

# Smart-telecaster HD View V5 ユーザーズガイド

株式会社ソリトンシステムズ

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# 目次

<b>1. STC HD View V5</b> .....	<b>5</b>
1.1. 受信側に必要な環境 .....	5
1.2. メインダイアログ .....	7
1.3. 音声の入出力 .....	11
1.3.1. 送り返し音声 .....	11
1.4. ライブ設定編集(STC Zao/Zao-S/ZaoApp 接続時) .....	12
1.5. ライブ設定編集(STC Zao-X 接続時) .....	19
1.6. 共通設定 .....	22
1.7. 録画ファイル再生機能 (Rec&Go) .....	23
<b>2. Transcode 再配信機能(STC Zao/Zao-S/ZaoApp 接続時)</b> .....	<b>24</b>
2.1. 設定編集 .....	24
2.2. Transcode ステータスウィンドウ表示設定 .....	29
2.3. Transcode 再配信ボタン/ローカル録画ボタン .....	30
2.4. Transcode 再配信設定例 .....	31
2.4.1. YouTube .....	31
<b>3. Passthrough 再配信機能</b> .....	<b>32</b>
<b>4. 仕様</b> .....	<b>33</b>
<b>5. 付録</b> .....	<b>34</b>
5.1. 待機中のチャンネルへ任意の画像を表示する .....	34
5.2. STC HD View で使用している OSS .....	36
5.2.1. libvpx .....	37
5.2.2. libvorbis .....	37
5.2.3. libogg .....	38
5.2.4. Picojson .....	38
5.2.5. libavcodec, libavformat, libavutil, libavfilter, libswscale, libswresample .....	39
5.2.6. spdlog .....	44
5.2.7. getopt .....	44
5.2.8. json11 .....	45

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5.2.9. httplib .....	45
5.2.10. cryptopp .....	46
5.2.11. pthreads .....	48
5.2.12. openssl .....	51
5.2.13. msgpack .....	53
5.2.14. opus .....	53
5.2.15. libsrtp .....	54
5.2.16. fmt .....	54



## 1. STC HD View V5

受信側の機材は、弊社推奨のインテル系 PC/AT 互換機に外部出力ボードを実装してのご提供となります。



図 1. 受信側機材

### 1.1. 受信側に必要な環境

#### ◀ ネットワーク環境

受信側には固定回線とグローバル IP アドレスが必要です。

※ 送信機が STC Zao/Zao-S/ZaoApp の場合、受信側は UDP ポート 31115 番、31116 番、31117 番、31118 番を使用します。ルータ配下に受信機を設置する場合は、ルータに対し NAT 設定（UDP 31115～31118 のポートフォワード）が必要です。

※ 送信機が STC Zao-X の場合、受信側は UDP ポート 42000 番、42001 番、42002 番、42003 番を使用します。ルータ配下に受信機を設置する場合は、ルータに対し NAT 設定（UDP 42000～42003 のポートフォワード）が必要です。

#### 外部出力ボード（弊社実装）

STC HD View の各チャンネルに受信したライブ映像と音声を、Blackmagic Design 社製 DeckLink Quad 2 に搭載されている 4 つのポートから SDI 出力します。チャンネルとポートの対応は下記の通りです。

- チャンネル 1 → HD-SDI/SD-SDI Out 1
- チャンネル 2 → HD-SDI/SD-SDI Out 2
- チャンネル 3 → HD-SDI/SD-SDI Out 3
- チャンネル 4 → HD-SDI/SD-SDI Out 4

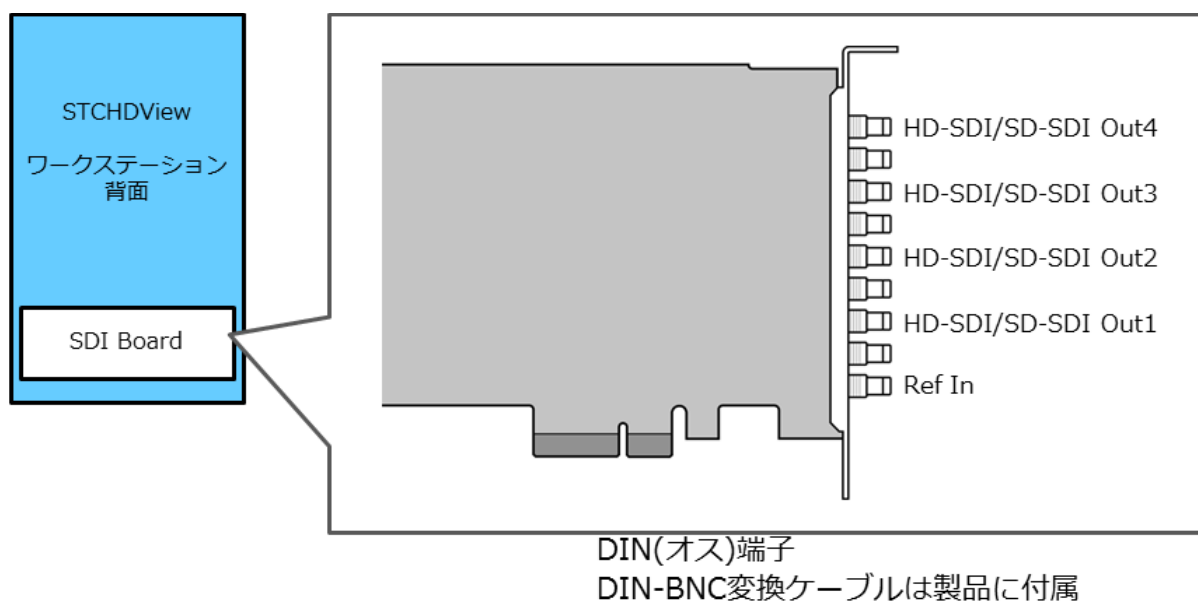


図 2. 外部出力に使用するポート



図 3. ワークステーション背面

## 1.2. メインダイアログ

PCの電源を入ると、STC HD View V5が自動起動します。

STC HD View V5を手動で起動する場合は、デスクトップ上の「STC HD View V5」アイコン、またはプログラムメニューの「Smart-telecaster HD」→「STC HD View V5」から起動します。Smart-telecaster HD View V5が起動すると以下のメインダイアログが表示されます。

