

**"LIGHTHOUSE MODEL"**  
**TRANSITION FROM ATSC 1.0 TO**  
**ATSC 3.0**  
**IN SAN FRANCISCO**  
by Francis Chao  
fchao2@yahoo.com



Web location for this  
presentation:

<http://aztcs.apcug.org>

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# SUMMARY

The FCC has mandated that all existing ATSC 1.0 television channels that wish to upgrade to ATSC 3.0 are required to run both the existing ATSC 1.0 and new corresponding ATSC 3.0 channels until July 17, 2027. The cost-effective scheme to run both channels simultaneously is called "Lighthouse Model" transition.

# FCC'S SIMULCAST MANDATE

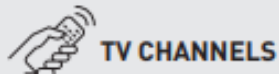
- <https://docs.fcc.gov/public/attachments/FCC-23-53A1.pdf>

# FCC'S SIMULCAST MANDATE (continued)

- [https://www.atsc.org/wp-content/uploads/2020/10/f-36-26-13322575\\_PAu3M4S9\\_WhitePaper\\_Lighthouse\\_TESTTREE\\_v2.pdf](https://www.atsc.org/wp-content/uploads/2020/10/f-36-26-13322575_PAu3M4S9_WhitePaper_Lighthouse_TESTTREE_v2.pdf)

# Virtual "Displayed" Channels Prior to Lighthouse Transition in San Francisco in 2022

**KRON-TV  
(RF CH. 7)**



**4.1 (ATSC1)  
="KCOP-DT"**

**4.2 (ATSC1)  
="KRON-TV"**

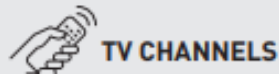
**4.3 (ATSC1)  
="Rewind TV"**

**4.4 (ATSC1)  
="Charge !"**

**4.5 (ATSC1)  
="Shop LC"**



**KTVU  
(RF CH. 31)**



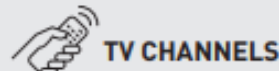
**2.1 (ATSC1)  
="KTVU-HD"  
="Fox"**

**2.2 (ATSC1)  
="Fox  
Weather"**

**2.3 (ATSC1)  
="Movies!"**

**2.4 (ATSC1)  
="Buzzr"**

**KNTV  
(RF CH. 13)**



**11.1 (ATSC1)  
="KNTV HD"  
="NBC"**

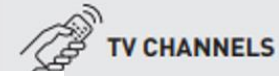
**11.2 (ATSC 1)  
="COZI TV"**

**48.3 (ATSC1)  
=" Telemundo"  
="KSTS"**

**48.4 (ATSC1)  
="TeleXitos"  
="KSTS-DT2"**

**11.5 (ATSC1)  
="NBCLX"**

**KPYX  
(= "KPIX +")  
(RF CH. 28)**



**44.1 (ATSC1)  
="KPXYX-DT"**

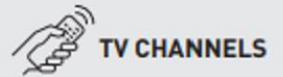
**44.2 (ATSC1)  
="TBD"**

**44.3 (ATSC1)  
="MeTV"**

**44.4 (ATSC1)  
="The Nest"**

**44.5 (ATSC1)  
="QVC 2"**

**KGO-TV  
(RF CH. 12 )**



**7.1 (ATSC1  
="KGO-HD "**

**7.2 (ATSC1)  
="LOCLish"**

**7.3 (ATSC1)  
="This TV"**

**7.4 (ATSC1)  
="HSN"**

**Lighthouse**

**KRON-TV  
(RF CH. 7)**



**Relocation of ATSC 1.0 Virtual Displayed Channels of the Lighthouse Station to Existing ATSC 1.0 TV Stations in San Francisco in March 2023**

**KTVU  
(RF CH. 31)**



TV CHANNELS

**KNTV  
(RF CH. 13)**



TV CHANNELS

**KPYX  
(= "KPIX +")  
(RF CH. 28)**



TV CHANNELS

**KGO-TV  
(RF CH. 12)**



TV CHANNELS

4.1 (ATSC1)  
= "KCOP-DT"

