



DX MONITOR

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IRCA welcomes: **Eric Floden**-Vancouver BC(rejoin), **Dan Sys**-Aldergrove BC(rejoin), **Vincent Ferme**-Ottawa ON (rejoin), **Ed Muro**-Long Island NY, **Joseph Stephen McDonald**-Mayne Island BC, **Peter Laws**-Norman OK, **R Dennis Breda**-Medina OH and **Joel Rochow**-Arlington VA... zowie! Please report often!! Apparently I goofed big time last issue and only published part of Bruce Conti's excellent article. The entire article appears this time. No tips were received for the Verification Signers column during June, so there is no column this issue. Send your tips to Steve Howe – showe@albany.edu. Next **Seattle** deadline **Monday 7/16/18 6 PM PLT** (3 week break) – pb.

2018 IRCA Convention

The 2018 IRCA convention will be held at the Best Western Plus Charles Inn in St Charles MO on September 7 and 8 2018. The hotel is located at 1425 S Fifth Street in St Charles, NW of I-70 exit 229B, or the first exit west of the Missouri River, eight miles west of the Lambert St Louis International Airport. The room rate is \$104.99 a night for either a standard king or two queens. The phone number to call the hotel directly to make reservations for that weekend is (636) 946-6936 or toll-free at 1-888-274-0988. When calling to make the reservation, you must mention the code IRCA to get the rate. There is a block of 30 rooms reserved at that rate for each night for your choice of a single or double bed, your choice. Reservations must be made by August 7 2018. One note, if all the rooms for this block sell out, then the meeting room at the hotel will be complementary. **Registration for IRCA members is \$0**; registration for non-members is \$25 per person with free breakfast. There will be a tentative radio tour of KCLC FM 89.1 at Lindenwood College in St Charles as well as another possible radio tour and a possible tentative radio tower visit. The annual Banquet is out of pocket and at **Culpepper's**, just down the street from the hotel at 3010 W Clay St, St Charles MO 63301 (burgers, catfish, broccoli Alfredo pasta, chicken strips, etc – <https://www.culpeppers.com/Home>). Your host for the convention is **Ken Hawkins**. You can either email him at StLouisHerdFan@gmail.com or you can call him on this cell phone at (636) 577-4295. Registration and auction items can be sent to **4034 San Fernando Ln, St Charles MO 63304-2829**.

Make your plans and reservations now for the 2018 IRCA convention as this will probably be one of the best! **All DXers are welcome!**

This year's **IRCA** convention will be an excellent chance to re-connect with old friends and to share DX stories. Speaking of sharing, we issue our annual **call to action** for those who wish to present a talk or paper during the convention. As you know, this can be as *formal* or *informal* as you want. To make it easier, we can provide you with audio-visual support, including slide-preparation and display.

If you're interested in sharing your experiences... or if you want to present questions for discussion that might lead to a better understanding of a particular aspect of your own DXing, please contact Mark Durenberger at Mark4@durenberger.com

WRTH Bargraph Frequency Guide A18 – Now Available – Buy your CD or Download today!

We are delighted to announce the availability of the new WRTH Bargraph Frequency Guide for the A18 season. The CD contains the complete, and monitored, A18 international broadcasts on LW, MW and SW, and fully updated domestic shortwave, displayed as a pdf colour bargraph. There are also other pdf and xls files to help you get the most out of the Bargraph. All these files are also available on a downloadable Zip file.

If you have not yet got your copy of WRTH 2018 then why not buy one now. Readers in the USA can also buy from **Amazon.com**.

The CD and Download are only available from the WRTH site. Visit our website (http://www.wrth.com/_shop) to find out more and to order a copy. I hope you enjoy using this new Frequency Guide.



IRCA PRESIDENT'S REPORT – Bruce Portzer – 6546 19th Ave NE – Seattle WA 98115
E-mail: portzerbt@gmail.com

The Board recently voted on one more spending proposal covering the costs of the 2018 convention.

Proposal 28.1.29 "Free convention registration to IRCA members (excluding banquet which often times is based upon what the person orders). This might also encourage folks to join IRCA just to get free registration, especially if the new dues rate is approved. The IRCA Bookstore to provide convention funds in advance if necessary." Submitted by **Phil Bytheway**

Passed by a vote of 6-1, with **Steve Howe** opposing. Bruce



BROADCASTING INFORMATION – Robert J Wien – 14051 Belle Chasse Blvd #415 – Laurel MD 20707
E-mail: wienbob@aol.com Phone: 301-477-3733 Column Deadlines: Saturdays

DATE OF COLUMN: June 16 2018 **Column data span:** June 02-16 2018, Data courtesy of **Stationintel.com**, FCC database and member contributions.

CALL CHANGES

FREQ	OLD CALL	CITY OF LICENSE	NEW CALL
940	WCSW	Shell Lake, WI	WXNK
1070	WSCP	Sandy Creek-Pulaski, NY	WZUN
1230	KCOQ	Steamboat Springs, CO	KTYV
1230	KTYV	Steamboat Springs, CO	KKSB (only KTYV temporarily-ye ed)
1280	WJST	New Castle, PA	WUZZ
1480	WUKB	Neon, KY	WNKW
1580	WLAA	Bitthlo, FL	WNTF

FORMAT, SLOGAN AND SILENT STATUS CHANGES

FREQ	CALL	CITY OF LICENSE	NEW INFORMATION
610	WTEL	Philadelphia, PA	old slogan: "SportsRadio 610", new: "610 ESPN"
620	KTAR	Phoenix, AZ	old slogan: "ESPN Phoenix 620 AM", new: "Arizona Sports 98.7"
850	WKVL	Knoxville, TN	was country, now sports, old slogan: "Pure Country", new: "Rocky Top Sports"
880	KLRG	Sheridan, AR	was silent, now religious teaching
	WPEK	Fairview, NC	was talk, now ESPN Radio Network, old slogan: "The Revolution", new: "ESPN Asheville 92.9-800-1400"
920	KLMR	Lamar, CO	was classic country, now news/talk, CBS Sports Radio sports, old slogan: "Giant Of The High Plains", new: "News Radio 920"

940	WXNK	Shell Lake, WI	was talk, now rock, old slogan: "Wisconsin's Talk Station", new: "Ink 92.7"
990	WREJ	Richmond, VA	old slogan: "Rejoice 990", new: "Rejoice!"
1010	KDLA	De Ridder, LA	now silent
1040	WYSL	Avon, NY	old slogan: "News 1040 AM WYSL", new: "WYSL 1040 AM 92.1 FM"
1090	KBOZ	Bozeman, MT	was talk, now new unknown format
1130	WHHW	Hilton Head Island, SC	was adult alternative, now oldies, old slogan: "93.5 The Island", new: "FM 96.1 1130 AM The Island"
1170	WWLE	Cornwall, NY	was news, now Spanish, old slogan: "Your Source For News", new: "1170 El Poder"
	WCXN	Claremont, NC	was silent, back on with new unknown format
1220	WAYE	Birmingham, AL	old slogan: "98.3 La Jefa", new: "98.3 1200 1500 La Jefa"
1230	KOBB	Bozeman, MT	now silent
1290	WCBL	Benton, KY	now silent, changes secondary format from classic country to silent
1300	KLER	Orofino, ID	old slogan: "US Country", new: "Clearwater Country"
1340	KOLE	Port Arthur, TX	was silent, now talk
1390	WPLM	Plymouth, MA	now silent
1400	WTSL	Hanover, NH	was sports, now new unknown format
	WMXF	Waynesville, NC	was talk, now ESPN Radio Network, old slogan: "News Radio 570", new: "ESPN Asheville 92.9-800-1400"
	KSRR	Provo, UT	now silent
1410	WBBX	Kingston, TN	was religious teaching, now new unknown format
1420	WWSZ	Decatur, GA	was unknown format, now urban contemporary, adds slogan: "Streetz 94.5"
	WBSA	St Albans, VT	was silent, now Bloomberg Radio Network business news
1450	KYLW	Lockwood, MT	was silent, now urban contemporary, adds slogan: "Wild 104 Montana"
1470	XERCN	Tijuana, BCN	old slogan: "Uniradio Informa", new: "RCN 1470"
1490	KOMJ	Omaha, NE	old slogan: "Boomer 1490", new: "Boomer 104.1 and 1490"
1500	WQCR	Alabaster, AL	was Spanish adult hits, now regional Mexican, old slogan: "Juan AM 1500", new: "98.3 1200 1500 La Jefa"
1520	WSVX	Shelbyville, IN	old slogan: "Giant 96", new: "Giant FM"
1580	WDAB	Travelers Rest, SC	now silent
1620	WNRP	Gulf Breeze, FL	old slogan: "NewsRadio 1620", new: "NewsRadio 92.3 FM 1620 AM"

MEMBER CONTRIBUTION

Received at HQ from **Jon Pearkins** (pb):

Bozeman MT lost KBOZ-1090 and KOBB-1230 on June 1st as both stations went silent due to long-expired licenses resulting from the long term health issues of the owner, Bill Reier.

Well, 6 more days till 1st day of summer, and next weekend I'll be also working Field Day for my local ham radio club in Laurel MD. Very hot here in Laurel with temperatures in the 90's today (6/17). DX has slowed down considerably but will start picking up again after the summer solstice. If you go on vacation and hear something interesting, report to your respective columns, including this one if it's a hot tip! Have a great rest of June, 73's. Bob Wien



CANADIAN RADIO NEWS – Dan Sys
E-mail: sysdan@gmail.com

Quick note from **Jon Pearkins**

960 ON Mississauga CKNT On the air full-time with classical music and female Test announcement, running licensed non-directional 2KW Day/280 watts Night. Expected format, after required Test Period, is News/Talk.



