

Regulation of Digital Radio in the UK Has Failed Consumers

- DAB in the UK has by far the lowest audio quality out of any country that has adopted DAB [1];
- 98% of stereo radio stations on DAB in the UK have a lower audio quality than FM stations [1][2];
- A significant – and increasing – number of music stations on DAB use mono instead of stereo [3].

The above 3 facts show that regulation of digital radio in the UK has failed consumers.

The regulation of digital radio, and in particular DAB, by the Radio Authority, and now Ofcom, has been undertaken on the premise that “the market will decide what bit rate/audio quality should be provided”. But given the above 3 facts then clearly this premise has failed.

The Radio Authority set a low minimum bit rate with the hope that broadcasters would not all flock to using the minimum bit rate set out in their Notes of Guidance, but 98% of all stereo radio stations on DAB now use the minimum bit rate of 128 kbps for stereo services, and 128 kbps has been shown to provide a lower audio quality than an FM station [2]. Moreover, a significant number of music radio stations are now being transmitted in mono on DAB. For example, Kerrang is now on numerous local and regional DAB multiplexes, and is in mono in every single instance.

The problem with the regulation of audio quality up to now is that it has naively ignored the economics of commercial digital radio. The transmission costs of stations on DAB or other digital platforms are approximately proportional to the bit rate used, so commercial radio groups will obviously try to use the minimum bit rate that they can get away with so as to minimise their costs, and therefore maximise profit.

The commercial radio groups also want a relatively high number of stations each because they think that a higher number of stations will water down the BBC’s share of radio listening, and they also believe that the increase in the number of stations will generate higher overall revenues, like the higher revenues they saw in the 1990s when the number of commercial stations soared. And given that DAB multiplexes have a fixed capacity then the lower the bit rate used the more stations they can put on these multiplexes, so this drives down the bit rates used in order to provide more stations.

Another fundamental flaw with the “let the market decide” approach is that listeners are predominantly attracted to a station for reasons other than audio quality. The “let the market decide” approach attempts to justify itself by the theory that people will not listen if the audio quality is too low. But that completely ignores the reasons why people listen to certain shows on the radio in the first place. For example, people that wake up in the morning and turn on the radio, if they decide to listen to Terry Wogan it is because they want to listen to Terry Wogan; not because the audio quality of Radio 2 is better than its competitors. The broadcasters – both commercial and BBC – know this and have abused the DAB system and the regulator by all providing the lowest audio quality they can get away with in full knowledge that whatever audio quality they provide they’re very unlikely to lose many listeners on the basis of audio quality. Therefore, there is very little incentive for them to use higher bit rates to provide higher audio quality, and so the reasoning behind “letting the

market decide” what audio quality is acceptable will never work in practice, and it is for this reason that regulators have to step in to look after the interests of the general public, because left to the broadcasters, as has already clearly been shown, they will provide the lowest audio quality they can get away with.

The broadcasters also take advantage of the low level of technical understanding of how digital radio works. The average consumer is not aware of the fundamental trade-off between audio quality and number of stations on a DAB multiplex – and nor should they have to be aware of this because it is the regulator’s job to see that what is provided is good enough quality in the first place.

Consumers expect DAB to sound far better than FM. DAB is digital, and billions of pounds has been spent over the last 10 to 15 years trying to persuade consumers that digital is fundamentally better than analogue. If asked why digital is fundamentally better, the vast majority of people wouldn’t be able to tell you – it just is. So the average consumer is attracted to DAB by the expectation of CD-quality on the radio. This expectation is reinforced in DAB adverts and on DAB websites:

From the BBC’s Digital Radio website: <http://www.bbc.co.uk/digitalradio/> (the BBC’s Digital Radio website had 900,000 hits in one week when its DAB adverts were on TV in Summer 2003):

“DAB offers pure, clear sound” ([benefits of DAB page](#))

From the DRDB’s <http://www.digitalradionow.com/> DAB website, they claim that DAB offers:

“Improved Sound Quality”

From MXR’s <http://www.getdabdigitalradio.com/> DAB website, they claim that DAB offers:

“Superb digital quality sound”

And a DAB advert in the run-up to Christmas on commercial radio claimed that DAB offers:

“ear-shatteringly great sound quality”

And Simon Nelson, the BBC’s Controller of Radio & Music Interactive, and the person responsible for the low audio quality on the BBC DAB multiplex claimed on Radio 4’s Feedback programme:

“For the vast majority of people, the sound quality of DAB digital radio is vastly superior to that which they can receive on their FM radio”

So, clearly DAB is being sold on the back of the claim that the audio quality is superior to FM radio, yet in reality, the audio quality is lower than on FM radio, so all of the above claims are false claims.

