

Frequently Asked Questions

1. What is the digital signal, what is the analog signal?

The difference between the analog and digital signals is their amplitudes. The amplitude of the analog signal is smaller than 70% of V_{π} , the digital signal has amplitude that close to or larger than V_{π}

2. I have the digital applications, which MBC should I use?

Generally speaking, for quad mode operation, Micro-MBC-1, Micro-MBC-2, chip-MBCs are designed for digital applications, mini-MBC-1, mini-MBC-2 and ditherless MBC are designed for analog applications. For null/peak mode, both micro-MBC family and mini-MBC family can be used. Please note, micro-MBC and chip-MBC has 9.8K-pilot tone, mini-MBC-1 and mini-MBC-2 has 1-KHz or 2-KHz pilot tone.

3. I have the analog applications, which MBC should I use?

You should use mini-MBC family.

4. Can I change the pilot tone frequency?

No. But you may specify the pilot tone that you would like to use when you place order for mini-MBC family. You may choose 500-KHz, 1, 2 and 4 KHz.

5. Can I change the pilot tone amplitude?

The program in the Mini-MBC product family determines the pilot tone amplitude. But the micro-MBC family and chip-MBC has a potentiometer for user to adjust the amplitude of the pilot tone.

6. Can I use modulator build-in photodiode? Do I have to remove the photodiode installed in the MBC?

You may use the modulator build-in photodiode. You do not need to remove the photodiode installed in the MBC. Mini-MBC family has external port for connecting the external photodiodes. Chip-MBC has been designed to use modulator build-in photodiode, although user may want to install a photodiode to the chip-MBC at their own choice.

7. I am using the modulator build-in photodiode, how much optical signal power can I use?

You need to check your modulator specifications, to find out the responsivity of the build-in diode, then calculate the current output from the diode. The current to our product is 0.8-80 μA when the modulator is set at Peak.

8. The pilot tone interferes with my system, can I use your ditherless BC for our system?

You may use ditherless BC for analog applications.

9. We are ordering your chip-MBC, how do we specify the right locking mode in our P.O?

Please check your modulator specifications to find out if the photodiode output has the same phase with the output signal, because if they are in the opposite phase, you need to lock to opposite mode against your output signal. For example, if you would like to lock to Null, you may need to place order for Peak mode.

10. We are going to use your DPMZ MBC for SSB and DQPSK applications. Will the pilot tones cause interference between the three modulators in the DPMZ?

In our DPMZ MBC, we use time division method. The pilot tone is applied to the three modulators in time sequence at cycling frequency about 2 Hz. So the pilot tones will not cause interference problem.

11. Any tips for using your DPMZ MBC for SSB applications?

The important thing is the phase between the two RF drivers at the two RF ports of the modulator. The hybrid-phase-shifter and their cabling are very important. Other important thing is the amplitude of the signal. The signal amplitude should be close to $V\pi$.

12. Any tips for using your DPMZ MBC for DQPSK applications?

Please pay attention to your cabling.

Please also note, the bit rate is different from the frequency response. 1Gbit is equivalent to 0.7GHz. For PRBS, because of the different pattern used in the applications, the equivalent frequency response may be even lower. We can only specify required frequency response for our product with GHz, not Gbit. The lowest frequency limit is 3 GHz. Therefore, 2.5 Gbit will certainly be too low for our DPMZ bias controller setup for the DQPSK applications.