WESTERN DX ROUNDUP – Nancy Johnson – 2922 S Olivewood – Mesa AZ 85212-2923
E-mail: NancyJohnson@prodigy.net

WDXR DEADLINES: July 13, August 10, August 24, Sept 7, Sept 21, Sept 28, October 5, October 12 and October 19. Please use Eastern Local Time.

REPORTERS FOR THIS ISSUE:

(RB) **Rick Barton**-PO Box 5503-Peoria AZ 85385 desertmoon_dxshack@inbox.com
Grundig Satellit 5000/205 (internal loop), RS SW-2000628, and inductively coupled Terk loop

(JCJ) **John Johnson**-2922 S Olivewood, Mesa AZ 85212 John_Johnson@prodigy.net
SDRplay RSPduo, Wellbrook ALA1530LNP

- 670 KMZQ **NV**, Las Vegas 6/21 0745 "Hugh Hewitt" morning show to long string of spots, ID on the hour. Formerly 6-70 The Score with sports, flipped this spring. (RB-AZ)
- 760 KFMB **CA**, San Diego 6/17 0145 vintage comedy radio with "The Life of Riley," string of spots, ID, CBS news. Very good reception on Satellit 5000, internal loop. I like to take special note of the old-time radio broadcasts, as there are so few of them left. (RB-AZ)
- 880 KRVN **NE**, Lexington 6/10 2320 animated sounding preacher and could have been mistaken for KHAC, but a 2327 break had a lot of local spots for Central Nebraska businesses (having lived in the area once I know all those towns). Sunday nights only programming. Very solid, steady on barefoot Satellit 5000. (RB-AZ)
- 970 KNIH **NV**, Paradise 6/20 mixing with others, 0800 faded up with "This is KNIH Paradise, Las Vegas" legal ID into EWTN programming. New for me. (JCJ-AZ)
- 1120 KANN **UT**, Roy 6/18 0730 "Unshackled" radio drama program This radio drama was not a replay from the 1940s but sounded like it, with the organ music signaling scene changes, and the type of audio they have. Dominant over a couple of unknown co-channel stations. (RB-AZ)
- 1190 KXKS **NM**, Albuquerque 6/14 over others 0800 out of religious program with "New Mexico's Christian Heritage Station, AM one-thousand KKIM Albuquerque, simulcasting on AM 1190 KXKS Albuquerque" into news. New for me. (JCJ-AZ)
- 1320 KOFA **AZ**, Yuma 6/11 0845 KOFA/KAWC (the //VHF – FM outlet). Unusual world beat music to ID on the HF, then relay of BBC World Service newscast. Good and steady on SW-2000629 and Terk loop. (RB-AZ)
- 1330 KGAK **NM**, Gallup 6/21 at 2130 talk by woman in Navajo, local spots, ID. First DX to come in well before sunset and on the longest day of the year. (RB-AZ)
- 1360 KDJW **TX**, Amarillo 6/10 good over others. 2300 out of religious program with "You're listening to KDJW Amarillo, KBKN Lamesa, KSJH-LP Hart" legal ID into EWTN programming. New for me. (JCJ-AZ)
- 1440 KUHL **CA**, Santa Maria 6/14 0700 ID, news, local spots and references to the area. Good over multiple co-channels. (RB-AZ)
- 1530 KGBT **TX**, Harlingen 6/10 on top 1530. 2300 out of Spanish sports programming with "KGBT Harlingen" legal ID in English back into Spanish sports programming. New to me. (JCJ-AZ)
- 1550 KQNM **NM**, Albuquerque 6/16 1200 ID and numerous repetitions of slogan "Relevant Radio" over unknown co-channel station playing AC/DC's "Back in Black." (RB-AZ)
- 1660 KBRE **CA**, Merced 6/10 0800 ID by man at hourtop, follow-up slogan IDs, old Nirvana cut from "Nevermind." Good pre-sunrise on Satellit 5000. (RB-AZ)

There is only one WDXR deadline next month – July 13! – Nancy 6/22 1900



CENTRAL DX ROUNDUP – John C Johnson – 2922 S Olivewood – Mesa AZ 85212-2923
E-mail: John_Johnson@prodigy.net **CDXR reports ONLY: cdxr@ircaonline.org**

RIDING GAIN

[EB-MO] Eric Bueneman, Hazelwood MO **N0UIHEric@gmail.com**
 CountyComm GP-5/SSB Ultralight receiver, Grundig AN-200 tunable loop

DOWN THE DIAL

- 580 WILL **IL**, Urbana. 6/20 fair signal with ACI from KFNS 590. 0632 with promo for *All Things Considered*, "AM Five-80" ID into *Morning Edition*. [EB-MO]
- 1130 WAMB **IN**, Brazil. 6/20 fair to poor signal, mixing with KWKH, WBBR; ACI from KMOX 1120 in analog mode. 0519 noted on day power with local spots. IN#55 at this location. [EB-MO]
- 1160 KRMV **IA**, Waukon. 6/20 fair to poor signal through WYLL. 0545 noted with Soft Adult Contemporary format, "KMRV" ID, legal ID at 0600. [EB-MO]
- 1260 KSGF **MO**, Springfield. 6/21 good to fair signal over WSDZ. 0615 noted with *The Clark Howard Show*, local spots, "104-point-One KSGF Springfield, news, talk FM" ID. [EB-MO]
- 1270 WQKR **TN**, Portland. 6/18 fair to poor signal, mixing with WKBF, WXGO. 0400 noted with "WQKR, 12-70 AM" ID into Classic Hits format. [EB-MO]
- 1390 KCLN **IA**, Clinton. 6/20 fair to poor signal, mixing with WLLI. 0449 noted with "You're listening to AM 13-90 KCLN" ID and weather forecast. [EB-MO]
- 1490 KTRR **MO**, Rolla. 6/21 fair signal in KFTK null. 0743 noted with "Power 104-Nine" ID into Hot Adult Contemporary format. [EB-MO]
- 1620 WTAW **TX**, College Station. 6.20 good signal over WNRP. 0505 noted with Fox News Radio, "WTAW College Station, Bryan" legal ID, Texas A&M sports promo, "News, talk 16-20 WTAW" ID and weather forecast. [EB-MO]

OPEN MIKE

Thanks to Eric we have a column this week. Remember, only one "DX Monitor" in July! This column was typed 6-22-18. 73, John



EASTERN DX ROUNDUP – Eric Bueneman (N0UIH) – 631 Coachway Lane – Hazelwood MO 63042-1347
E-mail: n0uiheric@gmail.com **DEADLINES: Friday 2359 ELT**

TUNING THE DIALS THIS ISSUE:

(PS-ON) **Paul Snider**, Welland ON, Canada **paulisnider@yahoo.ca**
 Elad FDM-S2 software-defined receiver, Pixel RF Pro-1B loop, MFJ-1020C as a tuner

ACROSS THE DIAL

- 1470 WVOL **TN**, Berry Hill – 6/17 2251 noted with a mention of Gospel music in the mix, various styles of Urban Gospel music, "WVOL Berry Hill/Nashville" legal ID at 2303 into another music set. A fair at times to very poor signal was noted in a mix of stations, confirmed via Tune-In Web stream. (PS-ON)
- 1570 WFRL **IL**, Freeport – 6/14 2043 noted with a Country format, a clear "WFRL" ID at 2044 into a song by Johnny Lee. I thought I heard this one the other night, but I wasn't sure because regulars WFLR and WVTL have similar sounding call signs. A poor to very poor signal was noted in a mix of stations with an unidentified Christian station, assumed to be WFUR. Confirmed via Tune-In Web stream. (PS-ON) (WFRL is a semi-regular at sunset at my location with WBGZ nulled – eb)
- 1570 WPTW **OH**, Piqua – 6/12 2354 noted with a Classic Hits format, including songs by Marvin Gaye and Elvin Bishop, "Classic Hits 98.1 WPTW" ID at 2258. A poor to very poor signal was noted in a mix of stations that included WBGX and a possible WWCK. (PS-ON) (98.1 refers to W251BC Piqua OH – eb)

EDITOR'S NOTES

Thanks to Paul for his logs in this edition. It is interesting to note that I have heard all but WPTW at my location. Have you made your plans for the IRCA Convention in Saint Charles yet? I will be there! 73 and good DX from N0UIH, the Florissant Valley Dial Twister



DX WORLDWIDE/TROPICAL BAND DX – Brandon Jordan – PO Box 338 – Rossville TN 38066
E-mail: dxwww.irca@gmail.com **all times UTC**

Deadline – Sunday Midnight Central Time.