2.1 (ATSC1)  
= "KTVU-HD"  
= "Fox"

11.1 (ATSC1)  
= "KNTV HD"  
= "NBC"

44.1 (ATSC1)  
= "KPX-DT"

7.1 (ATSC1)  
= "KGO-HD "

4.2 (ATSC1)  
= "KRON-TV"  
= "Antenna TV"

2.2 (ATSC1)  
= "FOX  
Weather"

11.2 (ATSC 1)  
= "COZI TV"

44.2 (ATSC1)  
= "TBD"

7.2 (ATSC1)  
= "LOCLish"

4.3 (ATSC1)  
= "Rewind TV"

2.3 (ATSC1)  
= "Movies!

48.3 (ATSC1)  
= "Telemundo"  
= "KSTS"

44.3 (ATSC1)  
= "MeTV"

7.3 (ATSC1)  
= "This TV"

4.4 (ATSC1)  
= "Charge !"

2.4 (ATSC1)  
= "Buzzr"

48.4 (ATSC1)  
= "TeleXitos"  
= "KSTS-DT2"

44.4 (ATSC1)  
= "The Nest"

7.4 (ATSC1)  
= "HSN"

4.5 (ATSC1)  
= "Shop LC"

11.5 (ATSC1)  
= "NBCLX"

44.5 (ATSC1)"  
= "QVC 2"

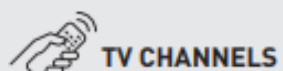
**Lighthouse**

**KRON-TV  
(RF CH. 7)**



**Relocation of ATSC 1.0 Virtual Displayed Channels of the Lighthouse Station to Existing ATSC 1.0 TV Stations in San Francisco in March 2023 (continued)**