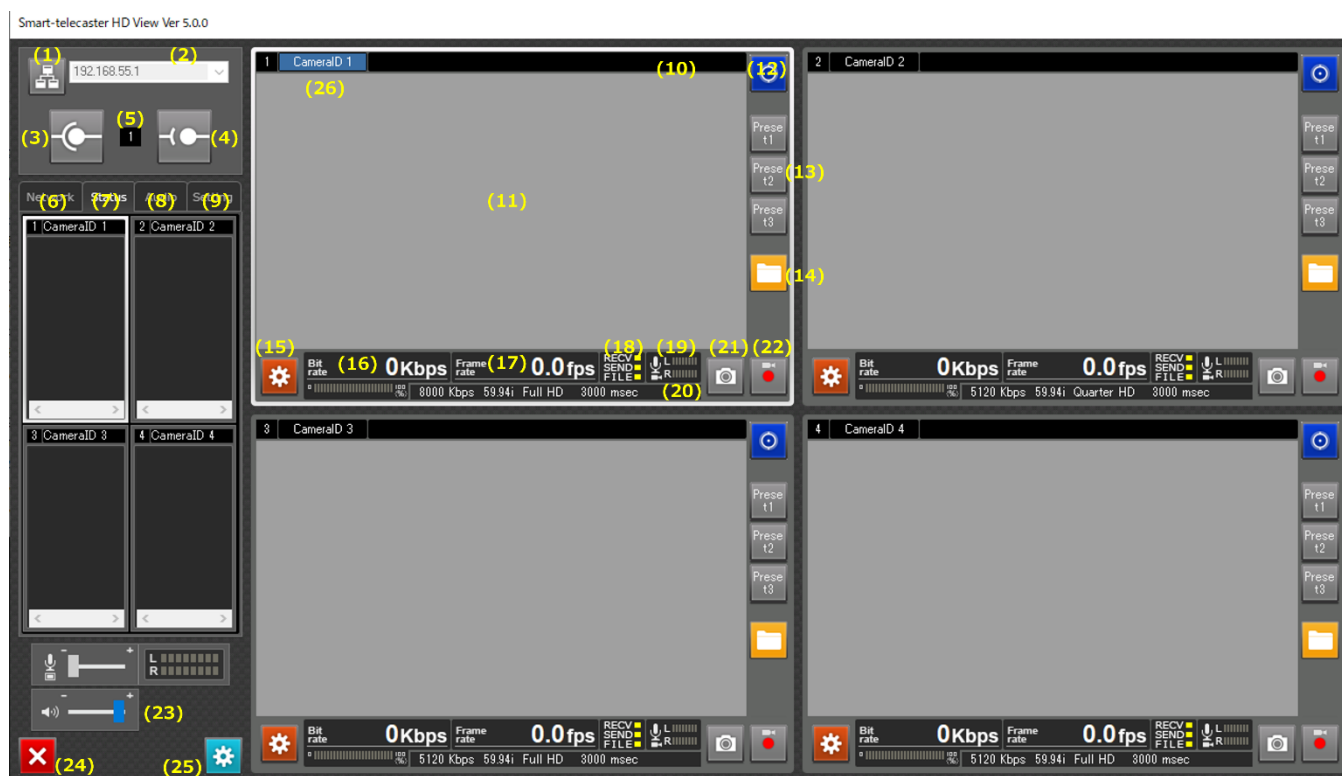


図 4. メインダイアログ

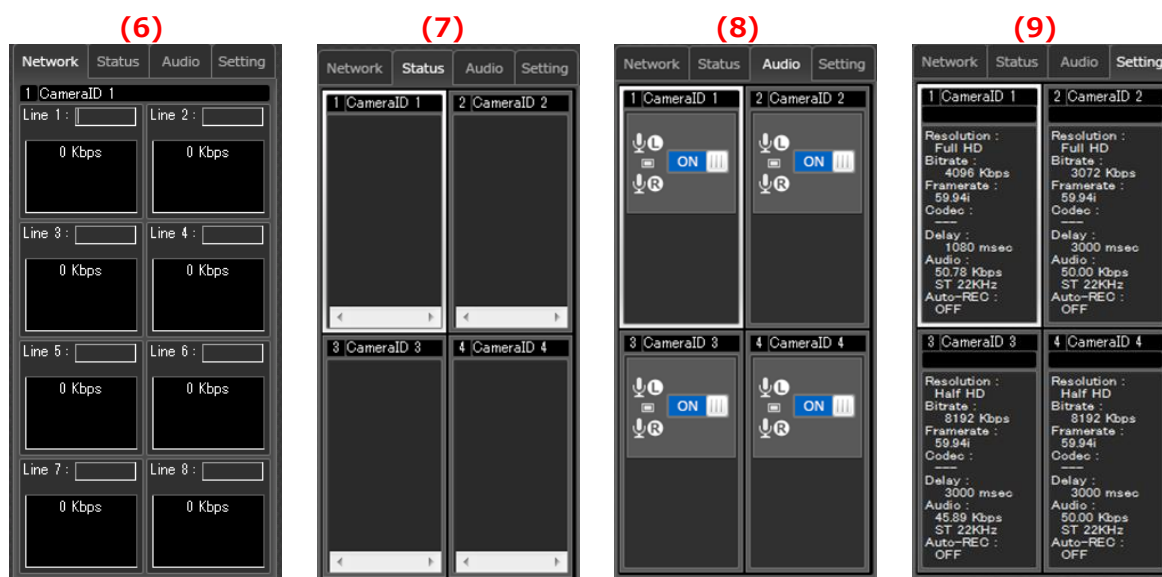


図 5. メインダイアログ(タブ内)

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(1) 接続先選択ボタン

接続先選択ダイアログを呼び出します。

注) 本バージョンでこの機能は使用できません。

(2) 接続先表示

接続先の IP アドレスが表示されます。

(3) 接続ボタン

注) 本バージョンでこの機能は使用できません。

(4) 切断ボタン

接続先との切断を行います。

注) STC Zao-X との接続時には使用しないで下さい。

(5) チャンネル番号表示

現在選択されているチャンネル番号が表示されます。

チャンネルの選択は、4 つあるプレビュー画面上でマウス左ボタンをクリックすることにより行うことができます。

選択されたチャンネルは、白い枠で囲まれます。

(6) 回線状況表示タブ

選択されているチャンネルの通信状況が表示されます。

接続中、使用している通信回線の速度が数値とグラフで表示されます。

各回線の横に文字入力が可能です。使用しているモデム名等を記載しておくことができます。

◀ (7) メッセージ表示タブ

STC HD View V5 の動作状況を表すメッセージが表示されます。

(8) 音声スイッチタブ

通常、STC HD View V5 側の音声は、接続中のチャンネル全ての送信機に伝送されます。

音声スイッチを OFF にすると、その音声スイッチに該当するチャンネルの送信機との音声伝送（双方向）を切断します。


例) チャンネル 1 ～ 4 まで全て受信中で音声スイッチが全て ON の場合、STC HD View V5 の音声は全てのチャンネル向けに伝送されます。


チャンネル 1 の音声スイッチを OFF にした場合、チャンネル 1 との音声は伝送されなくなりますが、チャンネル 2 ～ 4 との音声伝送はそのまま継続します。

(9) 設定値表示タブ

ライブ中継中の解像度、ターゲットビットレート、フレームレート、コーデック、ディレイ、オーディオ、自動録画（ローカル録画）の設定値が表示されます。

(10) 暗号化アイコン・ファイルを閉じるアイコン

送信機と暗号化接続が確立している場合は、 アイコンが表示されます。

STC Zao からファイル転送されてきた録画ファイルを開いている場合は、 アイコンが表示されます。

(11) プレビュー画面

受信したライブ映像が表示されます。

Alt キーと Enter キーを同時に押すことにより、選択されているチャンネルの映像を全画面表示にすることもできます。

元の 4 チャンネル全てのプレビュー表示に戻りたい場合には、全画面表示状態で Alt キーと Enter キーを同時に押してください。



## (12) SDI 外部出力ボタン

受信側の機器構成により、受信した映像と音声が入力されたSDIで外部出力可能な場合はボタンが青色になります。各機器構成による外部出力可否は下記の通りです。

### Blackmagic Design 社製 DeckLink Quad 2 使用時

全チャンネルが同時に外部出力可能となり、全チャンネルの外部出力ボタンが青色になります。

### Blackmagic Design 社製 DeckLink Quad 2 以外のボード使用時

4つのチャンネルのうち、外部出力ボタンで選択した1チャンネルのみが外部出力可能となります。選択したチャンネルはボタンが青色になります。

### 外部出力ボード未使用時

全チャンネルの外部出力ボタンがグレーアウトし、選択できません。


## (13) プリセットボタン

STC HD View V5では、任意の設定状態をプリセットとして登録しておくことができます。プリセットボタンを押下すると、登録されている設定値を一括設定変更することができます。プリセットが選択されている場合は、選択プリセットのボタンが緑色に点灯します。

## (14) 録画ファイルオープンボタン、及び再生/一時停止ボタン

STC Zaoで録画し、ファイル転送されてきた録画ファイルを開くことができます。

ファイルを開くと再生ボタン  が表示されます。

再生ボタンを押下すると再生が始まります。(ボタンは一時停止ボタン  へと変わります)  
一時停止ボタンを押すと、再生が一時停止します。(ボタンは再生ボタンへと変わります)

## (15) ライブ設定ボタン

各チャンネルのライブ設定編集ダイアログを呼び出します。

## (16) ビットレート表示

接続中の通信速度(実測値)が数値で表示されます。

同時に、TBR(target bitrate)に対する通信速度(実測値)がレベルで表示されます。

## (17) フレームレート表示

接続中のフレームレート(実測値)が表示されます。

## (18) 通信インジケータ [ RECV、SEND、FILE ]

通信(送信・受信)が発生すると点滅します。

## (19) 送信側音声インジケータ [ Cam Audio indicator ]

### 音声レベル

送信機からの受信音声レベルを表示します。音声モードがステレオになっている場合は上が左レベルで、下が右レベルです。音声モードがモノラルになっている場合は上下とも同じレベルが表示されます。

## (20) 設定表示

ライブ中継中のビットレート、フレームレート、解像度、遅延の設定値が表示されます。



### (21) 静止画ボタン

ライブ中継映像の静止画を取得します。

取得した静止画（jpeg 形式）は、「マイドキュメント」フォルダ内にある「My Reports」フォルダ以下に保存されます。

### (22) ローカル録画ボタン

送信機が接続した後、ライブ中継映像の録画が可能になるとボタンが有効となります。

録画ボタン  を押すと、ローカル録画を開始します。（ボタンは録画停止ボタン  へと変わります）

録画停止ボタンを押すと、ローカル録画を停止します。（ボタンは録画ボタンへと変わります）

録画したファイル（avi 形式または mp4 形式）は、「マイドキュメント」フォルダ内にある「My Reports」フォルダ以下に保存されます。

**注）複数チャンネルを同時に録画開始することはできませんが、送信機が Zao/Zao-S/Zao-X/ZaoApp の場合、正常に録画できないことがあります。（サポート対象外です）**

長時間録画する場合、1 時間毎に録画中のファイルはクローズされます。

その後、自動的に新しいファイルが作成され録画処理は継続します。

### (23) 受信側音声インジケータ [ View Audio indicator ]

#### マイク・アイコン

マイクからの音声入力にエラーが発生した場合、アイコン上に×マークが表示されます。

#### マイク・ボリューム

音声入力時のマイク・ボリュームを操作します。スライドバーを左に操作すると録音レベルが小さくなり、右に操作すると大きくなります。

#### スピーカー・アイコン

スピーカーへの音声出力にエラーが発生した場合、アイコン上に×マークが表示されます。

#### スピーカー・ボリューム

音声再生時のアプリケーション・ボリュームを操作します。スライドバーを左に操作すると音が小さくなり、右に操作すると大きくなります。

#### 音声レベル

STC HD View V5 側の入力音声レベルが表示されます。音声モードがステレオになっている場合は上が左レベルで、下が右レベルです。音声モードがモノラルになっている場合は上下とも同じレベルが表示されます。