***** PAN-AMERICAN DX *****

1110 **MÉXICO** XERED Radio Red, México, DF. JUN 26 0300 – Radio Red and Centro ID by man at the top of the hour followed by news. [BJ-TN]

CONTRIBUTOR

BJ-TN **BRANDON JORDAN**, Rossville TN, KM4PBQ
 WinRadio G33DDC, RFSpace NetSDR locked to GPS 10 MHz reference, Array Solutions SAL-20
 73 and Good DX, Brandon



DXpeditions – Phil Bytheway – 9705 Mary NW – Seattle WA 98117-2334
E-mail: DXM.EiC@gmail.com

April 2018 Cook Island Ultralight DXpedition
Thrilling Long Range DX with "Frequent Flyer" Gear
 By Gary DeBock, Puyallup WA, USA June 2018



Introduction: Two years ago a wacky new idea started to be brought into reality – the design of lightweight, airport-friendly FSL antennas that could provide serious gain boosts (and serious hobby excitement) for DXers on exotic vacations. The FSL antennas had already proven that they were the ultimate compact performers, but could they also somehow provide a major breakthrough in travel DXing results? If all of a DXer's gear needed to fit inside hand-carry luggage and pass through multiple security inspections, exactly how much performance could a DXer expect on an exotic ocean beach far away from home?

After a couple of "warm up" trips to Kona, Hawaii, I was eager to give my "frequent flyer" DXing gear a "final exam" to answer this question – a 5 day visit to Aitutaki Island in the Cook group, about 2600 miles due south of Hawaii. This South Pacific location featured dazzling scenery, subtropical weather, good security and very friendly island residents. It had no MW transmitters anywhere within 164 miles (264 km) – the closest one was 630-Radio Cook Islands in Rarotonga. It certainly seemed like the ideal "exotic ocean beach" venue to test out the lightweight gear, but little did I know that I was about to enjoy the most thrilling hobby experience I've ever had!

Somehow I managed to stumble across a superb sunrise propagation path for South and Southeast Asian reception, resulting in loggings of 657-AIR, 693-Bangladesh, 918-Cambodia and 1431-Mongolia – all at over 6,800 miles (10,950 km). As if that wasn't enough, the same propagation path ignored Japan almost completely. Usually around sunset I was doing my best to convince my wife that the main reason for this trip was to celebrate our anniversary (despite the somewhat different reality), so most of the sunset time was devoted to beach walks, Polynesian dinners and the like. That didn't stop long range stations like 1000-Radio Record in Sao Paulo, Brazil (7,072 miles/11,380 km) from showing up a couple of hours later, though, along with multiple North American stations. The ocean-boosted propagation seemed to be phenomenal from sunset to sunrise, to the point where almost any low-powered New Zealand station was capable of pounding in at S9. The entire experience was an unforgettable hobby thrill for a North American DXer using very basic equipment – and it obviously proved that this new niche of travel DXing has a lot of excitement to offer!



TRAVEL TO THE COOK ISLANDS: Although Aitutaki and Rarotonga islands are in a fairly remote part of the Southern Hemisphere, they are actually in the same time zone as Hawaii, so any jet lag from the west coast is minimal. Air New Zealand flies weekly from Los Angeles to Rarotonga in a 9 1/2 hour overnight trip, and the service and food on our flight was excellent. The Cook Islands have a subtropical climate with seasons opposite from those in the Northern Hemisphere, so visitors should expect quite a bit more heat and humidity than at home. The islands are administered by New Zealand in a "free association" agreement, and as such the Maori-speaking islanders are very friendly and welcoming to visitors. Rarotonga is the largest island, and upon arrival at the airport visitors will pass through immigration and customs, receive complimentary flower leis and bottled water, and if they are staying on the island (as most do), proceed to their motels.

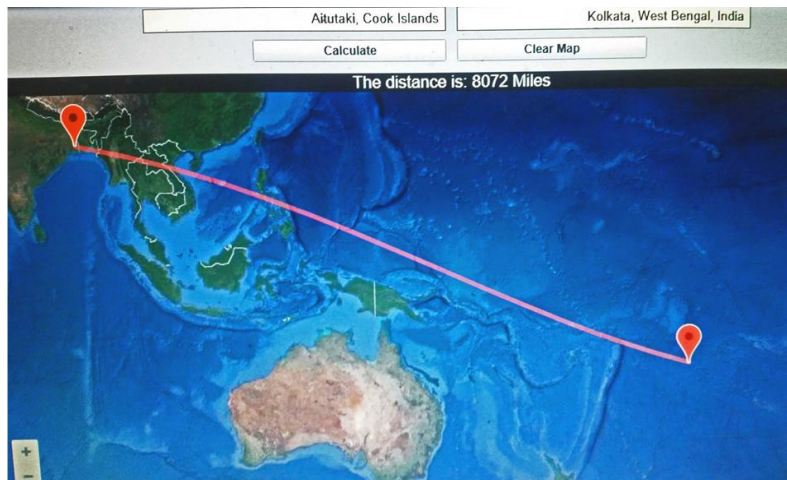
Our chosen destination of Aitutaki island is located 164 miles (264 km) north of Rarotonga, so we needed to board an additional Air Rarotonga flight of about 1 1/2 hours to the gorgeous island. Aitutaki is famous for a dazzling turquoise lagoon filled with a variety of beautiful tropical fish, and features many motels with convenient access to the lagoon. Because of its unique beauty it has the nickname of "Honeymoon Island" among the many Kiwi tourists. Most of the motels are on the northwest side of the island right on the lagoon beach, with a straight salt water path to Asia, the Pacific islands, New Zealand and Australia. DX reception from North and South America is also quite good at these beaches, although the best sites would probably be on the north and eastern sides of the island. During my stay the security on isolated lagoon beaches seemed to be excellent, probably due to the fact that most of the motels own these areas as part of their property, and try to reserve them for tourists. The subtropical climate is ideal for growing coconuts, bananas, guavas and the like, and fresh fruit is always in abundance. Of course as a tourist you can expect to pay a premium for restaurant meals, lagoon cruises and the like, but hobbyists who are primarily motivated to chase rare DX from sunset to sunrise will have no problem minimizing expenses. One of the quirks about visiting the Cook Islands is that Air New Zealand requires visitors to have a confirmed motel reservation before they can purchase a ticket – apparently because of some tourists who thought that setting up tents on the beach would provide the ultimate travel bargain.



"FREQUENT FLYER" LIGHTWEIGHT DXING GEAR: Both the 7.5 inch loopstick C.Crane Skywave SSB portable and the 5 inch (13 cm) TSA-friendly FSL antenna carried along for this trip had been used in previous transoceanic DXpeditions, and both are designed to fit easily within hand-carry luggage. Because of exceptional ocean-boosted propagation the modified portable was used alone for the North and South American reception, along with those for the Pacific islands, Hawaii, New Zealand and Australia. The 5" FSL antenna was used only to boost the Asian signals during the sunrise sessions, although even then the modified portable typically could receive many of the Asians all by itself. For this trip a 4 foot (1.3m) breakdown PVC base was also carried along to elevate the FSL antenna right next to the salt water edge, and this did seem to boost its performance somewhat. In comparison to John Bryant's 500 foot Beverage antennas at Easter Island during his 2007 trip this was a very humble setup indeed, although the long range performance of these lightweight DX chasers was about to be demonstrated in pretty convincing fashion.

ASIAN LOGGINGS

Checking out transoceanic DX propagation at an exotic ocean beach site can provide the hobby thrill of a lifetime – If a DXer is lucky enough to choose the ideal time, place and gear to make the chase. All of these fell into place in an amazing way during the 5 day trip to Aitutaki Island with Ultralight radio gear, resulting in the reception of MW stations in India, Bangladesh, Mongolia and Cambodia.



Because of extensive QRM from Australia and New Zealand the total number of Asian stations received was limited, but it was definitely a case of quality over quantity. Phenomenal propagation around sunrise shut down Japanese signals almost completely, but boosted up those from the exotic countries in east and south Asia. Korean station reception was limited to the big guns, which was also primarily true for Chinese signals. Except for the ANZ pest QRM, the conditions seemed custom-designed for a west coast DXer to go after the exotic stations which rarely – if ever – show up in BC, Washington or Oregon (even though the Cook Islands' distance to them is greater).

Ocean-boosted propagation at sunrise was strong enough to bring in both 693-Bangladesh and 1431-Mongolia at S9 levels almost every morning on my Ultralight gear, and allow both 657-AIR and 918-Cambodia to break through ANZ QRM on April 12th. No doubt many more of these exotic stations could have been logged except for Australian QRM on 576, 594, 872, 883 and 1566, but this only added to the thrill of the chase. The overall results were exceptional for a DXer using only a 7.5 inch loopstick Ultralight radio and 5 inch "Frequent Flyer" FSL – all designed to fit within hand-carry luggage, and easily pass through airport security inspections.

