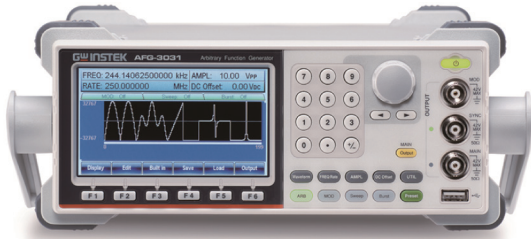




Multi Channel

Multi Channel Synchronized Phase Operation

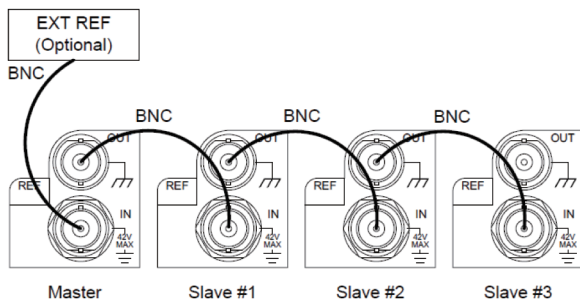
AFG-30XX series



The AFG-3000 series supports synchronized phase for multi channel operation up to 6 units and 12 channels.

Users can implement multi channel synchronized-phase operation up to 6 units and 12 channels (AFG-3032/3022). There are two methods to execute synchronized phase applications. Under different multiple frequency settings, master unit can synchronize the phase of each channel of the slave units. At 10 MHz reference frequency input (REF IN) connector, users can input 10 MHz atomic clock frequency standard via external signal source to increase frequency output accuracy.

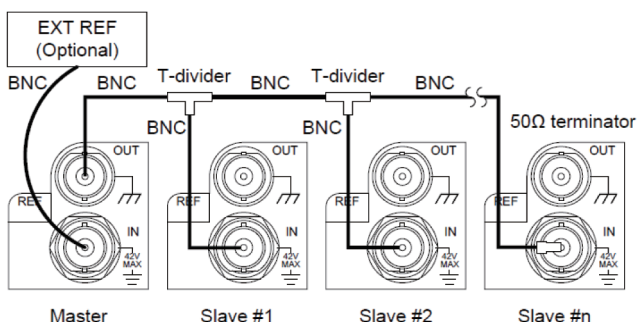
Daisy Chain connection



Method one uses reference frequency output (REF OUT) and reference frequency input (REF IN), 50 ohm BNC cable (RG-58A/U) and T type BNC connector to connect up to 6 units to conduct synchronized phase operation.

$$\text{Max. phase delay(ns)} = 39 + (N-2) * 39 \pm 25\text{nS}$$

Parallel Connection



Method two uses reference frequency output (REF OUT) and reference frequency input (REF IN), 50 ohm BNC cable (RG-58A/U) to connect up to 4 units to conduct synchronized phase operation.

$$\text{Max. phase delay(ns)} = (N-1) * 6 \pm 25\text{nS}$$

GW INSTEK
Simply Reliable

After finishing the Ref IN / OUT connection on the back panel, operate the front panel and sequentially set the clock of the master machine / slave machine.

Slave unit

1. Press CH1 key.
2. Press the UTIL key.
3. Press the F4 (System) key.



4. Press the F3 (Clk Source) key.



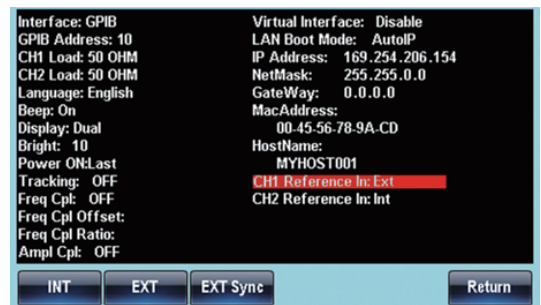
5. Set the clock source of each slave unit to external (EXT):

Press the F2 (EXT) key and change CH1 to EXT.



Master unit

6. Press CH1 key.
7. Press the UTIL key.
8. Press the F4 (System) key.
9. Synchronize the slave machine to the master machine:
Press the F3 (EXT Sync) key on the master machine to synchronize everything.

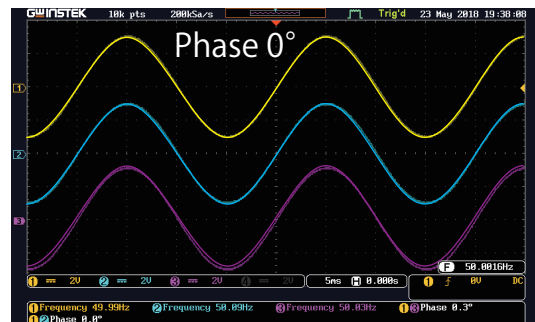


Asynchronous output: Master and slave machine (2 units)



CH1 of master unit
CH2 of master unit
CH1 of Slave # 1

Press Ext Sync on the master unit to synchronize the master machine with the slave machine.

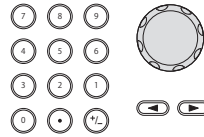


CH1 of master unit
CH2 of master unit
CH1 of Slave # 1

Set channel phase (phase angle 120 degrees)

1. Press the CH2 key. (Master unit)
2. Press F5 (Phase).
3. To select the phase of the channel, press F4 (Degree)
4. Use the selector keys and scroll wheel
or number pad to enter the phase.

120

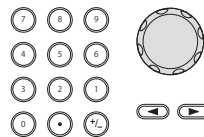


5. Press F5 (Degree) again to set the phase unit



1. Press the CH1 key. (Slave unit)
2. Press F5 (Phase).
3. To select the phase of the channel, press F4 (Degree)
4. Use the selector keys and scroll wheel
or number pad to enter the phase.

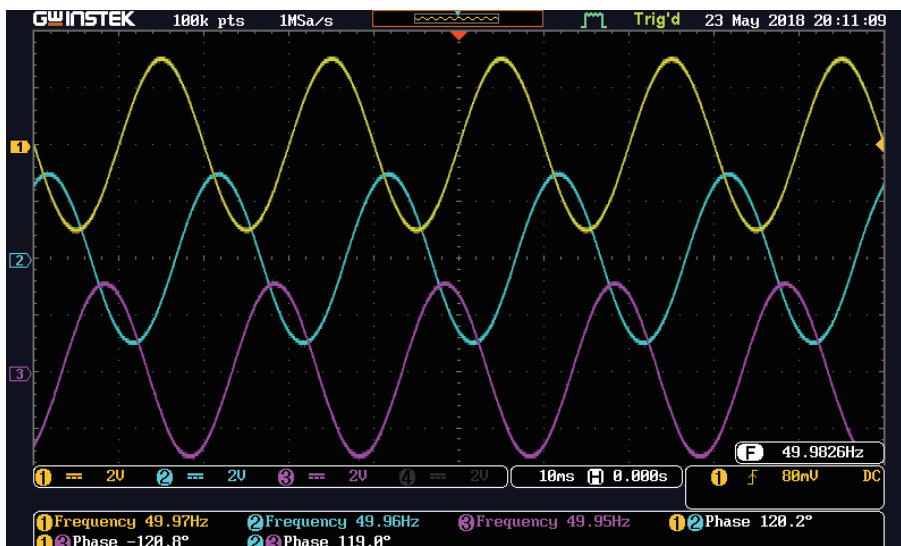
-120



5. Press F5 (Degree) again to set the phase unit



Phase angle 120 degrees



CH1 of master unit

CH2 of master unit

CH1 of Slave # 1

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