### (24) 終了ボタン

アプリケーションを終了します。

### (25) 共通設定ボタン

共通設定編集ダイアログを呼び出します。

### (26) カメラ ID 表示

カメラ ID（送信機名称）を表示します。

STC Zao-X が接続できる設定のチャンネルでは、文字の背景色が青色になります。

## 1.3. 音声の入出力

STC HD View V5 は、音声入力／出力に Windows 上で設定された「既定の入力デバイス／既定の出力デバイス」を使用します。

音声入力ソースを変更する場合は、使用する入力デバイスを接続し、既定の入力デバイスに設定してから STC HD View V5 を起動して下さい。

また、外部出力ボードがインストールされている場合、本アプリケーションが自動的に外部出力ボードを検出・使用しますので、既定の出力デバイスを外部出力ボードのオーディオデバイス以外に設定して下さい。

注) 弊社からの出荷の際、Windows のシステム音を外部出力ボードへ出力しない設定を行っています。

ご都合により OS の入れ替え等を行った場合、既定の出力デバイスが、外部出力ボードのオーディオデバイス以外に設定されているかどうかを確認して下さい。

### 1.3.1. 送り返し音声

送信機と接続中に受信機に接続されたヘッドセットへ話しかけると、受信機側の音声を送信機側へ送信され、送信機に接続されたヘッドフォンで再生されます（送り返し音声）

注) HD View V5 の起動中は、受信機にヘッドセットを接続したままの状態でご使用下さい。HD View V5 起動中にヘッドセットを抜き差しすることにより「既定の入力デバイス」が変わってしまった場合、HD View V5 の挙動が不安定になる場合があります。

接続中、送信機側で送り返し音声再生されない場合には、以下の点をご確認ください。

#### HD View V5 起動前にヘッドセットをつないでいたか

事前につないだヘッドセットのマイクデバイスとスピーカデバイスが、それぞれ既定の入力デバイス、既定の出力デバイスになっているかどうかを確認すること。

#### 音声スイッチタブが OFF になっていないか

本ユーザーズガイドの 1.2 節「(8) 音声スイッチタブ」を参照。

## 1.4. ライブ設定編集(STC Zao/Zao-S/ZaoApp 接続時)

送信機と接続する際の映像品質・音声品質等の設定を編集します。

設定編集ダイアログは各チャンネルで独立しているため、全てのチャンネルで個別に設定する必要があります。

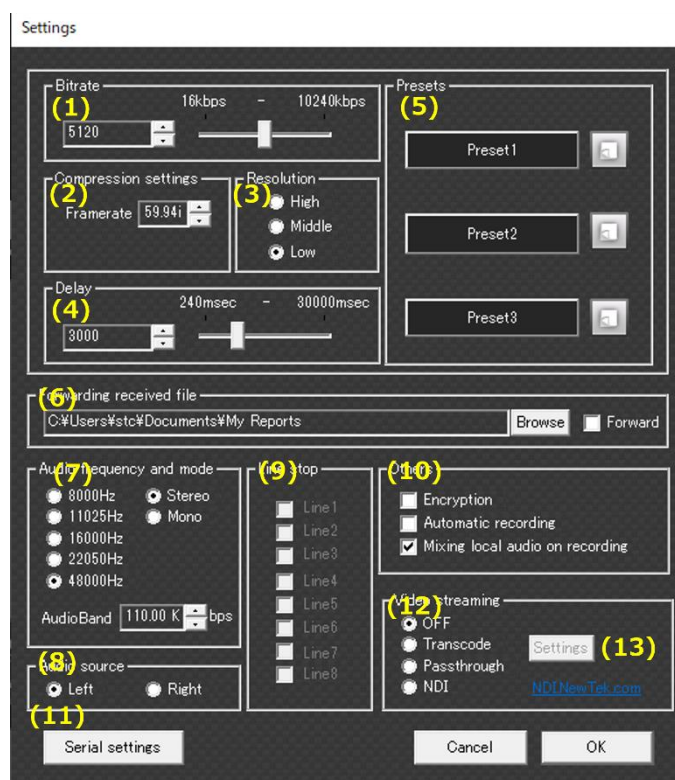


図 6. ライブ設定編集ダイアログ

### (1) ビットレート [ Bitrate ]

TBR (target bitrate) を指定します。

注) 設定値できる最大値は、接続する送信機によって異なります。

STC Zao : 10Mbps

STC Zao-S : 5Mbps

STC Zao App : 5Mbps

### (2) フレームレート [ Framerate ]

フレームレートを指定します。

### (3) 解像度 [ Resolution ]

ライブ中継映像の解像度を指定します。各設定による実際の解像度は以下の表の通りです。

送信機に入力されるソース映像フォーマットにより、実際の解像度は異なります。

また、接続中に設定を変更した場合、切断・再接続後もその設定が有効となります。

注) 送信機が Zao/Zao-S (入力：インターレース映像) で Middle 解像度設定の場合、フレームレートの設定値により実効解像度が変わります。(表 1, 表 5, 表 6 参照)

表 1. 解像度設定と実行解像度の関係(1080I)

中継端末：STC Zao/Zao-S（入力映像：1080 59.94i/50i）		
解像度設定	フレームレート設定	実効解像度
High	－	1920 x 1080
Middle	59.94i/50i	960 x 1080
	29.97/25	1920 x 540
Low	－	960 x 540

表 2. 解像度設定と実行解像度の関係(1080P)

中継端末：STC Zao-S（入力映像：1080 59.94p/50p）		
解像度設定	フレームレート設定	実効解像度
High	－	1920 x 1080
Middle	－	1920 x 540
Low	－	960 x 540

表 3. 解像度設定と実行解像度の関係(1080 29.97P/25P)

中継端末：STC Zao/Zao-S（入力映像：1080 29.97p/25p）		
解像度設定	フレームレート設定	実効解像度
High	－	1920 x 1080
Middle	－	1920 x 540
Low	－	960 x 540

表 4. 解像度設定と実行解像度の関係(720P)

中継端末：STC Zao/Zao-S（入力映像：720 59.94p/50p）		
解像度設定	フレームレート設定	実効解像度
High	－	1280 x 720
Middle	－	640 x 720
Low	－	640 x 360

表 5. 解像度設定と実行解像度の関係(SD)

中継端末：STC Zao/Zao-S（入力映像：480 59.94i）		
解像度設定	フレームレート設定	実効解像度
High	－	720 x 480
Middle	59.94i	360 x 480
	29.97	720 x 240
Low	－	360 x 240

表 6. 解像度設定と実行解像度の関係(SD)

中継端末：STC Zao/Zao-S（入力映像：576 50i）		
解像度設定	フレームレート設定	実効解像度
High	－	720 x 576
Middle	50i	360 x 576
	25	720 x 288
Low	－	360 x 288

表 7. 解像度設定と実行解像度の関係(ZAO APPS)

中継端末：STC Zao App (Android/iOS)		
解像度設定	フレームレート設定	実効解像度
High	－	1920 x 1080
Middle		1280 x 720
Low		640 x 360

表 8. 解像度設定と実行解像度の関係(ML)

中継端末：STC for iOS/Android ML		
解像度設定	フレームレート設定	実効解像度
High	－	960 x 540
Middle		640 x 360
Low		

## (4) デレイ [ Delay ]

受信側のバッファリング時間を msec 単位で指定します。(240msec～30000msec)

受信したデータをすぐに再生せずにバッファリング時間分だけ遅延させて再生することで、フレーム更新間隔の乱れを抑えます。

※ 送信側で使用する通信回線の種類／組み合わせによる参考値：

有線 LAN を使用する場合：240msec 以上

4G 回線のみ構成の場合：720msec 以上

3G 回線が構成に含まれる場合：1200msec 以上

衛星回線（BGAN など）を使用する場合：4000msec 以上

回線種を混合する場合は、通信速度の遅い方に合わせて設定して下さい。  
尚、この参考値はすべての状況／組み合わせを保証するものではありません。  
また、回線の混雑状況や電波状況により、通信速度が安定しない場合があります。  
その場合は、カメラを固定したりディレイを延ばすことで安定性を高めることができます。

