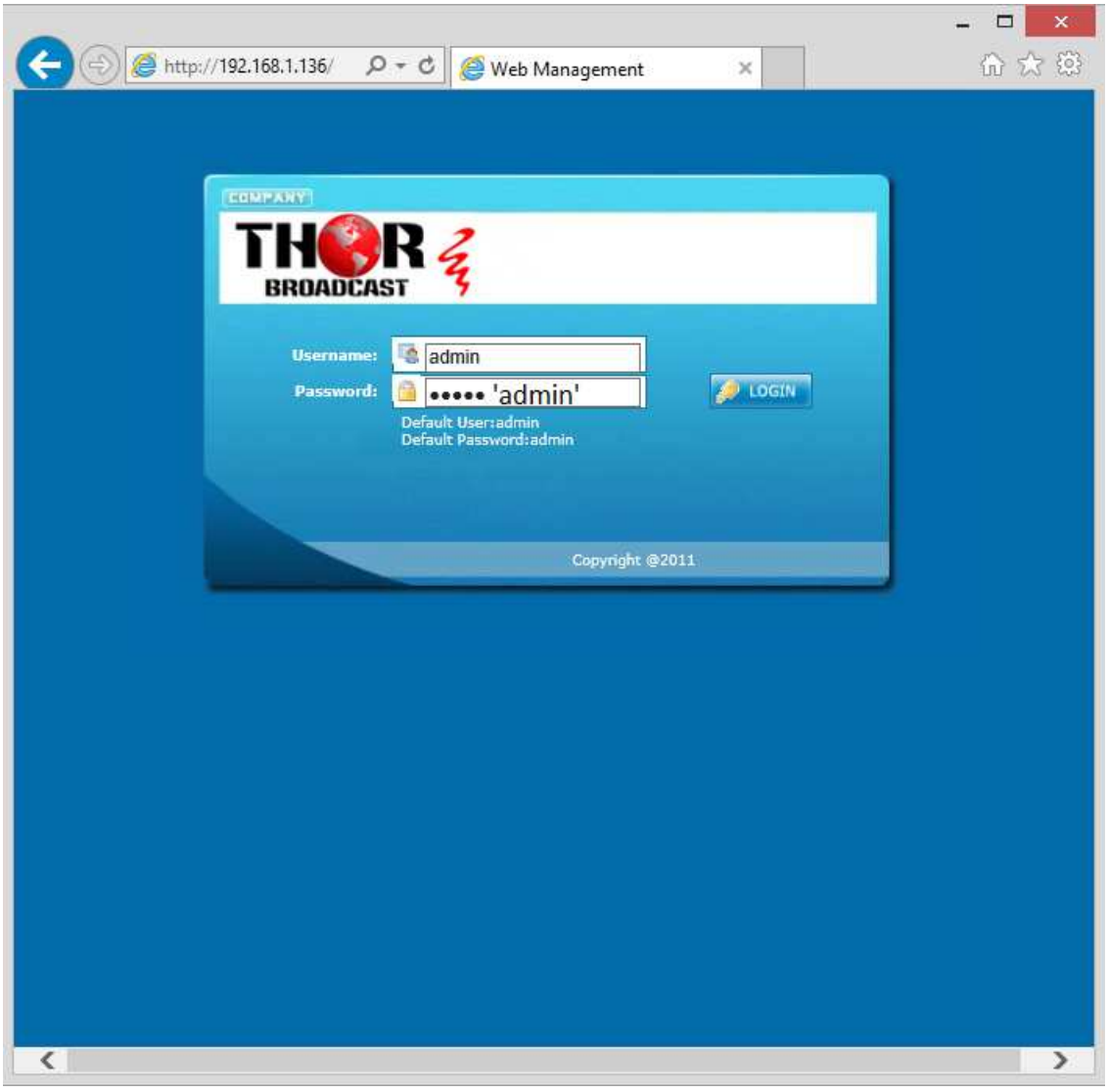
Encoder Modulator VCT virtual channel Setup

