# STB Controller
## OMC 1006

# USER MANUAL

## Rev. 2

Note: The specification and contents in this manual is subject to change.

# Table of Contents

# Introduction

## Overview

STB Controller, OMC 1006, is the equipment to receive upstream data from the STB and transmit it to Media Server via its dedicateed frequency. The STB receives downstream data from Media Server and control the STB with this data. STB Controller can control independantly the STB with its own function.

Communication method between STB Controller and the STB is Binary FSK.

## Function

### 1) RF Modem

STB Controller has RF Modem Function to transmit command and control data from the STB to Media Server.

### 2) Controller

STB Controller can control the STB via Key buttons on the front panel. (i.e. Force Tune, Forced Power on/off.)

### 3) Output Level Adjustment

Adjust RF Output Level to maintain stabilized level at the terminal.

### 4) Remote Monitoring of the STB

STB Controller has the built-in protocol to poll the status of the STB at every 500ms.

### 5) LCD Indicator

Indicate the status of data input and operation.

### 6) Troubleshooting of Serial Port

STB Controller has its own protocol to check RS-232C Port Status.

### 7) RACK Mountable Type

Standard 19" Rack mountable.

# Product Overview
## Front View



POWER SWITCH
 Power On/Off toggle switch

LCD DISPLAY
 Display input/output data and operation status

LED for Tx & Rx
 LED is blinking when STB Controller transmits and receives data

INPUT LED
 LED indicator for ⑤ ~ ⑦ button on front panel

OFF KEY
  Force TV to power off

ON KEY
  Force TV to Power on

CH KEY
  Set Channel No.

⑧  NUMERIC KEY
   0~9 Numeric Button

⑨  ESC KEY
   To quit input process at each function.

⑩  MODE KEY
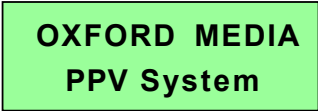   Set MODE

⑪  ENTER KEY
   Apply input data for function.

# Rear View



**RF INPUT**
Upstream RF Signal Input

**RF OUT**
RF Output Port

**RF ADJ**
Adjust RF Output Level

**RS232C PORT**
RS232C Communication Port

**DC POWER IN**
Cannon Jack for DC 12V/2A Power Input
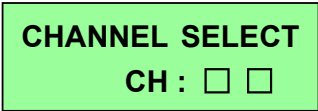
# Operation

## 1) Initial Screen

When STB Controller is power on state, you will see the below message.
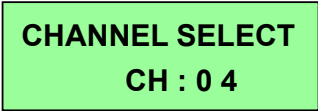
> OXFORD MEDIA
> PPV System

## 2) How to set CH for STB Control

● Press CH button on front panel, you will see blinking prompts on LCD screen.
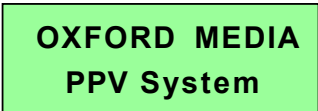
> CHANNEL SELECT
> CH : □ □

● Enter a channel number that you want to tune by using numeric button on front panel. Then, press ENTER button. You will see the changed CH number.

> CHANNEL SELECT
> CH : 0 4

● LCD Screen returns to the initial screen.

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## 3) Force ON

Control the STB to be tuned on with preset CH Number forcibly.

● Press ON button on front panel. You will see the channel information that you preset above.

> POWER ON CH:04
> Press Enter key.

● According to LCD screen instruction, press ENTER to send the data to STB.

> **POWER ON CH:04**
> **Sending · · ·**

● The screen will return to the initial screen after finishing data transmission.

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> **PPV System**

## 4) Force OFF

Control the STB to power off TV by force.

● Press OFF button on front panel. You will see the below message.

> **POWER OFF**
> **Press  Enter  key.**

● According to the instruction displayed, press ENTER key on front panel.

> **POWER OFF**
> **Sending · · ·**

● The screen will return to the initial screen after finishing data transmission.

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> **PPV System**

## 5) Troubleshooting of RS-232C Port

OMC1006 has its own protocol to check RS-232C port status. Therefore, the user needs to check the communication status of serial port via this protocol. Please contact Technical Engineer of Oxford Media Corp. to obtain the protocol.

## 6) Additional Message on LCD

Once OMC1006 receives the data from RCU, OMC1006 displays "remocon data" message on LCD screen. If OMC 1006 receives the protocol of Serial Query, then OMC1006 displays the status of RS-232C Port Status.