## (5) プリセット [ Presets ]

任意の設定状態をプリセットとして登録しておくことができます。

### ① プリセット選択ボタン

プリセット選択ボタンを押下すると、選択状態（ボタンが緑色点灯）になり、設定編集ダイアログ内の各設定値がプリセットに登録されている値に一括変更されます。尚、各ボタンには登録時に指定したプリセット名が表示されます。



図 7. プリセット選択ボタン

### ② プリセット登録ボタン

プリセット登録ボタンを押下すると、現在の設定値をプリセットとして保存するための登録ダイアログが表示されます。プリセット名を指定し Save ボタンを押下すると、現在の設定値がプリセットとして登録され、かつ選択状態になります。Cancel ボタンを押下すると、プリセット登録はキャンセルされます。

尚、プリセット名はメイン画面のプリセットボタンにも反映されます。また、接続中は Cam 側のプリセット表示の名称にも反映されます。プリセットが選択されている場合は、選択したプリセットのボタンが緑色に点灯します。プリセットの選択状態は、任意の設定値が変更されると解除されます。

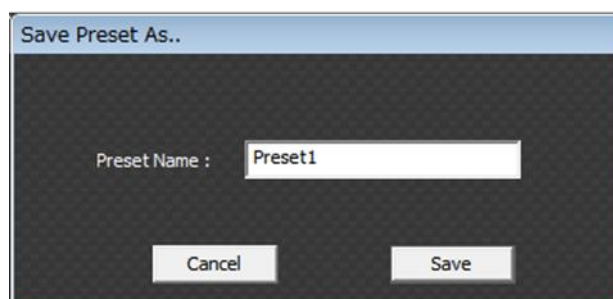


図 8. プリセット登録ダイアログ

## (6) 受信ファイルの転送 [ Forwarding received file ]

受信したファイルの保存フォルダを指定します。

## (7) 音声周波数およびチャンネル [ Audio frequency and mode ]

音声のサンプリング・レートおよびステレオ/モノラルと、音声帯域を指定します。

注) 順方向音声と送り返し音声、共通の設定です。

音声周波数 [ Audio frequency ]

音声送受信に使用するサンプリング・レートを指定します。

注) 送信機が iOS ML の場合、22050Hz 固定となります。

音声チャンネル [ mode ]

音声をステレオとして扱うか、モノラルとして扱うかを指定します。

音声帯域 [ AudioBand ]

音声送信に使用する帯域量 (Kbps) を指定します。

尚、設定可能な帯域幅は音声周波数とチャンネルの組合せにより以下の範囲になります。

表 9. 音声周波数とビットレートの関係

音声周波数	ステレオ (Kbps)	モノラル (Kbps)
8000Hz	11.71 ~ 62.50	7.81 ~ 41.01
11025Hz	15.62 ~ 85.93	11.71 ~ 48.82
16000Hz	23.43 ~ 167.96	15.62 ~ 97.65
22050Hz	29.29 ~ 167.96	15.62 ~ 87.89
48000Hz	68.35 ~ 488.28	31.25 ~ 234.37

## (8) 音声ソース選択 [ Audio source ]

音声をモノラルとして扱う際、左チャンネルの音声を使うか右チャンネルの音声を使うかを指定します。

Left 左チャンネルを使用します。

Right 右チャンネルを使用します。



## (9) 送信側回線の制御 [ Line stop ]

STC HD View V5 には、接続中に使用している回線を受信側から個別に一時停止／再開させることができる機能があります。（複数回線で接続中の場合のみ有効です）

使用中の回線を一時停止させる場合は、停止したい回線にチェックを入れて OK ボタンを押下します。

一時停止を解除し再び回線を使用する場合は、再開したい回線のチェックを外して OK ボタンを押下します。

この機能は、ライブ中継を維持したまま操作することができます。本機能を使用することにより、中継位置の移動等で通信速度が低下した回線を一時的に切り離すことや、回線状態を復帰させる為にリダイヤル（切断→再接続）させることができます。

## (10) その他 [ Others ]

暗号化 [ Encryption ]

通信データを暗号化する場合に指定します。

自動録画 [ Automatic recording ]

送信機と接続した際、自動的にローカル録画を開始するかどうかを指定します。

**注）自動録画機能を使用するためには、LocalRec Mode を ON にする必要があります。**

録画時のローカル音声ミキシング [ Mixing local audio on recording ]

ローカル録画の際、STC HD View 側のマイク入力を録画ファイルに収録するかどうかを指定します。

**注）録画時の音声ミキシング機能を利用するためには、LocalRec Mode を ON にする必要があります。**

**注）本機能は、送信機が iOS ML の場合のみ有効です。**

## (11) シリアルポート設定

シリアル通信設定ダイアログを呼び出します。

- Port: シリアル通信可能な COM ポートを指定します。
- Bitrate: ビットレート（ボーレート）を指定します。
- Data bit: データビットを指定します。
- Stop bit: ストップビットを指定します。
- Parity: パリティを指定します。

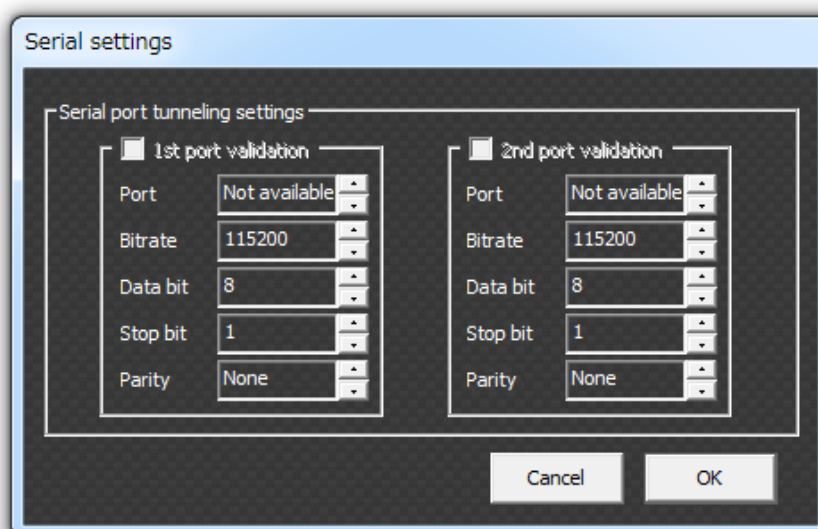


図 9. シリアルポート設定

---

## (12) Video streaming

受信映像を再配信する際、使用したい配信方式を選択できます。

複数選択することはできません。

また、送信機と接続中には変更できません。

### [OFF]

Video streaming 機能を使用しない場合に選択します。

### [Transcode]

受信映像 codec を H.264 に変換し、RTMP で配信します。

YouTube や Facebook など配信する場合にご利用下さい。設定方法に関しては後述します。

### [Passthrough]

受信映像 codec を変換せず RTSP で配信します。

VLC メディアプレイヤーや milestone Xprotect などへ配信する際にご利用下さい。視聴方法に関しては後述します。

### [NDI]

NDI 形式で配信します。

送信機で設定した STC Cam 名称が TriCaster 側に表示されます。

## (13) Transcode 再配信設定ボタン（ローカル録画設定と共通）

Transcode 再配信の詳細設定を行うことができます。

詳しい設定方法については後述します。



## 1.5. ライブ設定編集(STC Zao-X 接続時)

STC Zao-X が接続可能な設定となっているチャンネルでは、ライブ設定編集ダイアログは下図のようになります。

注) STC Zao-X はエンコードモード「Normal mode」で接続して下さい。

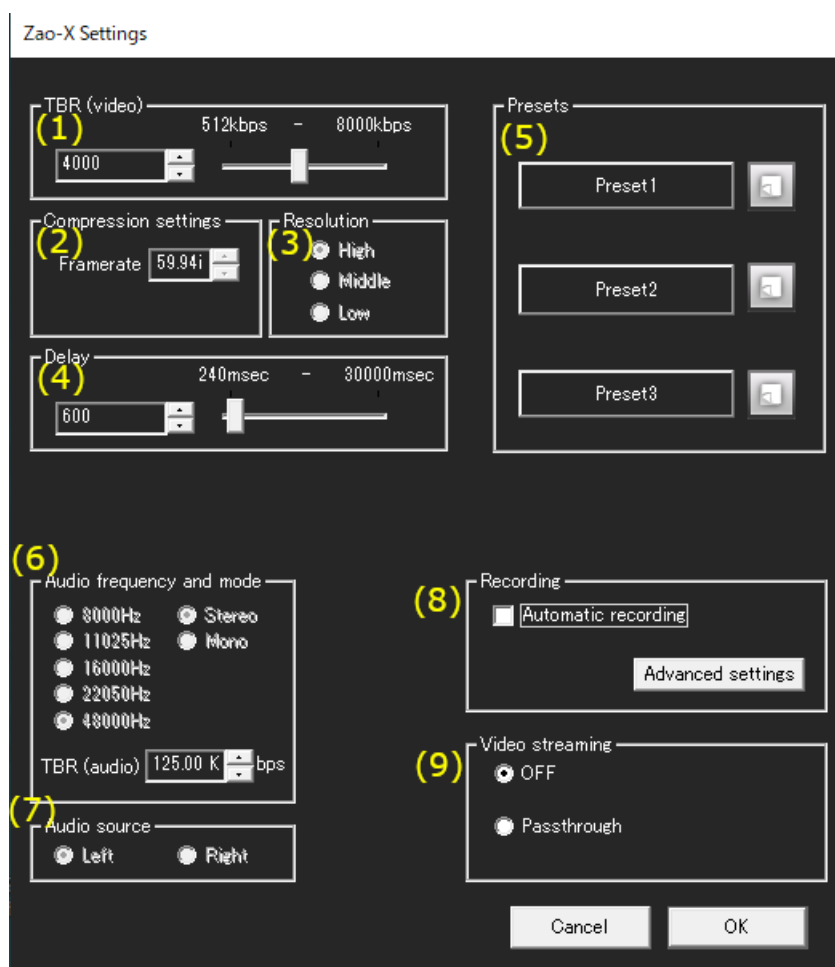


図 10. ライブ設定編集ダイアログ(STC ZAO-X 接続設定時)