**KTVU  
(RF CH. 31)**



~~2.1 (ATSC1)  
="KTVU-HD"  
="Fox"~~

~~2.2 (ATSC1)  
="Fox Weather"~~

~~2.3 (ATSC1)  
="Movies!"~~

~~2.4 (ATSC1)  
="Buzr"~~

~~4.4 (ATSC1)  
="KROP-DT"~~

~~4.5 (ATSC1)  
="Shop LC"~~

**KNTV  
(RF CH. 13)**



~~11.1 (ATSC1)  
="KNTV HD"  
="NBC"~~

~~11.2 (ATSC 1)  
="COZI TV"~~

~~48.3 (ATSC1)  
="Telemundo"  
="KSTS"~~

~~48.4 (ATSC1)  
="KSTS-DT2"~~

~~11.5 (ATSC1)  
="NBCLX"~~

~~4.2 (ATSC1)  
="KRON-TV"~~

**KPYX  
(= "KPIX +")  
(RF CH. 28)**



~~44.1 (ATSC1)  
="KPXY-DT"~~

~~44.2 (ATSC1)  
="TBD"~~

~~44.3 (ATSC1)  
="MeTV"~~

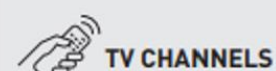
~~44.4 (ATSC1)  
="The Nest"~~

~~44.5 (ATSC1)  
="QVC 2"~~

~~4.3 (ATSC1)  
="Rewind TV"~~

~~4.4 (ATSC1)  
="Charge !"~~

**KGO-TV  
(RF CH. 12)**



~~7.1 (ATSC1)  
="KGO-HD "~~

~~7.2 (ATSC1)  
="LOCLish"~~

~~7.3 (ATSC1)  
="This TV"~~

~~7.4 (ATSC1)  
="HSN"~~

~~4.5 (ATSC1)  
="Shop LC"~~

~~4.1 (ATSC1)  
="KCOP-DT"~~

~~4.2 (ATSC1)  
="KRON-TV"~~

~~4.3 (ATSC1)  
="Rewind TV"~~

~~4.4 (ATSC1)  
="Charge !"~~

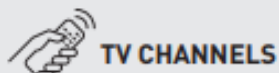
~~4.5 (ATSC1)  
="Shop LC"~~





**Lighthouse**

**KRON-TV  
(RF CH. 7)**



~~4.1 (ATSC1)  
="KCOP-DT"~~

~~4.2 (ATSC1)  
="KRON-TV"~~

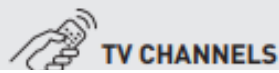
~~4.3 (ATSC1)  
="Rewind TV"~~

~~4.4 (ATSC1)  
="Charge!"~~

~~4.5 (ATSC1)  
="Shop LC"~~

**Relocation of ATSC 1.0 Virtual Displayed Channels of the Lighthouse Station to Existing ATSC 1.0 TV Stations in San Francisco in March 2023 (continued)**

**KTVU  
(RF CH. 31)**



2.1 (ATSC1)  
="KTVU-HD"  
="Fox"

2.2 (ATSC1)  
="Fox Weather"

2.3 (ATSC1)  
="Movies!"

2.4 (ATSC1)  
="Buzzr"

4.1 (ATSC1)  
="KCOP-DT"

**KNTV  
(RF CH. 13)**



11.1 (ATSC1)  
="KNTV HD"  
="NBC"

11.2 (ATSC1)  
="COZI TV"

48.3 (ATSC1)  
="Telemundo"  
="KSTS"

48.4 (ATSC1)  
="TeleXitos"  
="KSTS-DT2"

11.5 (ATSC1)  
="NBCLX"

4.2 (ATSC1)  
="KRON-TV"

**KPYX  
(= "KPIX +")  
(RF CH. 28)**



44.1 (ATSC1)  
="KPXY-DT"

44.2 (ATSC1)  
="TBD"

44.3 (ATSC1)  
="MeTV"

44.4 (ATSC1)  
="The Nest"

44.5 (ATSC1)  
="QVC 2"

4.3 (ATSC1)  
="Rewind TV"

4.4 (ATSC1)  
="Charge!"

**KGO-TV  
(RF CH. 12)**



7.1 (ATSC1)  
="KGO-HD"

7.2 (ATSC1)  
="LOCLish"

7.3 (ATSC1)  
="This TV"

7.4 (ATSC1)  
="HSN"

4.5 (ATSC1)  
="Shop LC"