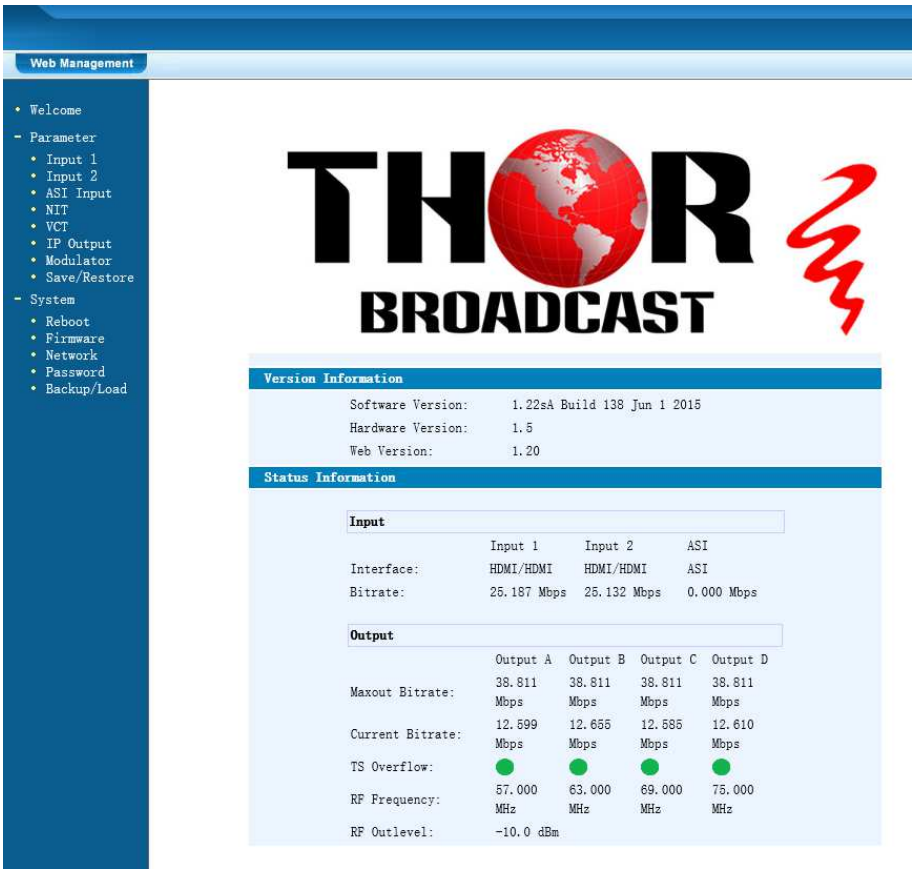


INTRO

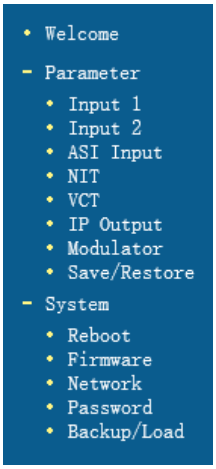
Thor Broadcast ships from our facility in Los Angeles with a preloaded NMS GUI firmware

Generally the IP address will be **192.168.0.136** ; this goes into any internet browser URL line

Once you're at the login screen; default username **and admin passwords are both: admin**



***If you do not have a green light at the bottom of this screen as shown to the left here, that means the unit is not reading the input(red light) which means that your resolution is above or below the units threshold of 720 to 1080 (could be 480 if using composite inputs)



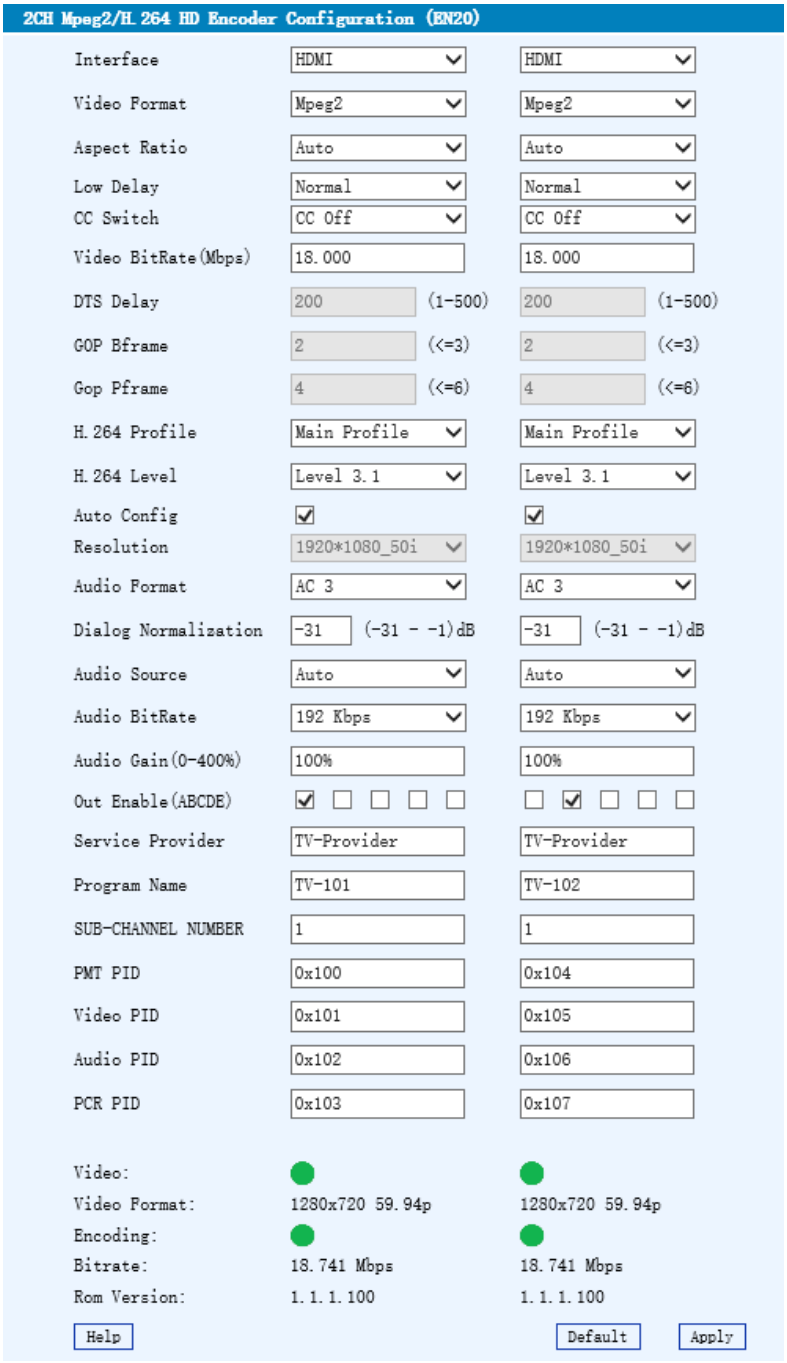
The Welcome Screen above has general information of your operating encoder