# Connection Diagram

RS-232
Cross Connection

Diplexer    L    H

RF Cable Network

Media Server
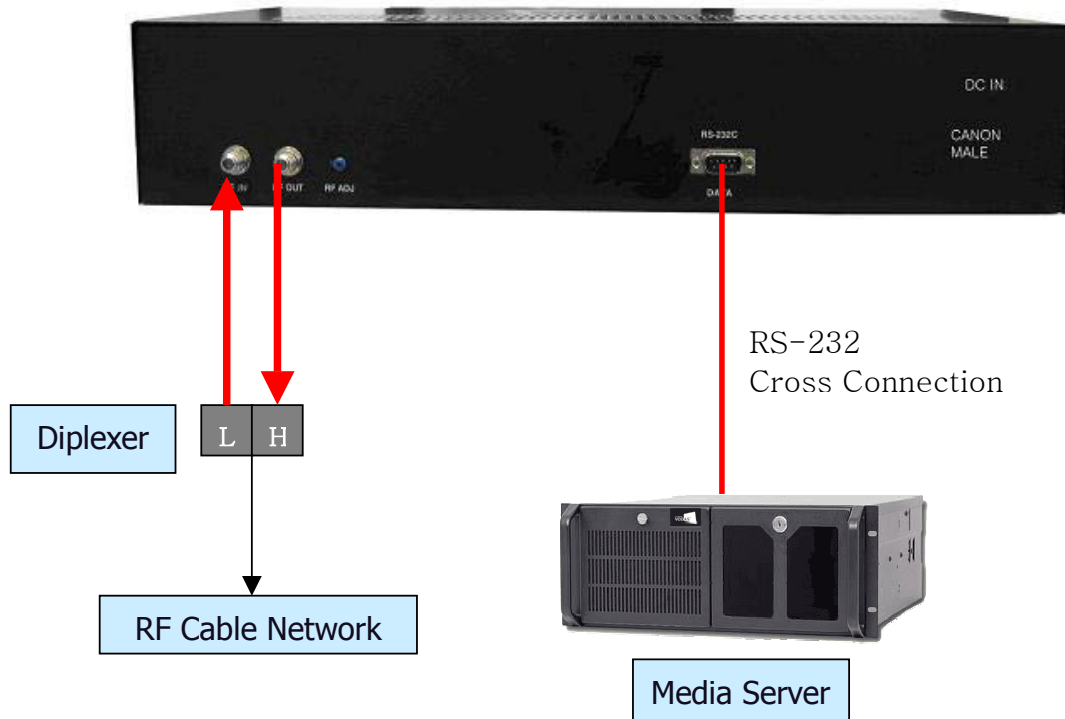
# Technical Specification

| Control Part | |
|---|---|
| MCU | Atmega128(Atmel) |
| Clock | 16 MHz |
| RAM | 4 Bytes |
| ROM | 128 Kbytes |

| RF Specification | |
|---|---|
| **RF Modem Section** | |
| Symbol Rate: 9600 bps | 9600 bps |
| TX Data Modulation Method | Binary FSK |
| TX Center Frequency | 108.00 MHz |
| TX Frequency Deviation | +/- 50 KHz |
| TX RF Output Level | 45dBmV Nominal |
| TX RF output Control Range | -20dB |
| TX Return loss | 16 dB |
| **RF Modem Section** | |
| Symbol Rate | 9600 bps |
| RX Demodulation Method | Binary FSK |
| RX Center Frequency | 10.7 MHz |
| RX Signal Frequency Deviation | +/- 50 kHz |
| RX Return Loss | 16 dB |
| RX Input Level | -18dBmV min to +38dBmV Max |
| RF Port Impedance | 75 Ohms both connectors |

| Environmental Specification | |
|---|---|
| Input Voltage | +12VDC/2A |
| External Power Adapter | - Input Voltage : 115VAC+/- 10%, 60Hz<br>- Output Voltage : +12VDC/2A |
| Operating Temperature Range | 0 to +50 degrees C |

| Operating Humidity Range | 20 to 95% (non-condensing) |
|---|---|

| **Physical Specification** | |
|---|---|
| Dimensions (W x H x D) | 484 x 88 x 290 (mm) (2RU high) |
| Weight | 5.0 kg |
| Connectors | RS-232 : 1 each, 9 pin Sub-Miniature type □" male <br> RF Output : F type RF receptacle <br> RF Input : F type RF receptacle <br> DC Power Input : Cannon(Male) |

**FCC Warning**

FCC15.19

This device is verified to comply with part 15 of the FCC Rules for use with cable television service.

FCC 15.105

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.

FCC 15.21

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.