(1) 映像 TBR [ TBR (video) ]

映像ストリームの TBR (target bitrate) を指定します。

512-8000kbps の間で設定することができます。

(2) フレームレート [ Framerate ]

注) 本バージョンでは、入力映像フォーマットのフレームレートに固定されます。

(3) 解像度 [ Resolution ]

注) 本バージョンでは、High (入力映像フォーマットの映像サイズ) に固定されます。

(4) デレイ [ Delay ]

受信側のバッファリングサイズを msec 単位で指定します。

バッファリングサイズは 240msec~30000msec の間で指定することができます。

## (5) プリセット [ Presets ]

任意の設定状態をプリセットとして登録しておくことができます。

### ① プリセット選択ボタン

プリセット選択ボタンを押下すると、選択状態（ボタンが緑色点灯）になり、設定編集ダイアログ内の各設定値がプリセットに登録されている値に一括変更されます。

尚、各ボタンには登録時に指定したプリセット名が表示されます。



図 11. プリセット選択ボタン

### ② プリセット登録ボタン

プリセット登録ボタンを押下すると、現在の設定値をプリセットとして保存するための登録ダイアログが表示されます。

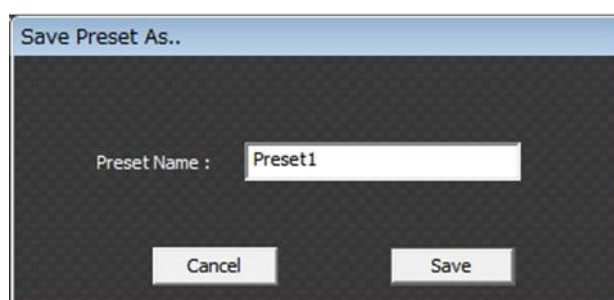


図 12. プリセット登録ダイアログ

プリセット名を指定し Save ボタンを押下すると、現在の設定値がプリセットとして登録され、かつ選択状態になります。Cancel ボタンを押下すると、プリセット登録はキャンセルされます。

尚、プリセット名はメイン画面のプリセットボタンにも反映されます。

プリセットが選択されている場合は、選択したプリセットのボタンが緑色に点灯します。

プリセットの選択状態は、任意の設定値が変更されると解除されます。

---

(6) 音声周波数およびチャンネル [ Audio frequency and mode ]

注) 本バージョンでは、音声帯域設定以外設定変更できません。

本設定は「順方向 Embedded 音声の設定」になります。

送り返し音声は「48KHz, Stereo, TBR:128kbps」固定になります。

音声周波数 [ Audio frequency ]

注) 本バージョンでは 48000Hz に固定されます。

音声チャンネル [ mode ]

注) 本バージョンでは Stereo に固定されます。

音声 TBR [ TBR (audio) ]

音声ストリームの TBR (target bitrate) を 15.62-312.50kbps の間で指定します。

(7) 音声ソース選択 [ Audio source ]

注) 本バージョンでは Stereo 設定に固定されているため、音声ソースの Left/Right は選択できません。

(8) ローカル録画設定 [ Recording ]

自動録画 [ Automatic recording ]

送信機と接続した際、自動的にローカル録画を開始するかどうかを指定します。

録画品質設定 [ Advanced settings ]

録画品質を設定するためのダイアログを呼び出します。

設定できる項目（映像品質、音声品質）は、Transcode 再配信機能の設定ダイアログと同一です。

◀ (9) Video streaming

[OFF]

Video streaming 機能を使用しない場合に選択します。

[Passthrough]

受信映像 codec を変換せず RTSP で配信します。

VLC メディアプレイヤーや milestone Xprotect などへ配信する際にご利用下さい。設定方法に関しては後述します。

## 1.6. 共通設定

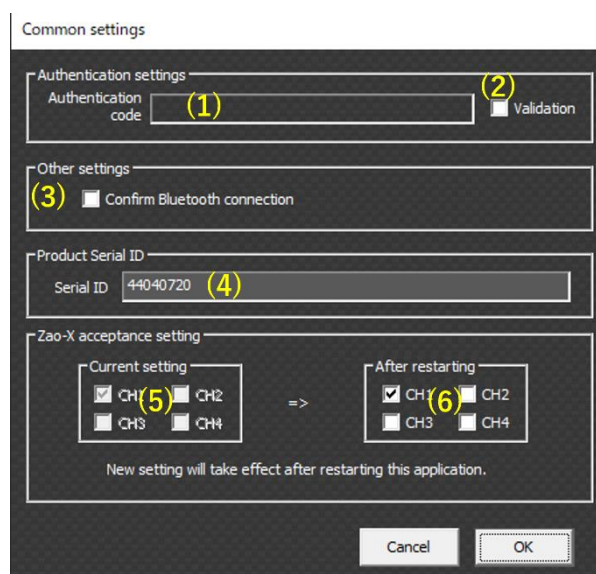


図 13.共通設定ダイアログ

### 接続認証設定 [ Authentication setting ]

#### (1) 接続認証コード [ Authentication code ]

送信機との接続認証のためのコードを入力します。

認証コードは、半角英数字で 30 文字まで設定することができます。(入力したコードは \* で表示されます)

本機能は、認証有効フラグ（下記）が ON の場合のみ有効です。

**注）送信機が STC Zao-X の場合、本機能はご利用になれません。**

#### (2) 認証有効フラグ [ Validation ]

チェック ON 時：接続時の認証を有効にします。

チェック OFF 時：接続時の認証を無効にします。

**注）接続認証を有効にした場合は、設定した認証コードと同じ認証コードを持つ送信機のみが接続することができます。送信機の認証コードが異なる場合、または無効な場合は、STC HD View V5 と接続することはできません。**

### その他の設定 [ Other settings ]

#### (3) Bluetooth 機器の接続確認を行う [ Confirm Bluetooth connection ]

**注）本バージョンでこの機能は使用できません。**

### ライセンス情報表示 [ Product Serial ID ]

#### (4) シリアル ID [ Serial ID ]

登録されているシリアル ID を表示します。

### Zao-X 接続可否設定 [ Zao-X acceptance setting ]

#### (5) Current setting

現在の STC Zao-X の接続可否設定が表示されます。

✓ が付いているチャンネルに Zao-X を接続することができます。

#### (6) After restarting

✓ を付けたチャンネルに Zao-X を接続できるように設定することができます。

**注）設定変更後、設定を反映するためには STC HD View V5 の再起動が必要になります。**

**再起動後（設定反映後）、After restarting の設定が Current setting に反映されます。**

## 1.7. 録画ファイル再生機能（Rec&Go）

Zao の Rec&Go 機能で録画・転送されてきた録画ファイルを HDView 上で再生することができます。  
Zao から転送されてきたファイルは、TAF 形式（Soliton Systems オリジナルフォーマット）で保存されます。  
保存先は、デフォルト設定の場合、「マイドキュメント」フォルダ内にある「My Reports」フォルダ以下に保存されます。

### 録画ファイルの展開と再生

- (1) File オープンボタンを押下すると、ドキュメントの MyReports フォルダが開かれます。
- (2) 再生したい録画データを選択します。  
※ファイルによっては読み込みに時間がかかる場合があります。
- (3) 再生可能状態になると、(1)の File オープンボタンが、再生ボタンに変わります。  
再生中は一時停止ボタンに変わり、一時停止を行うことができます。
- (4) ファイル再生を中止したい場合は、右上の×ボタンを押下することで中止できます。