On the left hand side you can quickly switch to Thor's Parameters and System Control

Input 1 reflects the first TWO HDMI inputs 1 & 2

Input 2 reflects the next TWO HDMI inputs 3 & 4

In this example – we have inserted 4 HDMI inputs into our unit



INPUTS 1 & 2

You can see that there are a variety of ways to alter the functions and options using simple drop down menus when perusing the various menu options.

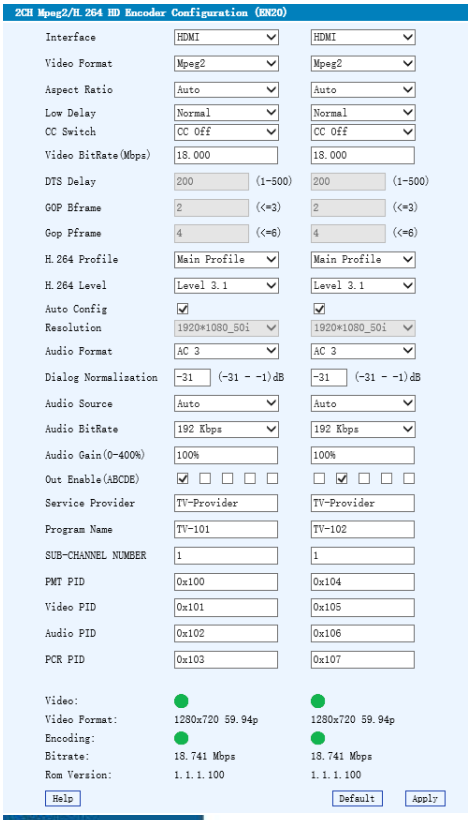
However Thor's unique hardware systems are developed to automate most of these options for you. It's important for you to always save and hit APPLY at the bottom to save the work you've done.

You can set up virtual channels and program ID features as well.

At the bottom the green light indicates the unit is operational and digesting the video stream at about 18mb/s.

If you have RED lights, there is a 99% certainty that this problem is related to resolution

If you are setting up an encoder with HDMI cables to STB's or DVD players; your settings screen should resemble the one to the left.



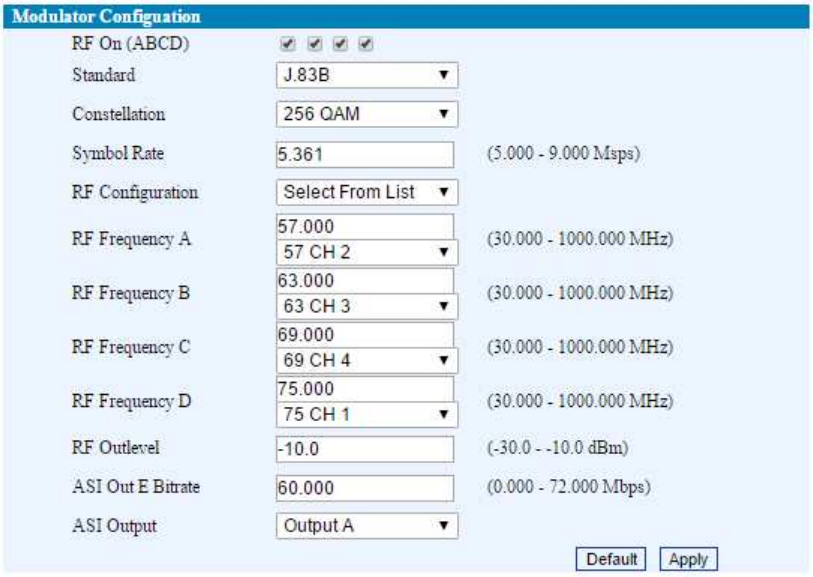
In this example we are converting HDMI to QAM

