Movelt Zephyr Test

# Source the ROS 2 installation

source /opt/ros/foxy/setup.bash

# Create a workspace and download the micro-ROS tools

$mkdir zephyr\_movelt\_discovery\_l475\_iot1

$cd zephyr\_movelt\_discovery\_l475\_iot1

#Download src folder which include micro\_ros\_setup

$git clone -b $ROS\_DISTRO https://github.com/micro-ROS/micro\_ros\_setup.git src/micro\_ros\_setup

# Update dependencies using rosdepsudo apt update && rosdep update

rosdep install --from-path src --ignore-src -y

# Install pipsudo apt-get install python3-pip

# Build micro-ROS tools and source them

colcon build

source install/local\_setup.bash

# Create a micro-ROS Agent

ros2 run micro\_ros\_setup create\_agent\_ws.sh

ros2 run micro\_ros\_setup build\_agent.sh

#Create Firmware

ros2 run micro\_ros\_setup create\_firmware\_ws.sh zephyr discovery\_l475\_iot1

For instructions for tf2\_msgs, Check the link:

<https://github.com/micro-ROS/zephyr_apps/tree/foxy/apps/attitude_estimator>

Add tf2\_msgs package, before building the app download and add this package to mcu\_ws folder

cd firmware/mcu\_ws

git clone -b foxy https://github.com/ros2/geometry2

cp -R geometry2/tf2\_msgs .

rm -rf geometry2

ros2 run micro\_ros\_setup configure\_firmware.sh attitude\_estimator1 -t serial -d 1

ros2 run micro\_ros\_setup build\_firmware.sh

# Run the micro-ROS agent source install/local\_setup.bash

ros2 run micro\_ros\_agent micro\_ros\_agent serial --dev [ST Disco serial device] -v6

Create demo adxl372\_test

1. Copy Pingpong folder and rename as adxl372\_test.
2. Compare with adxl372 directory

Firmware/zephyrproject/zephyr/samples/sensor/ adxl372

Copy Src/main.c into adxl372\_test.

#To modify CMakeList.txt Line 5 to below

firmware/zephyr\_apps/app/adxl372\_test/CMakeLists.txt

set(COMPATIBLE\_BOARDS stm32f429i\_disc1 disco\_l475\_iot1 olimex\_stm32\_e407 native\_posix nucleo\_h743zi nucleo\_f746zg)

firmware/zephyr\_apps/app/adxl372\_test/boards/

Copy nrf52dk\_nrf52832.overlay and paste it in the same folder.

Rename it to stm32f429i\_disc1.overlay.

Edit as follow

&spi5 {

cs-gpios = <&gpioe 4 GPIO\_ACTIVE\_LOW>;

adxl372@0 {

compatible = "adi,adxl372";

reg = <0>;

spi-max-frequency = <8000000>;

label = "ADXL372";

int1-gpios = <&gpioe 6 GPIO\_ACTIVE\_HIGH>;

};

};

/\*\*\*\* SPI5, PE4 is CS, PE6 is INT1 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

Default Settings is ADXL372\_PEAK\_DETECT\_MODE.

If you want to change to ADXL372\_MEASUREMENT\_MODE,

Go to /zephyrproject/zephyr/drivers/sensor/adxl372/

Edit Kconfig: Line 30 to

choice

prompt "Operating mode"

default ADXL372\_MEASUREMENT\_MODE

#Compile Firmwrae

source /opt/ros/foxy/setup.bash

source install/local\_setup.bash

ros2 run micro\_ros\_setup configure\_firmware.sh attitude\_estimator --transport serial --dev 1

#Build Firmware

ros2 run micro\_ros\_setup build\_firmware.sh