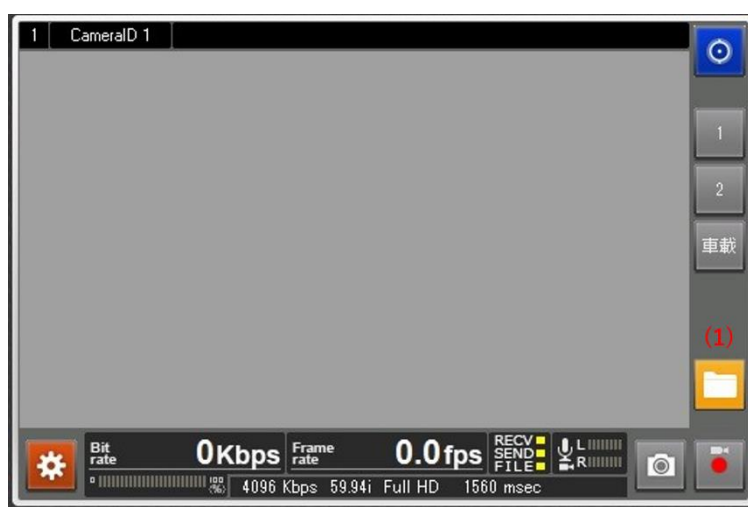


図 14. REC&GO ファイル選択ボタン



図 15. REC&GO ファイル再生、中止ボタン

## 2. Transcode 再配信機能(STC Zao/Zao-S/ZaoApp 接続時)

### 2.1. 設定編集

Transcode 再配信モード・ローカル録画モード、共通の設定ダイアログです。

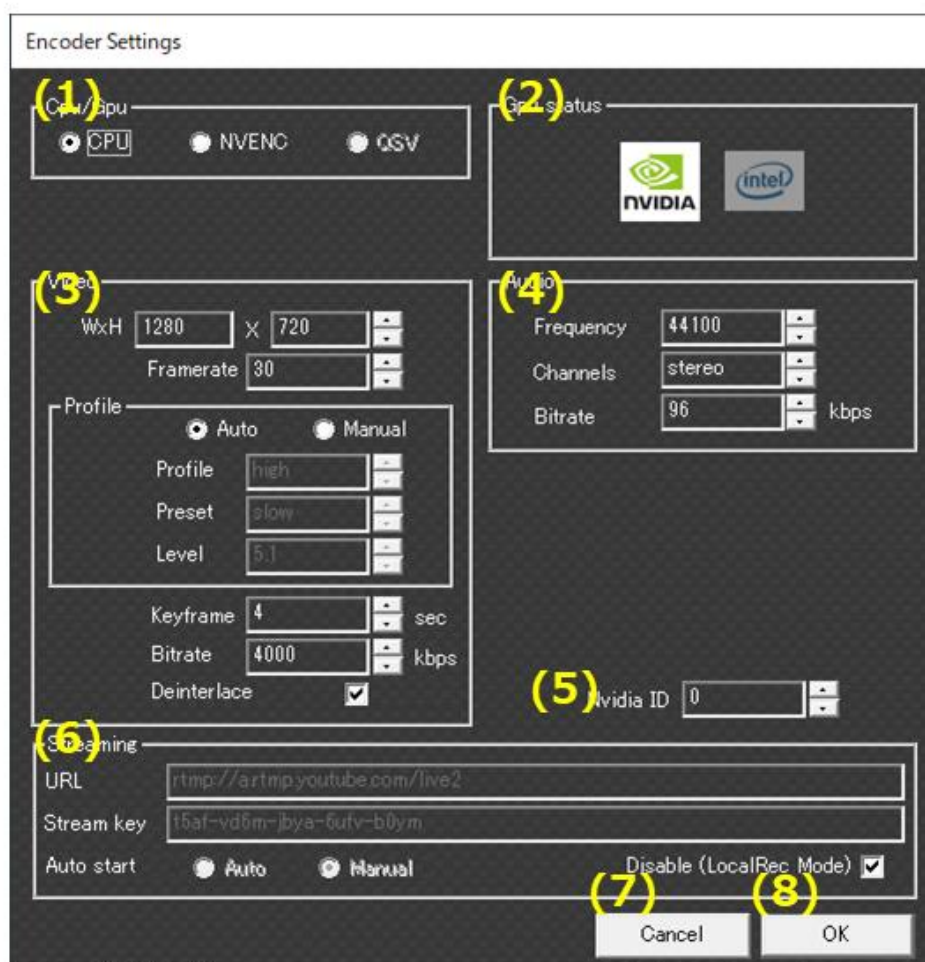


図 16. TRANSCODE 再配信設定編集ダイアログ

#### (1) Cpu/Gpu

Transcode を CPU で行うか、サポートしている GPU で行うかを選択して下さい。

#### (2) Gpu status

STC HD View 起動時に GPU ステータスをチェックし、HW アクセラレーションが利用可能かどうかを表示します。

注) 下記インジケータが利用可能状態を示していても、PC ワークステーションに搭載されている CPU やグラフィックボードにより HW アクセラレーションが利用できない場合があります。その場合、(1)で NVENC や QSV を選択しても正常に動作しません。CPU を選択して下さい。





## (3) Video

Transcode 後の映像サイズ、フレームレート、エンコード品質等を選択して下さい。

表 10. 幅 x 高さ ( W x H )

No	width	height	remarks
1	1920	1080	default
2	1280	720	
3	960	540	
4	640	360	
5	320	180	

表 11. FRAMERATE

No	Framerate	Remarks
1	60	* It is effective only when setting 720p/60fps
2	50	* It is effective only when setting 720p/50fps
3	30	default(NTSC)
4	25	default(PAL)
5	15	

## Profile グループ

- ・「Auto」の場合 : 「Profile」「Preset」「Level」は自動的に設定されます。
- ・「Manual」の場合 :

表 12. PROFILE

No	Profile	remarks
1	High	default
2	Main	

表 13. PRESET

No	Preset	remarks
1	Slow	default
2	Medium	
3	Fast	

表 14. LEVEL

No	Level	remarks
1	5.1	default
2	5.0	
3	4.2	
4	4.1	
5	4.0	
6	3.2	
7	3.1	

表 15. KEYFRAME

No	Keyframe(sec)	remarks
1	10	
2	9	
3	8	
4	7	
5	6	
6	5	
7	4	default
8	3	
9	2	
10	1	

表 16. BITRATE(VIDEO BITRATE)

No	Bitrate(kbps)	remarks
1	10000	
2	9500	
3	9000	
4	8500	
5	8000	
6	7500	
7	7000	
8	6500	
9	6000	
10	5500	
11	5000	
12	4500	
13	4000	
14	3500	
15	3000	
16	2500	
17	2000	default
18	1000	
19	750	
20	500	
21	250	

表 17. インターレース解除 DEINTERLACE

No	Deinterlace	remarks
1	Checked(ON)	default
2	No checked(OFF)	

## (4) Audio

Transcode 後の音質を選択して下さい。

表 18. FREQUENCY

No	Samplerate	remarks
	48000	Local Rec mode
1	44100	default
2	22050	
3	11025	

表 19. CHANNELS

No	Samplerate	remarks
1	Stereo	default
2	Mono	

表 20. BITRATE(AUDIO BITRATE)

No	Bitrate(kbps)	remarks
1	96	default
2	112	
3	160	
4	192	
5	224	

## (5) Nvidia ID

2つのGPUがインストールされている場合、エンコード時に使用するカードを選択することができます。

表 21. NVENC

No	NvidiaID	Remarks
1	0	default
2	1	

## (6) Streaming

RTMP url

RTMP URL を入力して下さい。

Stream key

Stream key を入力して下さい。

Auto start

## •Auto

送信機と受信機の接続が確立した後、自動的にストリーミングを開始します。

## •Manual

送信機と受信機の接続が確立した後、手動で配信の開始及び停止を行います。

Disable (Local Rec Mode)

Transcode 再配信機能を無効化し、ローカル録画を行うことができます。

表 22. LOCAL REC MODE

No	Local Rec Mode	remarks
1	チェックあり(ON)	Default
2	チェックなし(OFF)	



## (7) Cancel

設定ウィンドウを閉じます。(設定内容は保存されません)

## (8) OK

設定ウィンドウを閉じます。(設定内容は保存されます)