Audio is embedded – MPEG2 – CC OFF

Bitrate is about 18mb/s which is crystal clear HDTV running from a DVD player

The next page is a QAM Frequency chart which displays the frequency in megahertz you're converting to a channel ID # --

Below you see that the 4 channels are being tuned to 2,3,4,5 in a consecutive order

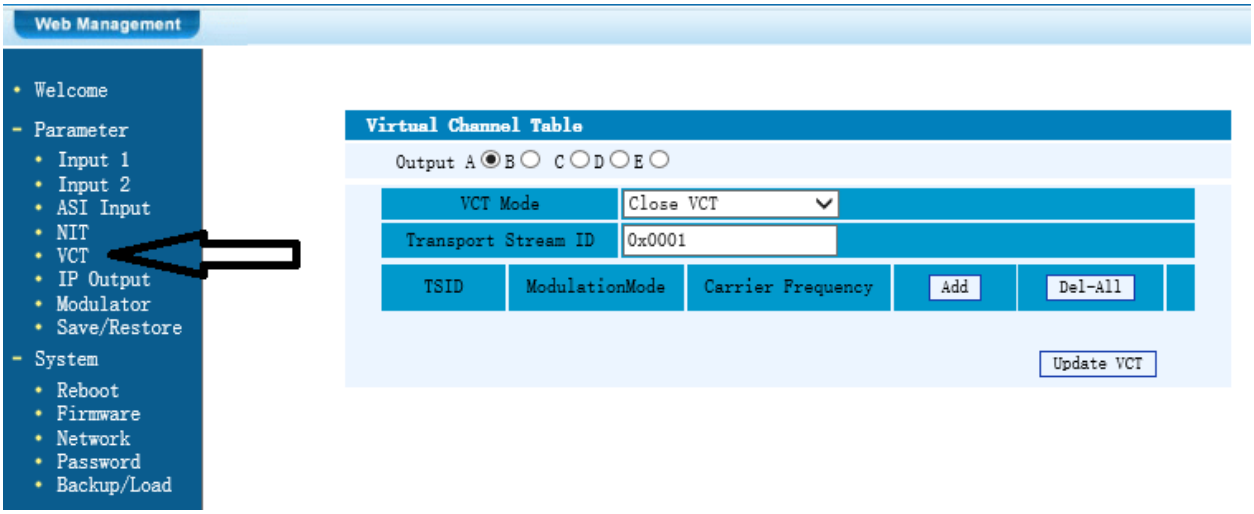


CATV QAM Channel Center Frequency - 54 MHz to 860 MHz

EIA CH.	MHz Center Frequency	EIA CH.	MHz Center Frequency	EIA CH.	MHz Center Frequency
2	57	42	333	87	603
3	63	43	339	88	609
4	69	44	345	89	615
5	79	45	351	90	621
6	85	46	357	91	627
95	93	47	363	92	633
96	99	48	369	93	639
97	105	49	375	94	645
98	111	50	381	100	651
99	117	51	387	101	657
14	123	52	393	102	663
15	129	53	399	103	669
16	135	54	405	104	675
17	141	55	411	105	681
18	147	56	417	106	687
19	153	57	423	107	693
20	159	58	429	108	699
21	165	59	435	109	705
22	171	60	441	110	711
7	177	61	447	111	717
8	183	62	453	112	723
9	189	63	459	113	729
10	195	64	465	114	735
11	201	65	471	115	741
12	207	66	477	116	747
13	213	67	483	117	753
23	219	68	489	118	759
24	225	69	495	119	765
25	231	70	501	120	771
26	237	71	507	121	777
27	243	72	513	122	783
28	249	73	519	123	789
29	255	74	525	124	795
30	261	75	531	125	801
31	267	76	537	126	807
32	273	77	543	127	813
33	279	78	549	128	819
34	285	79	555	129	825
35	291	80	561	130	831
36	297	81	567	131	837
37	303	82	573	132	843
38	309	83	579	133	849
39	315	84	585	134	855
40	321	85	591	135	861
41	327	86	597		

Virtual Channels

In order to create RF QAM Channels without decimal points, or in order to create a virtual channel, Thor Broadcast has a VCT menu option to create such results in your RF QAM Distiribution.