# Creation of ATSC 3.0 Simulcasted Virtual "Displayed Channels" at the Upgraded Lighthouse Station

**Lighthouse**  
**KRON-TV**  
 (RF CH. 7)



ATSC 3.0

TV CHANNELS

**KTVU**  
 (RF CH. 31)



ATSC 1.0

TV CHANNELS


**KNTV**  
 (RF CH. 13)



ATSC 1.0

TV CHANNELS


**KPYX**  
 (= "KPIX +")  
 (RF CH. 28)



ATSC 1.0

TV CHANNELS

**KGO-TV**  
 (RF CH. 12)



ATSC 1.0

TV CHANNELS

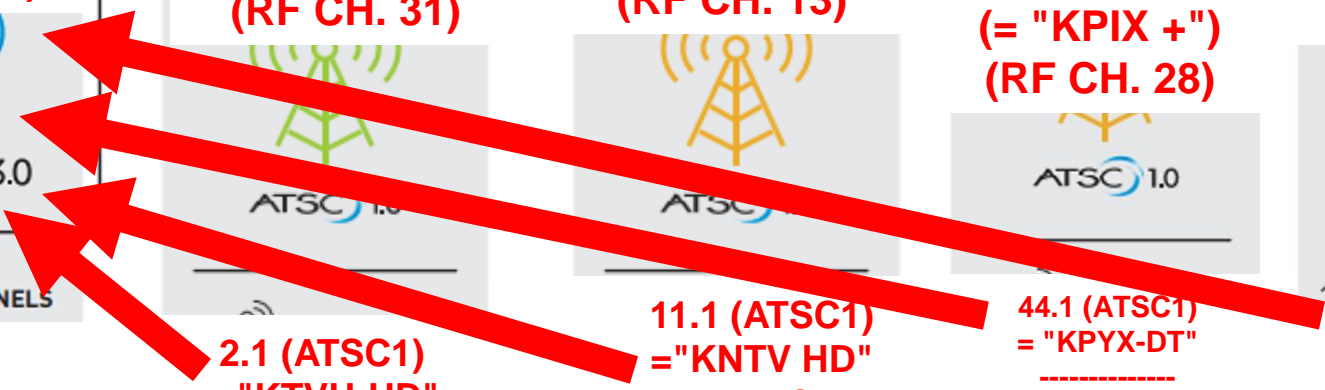
- ~~4.1 (ATSC1)~~  
~~= "KCOP-DT"~~
- ~~4.2 (ATSC1)~~  
~~= "KRON-TV"~~
- ~~4.3 (ATSC1)~~  
~~= "Rewind TV"~~
- ~~4.4 (ATSC1)~~  
~~= "Charge !"~~
- ~~4.5 (ATSC1)~~  
~~= "Shop LC"~~

- 2.1 (ATSC1)  
= "KTVU-HD"  
= "Fox"
- 2.2 (ATSC1)  
= "Fox Weather"
- 2.3 (ATSC1)  
= "Movies!"
- 2.4 (ATSC1)  
= "Buzzr"
- 4.1 (ATSC1)  
= "KCOP-DT"

- 11.1 (ATSC1)  
= "KNTV HD"  
= "NBC"
- 11.2 (ATSC 1)  
= "COZI TV"
- 48.3 (ATSC1)  
= "Telemundo"  
= "KSTS"
- 48.4 (ATSC1)  
= "TeleXitos"  
= "KSTS-DT2"
- 11.5 (ATSC1)  
= "NBCLX"
- 4.2 (ATSC1)  
= "KRON-TV"

- 44.1 (ATSC1)  
= "KPXY-DT"
- 44.2 (ATSC1)  
= "TBD"
- 44.3 (ATSC1)  
= "MeTV"
- 44.4 (ATSC1)  
= "The Nest"
- 44.5 (ATSC1)  
= "QVC 2"
- 4.3 (ATSC1)  
= "Rewind TV"
- 4.4 (ATSC1)  
= "Charge !"

- 7.1 (ATSC1)  
= "KGO-HD "
- 7.2 (ATSC1)  
= "LOCLish"
- 7.3 (ATSC1)  
= "This TV"
- 7.4 (ATSC1)  
= "HSN"
- 4.5 (ATSC1)  
= "Shop LC"



Lighthouse

KRON-TV  
(RF CH. 7)



# Creation of ATSC 3.0 Simulcasted Virtual "Displayed Channels" at the Upgraded Lighthouse Station

KTVU  
(RF CH. 31)



KNTV  
(RF CH. 13)



KPYX  
(= "KPIX +")  
(RF CH. 28)



KGO-TV  
(RF CH. 12)



2.1 (ATSC3)  
= "KTVU-HD"

2.1 (ATSC1)  
= "KTVU-HD"  
= "Fox"

11.1 (ATSC1)  
= "KNTV HD"  
= "NBC"

44.1 (ATSC1)  
= "KPXY-DT"

7.1 (ATSC1)  
= "KGO-HD"

4.1 (ATSC3)  
= "KRON-TV"

2.2 (ATSC1)  
= "Fox Weather"

11.2 (ATSC 1)  
= "COZI TV"

44.2 (ATSC1)  
= "TBD"

7.2 (ATSC1)  
= "LOCLish"

5.1 (ATSC3)  
= "KPIX-TV"  
= "CBS"

2.3 (ATSC1)  
= "Movies!"

