



QUANTUM5X SYSTEMS INC.

QT-256 USER GUIDE



CONTENTS

Quantum5x Systems Inc.....	1
Controls and connections.....	2
Programming frequencies.....	4
Technical specifications.....	6
Tuning Procedures.....	7
Certification and conformity.....	8

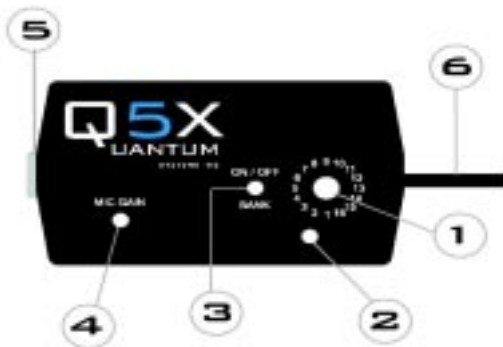
Quantum5x Systems Inc.

Quantum's technologies have enhanced the experience and fan enjoyment in ESPN's and FOX sports coverage of on-air events such as The Great Outdoor Games, The X Games, MLB, NHL games, the All Star Games, and the WNBA.

Quantum's philosophy is to motivate and drive the research and development of products that add value for sports fans, television viewers and movie-goers alike. As the demand for a richer and fuller entertainment experience heightens, Quantum5x delivers a heightened viewing experience across all forms of media. Quantum5x has enhanced some of the world's most prominent sporting events with new and groundbreaking technologies.

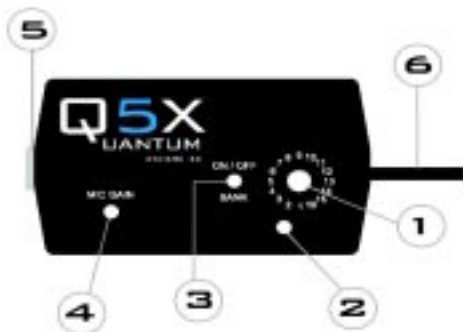
“Watch, Listen and Enjoy the Experience of the Future”.

Controls and connections



1. The 16 - position rotary **BANK** and **CHANNEL** switch.
2. The “LED” displays the “**BANK**” number in **GREEN**, and the **power On/Off in RED**. Also charge status: **RED** indicates charging, **GREEN** indicates charge complete.
3. The “pushbutton” controls **ON/OFF** when pressed momentarily, turns the transmitter **ON** or **OFF** and will set the “Bank” to the Current rotary switch setting.
4. Microphone Gain control turn clockwise to increase mic gain.
5. 4 pin **mic/charger** connector.
6. 1/4 wave whip flex antenna.

Controls and connections



To turn on, momentarily press “pushbutton” (3). The green LED (2) will flash the previously used “BANK” (3 flashes = BANK 3). The transmitter is now powered on and the rotary switch (1) will indicate the channel. If the red LED (2) is out the transmitter is in operation.

Rotating the channel selector (1) will change the channel. To change the BANK, set the rotary switch (1) To the appropriate BANK number and press the pushbutton (3) until the green LED (2) flashes the new BANK. Then set the rotary switch (1) to the desired cahnnel.

To power OFF the transmitter, momentarily press the pushbutton (3). The red LED (2) will light and fade out indicating the transmitter has turned OFF.

(It is normal on power up for the transmitter to take from 1-5 seconds to lock on to frequency, this will be indicated by the red LED (2).

Programming frequencies

CH	BANK 1		CH	BANK 3		CH	BANK 5		CH	BANK 7
1	690.000		1	693.200		1	696.400		1	699.600
2	690.100		2	693.300		2	696.500		2	699.700
3	690.200		3	693.400		3	696.600		3	699.800
4	690.300		4	693.500		4	696.700		4	699.900
5	690.400		5	693.600		5	696.800		5	700.000
6	690.500		6	693.700		6	696.900		6	700.100
7	690.600		7	693.800		7	697.000		7	700.200
8	690.700		8	693.900		8	697.100		8	700.300
9	690.800		9	694.000		9	697.200		9	700.400
10	690.900		10	694.100		10	697.300		10	700.500
11	691.000		11	694.200		11	697.400		11	700.600
12	691.100		12	694.300		12	697.500		12	700.700
13	691.200		13	694.400		13	697.600		13	700.800
14	691.300		14	694.500		14	697.700		14	700.900
15	691.400		15	694.600		15	697.800		15	701.000
16	691.500		16	694.700		16	697.900		16	701.100
CH	BANK 2		CH	BANK 4		CH	BANK 6		CH	BANK 8
1	691.600		1	694.800		1	698.000		1	701.200
2	691.700		2	694.900		2	698.100		2	701.300
3	691.800		3	695.000		3	698.200		3	701.400
4	691.900		4	695.100		4	698.300		4	701.500
5	692.000		5	695.200		5	698.400		5	701.600
6	692.100		6	695.300		6	698.500		6	701.700
7	692.200		7	695.400		7	698.600		7	701.800
8	692.300		8	695.500		8	698.700		8	701.900
9	692.400		9	695.600		9	698.800		9	702.000
10	692.500		10	695.700		10	698.900		10	702.100
11	692.600		11	695.800		11	699.000		11	702.200
12	692.700		12	695.900		12	699.100		12	702.300
13	692.800		13	696.000		13	699.200		13	702.400
14	692.900		14	696.100		14	699.300		14	702.500
15	693.000		15	696.200		15	699.400		15	702.600
16	693.100		16	696.300		16	699.500		16	702.700

