



QT-5100 Series transmitters

Description

This document describes the use of the QT-5100 series of transmitters.

History

Rev 1	Original
Rev 1.1	Added AquaMic specific instructions
Rev 1.2	Storage mode

FCC Notices:

Information to users:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1.) This device may not cause harmful interference and (2.) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

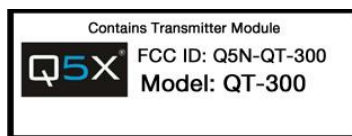
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: Changes or modifications not expressly approved by Quantum5X Systems Inc, could void the user's authority to operate the equipment.

IMPORTANT: Final product(s) after integration with this module shall be tested to comply with all applicable FCC requirements and Unintentional radiators (FCC section 15.107 & 15.109) before declaring compliance to Part 15 of the FCC Rules.

Labeling of the End Products:

Following permanent label shall be applied on all final products after module integration.



RF Exposure Compliance:

Module Integration into Host End Products

The QT-5100 Transmitter Module has been designed by Quantum5X Systems Inc. to be used exclusively by Quantum5X as a building block for their wireless audio transmitter products. The module, as designed, is a standalone unit that is ready for integration into final form factor with the limitation for portable use as specified in RF Exposure compliance. For proper usage of the module, the module integrator must ensure that the input power and input audio signal do not exceed the specified limits as outlined in the specification section. Failure to do so will result in damage to the module.

This module is a low-power device and complies with applicable RF exposure requirements as a mobile device. For portable application, it is limited only to the specified hosts configurations as shown below as acceptable and approved with this filing.

The QT-5100 Transmitter

Out-of-the-Box Setup

Ensure the QT-5100 has a sufficient charge level by immediately inserting the micro USB charger. (see AquaMic exception below)

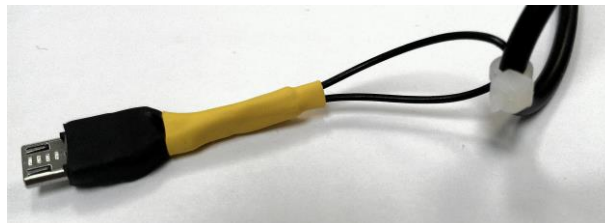


Storage Mode

When in Storage mode the transmitter will appear to be completely drained and will not respond to any commands from the QG-H1 remote or QG-N3 gateway. If the transmitter was set to Storage mode it does require that the charger be inserted to bring it out of storage mode. If it was in this mode, when you insert the charger it will wake up and report the battery level. Depending on the charge level and how long it's been in storage it may be ready to use or may require some time on the charger if it's below your required battery level.

Using the Reset Key

The QT-5100 has an issue where the unit occasionally needs to be reset after being connected to a charger. The Reset Key is a small male USB device with a yellow shrink wrap to identify it.






Use this only if the transmitter becomes unresponsive. The transmitter has 2 microprocessors and occasionally one may become locked. The Reset Key (which is typically attached to the cable of the charger) should be inserted into the charge port, left for 1 second, and then removed.

After the Reset Key is removed, the Status LED will blink green 3 times. There are 2 LED indicators on the QT-5100 series, Status and Charge.

Charge LED Color

When connected to a charger, the color of the Charge LED will indicate the progress of the charging cycle. The LED is located on the front of the TX. For more info on the charge status see the QG-H1 as it will report more accurate battery levels.

-  **GREEN** - The battery is charged and ready for use.
-  **AMBER** - The battery level is low, but can be used for short term use, such as setup or quick audio tests.
-  **RED** - The battery level is unusable and must be charged.

Note: After the LED changes from Amber to Green, it is recommended it be charged for 15 more minutes while the trickle charge completes.

Status LED




The Status LED indicates 2 conditions;

- 1) one condition (On/Off) via the LED *blink pattern*.
- 2) the second condition (Battery Level) via the LED *color*.