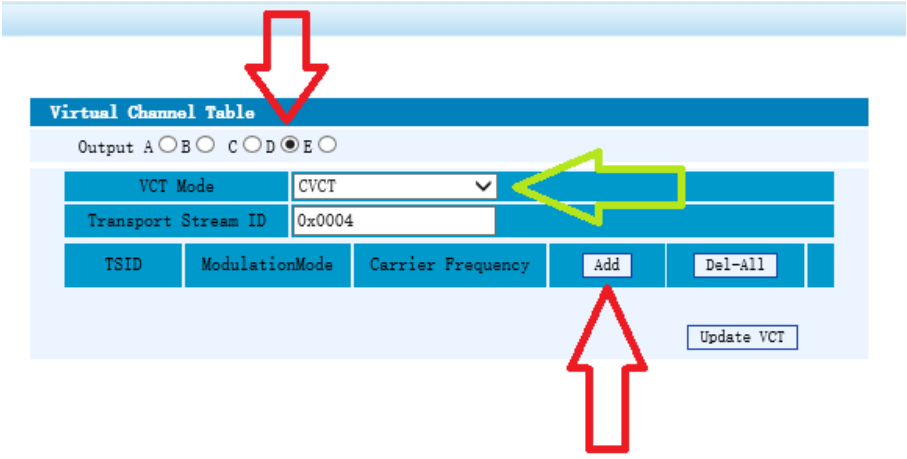
Since you can only modulate in a direct linear format; such as using channel 10, 11, 12, 13… VCT

Some headend's require a digital remap, some cable companies require different frequencies than channel numbers, and for adding a unit to an existing headend this VCT makes it easy to add any number of channels by using any open frequencies in the RF spectrum and assign simpler format visual channel numbers on your TV set.

EXAMPLE: Suppose you are installing a 4HDMI unit on an existing rack, the client needs to add channels 32, 33, 34, and 7. Frequencies 273, 279, & 285 are clear so adding channels 32, 33, 34 is simple, however in order to add channel 7 we must create a frequency inline for channel 35 (291mhz) and remap to VCT for channel #7 or frequency 177.

First select input 4 or D in the OUTPUT selection

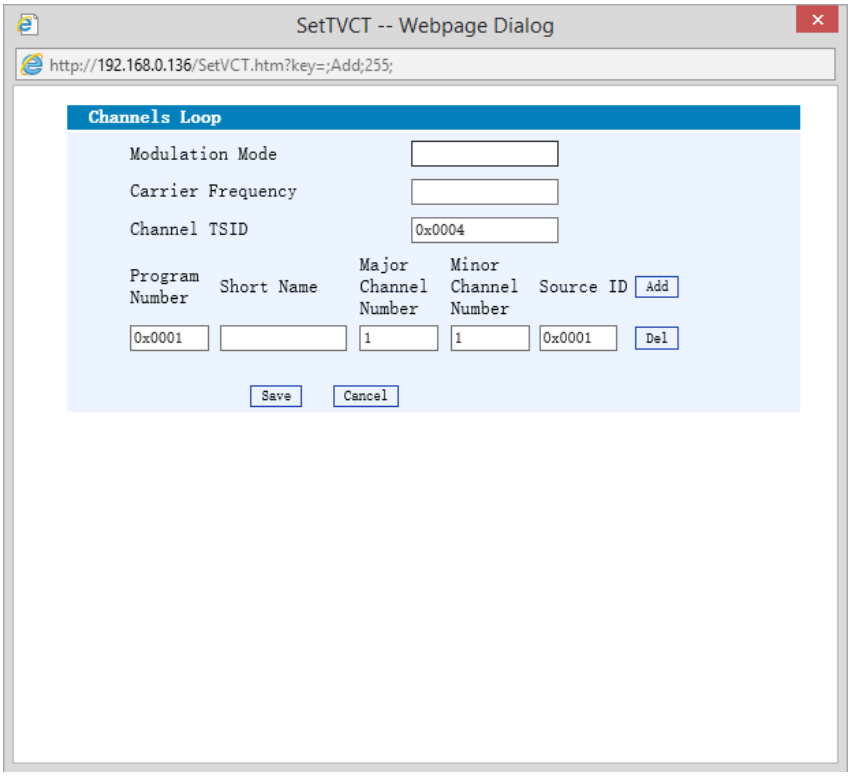
Next click ADD



Under VCT MODE: it must be set to CVCT

Next you will see a POP up window

PLEASE MAKE SURE YOU ARE USING MOZILLA, or EXPLORER, generally this firmware does not work well with either google chrome or safari.



There is essentially only a few changes that need to be made:

