

ANNEX-BB. One-seg service in same channel

1 reduction of power consumption of portable receiver

As described in ANNEX-AA, One-seg service is based on “Segmented OFDM transmission” technology.

In addition above, One-Seg service adopt unique technology, named partial reception, to reduce receiver power consumption.

The most important factor to reduce power consumption is to decrease the signal processing speed in receiver.

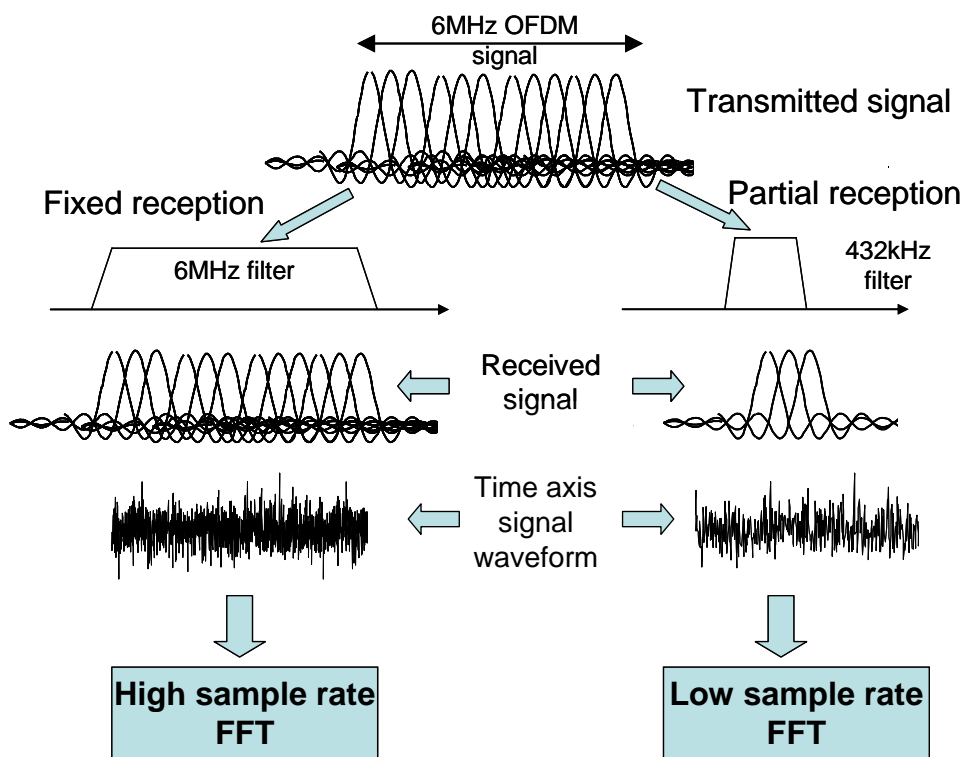


Figure 1-1; signal processing for wideband reception and partial reception

As shown in figure, in case of partial reception(right of figure), center segment of 6MHz OFDM signal is filtered by narrow bandpass filter, its pass band is as equal as 432 kHz.

Filtered narrow band signal is demodulated by low sample rate FFT(Fast Fourier Transform). Its sample rate is 1/8 of high sample rate of FFT which is used for full band demodulation.

As a result, signal process speed of demodulation block is decreased to 1/8

On the other hand, DVB-H, new standard of DVB-T for portable reception, adopts same demodulation circuit and after demodulation, to reduce signal processing speed, pick up necessary data block. This technology is called “Time slicing”.

But, mentioned above, signal processing speed of demodulator portion of DVB-H receiver is same as DVB-T receiver, therefore, consumption power saving is only done at backend circuit.

In One-seg receiver with partial reception, both demodulator circuit and backend circuit operate in low sample rate.

So, regarding power consumption, One-seg partial reception seems to be better than DVB-H.

2. adaptive choosing in mobile reception

figure 2-1 shows the transport stream(TS) of transmission side and reception side in case of 2 layer transmission.

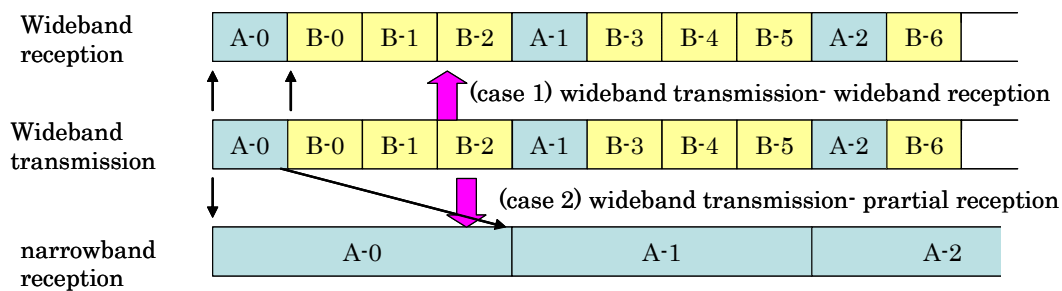


Figure 2-1 Transport stream of transmission side and reception side

Case 1 in figure shows wideband transmission and wideband reception. Wideband receiver is usually used for fixed receiver and mobile receiver.

Case 2 in figure shows wideband transmission and partial reception. Partial reception receiver is usually used for portable receiver.

As shown in figure, Transport stream of transmission side includes the TS packet of 2 layers, these are A layer and B layer. As a result, wideband receiver receives both A layer packets and B layer packet.

If the program of A layer and B layer are same(simulcast for A and B layer), mobile receiver can display any program of A layer or B layer. So, If receiving condition of mobile receiver is not good because of low field strength, etc, such time display layer A.

On the other hand, receiving condition is good , such time display layer B program,

that is HD quality.

To select A layer data or B layer data, mobile receiver can continue TV reception service.

This technique is adopted mobile receiver in Japan, people are enjoying TV in any time in car.