ZOON Configuration Parameters

Mode(mode)

Each mode represents physical data modulation inside the zoon, and they correspond to different data rate, frequency bandwidth. Mode 0 is the slowest,farest one and Mode 10 is the fastest,closest one. Zoon pairs have to be in the same mode in order to send and receive.

Frequency(frequency)

Frequency has to be between 2.4Ghz-2.5Ghz.Accepted values are 2400000000-2500000000

Baud Rate(baudRate)

Baud Rate of the UART port.(Not applicable to USB port)

Power(power)

Max power for ZOONv1 is 8dBm(6.3mWtt), ZOONv2 is 14dBm(25mWtt), and for ZOONv3 is 20dBm (100mWtt). You can restrict the power level. If you decrease the power level, it will decrease the maximum range.

Max Delay(maxDelay)

When you write the date from a USB or UART port, ZOON will wait that Max Delay amount of time then will send the date.

Error Correction (fec)

Convolution based Correction codes

Retransmit Count (maxRetransmitCount)

It represents how many times the ZOON will send the data, however the receiver will get only once. You should increase the count in noisy environments. It will decrease the effective data rate.

Encryption (isEncryptionEnabled)

Enabled disables the ChaCha20 Encryption with padding.Padding means ZOON discards the messages that does not come from the same encryption key.ChaCha20 is strong encryption protocol similar to AES256

Encryption Key(chachaKey)

32 bytes ChaCha20 encryption key.

Mesh (isMeshEnabled)

In Mesh mode, each ZOON module has an ID and you need to use this ID while you send DATA.

The format to send is 0x7E,ID(2bytes),Length(2bytes),DATA.

The format to receive is 0x7E,ID(2bytes),Length(2bytes),DATA.

Note that This feature requires you update all of your codes.

Mesh Id Length (isMesh4Bytes)

By default Mesh ID in mesh data protocol is 2 bytes,but to make ipv4 compatible we added support to make it 4bytes.Both sides needs to be configured as 4bytes length

Mesh Emit Source (isMeshSourceEmit)

In the mesh mode, if Emit Source is enabled, the received packet will emit the source ID of the received packet according to mesh format. Otherwise will only print the received DATA without knowledge who sent the data.

Mesh RELAY (isRepeater)

ZOON dismisses USB/UART datas and acts as data repeater, transmitting what it receives.

Mesh SWARM (isMavlinkSwarm)

MavlinkSWARM is basically a proper implementation of multipoint network.To clarify more,In fact All mesh protocols are implemented as multipoint beneath,including WiFi itself. Mavlink SWARM removes the hassle of adapting your code to mesh format,if and only if the the packets you are sending are MAVLINK

packets,and still leaves you the task to filter out the mavlink packets that were not addressed to the unit (GCS,Autopilot,etc) with the system_id field of mavlink packet.

DEBUG mode(isDebug):

Prints out the received data with the power in JSON format

DEBUG base64(isDebugBase64):

If the data is binary but not ASCII, You can enable this in DEBUG mode to encode data in base64.

NeverLOST (isMavlinkNeverLost):

NeverLOST is a specific feature to ZOON modules. ZOON has 0-10 modes mentioned above. With the 0 mode you can send data to farest point possible with a ZOON unit, but as it has data rate limitation you can not send all data,meanwhile with the 10 mode you can send data up to 256Kbps but it will not go as far as the mode 0.NeverLOST is like best of both worlds. You can configure the ZOON to high speed mode , but once the drone gets connection lost for NeverLOST interval,It activates the NeverLOST MODE and begins to filter out unnecessary information and send only the packets that is important and in the NeverLOST packet list.

NeverLOST MODE(neverLostMode):

MODE that ZOON will switch to if it gets a connection lost for the NeverLOST interval, (Initially it needs to receive data in the regular mode).
NOTE: Mavlink NeverLOST needs to be carefully configured.

NeverLOST Interval(neverLostInterval):

The connection loss interval,that ZOON will wait and switch to never lost mode.

NeverLOST Commands(mavlinkNeverLostCommand):

Mavlink packet command ids to be filtered and sent on never lost mode.