Modulation Mode:
leave blank

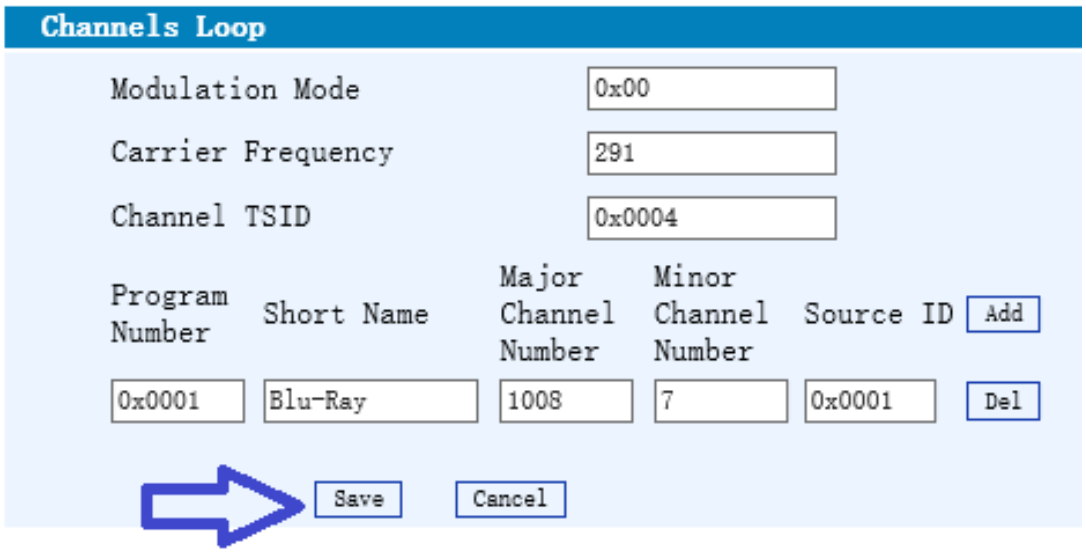
Carrier Freq: in this case we are using Ch 35 or 291mhz

Short Name: optional, in this case we'll use Blu-Ray

Major CH: This is the first # that you see on your TV, usually in decimal format

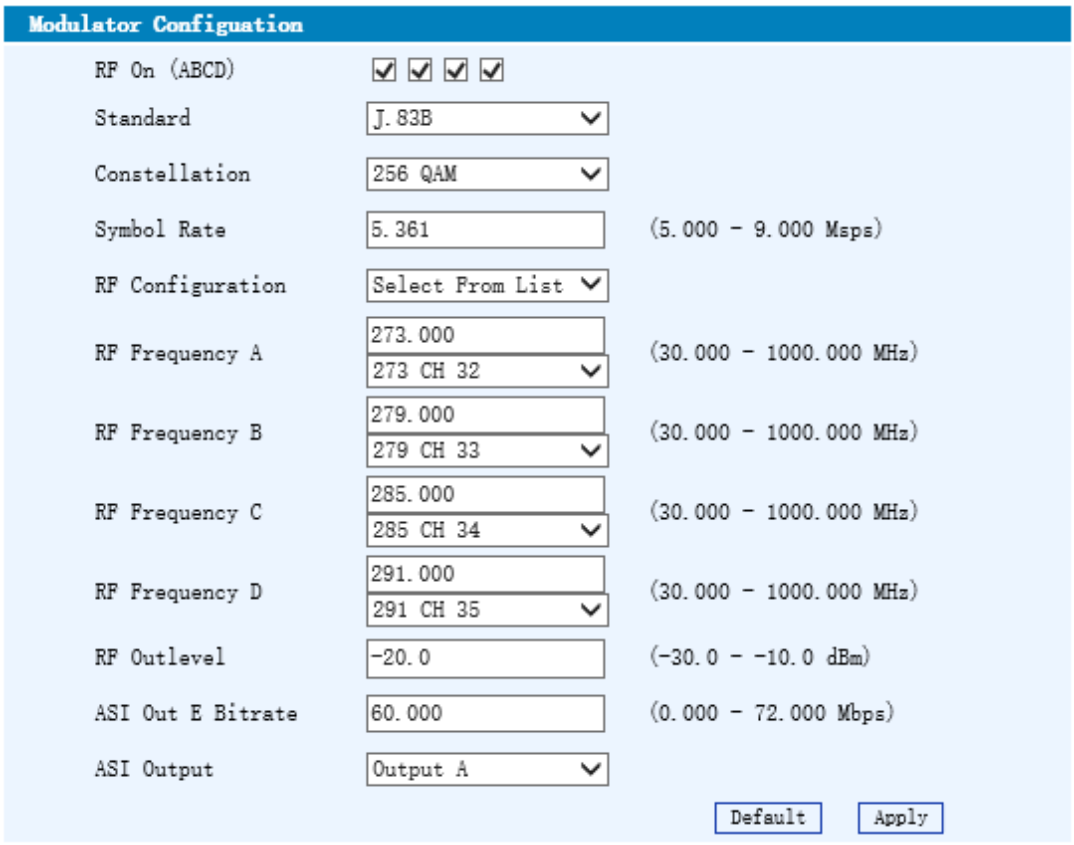
Minor CH: Number after decimal following Major CH

So in order to create a whole number without a decimal, all you need to do is put (1008) in the Major Box and then add 7 to the Minor Box. This will create a VCT on frequency 291, but will appear on your RF system as 7. In essence you are creating a virtual channel where there is an empty frequency.