Indeed it is interesting to compare the above claims with comments made in the hi-fi magazines about the audio quality of DAB (not letters, these comments are made by hi-fi magazine staff):

What Hi-Fi, February 2004 issue:

"some digital music services sound truly horrible"

Hi-Fi News, July 2003 issue:

"Sound quality between the units is variable, but bear in mind that all must work with the low-fi constraints of the UK DAB service."

Hi-Fi World, August 2003 issue, Noel Keyword Opinion column:

"... is that Digital Radio will be nothing more than a modern day equivalent of Medium Wave. Is this progress?"

And the audio quality has hardly changed since these comments were written.

The difference between what the DAB broadcasters say and what the hi-fi press are saying in every issue couldn't be more stark...

Listeners are not aware of the technical details about DAB (and nor should they be), and trust the broadcasters to give them fair advice, yet as can be seen by the above claims about the supposedly superior audio quality available on DAB, the broadcasters are abusing this trust and are actively mis-informing the general public by creating a false impression of what consumers will receive if they buy a DAB receiver.

The largest ever survey of 5,000 people, carried out by the WorldDAB organisation, into what people wanted DAB to provide found that "audio enhancement" was by far the most appealing feature with 3 times as many people saying that they valued "audio enhancement" above being provided with more radio stations [4]. The definition of audio enhancement was:

- CD-quality sound
- interference-free reception
- and, for cars, no retuning on the move.

The results of this survey were summarily ignored by both the broadcasters and the Radio Authority, and now DAB has lots of radio stations, but with 98% of the stereo radio stations having audio quality that can only be described as poor. In fact, the official classification of the audio quality provided by 128 kbps MPEG Layer 2 (which is the codec that DAB uses) is "Annoying" [5].

And now, in March 2005, Ofcom are proposing to totally ignore the results of market research which they commissioned MORI to undertake, which showed that:

- 63% of analogue listeners consider "better sound quality" to be the main advantage of DAB, whereas
- only 21% consider the main advantage of DAB to be the "extra stations" it provides

Because listeners are not aware of the trade-offs that have been undertaken by the DAB broadcasters, and because the listeners have a low level of technical understanding of digital audio – not forgetting that listeners tend to trust the broadcasters, especially the BBC – they just accept the audio quality that is provided on DAB and do not question whether it could be better than it is. All the advertising hype surrounding DAB (some of which I've quoted above) tells them that DAB provides superior audio quality, and because of the general public's low level of understanding of all things digital they believe this. However, this does not get away from the fact that the largest survey ever undertaken into DAB asked for one thing above all else – audio enhancement, and DAB in the UK is now providing something completely sub-standard compared to what was asked for. This is due to the failure of the regulation carried out by the Radio Authority, and is characterised by the fact that 98% of stereo radio stations on DAB in the UK use the minimum bit rate level allowed by Ofcom, and the UK has the lowest audio quality out of any country that has adopted DAB in the entire world.

Steven Green

References

- [1] http://www.digitalradiotech.co.uk/worldwide_dab.htm
- [2] http://www.david.robinson.org/commsbill/index.html#1_2_3
- [3] <http://www.wohnort.demon.co.uk/DAB/ukloc.html>
- [4] http://www.digitalradiotech.co.uk/WorldDAB_Survey_Results.pdf (Table 3, Page 8)
- [5] http://www.digitalradiotech.co.uk/bitrate_vs_quality.htm (the curve for MPEG Layer 2 which is the codec used by DAB is labelled 'LII')