- 657 **INDIA** All India Radio, Kolkata, 200 kW (8,075 miles/12,995 km). Recorded by accident during a sunrise check of the Korean big guns at 1641 on April 12, reception of this longest-distance station went unnoticed until file review after return to the States. The female speaker (in the Bengali language) is the third station in the recording, after the female vocal music from Pyongyang BS and the Irish-accented male preacher from NZ's Star network. Her speech peaks around 40 to 50 seconds into the recording. The isolation of the Star network at the 55 second point was done by the Ultralight's loopstick, not by the propagation. Thanks to Alokesh Gupta for the language and station identification
<https://dreamcrafts.box.com/s/ix71clk446ad5d5bkzbn3e0q94fe18wu>
- DPR KOREA** Pyongyang BS, Kangnam, 1500 kW. Like most east Asian signals the NK big gun sounded pretty anemic in the Cook Islands. Its female vocal music at 1641 on April 12th shared the frequency with NZ's Star network (Irish-accented preacher) and AIR's female Bengali speaker
<https://dreamcrafts.box.com/s/ix71clk446ad5d5bkzbn3e0q94fe18wu>
- 693 **BANGLADESH** Bangladesh Betar, Dhaka, 1000 kW (7,960 miles/12,810 km). Probably the biggest surprise of the DXpedition, with S9 signal peaks on 4 out of 5 sunrise sessions. Frequently snarling with the Oz pest 3AW, it usually managed a few minutes on top of the frequency each morning from 1630-1700. Exotic South Asian music was the usual format, and was very easy to distinguish from the talk-oriented format of 3AW (and other Oz co-channels). This first appearance at 1652 on 4/10 featured a "Bangladesh Betar" ID by a male speaker at 8 seconds into the recording (thanks to Chuck Hutton for listening) <https://dreamcrafts.box.com/s/94j756mjptm1fuaij381dw2wbsqkr91>. This was followed by a lot of exotic music until 3AW claimed the frequency just before the 1700 TOH <https://dreamcrafts.box.com/s/ltl5f8aeo5w2qm3bf2n02x06xsu9fb9r>. The next day (4/11) the exotic station was back with S9 peaks, including this typical music and female speaker at 1625 <https://dreamcrafts.box.com/s/3fu4wo3efoj34dfjm4c6jvg4mzb3nrcv>. The exotic music from Bangladesh was in an S9 snarl with 3AW (and another Oz pest) from 1659 throughout the 1700 TOH on April 11th
<https://dreamcrafts.box.com/s/pa29z92iqim2y6ps40qlv08q84gtxbq>
- 774 **JAPAN** JOUB, Akita, NHK2, 500 kW. Oddly enough, this was the only Japanese signal making it to the island during the entire trip. Mixing with a goofy-sounding 3LO announcer at 1613 on 4/11, the Japanese female speech concerns a "doobutsuen" (a "zoo" in Japanese, similar to what the frequency sounded like with the 3LO announcer) <https://dreamcrafts.box.com/s/57lu1aeb7u77kjwub1v7gr1id66xho7l>
- 819 **DPR KOREA** KCBS, Pyongyang, 500 kW. The NK big gun managed a potent signal for its 3+1 pips across its "TOH" at 1630 on 4/12 but never could shake off RNZ's Tauranga transmitter <https://dreamcrafts.box.com/s/4x2b670b8p2b2edy9xw19ns1eftnbg1w>
- 909 **CHINA** CNR6, Quanzhou, 300 kW. Strong signal with CNR ID (1:08) and Mandarin speech by male and female announcers. NZ's Star network was apparently off the air at the time, since it was a real blaster when transmitting <https://dreamcrafts.box.com/s/kgvitthofeqvphnve4yoi35q1nxfypn>
- 918 **CAMBODIA** RNK, Phnom Penh, 600 kW (6823 miles/10,981 km). Breaking through the Shandong and Oz QRM at an ideal time to dominate the frequency, its sign off transmission with the National Anthem peaked just before the 1700 TOH on April 12. Female speech in the Khmer language and exotic music are featured just before the anthem (thanks to Hiroyuki Okamura and Jari Lehtinen for listening, and identifying the National Anthem)
<https://dreamcrafts.box.com/s/8ji74eayhau8ttjv25pv6zlmcnt0jyai>. Chuck Hutton's improved audio file of the same reception (thanks)
<https://dreamcrafts.box.com/s/qams92h5ktn7ki93u3qlvzbvzyl3y8rru>
- CHINA** Shandong RGD Synchros (Multiple). The dominant Asian signal on the frequency, it rarely allowed Cambodia to sneak through. Here it is with female Mandarin speech at 1647 on 4/11 <https://dreamcrafts.box.com/s/ml1vqzmg135q9gfpzlpsepvmz111shw>. Shandong's 5+1 time pips were recorded mixing with another station's 5+1 time pips at 1700 on 4/12, resulting in bizarre, two-tone time pips at the 1700 TOH on 4/12 (during Cambodia's National Anthem at 1:40, in the MP3 linked below). The sound effect sounded similar to that of a "cuckoo clock," resulting in some initial confusion about their sources. Thanks to Nick for his assessment that these must be Shandong's pips mixing with those of RNZ National (a regular on the frequency each evening and morning)—an explanation that makes sense to me <https://dreamcrafts.box.com/s/8ji74eayhau8ttjv25pv6zlmcnt0jyai>
- 972 **REP KOREA** HLCA, Dangjin, 1500 kW. The South Korean big gun played the part on most mornings, including this S9+ Korean female speech at 1631 on 4/12 <https://dreamcrafts.box.com/s/gynxilf8rpe762f0y5wbj85k0krh1dvb>
- 981 **CHINA** CNR1 Synchros, Changchun/Nanchang, 200 kW/200 kW. The first of three CNR1 frequencies which usually produced strong signals, this music //1377 was received at 1624 on 4/12 <https://dreamcrafts.box.com/s/tybil0tglmfmqkec7u2u1udhngncd4sc5d5>
- 1377 **CHINA** CNR1 Synchros, (Various). Overall this was not only the strongest Chinese frequency on the band, but was the strongest Asian station on the band as well. Awesome S9+ signals were typical each morning, as with this male speech and music at 1622 on 4/12
<https://dreamcrafts.box.com/s/5eh6zami9876vajyijfoaqz764lcmo1a>. Another potent signal from this Chinese blaster at 1640 on 4/12
<https://dreamcrafts.box.com/s/8jlbyscbxe4i8ed1n4admt01f66gt7jt>
- 1431 **MONGOLIA** Mongolia (Relay Station), Choibalsan, 500 kW. This station was easy to receive on the first attempt, with very little competition on the frequency. It typically managed an S9 signal after 1630 daily with the BBC's Korean service, which seemed to be broadcast during the peak sunrise enhancement time in Aitutaki's ocean-boosted propagation. Here is BBC's Korean male announcer at an S9 level at 1632 on 4/11, with the BBC interval signal at 47 seconds into the recording <https://dreamcrafts.box.com/s/bfl4ohbfmhf9fdvfa6mx6jnxapaayk4a>. The Mongolian relay program prior to 1630 was also in Korean, with this female Korean speech at 1627 on 4/11 <https://dreamcrafts.box.com/s/5892chd20zbx3w7r1q1f2qx39f6l7gm>
- 1566 **REP KOREA** HLAZ, Jeju, FEBC, 250 kW. A very poor signal was typical during this trip, with the Chinese service barely showing up under 3AW and two other DU English stations (probably 4GM and Norfolk Island). Whenever 3AW was in a fade it had a chance, since other two co-channels were running very low power. Here is the latter situation, with the weak Chinese barely audible under the DU English snarl at 1641 on 4/12
<https://dreamcrafts.box.com/s/hysvrh4f7i8u16f3740ch5azam0iervx>
- 1593 **CHINA** CNR1, Changzhou, China, 600 kW This was another Chinese blaster, with S9 signals typical every morning. Here it was at 1641 on 4/12 with male Chinese speech and music //1377 <https://dreamcrafts.box.com/s/unn7d4h3wa9ro7g7wespunkqeaay6f6e>



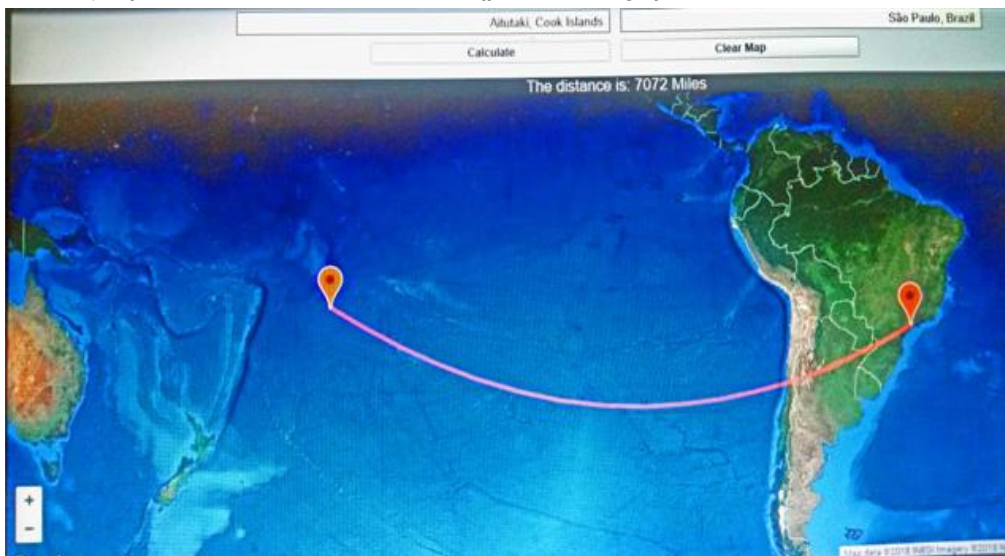
PACIFIC ISLAND LOGGINGS

Chasing DX from the center of Polynesia was an ideal chance to track down exotic DU island stations that rarely, if ever, show up on the west coast of North America. From my location on the Aitutaki lagoon beach obscure stations like 630-Cook Islands and 990-Fiji Gold were pounding in at S9 levels every evening, while other exotic island stations were the strongest ones on the MW band. Phenomenal ocean beach propagation was routine – except that the North American pest stations (that TP-DXers love to hate) never managed even a whimper.

