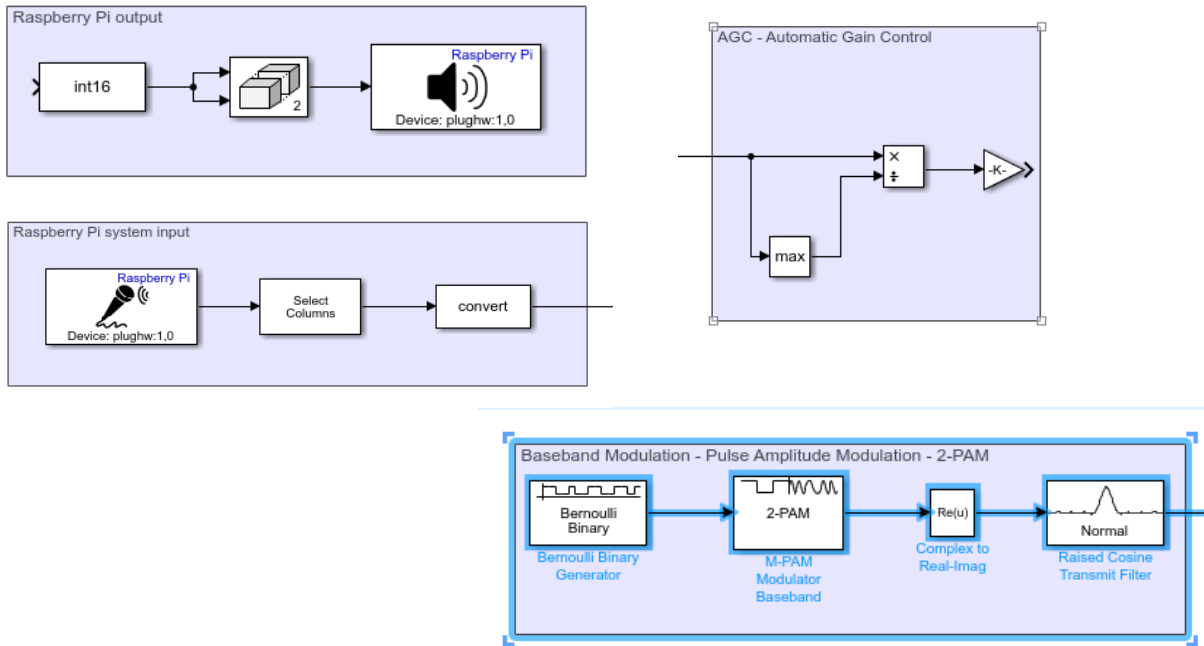


## Digital modulation systems ASK



**STEP 1:**

Based on the blocks depicted in the figure, realize a 2-ASK modulator. Use a sinusoidal wave with:

- Frequency 15kHz
- Amplitude 500mVpp

generated by the signal generator instrument, as carrier.

Set the bit rate to 2.400bit/s.

Observe:

- The waveform in the time domain;
- The spectrum;
- Measure the bandwidth of the main lobe;

Then, modify the carrier frequency from 15 to 2kHz.

CONSIDERATIONS:.....  
 .....  
 .....

STEP 2:

By following the same procedure as before, realize a 4-ASK modulator.

Use a sinusoidal wave with:

- Frequency 15kHz
- Amplitude 500mVpp

generated by the signal generator instrument, as carrier.

- Set the bit rate to 2.400bit/s.

Observe:

- The waveform in the time domain;
- The spectrum;
- Measure the bandwidth of the main lob;

Then, modify the carrier frequency from 15 to 2kHz.

QUESTION 1: measure the occupied bandwidth and compare it to the previous case.

CONSIDERATIONS:.....  
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QUESTION 2: Suppose that you can occupy the same bandwidth as before. How can you modify the bit rate?

CONSIDERATIONS:.....  
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