## 2.2. Transcode ステータスウィンドウ表示設定

デフォルトでは、ライブ中に Transcode ステータスウィンドウはポップアップしません。表示したい場合には下記 ini ファイルを編集して下さい。

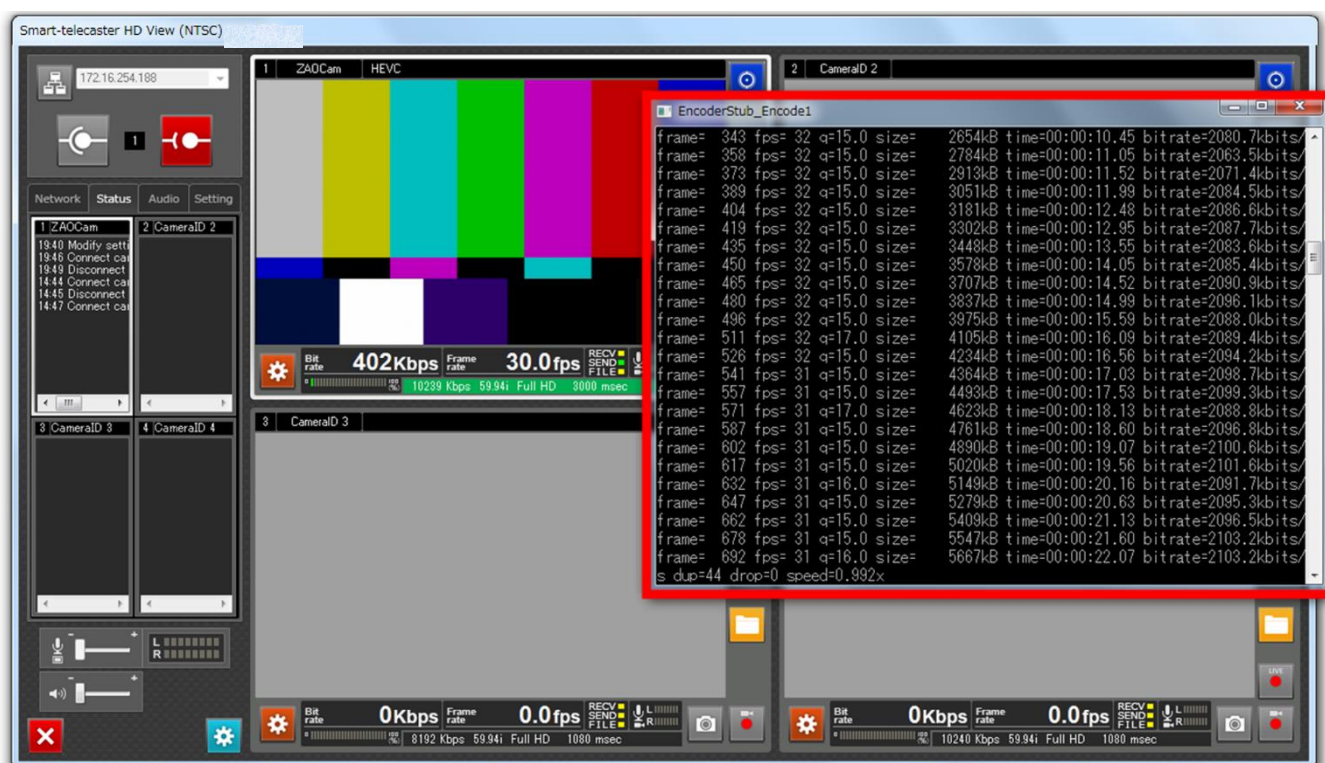


図 17. TRANSCODE ステータスウィンドウ表示

C:¥Program Files (x86)¥Smart-telecaster HD¥STCView (NTSC)¥x64¥EncoderStub.ini

※EncoderStub.ini はお使いの環境、インストール先によって配置場所が異なる場合がございます。

[CONFIG]

check\_interval = 100

encstart\_waittime = 500

encend\_waittime = 500

comm\_timeout = 300

program\_reg\_interval = 15000

encoder\_path = "C:¥Program Files (x86)¥Smart-telecaster  
HD¥bin¥StreamPusher¥StreamPusher.exe"

segment\_time = 3600

localrec\_format = "mp4"

hide\_window = 1 ⇒ ステータスウィンドウを表示したい場合、0 に設定する。

## 2.3. Transcode 再配信ボタン／ローカル録画ボタン

### Transcode 再配信が有効な場合

ローカル録画モード（Local Rec mode）が無効で送信機と接続されている場合、配信ボタンが表示されます。



図 18. TRANSCODE 再配信モード

### ローカル録画モード（Local Rec mode）が有効な場合

Local Rec mode が有効で送信機が接続されている場合、静止画ボタンと録画ボタンが有効になります。



図 19. ローカル録画モード

静止画、ローカル録画ファイルのメディアフォーマットは、それぞれ下記となります。

表 23. FILENAME FORMAT

	ファイル名フォーマット	拡張子
ローカル録画	[送信機名]_YYYYMMDDHHMMSS_[ch 番号]_[シーケンス番号].mp4	mp4
静止画	[送信機名]_YYYYMMDDHHMMSS_[ch 番号].jpg	jpg

## 2.4. Transcode 再配信設定例

### 2.4.1. YouTube

YouTube にログインし、[クリエイターツール](#)から、[ライブストリーミング](#)を表示します。

表示される[エンコーダの設定]を、Transcode 再配信設定ダイアログ内の URL と Stream key へコピーします。

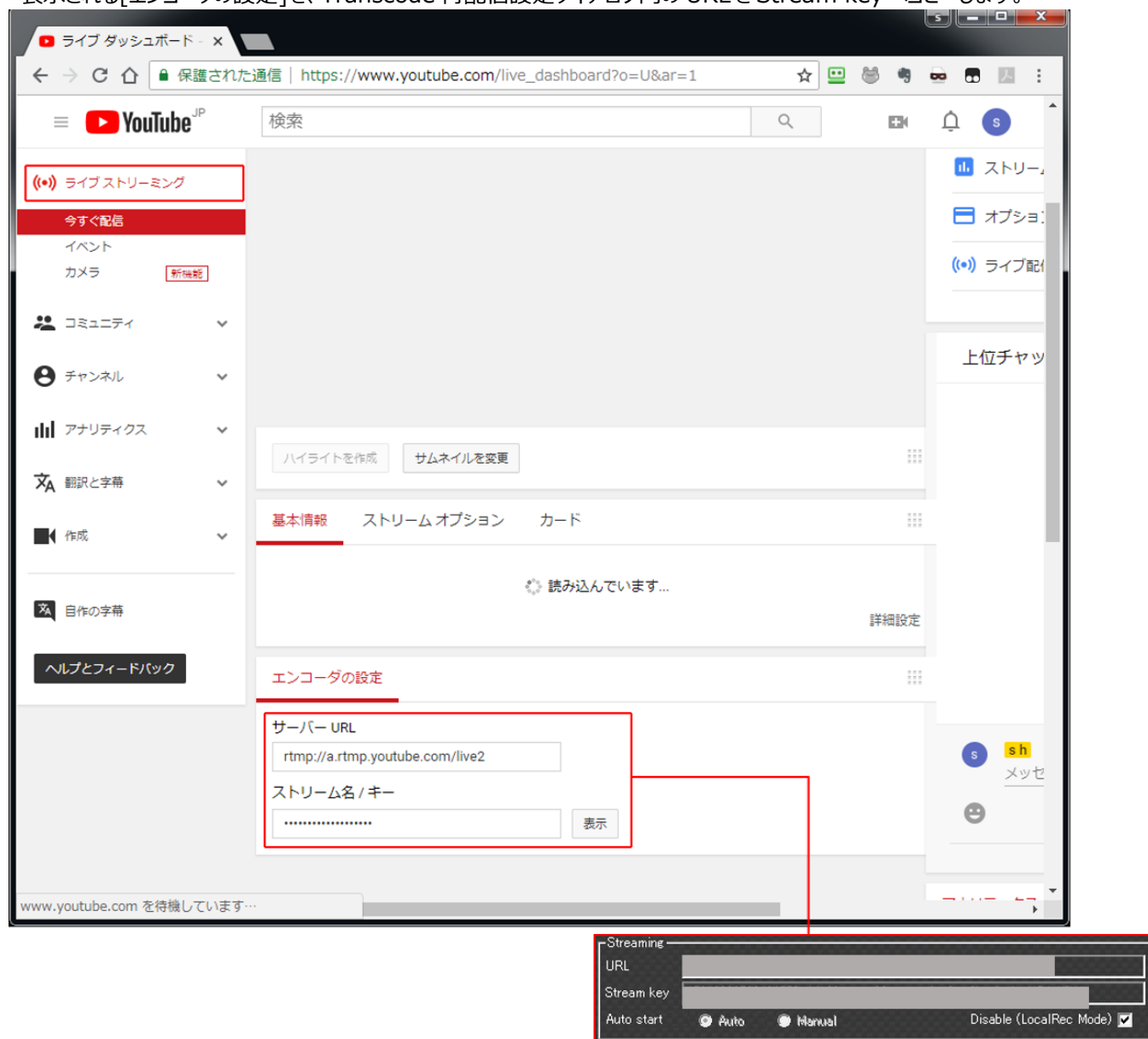


図 20. TRANSCODE 再配信設定例 (YOUTUBE)