Close-in DU propagation was so favorable that only the 7.5 inch loopstick CC Skywave SSB Ultralight was necessary to track down most of these exotic stations at S9 levels, and make all the MP3 recordings linked below. The vacation was also an ideal chance to investigate and record what is possibly the most obscure MW-DX station still transmitting in the Pacific – 630-Radio Cook Islands, with an underperforming 2.5 kW transmitter in Rarotonga. Overall the entire experience was a real thrill for a west coast DXer who rarely hears these stations, let alone at such powerful levels.

- 540 **SAMOA** 2AP, Apia, 5 kW. Located only 866 miles (1,394 km) from my DXing site, this was always an S9 powerhouse every evening. Samoan island music was common, along with male and female Samoan speech. The station does have some issues with the transmitted signal cutting out, an intermittent microphone and (occasionally) the announcer allowing 30 seconds of dead time after a song, as in the third MP3 below. Male Samoan speech, background music and advertisement at 0718 on 4/9 <https://dreamcrafts.box.com/s/vfsisz3n9gx6869eejhb116y3dwnrn20>. Samoan news (with mentions of Samoa at the 1 second and 9 second points) at 0702 on 4/9 <https://dreamcrafts.box.com/s/3y9puecegk6bi6kppv9s8coxgq23ifam>. Beautiful Samoan island music at 0716 on 4/9, followed by 28 seconds of dead time. When programming resumes with an advertisement the transmitter (or microphone) cuts out twice within 30 seconds, with the microphone apparently having an intermittent low output issue <https://dreamcrafts.box.com/s/akv3p4ds5rnz0kcta1k4rixnht5c3hqf>
- 558 **FIJI** Radio Fiji One, Naulu, 5 kW. Both this native language station and its English-oriented sister station on 990 were solid powerhouses each evening, as well as during sunrise enhancement sessions. S9 signals were the norm, and a wide variety of local island music was the usual format. Typical Fiji island music on the station's overnight program at 1605 on 4/9 <https://dreamcrafts.box.com/s/lu5tzn71kfie3mtznaiey0taowcf0b3>. Island music and the usual ID, "Radio Fiji One, Na Domoiviti" at the 24 second point of this recording at 1622 on 4/10 <https://dreamcrafts.box.com/s/lu5tzn71kfie3mtznaiey0taowcf0b3>. Apparent storm coverage of Tropical Cyclone Keni at 0718 on 4/9; the cyclone caused extensive damage on Fiji <https://dreamcrafts.box.com/s/hj0vi3yc9zut8pll2vs8kgtyc6cu6i81>
- 621 **TUVALU** T2U2, Radio Tuvalu, Funafuti, 5 kW. Usually very strong but occasionally pestered by the usual female announcer, featured in this recording in her native language at 0720 on 4/12 <https://dreamcrafts.box.com/s/ht4fhwj9htzcrtmuby6930664yc9uj56>
- 630 **COOK ISLANDS** Radio Cook Islands, Avarua, 2.5 kW. Located 164 miles (264 km) south of my DXing site, it was pretty obvious why this obscure station is so tough for distant DXers to track down. After sunset it had multiple strong co-channels on the frequency (RNZ and ABC), and even just after its sign on at 1556 the 5+1 pips from RNZ were clearly audible at 1600. The station has multiple issues, with a disastrous live microphone, audio amplitude varying widely between different programs, noticeable audio hum on the signal, etc. It signs on at 1556 and signs off at 0958, unless there is a weather emergency in the area (as there was with tropical cyclone Keni on April 9), in which case it switches to an RNZ satellite feed overnight until sign on at 1556 (thanks to Bryan Clark for ID of the station). The station is obviously a low budget operation, with no special sign on or sign off message, automated time mentions, and (typically) strings of recorded island music with no live announcer. The only live announcers I heard during the week were during a Sunday morning recorded church service on April 8 and just after sign on (with the dreadful microphone) on April 12th. Here is the full sign on routine at 1556 on April 12, with the horns, apparent national anthem, English ID, drums, and finally the live female announcer with the dreadful microphone (cutting off almost all the high frequencies, resulting in legendary poor audio). The weakness of the signal at 1600 allows the 5+1 time pips from RNZ to be clearly heard at the 4:30 point in the recording <https://dreamcrafts.box.com/s/xqonh9iz57w22ebzxwz42krugu3rvyqx>. This recording of a church service at 1724 on April 8 was the only one I made on Rarotonga, the site of the transmitter. It features a live male announcer at 1:10 into the recording with an English "It's 7:25, that's your time with your National Voice" ID. At 1:44 into the recording one of the station's major issues is on full display – the sudden amplitude increase of the transmitted audio <https://dreamcrafts.box.com/s/rfe2u3m3px4xmossujtxilzw8vlk3jtg>. During most hours of the day the station runs a fully automated operation, with strings of recorded island music interspersed with recorded male-voiced station ID's and female-voiced time checks, as at 0706 on 4/9 <https://dreamcrafts.box.com/s/oegfjznhbgw0evy9xuzqbu428xd3114y>. There is no special sign off message at 0958 (2358 local time), when the power is cut. There is a recorded station ID and time check at 0957, though, as in this recording at 0956 on April 9th. The weakness of the station around local midnight can be heard, with a strong co-channel pestering the signal before the unceremonious switch to the RNZ satellite feed at 0959. This was due to the tropical cyclone Keni weather emergency in the South Pacific area on April 9th; on normal days the transmitter power is simply cut off at 0958 (2358 local time), with no warning or fanfare <https://dreamcrafts.box.com/s/bqwt5lm0ezhdzyaqyqkfj8j8birysar>
- 846 **KIRIBATI** Radio Kiribati, Christmas Island, 10 kW. Not quite as strong on Aitutaki as it was in Kona, Hawaii last December, this station was one of the first to fade in at sunset, but was pestered by ANZ co-channels later in the evening. It has apparently corrected the transmitter cutout issues noticed last December, and features an open carrier overnight after sign off around 1006. The time delay with its 1440 parallel wasn't checked during this trip (mainly because both of these Kiribati stations had trouble holding their frequencies), but in December it was very unpredictable. Since the 846 transmitter apparently doesn't sign on until it gets the programming from 1440 in Tarawa (significantly to the west), 846-Kiribati was silent during my sunrise DXing sessions in the Cooks from 1600-1700, although the semi-local 630-RCI (at approximately the same longitude) signs on at 1556. The best time to receive the station was around local sunset, before the ANZ co-channels showed up. Here it was at 0650 on 4/9, playing some American country music (a format which seems very common on the playlist) <https://dreamcrafts.box.com/s/e965m3zcy13t3auije44zn344x5q8fw9>. Later on in the evening it was pestered by multiple ANZ co-channels, as demonstrated when the loopstick bearing is shifted at the 16 second point in this recording at 0834 on 4/10 <https://dreamcrafts.box.com/s/f6kd11wrj2lunrcjzls1nnnr9i8v39m>
- 900 **FIJI** Radio Fiji Two (Fiji Gold), Suva, 10 kW. The English-language sister station to the native language 558-RF1, this interesting station plays classic pop hits, and is a favorite with expats and NZ listeners alike. Very tough to receive on the west coast because of its "domestic" frequency and the 5 kW Hawaii co-channel KIKI, its signal had no trouble pounding in to the Cooks at an S9 level each evening, although the 1 kW Kiwi co-channel TAB Trackside did attempt to make it somewhat of a horse race at times. Because of Tropical Cyclone Keni there was extensive weather coverage on the station during my visit, which is reflected in all of the MP3's linked below. Oldies music and tropical cyclone weather update at 0712 on 4/10, after the storm had just passed through the center of Fijian waters <https://dreamcrafts.box.com/s/b5may3br5kuuwbus18lr4hala57x1vb>. Oldies music, local advertisements and Fiji news at 0700 on 4/12, including the President's warning against corruption in repair construction contracts after the tropical cyclone <https://dreamcrafts.box.com/s/rs70dcbhco94arepnnv60thl3b5z27hw>. Long version of the first MP3, as co-channel TAB Trackside (1 kW in Nelson, NZ) tries to make it a horse race with Fiji Gold at 0710 on 4/10, but folds in the clutch to Melissa Etheridge <https://dreamcrafts.box.com/s/devsen4lrp2pul0m92m0r638yb6yj79i>