48.3 (ATSC1)  
= "Telemundo"  
= "KSTS"

44.3 (ATSC1)  
= "MeTV"

7.3 (ATSC1)  
= "This TV"

7.1 (ATSC3)  
= "KGO-HD"  
= "ABC"

2.4 (ATSC1)  
= "Buzzr"

48.4 (ATSC1)  
= "TeleXitos"  
= "KSTS-DT2"

44.4 (ATSC1)  
= "The Nest"

7.4 (ATSC1)  
= "HSN"

11.1 (ATSC3)  
= "KNTV"  
= "NBC"

4.1 (ATSC1)  
= "KRON-T"

11.5 (ATSC1)  
= "NBCLX"

4.3 (ATSC1)  
= "Rewind  
TV"

4.5 (ATSC1)  
= "Shop LC"

14.1 (ATSC3)  
= "KDTV-TV"  
= "Univision"

4.2 (ATSC1)  
= "KRON-TV"

4.4 (ATSC1)  
= "Charge !"

**Lighthouse**

**KRON-TV  
(RF CH. 7)**



**2.1 (ATSC3)  
= "KTVU-HD"**

**4.1 (ATSC3)  
= "KRON-TV"**

**5.1 (ATSC3)  
= "KPIX-TV"  
= "CBS"**

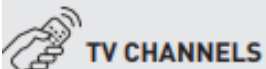
**7.1 (ATSC3)  
= "KGO-HD"  
= "ABC"**

**11.1 (ATSC3)  
= "KNTV"  
= "NBC"**

**14.1 (ATSC3)  
= "KDTV-TV"  
= "Univision"**

**Creation of ATSC 3.0 **Simulcasted** Virtual "Displayed Channels" at the Upgraded Lighthouse Station (continued)**

**KTVU  
(RF CH. 31)**



**2.1 (ATSC1)  
= "KTVU-HD"  
= "Fox"**

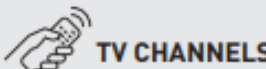
**2.2 (ATSC1)  
= "Fox Weather"**

**2.3 (ATSC1)  
= "Movies!"**

**2.4 (ATSC1)  
= "Buzzr"**

**4.1 (ATSC1)  
= "KRON-T"**

**KNTV  
(RF CH. 13)**



**11.1 (ATSC1)  
= "KNTV HD"  
= "NBC"**

**11.2 (ATSC 1)  
= "COZI TV"**

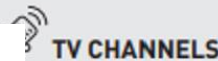
**48.3 (ATSC1)  
= "Telemundo"  
= "KSTS"**