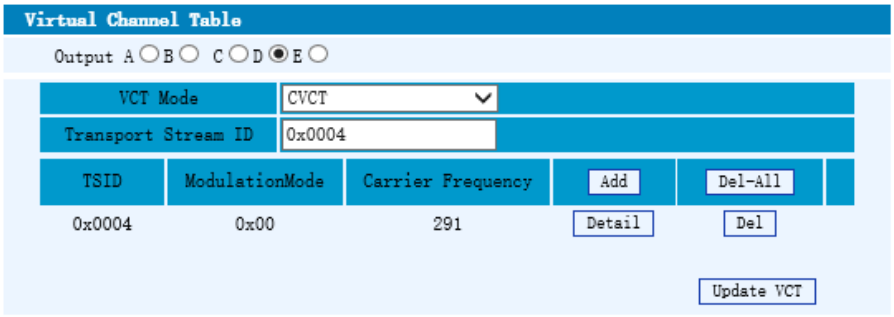


Also make sure to press SAVE to ensure your settings were added correctly.

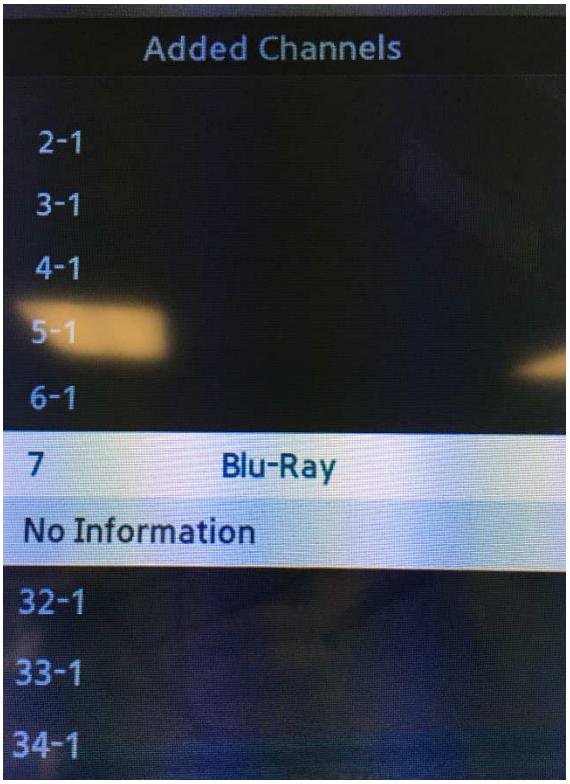
Now reverting back to your Modulator table, it should look like this:



VCT Table should look like this:



Now when you fire up the television and begin scrolling through the channel list you'll see our newly created VCT Channel, as shown below 7, 32, 33, & 34

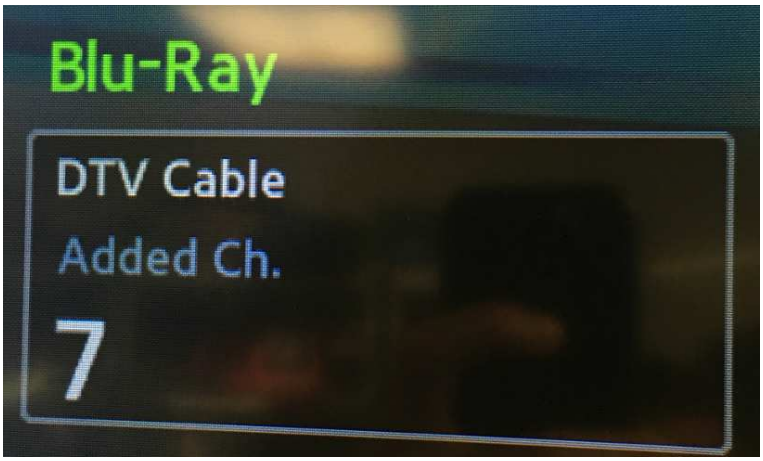


Again this is just an example, but you can see that there is no channel 35, because it has been digitally remapped to appear as channel 7 from Channel 35 or frequency 291.

Also note that because we added a title in – Blu Ray appears by channel # 7 on the TV set channel list

