Cavity Testing

Programming FPGA

- 1. Before programming the FPGA check the to see if H2 has jumpers connecting pin 1 to 2 and 5 to 6.
- 2. Set both of dip switches to the 'F' position
- 3. Using Xilinx Impact program the FPGA with the attached MCS file. Xilinx Impact Document Github Link
- 4. Programming the FPGA should take about 5 minutes each.
- 5. Once complete power down the chassis and remove the Xilinx Platform Cable

Test points

- 1. Using the Cavity BPM Excel file from the Cavity BPM Chassis Tracker
- 2. Add a new line for each new chassis
- 3. Verify the voltage at each test point

Connecting to The Chassis

- 1. Change the IP Settings to ping the chassis directly
 - Follow the guide from Hello Tech
 - Set the subnet to 255.255.0.0
 - Set the IP Address to 134.79.218.0
- 2. Open a command prompt and run the following command
 - ping -c 5 134.79.218.144
 - This should have responses in ms if the chassis is responding

```
● ● ● \_\C#1
                                ~ (zsh)
                                                         #1
🕒 8/19, 11:04 AM
                    □ PC95567
                                         23%
) ping -c 5 134.79.218.144
PING 134.79.218.144 (134.79.218.144): 56 data bytes
64 bytes from 134.79.218.144: icmp_seq=0 ttl=64 time=0.289 ms
64 bytes from 134.79.218.144: icmp_seq=1 ttl=64 time=0.380 ms
64 bytes from 134.79.218.144: icmp_seq=2 ttl=64 time=0.411 ms
64 bytes from 134.79.218.144: icmp_seq=3 ttl=64 time=0.431 ms
64 bytes from 134.79.218.144: icmp_seq=4 ttl=64 time=0.422 ms
5 packets transmitted, 5 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 0.289/0.387/0.431/0.052 ms
```

- 3. To run the python GUI
 - While in command prompt go to the folder
 - V:\groups\CD\disco\Cavity BPM GUI\
 - Run the python application with python3 main.py
 - This requires PyQt5 and numpy to be installed
 python3 -m pip install -U PyQt5 numpy
- 4. From here verify that the following information is correct
 - IP Address: 134.79.218
 - Firmware Date: 01/24/20
 - Firmware Version: 61

Change Information		X/Y Attenuator	6
			-
BPM ID	255		_
Firmware Version	61		Ţ
System ID	ВРМ	Reference Attenuator	6
Subsystem Type	Cavity		_
Firmware Date	01/24/20		4
Status Registers			
PLL Lock		Board Monitor PLL	
PLL Lock PLL Lock Lost		Board Monitor PLL	
PLL Lock PLL Lock Lost Power Supply		Board Monitor PLL Xillinx Monitor SFP	
PLL Lock PLL Lock Lost Power Supply		Board Monitor PLL Xillinx Monitor SFP	