



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

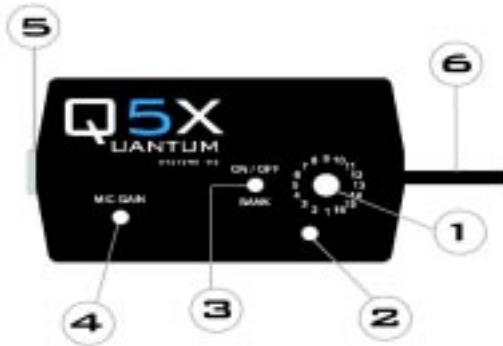
Quantum5x Systems Inc.

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.

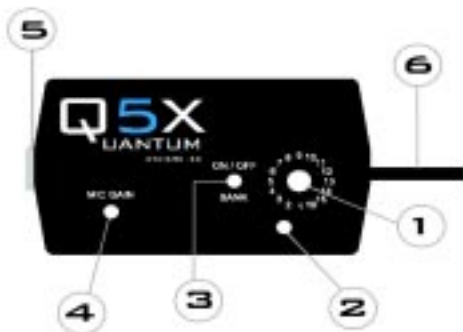
“Watch, Listen and Enjoy the Experience of the Future”.

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 +/- <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