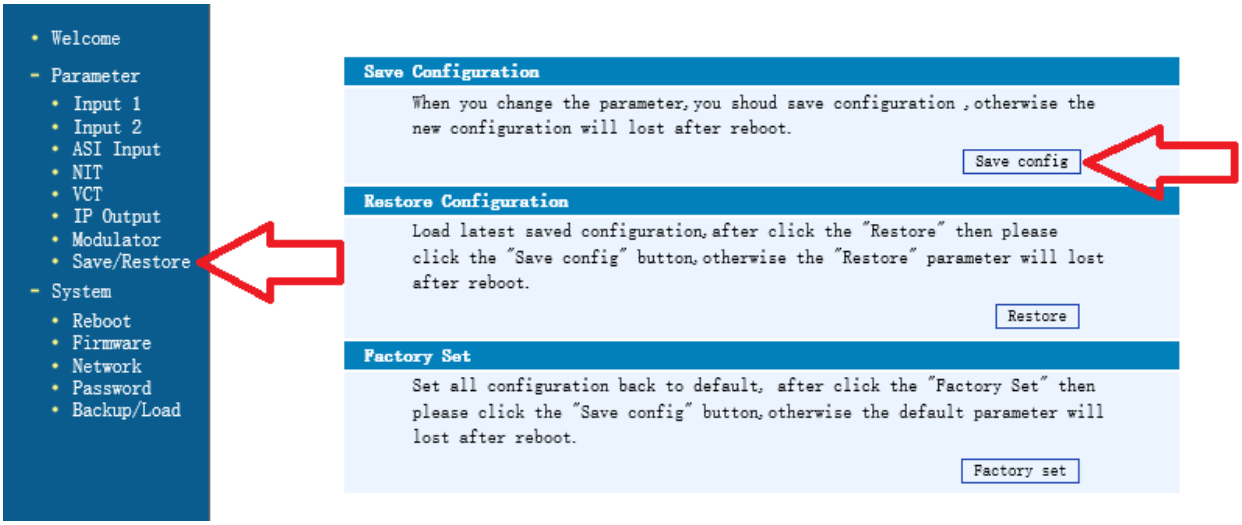
Also note that when you are scrolling through the TV channels we notice how under Channel 7 Blu-Ray also appears above it.

You can ideally set this up for every channel so your customers will always know what they are watching… ABC, FOX, CBS, ESPN



So, after adding in VCT for the other 3 inputs, we can go back to our TV and check the listings to ensure that all 4 HDMI inputs are accounted for.

FIRST always save your work

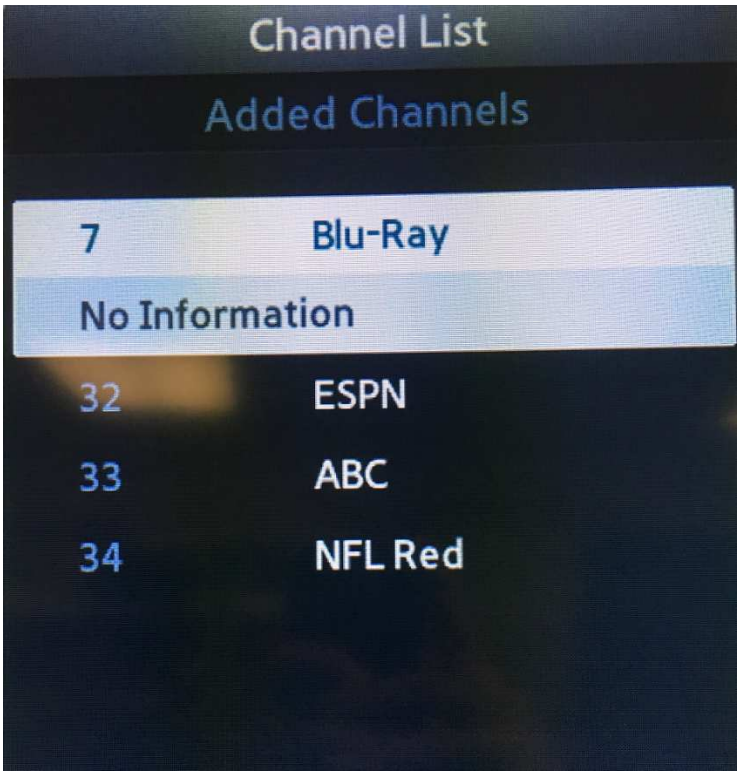


Click on the SAVE/RESTORE on the left hand menu, then click SAVE CONFIG.

Some notes about these procedures—

- Make sure after your settings are input that you need to ensure that your TV sets are acting in accordance with the changes you're making
- Not every TV set is created equal, some sets will automatically make changes when new lineup situations are addressed, some TV's will pick up the new channels while some legacy TV's will need to be rescanned for QAM channels in the TV setup guide.
- After saving settings on your Thor Encoder, also power cycle the unit as well. This restart helps the unit achieve optimal settings from the onset once changes are made

Once you rescan the TV and your settings on the Thor Encoder/Modulator are definitively correct, you should be able to rescan your TV set (we use Samsung at the Thor Broadcast Lab)



The Thor Modulator is broadcasting on frequencies of 273, 279, 285, & 291.

Using VCT we put CH 35 (freq 291) on Logical Channel # 7

We used the VCT for channels 32, 33, & 34 to eliminate decimal points and to label the channels accordingly with the faux labels in this example being ESPN, ABC, and NFL Redzone.

Also note that after you rescan your QAM tuner in your TV set, it eliminated all the other channels that we're not broadcasting (image from pg 9)

Now that you've completed these steps and confirmed everything is functioning as it should, you should now introduce this encoder to the rest of the RF QAM distribution headend by using the RF output from the Thor H-4ADHD via coax to the rest of the modulators using a combiner already found on the rack inside the headend room of the facility.

For Further Tech Support

1-800-521-Thor(8467)

support@thorfiber.com