Programming frequencies

CH	BANK 9		CH	BANK 11		CH	BANK 13		CH	BANK 15
1	702.800		1	706.000		1	709.200		1	712.400
2	702.900		2	706.100		2	709.300		2	712.500
3	703.000		3	706.200		3	709.400		3	712.600
4	703.100		4	706.300		4	709.500		4	712.700
5	703.200		5	706.400		5	709.600		5	712.800
6	703.300		6	706.500		6	709.700		6	712.900
7	703.400		7	706.600		7	709.800		7	713.000
8	703.500		8	706.700		8	709.900		8	713.100
9	703.600		9	706.800		9	710.000		9	713.200
10	703.700		10	706.900		10	710.100		10	713.300
11	703.800		11	707.000		11	710.200		11	713.400
12	703.900		12	707.100		12	710.300		12	713.500
13	704.000		13	707.200		13	710.400		13	713.600
14	704.100		14	707.300		14	710.500		14	713.700
15	704.200		15	707.400		15	710.600		15	713.800
16	704.300		16	707.500		16	710.700		16	713.900
CH	BANK 10		CH	BANK 12		CH	BANK 14		CH	BANK 16
1	704.400		1	707.600		1	710.800		1	714.000
2	704.500		2	707.700		2	710.900		2	714.100
3	704.600		3	707.800		3	711.000		3	714.200
4	704.700		4	707.900		4	711.100		4	714.300
5	704.800		5	708.000		5	711.200		5	714.400
6	704.900		6	708.100		6	711.300		6	714.500
7	705.000		7	708.200		7	711.400		7	714.600
8	705.100		8	708.300		8	711.500		8	714.700
9	705.200		9	708.400		9	711.600		9	714.800
10	705.300		10	708.500		10	711.700		10	714.900
11	705.400		11	708.600		11	711.800		11	715.000
12	705.500		12	708.700		12	711.900		12	650.000
13	705.600		13	708.800		13	712.000		13	660.000
14	705.700		14	708.900		14	712.100		14	670.000
15	705.800		15	709.000		15	712.200		15	750.000
16	705.900		16	709.100		16	712.300		16	730.000

Technical specifications

Dimensions	58mm x 34mm x 16.5 mm
Power output	103 mW
Frequency range	690 Mhz - 715 Mhz
Number of frequencies	256 pre-programmed
Power Output (EIRP)	169 mW
Noise reduction	Proprietary QT companding
Adjustable controls	On/Off/Bank number Microphone gain frequency select
Specific Absorbance Ratio (SAR)	0.68 W/Kg
Battery (Renata # ICP633048A-SC)	Lithium Ion 3.7 Volt capacity 820mAh
Battery Life	8 Hrs @ 100 mA
Antenna	External 1/4 wave flex
Mic input connector	4 pin (FCI) locking
Microphone	Countryman, EMU Lavalier

Tuning Procedures

A temperature-compensated 10.000 MHz crystal oscillator provides the frequency reference for the synthesizer. The oscillator frequency is divided down to 25 kHz and remultiplied in the synthesizer to one of the 256 transmit frequencies as selected by the operator via the microcontroller. The output signal is generated by an integrated VCO.

The reference oscillator is a temperature-compensated, voltage-controlled crystal oscillator. During manufacturing of the transmitter, the potentiometer that sets the control voltage is adjusted so that the reference frequency is 10.0000 MHz. This is accomplished by adjusting a representative transmit frequency to its correct value by means of a frequency counter. Typical frequency tolerance using this method is $\pm 0.001\%$.

The VCO and power amplifier operate from precision regulated power supplies. These, and the use of close-tolerance components, fix the output power level. During manufacture the output power level is confirmed with a wattmeter, and adjusted when necessary by changing the value of the resistor which biases the RF power amplifier.

Certification and conformity

FCC WARNING:

For Class B Unintentional Radiators:

This equipment has been tested and found to comply with the limits for a Class B digital devices, 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 instruction manual, 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 of 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.

Certification and conformity

FCC WARNING:

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.

MANUFACTURERS WARNING

Changes or modifications not expressly approved by Quantum5x Systems inc. could void the user's authority to operate the equipment

INDUSTRY CANADA

This Device complies with Industry Canada RSS-123, Issue 1,
Rev.2:1999

This device complies with Specific Absorbance Ratio specifications (SAR)

QT-256
FCC ID: Q5N-QT256
IC: 4614A-QT256

Tested to Comply With FCC and IC Standards



www.quantum5x.com