- 1017 **TONGA** A3Z (Tonga BC), Nuku'alofa, 10 kW. Much stronger in the Cooks than in Hawaii, this station was only 1,014 miles (1,632 km) from my DXing site on Aitutaki. Coverage of Tropical Cyclone Keni dominated the programming, which featured both English and native language updates on the storm. Despite the station's S9 strength it was easily nulled out with the Ultralight's loopstick, bringing in the 2.5 kW Radio Sport co-channel in Christchurch (as demonstrated at 1:23 into the first video linked below). In a Tropical cyclone update in English and Tongan languages at 0712 on 4/9, Radio Tonga is nulled out by the Ultralight's loopstick at various points, bringing in the Kiwi co-channel Radio Sport (2.5 kW) at an equal S9 level around the 4 minute point <https://dreamcrafts.box.com/s/h4hbmh1ro3xydm0h6g4tlfkwxqpp3mjld>. Tongan island music at S9 level at 1607 on 4/11, but with Yankee-accented Radio Sport (relaying Fox Sports Network) and another DU English co-channel (2KY?) <https://dreamcrafts.box.com/s/3771cas3q9mdqvsn8phy2c936esghlchi>
- 1098 **MARSHALL ISLANDS** V7AB, Radio Marshalls, Majuro, 25 kW. Not nearly as strong as in Hawaii, this was another island station easily nulled out with the Ultralight's loopstick to bring in an S9 Kiwi co-channel (Newstalk ZB). It was strongest prior to sunset in NZ, but couldn't hold the frequency after that unless the Kiwi station was nulled out (as demonstrated in the MP3 linked below). Radio Marshalls and Newstalk ZB fight it out at 0724 on 4/9, with the island station holding the frequency as long as the loopstick favors it (and getting plastered otherwise) <https://dreamcrafts.box.com/s/32p2a8stc0ci9m1f7cyrmxkfkpa9rhk8>. Radio Marshalls plays some beautiful music, which made for enjoyable listening as long as Newstalk ZB was nulled out (as at 0746 on 4/10) <https://dreamcrafts.box.com/s/3f589i8odtcu98ky45agyz4ggqx29qzg>
- 1170 **UnID** Religious format station (with a mention of "with your pastor" is at the 25 second point) featuring island-accented English female speech having a motivational theme at 0707 on 4/12. Although no ID was recorded, the programming details all seemed to point to Eagle Christian Radio in the Marshall Islands, but Mika Makelainen talked with one of the station personnel who said that the station hasn't been broadcasting recently. As such, the reception remains the ultimate mystery, since the details don't seem to fit any other possibility <https://dreamcrafts.box.com/s/7pof6qol9hhub400ncq3ele32dlf4vy4>
- 1440 **TARAWA** Radio Kiribati, Bairiki, 10 kW. Reasonably strong on most nights in the Cooks, although occasionally (and amazingly) troubled by the flea-powered (200w) Kiwi co-channel Te Reo O Tauranga Moana. Having a variable-delay parallel arrangement with its 846 kHz sister station on Christmas Island, all of the programming originates from this station. The music format features a lot of Kiribati island tunes, along with a surprising amount of American country music. Radio Kiribati with the usual female and male announcers at typical strength at 0708 on 4/9 <https://dreamcrafts.box.com/s/bwsm9wdte9qap0anqw3wt8rgtsg9d9j0>. One of the distinctive ways to identify the station is the 4-bong time signal on the half hour, as at the 13 second point in this recording at 0730 on 4/10 (with the male announcer) <https://dreamcrafts.box.com/s/0jdxn3mm3v1da9a659nyvvd47ek7qryo>. The usual female announcer has a strong signal until around 51 seconds into this recording at 0805 on 4/11, when the 200w Kiwi co-channel Te Reo O Tauranga Moana provides some serious competition in Maori (thanks to Theo for language identification) <https://dreamcrafts.box.com/s/f9m926aqpacsoliti513eevgsq72dnab0>



NORTH AMERICAN/SOUTH AMERICAN LOGGINGS

The closest point on the USA mainland is 4,550 miles (7,323 km) away from Aitutaki island, and there was a straight ocean path to North America from my DXing spot on the lagoon beach, resulting in several strong transoceanic signals across the Pacific. The closest point in South America (Chile) was about 5,550 miles (8,930 km) away, although there was a 480' (150m hill) between my lagoon spot and that direction.

Because of various tourist activities scheduled by my wife around sunset and a lingering mindset that North American signals weren't exactly top priority DX to chase, no deliberate effort was made to go after these stations while in the Cook Islands. Despite this 7 USA mainland stations and one South American (1000-Radio Record in Sao Paulo, Brazil) crashed the Kiwi sunset skip DXing sessions about 2 hours after sunset, wiping out the adjacent 9 kHz-split frequencies that I was trying to receive. The most distant of the USA stations was 1170-KFAQ in Tulsa, Oklahoma, at 5,642 miles (9,080 km). All were received on the 7.5" loopstick CC Skywave Ultralight alone, which provided good reception of these stations because the reciprocal bearing of New Zealand was ideally directed at North America on the 7.5" loopstick – so that the DX from both directions was received at optimal strength concurrently.

No doubt many more of these North and South American stations could have been received if a deliberate effort had been made to go after them, especially around sunset if the 5 inch "Frequent Flyer" FSL antenna had been set up to provide a gain boost (as it was for long range Asian DX, at sunrise). Strangely enough, none of the usual TP-DXing pests in Vancouver, Seattle, Portland or San Francisco made this North American DX list (although to be honest, I really didn't miss them at all!).

- 610 **KEAR CA**, San Francisco, (5 kW at 4,610 miles/7,419 km). "Family Radio for the West Coast," Christian religious format received at fair level at 0835 on 4/12 <https://dreamcrafts.box.com/s/jq81e11f3tq5o4slbe6ytsv477ffwg36>
- 640 **KFI CA**, Los Angeles, (50 kW at 4,570 miles/7,355 km). Powerful (S9) level with commercial ads at 0633 UTC on 4/12 <https://dreamcrafts.box.com/s/vxrj7014eqhrbok88pw8a3e1y32qerka>
- 1000 **BRAZIL** Radio Record, Sao Paulo, 200 kW. Thought at first to be a foreign-language DU on 999, this Portuguese recording at 0751 on 4/10 was a mystery at first. After asking for online help I was fortunate to have Ivan Dias of Sorocaba, SP, Brazil identify the station, and the "Manha Record" program. At 7,072 miles (13,382 km), this was the fourth most distant reception of the trip <https://dreamcrafts.box.com/s/wiuc8rlk3q1y1t6580kh2m016c8jblsg>
- 1070 **KNX CA**, Los Angeles, (50 kW at 4,570 miles/7,355 km). Powerful (S7) level with "1070 Newsradio" ID at 3 seconds, followed by national news at 0730 on 4/10 <https://dreamcrafts.box.com/s/81cy1nzyr4dokk489sdgh34is3lp4ww>
- 1160 **KSL UT**, Salt Lake City, (50 kW at 5,144 miles/8,278 km). Powerful (S7) level with weather and station ID at 33 seconds, followed by public service ads at 0901 on 4/12 <https://dreamcrafts.box.com/s/4ymewhcz6x28hikjtd77y99e85ji2u4>
- 1170 **KFAQ OK**, Tulsa, (50 kW at 5,642 miles/9,080 km). Strong signal over apparent DU English co-channel with "Coast-to-Coast" ID at 44 seconds; thanks to Richard Allen for confirming the broadcast of the program on the station at 0845 on 4/12 <https://dreamcrafts.box.com/s/u5gtxk6l5qgggu2xuf2q09thdnj44sfo8>
- 1430 **KMRB CA**, San Gabriel, (9.8 kW at 4,577 miles/7,366 km). Cantonese Chinese format at S7 level with commercial ads at 0830 on 4/12 <https://dreamcrafts.box.com/s/au8ru485mfr57cvspeo0qp4zjqv5pekg>
- 1640 **KDIA CA**, Vallejo, (10 kW at 4,633 miles/7,456 km). "1640-KDIA" ID at 6 seconds with Christian religious format at S5 level at 0807 on 4/10 <https://dreamcrafts.box.com/s/k3a631palnk7ntv4xsgjrjnv8bcio611>

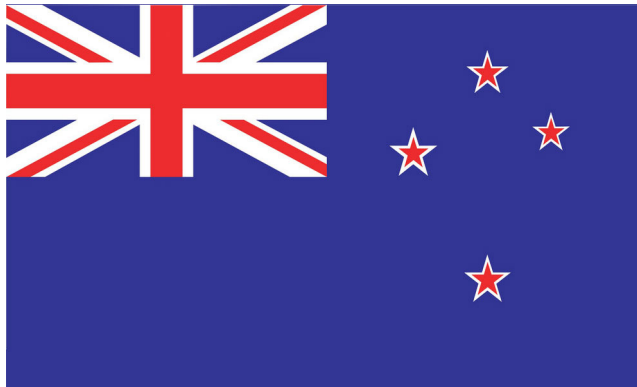


HAWAIIAN STATIONS

As with North American DX, these stations were not exactly high priority DX in the Cook Islands, and no special effort was made to go after them. After two Kona, Hawaii DXpeditions in 2017, there was a lingering memory of too many Hawaiian MW stations running too much power in too few small, congested communities.

- 590 KSSK **HI**, Honolulu, Oahu, (7.5 kW at 2,781 miles/4,476 km). "Variety, 92.3, KSSK" ID at 2 seconds, followed by pop music at 0701 on 4/10
<https://dreamcrafts.box.com/s/1j20fcstcfhnoon4cq46kctber04ztz>
 1420 KKEA **HI**, Honolulu, Oahu, (5 kW at 2,781 miles/4,476 km). ESPN sports format at strong level at 0715 on 4/11
<https://dreamcrafts.box.com/s/dz0s8yxd917cttwuaeewanqlwm5c71q>

NEW ZEALAND/AUSTRALIAN LOGGINGS



As reported previously, the salt water-enhanced propagation from Aitutaki island to New Zealand was outstanding every evening after local sunset, resulting in over 100 Kiwi MW-DX recordings made during the trip. Australian signals ruled at sunrise, however, as a collection of Oz talk-format pest stations on 567, 594, 693, 918 and 1566 did their best to make it a challenge to track down exotic South and Southeast Asian DX on their frequencies.

All of the following stations were received with the hand-held 7.5" loopstick C.Crane SSB Ultralight radio alone, which was more than sensitive enough to track down scores of Kiwi and Oz stations every evening on the lagoon beach next to our motel. The master plan during the trip was to check all the MW frequencies in the evening after sunset, splitting up the frequencies to cover in pre-planned DXing sessions every evening. That worked fairly well until my wife discovered some special Polynesian dinner offers on the last two days, causing some of the higher frequencies to be foregone in favor of South Pacific luaus and Cook Maori dancing entertainment. As I watched the Maori fire dancing, it seemed like my master plan to cover the entire MW band was going up in smoke.