**48.4 (ATSC1)  
= "TeleXitos"  
= "KSTS-DT2"**

**11.5 (ATSC1)  
= "NBCLX"**

**4.2 (ATSC1)  
= "KRON-TV"**

**KPYX  
(= "KPIX +")  
(RF CH. 28)**



**44.1 (ATSC1)  
= "KPXY-DT"**

**44.2 (ATSC1)  
= "TBD"**

**44.3 (ATSC1)  
= "MeTV"**

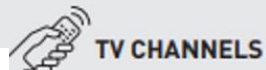
**44.4 (ATSC1)  
= "The Nest"**

**44.5 (ATSC1)  
= "QVC 2"**

**4.3 (ATSC1)  
= "Rewind  
TV"**

**4.4 (ATSC1)  
= "Charge !"**

**KGO-TV  
(RF CH. 12)**



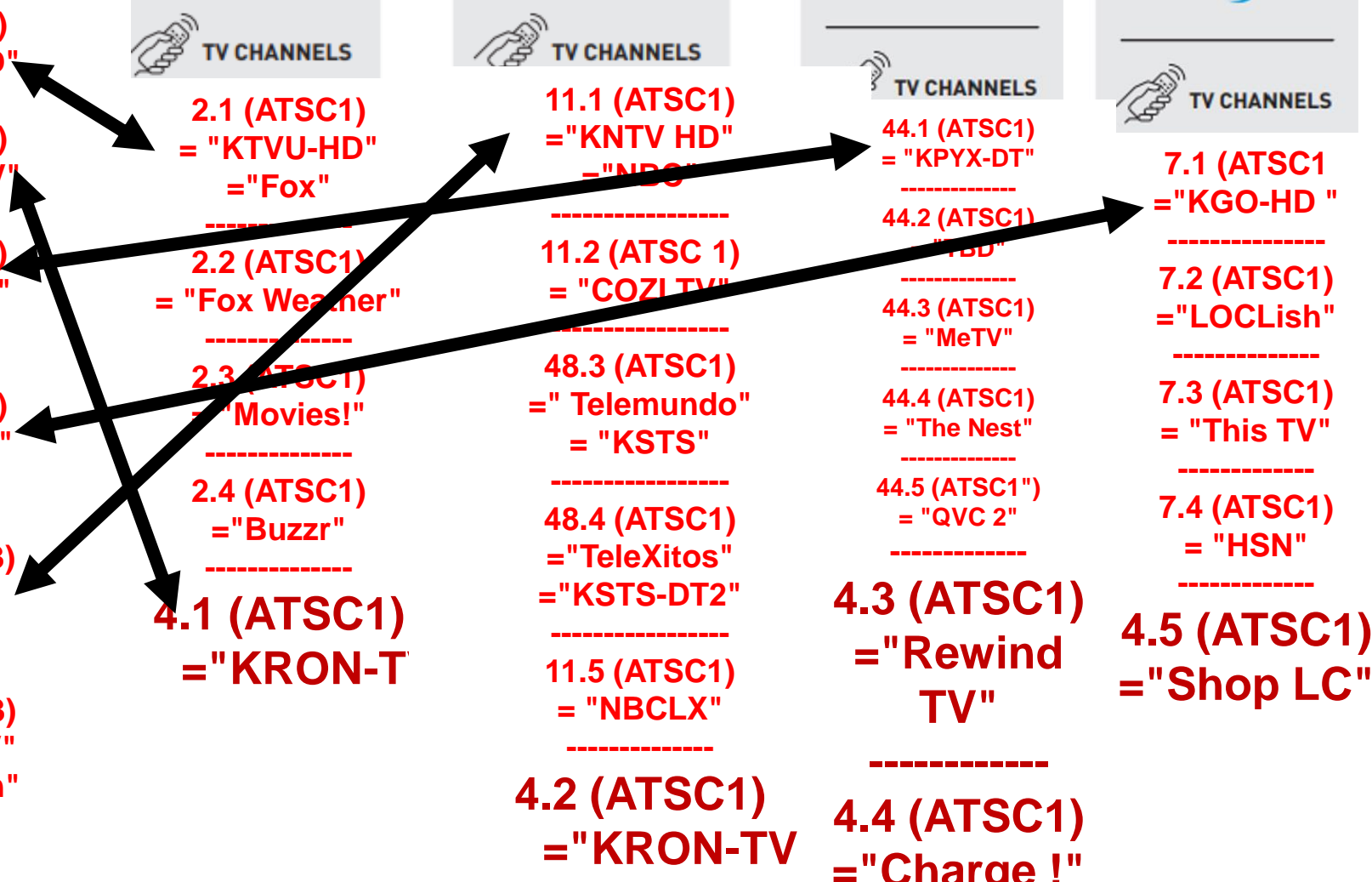
**7.1 (ATSC1)  
= "KGO-HD "**

**7.2 (ATSC1)  
= "LOCLish"**

**7.3 (ATSC1)  
= "This TV"**

**7.4 (ATSC1)  
= "HSN"**

**4.5 (ATSC1)  
= "Shop LC"**



# NET RESULTS

- The 5 most powerful TV channels in San Francisco now "simulcast" in both the "NextGen" ATSC 3.0 and the legacy ATSC 1.0 formats
- The "Lighthouse" station called KRON-TV simulcasts main 4.1 subchannel, while its other subchannels of 4.2, 4.3, 4.4, and 4.5 are now transmitted from the legacy ATSC 1.0 stations