Status LED Color

The color of the Status LED indicates the battery charge level;

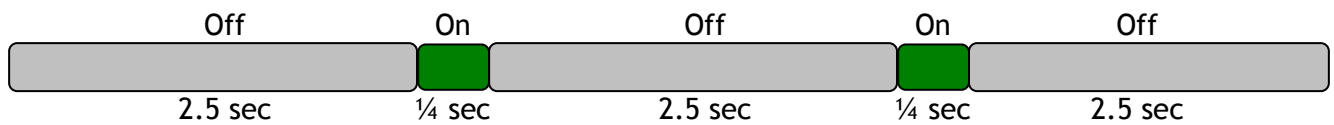
Note: The meaning of the Status LED's color is slightly different than the Charge LED's color. See the following:

-  **GREEN** - The battery level is over 50%.
-  **AMBER** - The battery level is less than 50%.
-  **RED** - The battery level is unusable and must be charged.

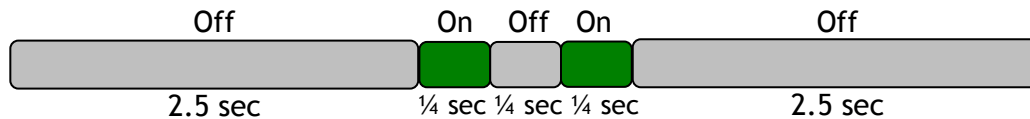
Status LED Blink Patterns

The blink pattern of the Status LED indicates the mode of the QT-5100.

OFF Mode (*no RF, no audio*) – The LED is off for 2.5 seconds and on for ¼ of a second, and repeats.



ON Mode (*RF on, may have audio, unless the transmitter has been audio muted*) – The LED is off for 2.5 seconds and blinks on twice for $\frac{1}{4}$ of a second, and repeats.



On/Off Pushbutton (All except AquaMic)

The pushbutton is used to turn the QT-5100 on and off. If the transmitter is Off, press and hold the pushbutton for 3 seconds to turn the transmitter On. If the transmitter is On, press and hold the pushbutton for 3 seconds to turn the transmitter Off.

Important Notice for QT-5100 AquaMic

Things to Check before Use

Antenna – The connector on the antenna contains a rubber gasket that completes the seal. Always check that the gasket is not broken and is tightened firmly by hand before use. Tighten until resistance is felt, then tighten an additional $\frac{1}{8}$ turn.

Microphone – The microphone has been fitted with a specially designed waterproof LEMO connector. Ensure that the mic is properly threaded and tightened firmly by hand to set the waterproof seal.

Battery – Every Q5X transmitter contains an internal lithium-ion battery. Please be sure to fully charge the unit before using. Note that, while the accompanying charger is equipped with a waterproof connector, it is not advisable to charge the transmitter while in water.

Care and Cleaning – After use, the AquaMic must be cleaned with clean fresh water (not salt water or water with chemicals in it). Fill a bucket with clean fresh water and follow the notes above to make sure the unit is sealed. Immerse the AquaMic in the water and gently clean it making sure to not disturb any of the seals. Take the unit out of the water and shake it gently. Dry the AquaMic with a dry cloth. Allow the unit to dry completely before putting it back into storage.

Technical Data UHF Radio

RF Carrier Frequency Range: 525Mhz – 600 MHz (optional ranges available upon request)

Working Range – 500m (line of sight, outdoors for a single system with appropriate receive antennas)

Note: Actual working range depends on receiver antenna configuration, RF signal absorption, reflection and interference.

RF Power Output: 10mW to 250mW (user adjustable, please review your local laws and restrictions)

RF Output Connector: AquaMic only - SSMA, 50 OHM Impedance

Technical Data 802.15.4 Radio

RF Power Output: 3 dBm (max)

RF Carrier Frequency Range: 2.405GHz – 2.480GHz

Technical Data QT-5100 Module

Power Requirements: 3.7V Internal Lion battery (non-removable - rechargeable)

Max Input Audio Signal: 1V RMS

Audio Gain Adjustment Range: 0 dB to 30 dB

Overall Dimensions: depends on model

Net Weight: depends on model