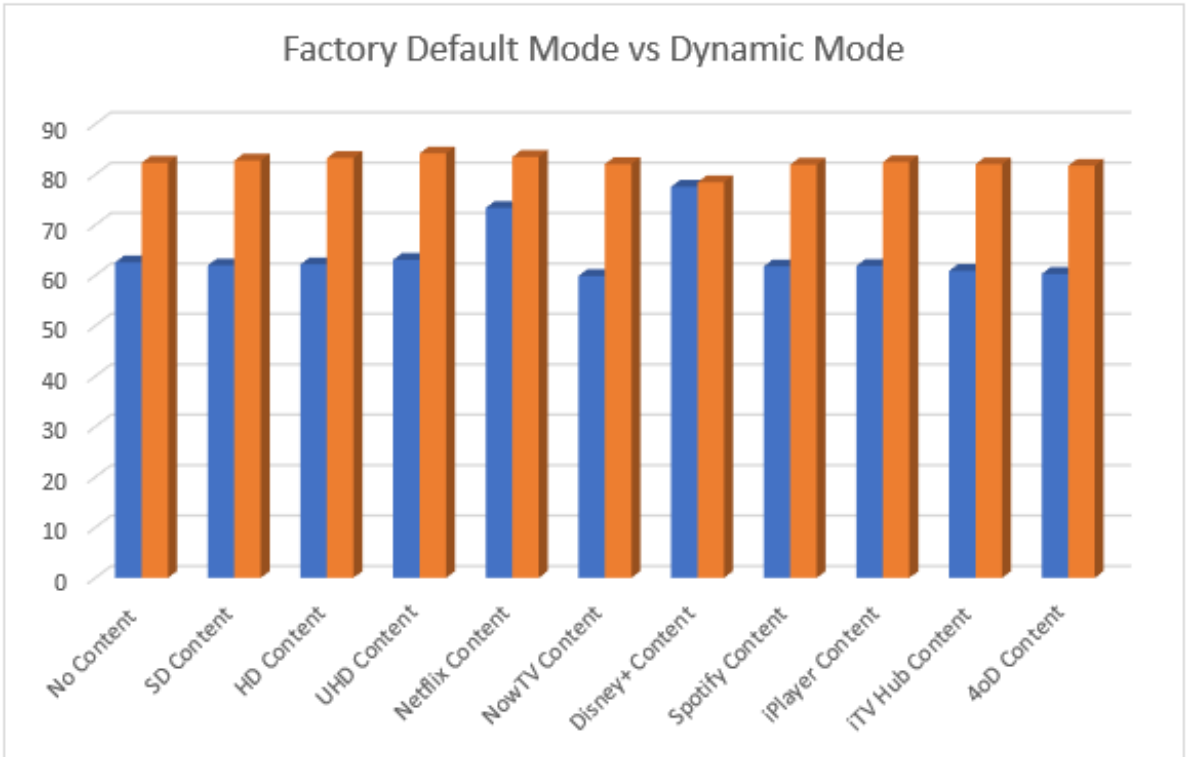


Active consumption on average remains steady throughout the years after 2014, however standby power draw greatly improvements in energy efficiency from 2018 and carries on to 2022.

In 2014 the Amazon Echo made its debut, in our testing the worse performing smart speaker drew 2.625W on Standby and the best 1.35W in standby.

Power Consumption - Televisions

With a typical power consumption of 4W for the average DAB device at 75dBa it remains a much more energy efficient platform than Terrestrial or IP content delivered to a Television.



Power Consumption - Xbox

An Xbox listening to music on Spotify draws 50W of power, combine that with the panel of the television shown previously and you get between 110-140W.

Power Consumption - Xbox 1540



Test Results – Conclusions

Heading in the right direction!

- DAB remains one of the most efficient means of listening to audio content.
- Audio quality remains better than the typical Television.
- Still competitive vs Smart Speaker Technology.
- Year on year energy efficiency improvements have been made, can more be done?