- 531 **AUSTRALIA** 2PM, Kempsey, 5 kW. Dominant during most sunrise sessions, but pretty wimpy in the evening. Here it was with call-in talk on the SRN network (//639) at 1627 on 4/10 <https://dreamcrafts.box.com/s/dt3qb3g23xzqjnn6crsztf7x5xajmiby>
AUSTRALIA 4KZ, Innisfail, 10 kW. Occasionally dominant around sunrise, but usually under 2PM. This recording at 1559 on 4/10 has mentions of Innisfail at 20 and 23 seconds, a 4KZ promo, and "4KZ National News" at 1:21 in the MP3
<https://dreamcrafts.box.com/s/bo65gzy106b6p3mf0gju4xhq14pgzig>
NEW ZEALAND More FM, Alexandra, 2 kW. Despite its rare reputation on the west coast the low-powered station had no trouble making itself heard each evening in the Cooks. Here it is with typical modern rock music at 0714 on 4/9, with a choppy, sandwiched "More FM" Yankee-accented female ID (also typical) at the 6 second point <https://dreamcrafts.box.com/s/dapiipgz0y3fcgkwqyg163zlr6i46h56>
NEW ZEALAND PI, Auckland, 5 kW. Usually in a snarl with Kiwi co-channel More FM each evening, this Samoan language broadcaster was sometimes dominant in the sunrise sessions, such as at 1633 on 4/10 (over 2PM's call-in talk)
<https://dreamcrafts.box.com/s/v7vd48wj50wh850xqzqwdde60nguomfmi>
 540 **NEW ZEALAND** Rhema, Taranaki/Christchurch, 2/1 kW. Usually covered by Samoa's 2AP in the evening, it had a clear shot during the sunrise sessions before the Samoan sign on, such as at 1603 on 4/9 (with Rhema ID at 40 seconds) <https://dreamcrafts.box.com/s/niou2j8yrth0ntgyu59a0bwdyyisnfo>
 549 **NEW ZEALAND** TAB Trackside Radio, Napier-Hastings, 1 kW. For some reason this low powered horse racing station ruled the frequency each evening, although there were higher powered NZ and Oz co-channels. This recording at 0733 on 4/10 features an entire horse race at a strong level, along with a musical break <https://dreamcrafts.box.com/s/udp96gpbxvdu26wrvbgy2ri224pps64h>
 558 **NEW ZEALAND** Radio Sport, Invercargill, 5 kW. Barely audible (under a thunderous Radio Fiji One) with Yankee-accented Fox Sports News relay at 1624 on 4/10, this station always had a very rough time with the Fiji co-channel <https://dreamcrafts.box.com/s/pue1kl4p7uvohelwt5hdr45bjp0aau3>
 567 **NEW ZEALAND** RNZ National, Wellington, 50 kW. With a relatively wimpy west coast signal after its old tower was demolished, this station sounded far more energetic in the Cooks. Here was parliamentary news at 0717 on 4/10 <https://dreamcrafts.box.com/s/y4uy1yjnfvvg5kboq7e1celolmrkysd33>
 576 **AUSTRALIA** 2RN, Sydney, 50 kW. A real blaster every morning around sunrise, it usually wiped out any chance of hearing something exotic on the frequency, such as at 1619 on 4/13 <https://dreamcrafts.box.com/s/bkwh5w1vg3xufbe63f3yefbaav7afvlg>
NEW ZEALAND Star, Hamilton, 2.5 kW. If 2RN didn't wipe out the frequency during the sunrise sessions then the "Dwarf Star" usually would. Here it was in a relatively equal mix with the Oz big gun at 1618 on 4/13 <https://dreamcrafts.box.com/s/x1od4xf71d9nxpgzpz21h7sqvevretiw>
 585 **AUSTRALIA** 7RN, Hobart, 10 kW. Usually in a mix with a presumed 2WEB in the evening, the station was easy to ID with its 576 parallel, such as at 1607 on 4/9 with female and male speech in an RN network program <https://dreamcrafts.box.com/s/43n8cxjbesp75bk6t63tedovm3pkfo7h>
NEW ZEALAND Radio Ngati Porou, Ruatoria, 2 kW. A Kiwi Maori station with legendary weakness, on the west coast it has only been heard at Rockwork 4 (where it has now been MIA for 3 years). In the Cooks it was barely audible, such as at 1610 on 4/9 (with the 603-Waatea parallel playing "In the Misty Moonlight" for the first 3 seconds, followed by the same music way under 7RN from the rare station, and finally the 603-Waatea parallel again at the 35 second point). The parallel check was only successful on one out of four attempts, with the wimpy signal usually MIA
<https://dreamcrafts.box.com/s/ayxdvibx0u0hpecasdx9xuqd4pu6bwod>
UnID-Oz This station received at 0738 on 4/9 was not //576, and was also not //603, so most likely it was David Sharp's "Outback Radio," 2WEB in Bourke. It was usually in a running battle with 7RN each evening in the Cooks <https://dreamcrafts.box.com/s/8768a9n9y3wf1ibz51yi1qj2pkhla04>