### 3. Passthrough 再配信機能

(1) [VLC Media Player](#) をインストールします。

※動作確認済み VLC Media Player : v2.2.4

(2) VLC Media Player を起動し、[Media] – [Open Network Stream]を押下します。

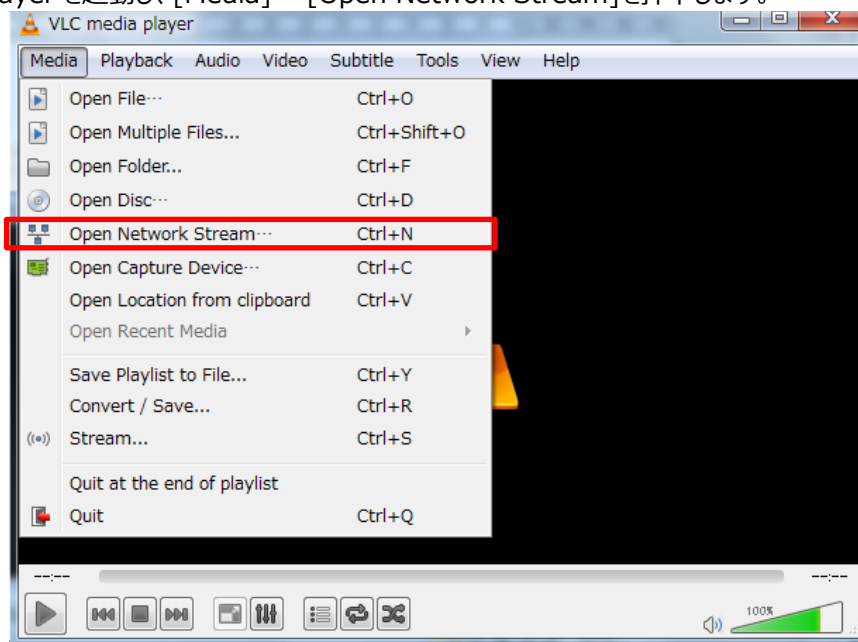


図 21. VLC MEDIA PLAYER

(3) network URL を下記のように指定します。

`rtsp://[HD View の IP アドレス]:20011/stc`

※上記の例は、HDView の ch1 で受信している映像を VLC Player で再生する場合です。ch2 以降の受信映像を再生する場合は、上記 URL に指定するポート番号を 20021(ch2), 20031(ch3), 20041(ch4) へ変更して下さい。

(4) Play ボタンを押下すると再生が開始されます。

※Passthrough(RTSP)再配信は、使用帯域幅の大きい配信です。ローカルネットワークによる限定閲覧を推奨します。

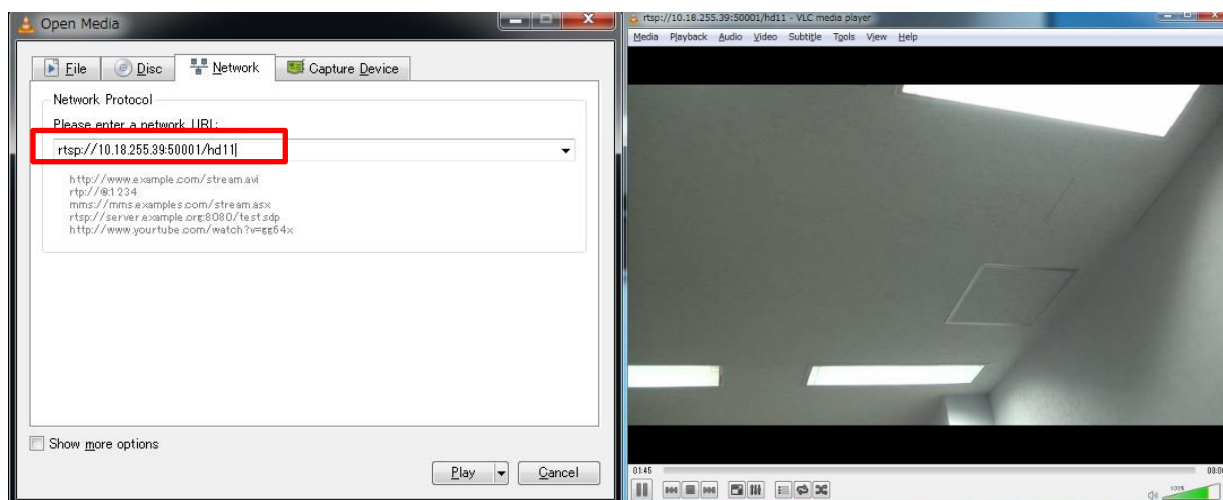


図 22. VLC MEDIA PLAYER(OPEN MEDIA ダイアログ)



## 4. 仕様

表 24. STC HD VIEW V5 の仕様

主な機能	同時接続数	4
	接続可能製品	STC Zao-X, Zao App 販売終了製品 : STC Zao-S, STC Zao
	符号化方式	VP8, H.265
	映像ビットレート	512~8000kbps ※STC Zao-X 16~10240kbps ※STC Zao 16~5120kbps ※STC Zao-S,Zao apps
外部出力	映像出力機	BlackmagicDesign Decklink Quad 2 (4ch 同時出力)
	対応信号形式	1080/59.94p,1080/50p,1080/29.97p,1080/25p,1080/59.94i, 1080/50i, 720/59.94p, 720/50p, 480/59.94i, 576/50i
	同期信号	3 値シンク
音声	符号化方式	Opus ※STC Zao-X Vorbis ※STC Zao-X 以外
	チャンネル	ステレオ ※STC Zao-X ステレオ/モノラル ※STC Zao-X 以外
	サンプリング	48kHz 固定 ※STC Zao-X 8~48kHz ※STC Zao-X 以外
	入力	PCM
	出力	PCM
	ビットレート	15.62~312.50kbps ※STC Zao-X 7.81~488.28kbps ※STC Zao-X 以外
動作環境	推奨ハードウェア	HP Z440 Workstation 以上
	対応 OS	Windows10 Pro 64bit
	CPU	Intel Xeon
	メモリ	16GB 以上

## 5. 付録

### 5.1. 待機中のチャンネルへ任意の画像を表示する

HD View V5 v5.0.8 以降では、待機中のチャンネルのプレビュー表示と外部出力へ任意の画像を表示することが可能です。HD View V5 をセットアップすると、サンプル画像もインストールされますので、すぐに本機能をお試しいただくことができます。

#### 表示方法の切り替え

スタートメニューに登録されたショートカットを実行した後、HD View V5 を再起動することにより、以下の 3 種類の表示方法を切り替えることができます。

#### (1) 画像表示 OFF (デフォルト)

「standby image setting (OFF, NTSC)」または「standby image setting (OFF, PAL)」を実行



#### (2) 静止画像を表示

「standby image setting (static image, NTSC)」または「standby image setting (static image, PAL)」を実行



## (3) 静止画像列を表示 (30 枚の連番画像ファイルをループ再生)

「standby image setting (image sequence, NTSC)」または「standby image setting (image sequence, PAL)」を実行

表示する画像を入れ替えたい場合

画像ファイル名と画像ファイル形式 (1920x1080, 24bit カラー, png) を、インストール時のデフォルト画像と合わせることで、任意の画像を表示することが可能です。

- 画像ファイル格納フォルダ :
  - NTSC : C:\Program Files (x86)\Smart-telecaster HD\STCView (NTSC)\x64\images\ch1 ~ ch4
  - PAL : C:\Program Files (x86)\Smart-telecaster HD\STCView (PAL\_B)\x64\images\ch1 ~ ch4
- 画像ファイル名 :
  - 静止画 : smart-telecaster.png
  - 静止画像列 : smart-telecaster00.png ~ smart-telecaster29.png

## 5.2. STC HD View で使用している OSS

表 25. 使用している OSS 一覧

OSS 名	Copyright	License
libvpx	WebM project	New BSD License
libvorbis	Xiph.Org Foundation	New BSD License
libogg	Xiph.Org Foundation	New BSD License
picojson	Cybozu Labs, Inc., Kazuho Oku	BSD 2-Clause "Simplified" License
libavcodec, libavformat, libavutil, libavfilter, libswscale, libswresample	ffmpeg.org	GNU Lesser General Public License, version 2.1
spdlog	Gabi Melman	MIT License
getopt	NetBSD Foundation	BSD 2-Clause License
json11	Dropbox	MIT License
httplib	Yuji Hirose	MIT License
cryptopp	Wei Dai	Boost Software License 1.0
pthread	Ross P. Johnson	GNU Lesser General Public License, version 2.1
openssl	The OpenSSL Project	the OpenSSL License and the original SSLeay license
msgpack	FURUHASHI Sadayuki	Boost Software License 1.0
opus	Xiph.Org, Skype Limited, Octasic, Jean-Marc Valin, Timothy B. Terriberry, CSIRO, Gregory Maxwell, Mark Borgerding, Erik de Castro Lopo	BSD 3-Clause License
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## 5.2.5. libavcodec, libavformat, libavutil, libavfilter, libswscale, libswresample

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Version 2.1, February 1999

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◀

## 5.2.12. openssl

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