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| Sensorum |
| Avalon Project – User Guide |
| User Guide |

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User Guide

# xBee Configuration

1. Ensure the “Serial Select” switch is at USB on both Arduino Wireless SD shields.
   1. When the “Serial Select” switch is set to USB, the xBee will communicate through the USB-FTDI chip via its RX, TX lines. When it is set to “micro”. The RX, TX lines of the xBee are tied to the TX, RX lines of the Arduino Uno respectively. This is called “Serial Hijacking”.
2. Open the Arduino IDE and go to File->Basics->Bare Minimum.
3. Upload the code to GatewayNode and CameraNode Arduinos
   1. This ensures that there is no Arduino interference for when the xBee’s are configured.
4. Go to <https://www.digi.com/resources/documentation/digidocs/90001526/default.htm>
5. Follow the guide to download, install and configure the XBEE modules using XCTU.
   1. DigiMesh 2.4 TH should be the installed firmware
   2. XBEE\_A should be GatewayNode
   3. XBEE\_B should be CameraNode

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| --- | --- | --- | --- |
| Parameter | Description | GatewayNode | CameraNode |
| ID | Network ID | D161 | D161 |
| DH | Destination Address HIGH | 0013A200 | 0013A200 |
| DL | Destination Address  LOW | **SL** of CameraNode | **SL** of GatewayNode |
| NI | Node Identifier | GatewayNode | CameraNode |
| PL | TX Power Level | 0 | 0 |
| BD | Baud Rate | 115200 | 115200 |
| Arduino\_SN | Arduino Uno Serial | 55635303838351319170 | 5563530383835161B131 |

# Basic Communication Test

1. Ensure the “Serial Select” switch is at USB on both Arduino Wireless SD shields.
2. Open “gatewayNode-basic-comm-test.ino”
3. Upload to GatewayNode on the CORRECT COM port
   1. Ensure the correct COM port is selected if both Arduino’s are plugged in via USB
4. Open “cameraNode-basic-comm-test.ino”
5. Upload to CameraNode device
   1. Ensure the correct COM port is selected if both Arduino’s are plugged in via USB
6. Switch “Serial Select” to “Micro” on **BOTH** Arduino Wireless SD Shields
7. Open Serial monitor on “CameraNode” COM Port (Check Arduino SN)
   1. Output should be:
      1. Hello World
8. Open Serial monitor on “GatewayNode” COM port (Check Arduino SN)
   1. Output should be:
      1. RX: H
      2. RX: e
      3. RX: l
      4. RX: l
      5. RX: o
      6. RX:
      7. RX: W
      8. RX: o
      9. RX: r
      10. RX: l
      11. RX: d
      12. RX:
9. This confirms a successful serial connection between both xBee devices