- 594 **AUSTRALIA** 3WV, Horsham, 50 kW This was another huge blaster during sunrise sessions, wiping out any chance at Southeast Asia. In tandem with the Star network, the Oz big gun plastered anything weak, such as at 1629 on 4/13 <https://dreamcrafts.box.com/s/89kmgloez1eh25jibvtf0u625t4lm93>
- NEW ZEALAND** Star, Timaru/Wanganui, 5/2 kW. The Christian hymn network dominated in the evenings, but lost out to the Oz big gun at sunrise. This weather report was received at 1622 on 4/13 <https://dreamcrafts.box.com/s/z54n53zsf262e5d10jmcdegqz2yatzh>
- 603 **NEW ZEALAND** Radio Waatea, Auckland, 5 kW. The strongest of the Maori language stations in the Cooks, it provided a convenient parallel signal to check for the wimpy 585 Maori station. This was its typical (S9) strength at 0737 on 4/9, with Maori language conversation <https://dreamcrafts.box.com/s/2hrnll04jy6khhbwlceggpeym0gbhq0e>
- UnID-Oz** One of the Australian ABC stations was mixing with Radio Waatea at 0752 on 4/10, but a parallel check wasn't made at the time because Radio Waatea was being used for a parallel check with 585 at that moment <https://dreamcrafts.box.com/s/xwj9crb06bhtyn6nx77iuhp9hd2xdb11>
- 630 **AUSTRALIA** 4QN, Townsville, 50 kW. Oz big gun was easy to hear in the null of Radio Cook Islands' open carrier at 1500 on 4/12 with trumpet fanfare and ABC news at the TOH; it was also easy copy in RCI's null (with RNZ) every evening <https://dreamcrafts.box.com/s/ceiaw26agqd4h15jv0j0xipexd7oryy6>
- NEW ZEALAND** RNZ National, Napier-Hastings, 10 kW. 5+1 time pips and female announcer mixing with 4QN in the null of Radio Cook Islands' open carrier at 1500 on 4/12; this station was the dominant co-channel of RCI in the evening <https://dreamcrafts.box.com/s/ceiaw26agqd4h15jv0j0xipexd7oryy6>
- 639 **AUSTRALIA** 2HC, Coff's Harbour, 5 kW. Local ads (mentioning the suburb "Umarra" at 1:08) and "100.5 FM, 639 AM" ID at 1:18 <https://dreamcrafts.box.com/s/cgv1vb0g8twz4vl6j8660hdjj53d1mmx>
- 657 **NEW ZEALAND** Star, Wellington/Tauranga, 50/10 kW. A real powerhouse with its Christian programming each evening, its signal tapered off somewhat around sunrise, allowing Pyongyang and AIR (Kolkata) to sneak through on 4/12. This signal (at 1651 on 4/12) starts off with the Asians nulled for a few seconds (after AIR had hit its peak), with Star's Irish-accented preacher hitting an S9 level briefly <https://dreamcrafts.box.com/s/3o4kd9pkall7oyrzzhy0n2hnx3o8ypfx>
- 675 **NEW ZEALAND** RNZ National, Christchurch, 10 kW. Another evening powerhouse with a traffic report during the rush hour at 0630 on 4/12 <https://dreamcrafts.box.com/s/o7fldq2j27j3xdpfmwn7yienzn11kq9l>
- 693 **AUSTRALIA** 3AW, Melbourne, 5 kW. This was the major pest for Bangladesh reception (and much more troublesome than Radio Sport). This recording of the "Australia Overnight" program at 1703 on 4/10 was during a mix with news from Bangladesh, and features multiple promotions (initially) for the 3AW smart phone and the 3AW app (I don't think I'll apply for these!) <https://dreamcrafts.box.com/s/39r5556vdg04sasruqfggqkyr8wkm7v>
- NEW ZEALAND** Radio Sport, Dunedin, 5 kW. Usually dominant around 1600 daily, only to lose out to 3AW and Bangladesh as 1700 approached. This Yankee-accented program (Fox Sports News relay) was at 1608 on 4/10 <https://dreamcrafts.box.com/s/e921kcqxn063geffbjq3t6hq97131vey>
- 702 **AUSTRALIA** 2BL, Sydney, 50 kW. The Oz big gun had a rough time going up against Kiwi Magic in the Cooks. Here it was at almost equal strength (with male-female conversation under Magic's "See You Later, Alligator") at 0740 on 4/9 <https://dreamcrafts.box.com/s/j4xkzd773528d4ekr3ibjw184j5hev0i>
- NEW ZEALAND** Magic, Auckland, 10 kW. Magic's flagship station ruled the frequency each evening, with awesome signals around the Kiwi sunset, such as at 0730 on 4/10 with this very creative oldies song medley ID <https://dreamcrafts.box.com/s/n0bnhm6yay3w0nwbj7mez8foxuo7tvb>
- 729 **NEW ZEALAND** Radio Sport, Whangarei, 3 kW. Dominant over a real crowd at 1648 on 4/13 with Yankee-accented Fox Sports News relay <https://dreamcrafts.box.com/s/ykyl4b029h1xynq0vea1w8ttz0nk7peh>
- 738 **AUSTRALIA** 2NR, Grafton, 50 kW. Dominant over Magic (a pretty rare occurrence in the evening) at 0745 on 4/9 with male speech <https://dreamcrafts.box.com/s/synliotkd983zc7ch57rcx84xwswuwaw>
- NEW ZEALAND** Magic, Christchurch, 5 kW. The usual sunset skip leader on the frequency, with strong music //702 over 2NR at 0731 on 4/10 <https://dreamcrafts.box.com/s/vp58j5scujemjzn59ua6tebzk7c56awl>
- 756 **NEW ZEALAND** RNZ National, Auckland, 10 kW. This was one of the strongest RNZ signals each evening, although for some reason it never was recorded. Usually at equal strength with its 567 and 675 parallels.
- 765 **NEW ZEALAND** Radio Kahungunu, Napier-Hastings, 2.5 kW. This Maori-language overachiever was competitive with its 603 parallel on most evenings, but like 756-RNZ accidentally went unrecorded (most likely due to an unscheduled Polynesian dinner).
- 774 **AUSTRALIA** 3LO, Melbourne, 50 kW. The Oz big gun was a potent presence during most sunrise sessions, such as at 1611 on 4/9 (booming in over NZ's Radio Sport) <https://dreamcrafts.box.com/s/krxsxdkps64zbnlnm0m0wuoeivqmp4yd>
- NEW ZEALAND** Radio Sport, New Plymouth 5 kW. Yankee-accented Fox Sports news relay almost at equal strength with 3LO at 1612 on 4/9, but usually way under the Oz big gun around sunrise <https://dreamcrafts.box.com/s/5xqrmwv1n3866u2rotzqx9oa3wa4o8iz>
- 792 **AUSTRALIA** 4RN, Brisbane, 25 kW. Not very impressive for the power level on most mornings, usually in a lackluster mix with NZ's Yankee-accented Radio Sport (such as at 1614 on 4/9, playing music //576) <https://dreamcrafts.box.com/s/eg72jxaf03tdxu4l70vbg52231ixckn5>
- NEW ZEALAND** Radio Sport, Hamilton, 5 kW. Dominant over a weak 4RN with Fox Sports News relay at 1615 on 4/9 <https://dreamcrafts.box.com/s/6pdsb8j64gdm87882rwh1jhy8eikxco2>
- 810 **AUSTRALIA** 2BA, Bega, 10 kW. Female speech //774 (along with RNZ and a possible KGO) at 0850 on 4/10 <https://dreamcrafts.box.com/s/1opl0zzodp01jhbfs2sv2o0fzqyttqhd>
- NEW ZEALAND** RNZ National, Dunedin, 10 kW. Male speech //819 in a three station mix at 0850 on 4/10; co-channels were 2BA and a possible KGO <https://dreamcrafts.box.com/s/1opl0zzodp01jhbfs2sv2o0fzqyttqhd>
- 819 **NEW ZEALAND** RNZ National, Tauranga, 10 kW. Strong signal all alone with male conversation //810 at 0848 on 4/10 <https://dreamcrafts.box.com/s/qa751yhhwxlosyi1po1zqgdrbzd7e047>
- 828 **AUSTRALIA** 3GI, Sale, 10 kW. Female and male speech //774 way under NZ's TAB Trackside at 0835 on 4/10 <https://dreamcrafts.box.com/s/t73cumjyelgga9dggk94nyu23lv3wzol>
- NEW ZEALAND** TAB Trackside Radio, Palmerston North, 2 kW. You can almost smell the horses as the low power TAB Trackside leaves the Aussie 3GI way down in the dust at 0835 on 4/10 <https://dreamcrafts.box.com/s/t73cumjyelgga9dggk94nyu23lv3wzol>
- 837 **AUSTRALIA** 4RK, Rockhampton, 10 kW. Female speech //774 in a mix with RNZ at 0840 on 4/10 <https://dreamcrafts.box.com/s/nx22gapusqquzotjoo873l7itbmf9hkv>
- NEW ZEALAND** RNZ National, Whangarei/Kaitiaki, 2.5/2 kW. Male speech //819 in a mix with 4RK at 0840 on 4/10 <https://dreamcrafts.box.com/s/nx22gapusqquzotjoo873l7itbmf9hkv>
- 846 **NEW ZEALAND** Newstalk ZB, Masterton, 2 kW. The usual co-channel in the null of Radio Kiribati (on Christmas Island), it was at a fairly strong level with female and male speech //1035 at 0833 on 4/10 <https://dreamcrafts.box.com/s/4lxwj5239ug4rsdwzju2k7136zv7h67f>
- 855 **NEW ZEALAND** Rhema, Hamilton, 2 kW. "Focus on the Family" promo and commercial ads at 0830 on 4/10, followed by the "Focus" program in Yankee-accented English <https://dreamcrafts.box.com/s/s0xxgqxg94043ycr861gijkaotgjt3>
- 864 **NEW ZEALAND** Newstalk ZB, Invercargill, 10 kW. Modest signal with female speech //1035 over a weak co-channel at 0827 on 4/10 <https://dreamcrafts.box.com/s/1385lejmf782qu2wc61bfxn1dsbabzvj>
- 873 **UnID-DU** Three DU English stations mixing at 0826 on 4/10, all receiving a salt water enhancement boost to the point where they succeed in creating mass confusion. Probably a mix of Newstalk ZB, TAB Trackside and an Oz station <https://dreamcrafts.box.com/s/aw9dn1m2bw39sbwflb4dagenutr95ksi>
- 882 **NEW ZEALAND** Star, Auckland, 10 kW. S9 signal all alone and //909 with female speech at 0825 on 4/10 <https://dreamcrafts.box.com/s/n2y76kxspboqnm5bcs2otv3xc3q8i45p>
- 891 **AUSTRALIA** 4TAB, Townsville, 5 kW. Pounding in at a winning level at 0821 on 4/10, featuring a bizarre "When You're After Your Mate" ad at 28 seconds, complete with a gambling addiction hotline number. Meanwhile 891-Wellington was left in the dust, barely showing up at the end of the race <https://dreamcrafts.box.com/s/2t7mn5m32326z3drhya6dtwnx4y3t5z>
- NEW ZEALAND** Magic, Wellington, 5 kW. The anemic music station was under 4TAB (as usual) in this recording at 0822 on 4/10, the Kiwi oldies station was losing the horse race with 4TAB every evening <https://dreamcrafts.box.com/s/24833qhi3ta0rp284700h85d6tgm9sr>
- 900 **NEW ZEALAND** Coast, Whangarei, 2.5 kW. Oldies format dominating over Star for most of this recording at 0819 on 4/10 <https://dreamcrafts.box.com/s/nj1yafh2dj2fervb0itouzrppdefrx8>
- NEW ZEALAND** Star, Dunedin, 10 kW. Dominating over Coast at the end of this recording at 0820 on 4/10 with female speech //909 (includes a brief 909 segment) <https://dreamcrafts.box.com/s/nj1yafh2dj2fervb0itouzrppdefrx8>
- 909 **NEW ZEALAND** Star, Napier, 5 kW. Awesome S9 signal with female Kiwi speech at 0818 on 4/10; this was the preferred Star frequency for parallel checks every evening <https://dreamcrafts.box.com/s/nrs8b2xt0tkzrxdx8icqtae9qo13335>. The Christian format station was also a powerful presence every sunrise session, such as at 1618 on 4/11 <https://dreamcrafts.box.com/s/cgde7y1n3p9w2ll1xdl6tjge5fd4jooi>

- 918 **NEW ZEALAND** RNZ National, Timaru/New Plymouth, 2.5/2 kW. Fair level with male speech //567 at 0812 on 4/10
<https://dreamcrafts.box.com/s/78f0cf7mjhy66cjb5uryhtw0n2hzym0>
UnID-Australian "Midnight, with Merv Starr" program intro at 1702 on 4/12 (30 seconds into the following recording). Strangely, the two eastern Oz station websites indicate that both should be music-oriented <https://dreamcrafts.box.com/s/dlhcf700ou82hf7unqwlbn026m7bcis52>
Note: The 918 frequency was one of the more interesting in this group. It received a lot of attention because of Cambodia on the frequency, which finally broke through with its National Anthem on April 12th. One single MP3 contained the Cambodian anthem, Shandong in China, bizarre "Cuckoo Clock" time pips at the 1700 and a mix of two DU English stations after that – one of which was the "Midnight, with Merv Starr" program on an Oz talk station, which remains unidentified. The other DU English signal on the frequency was the RNZ duo from Timaru and New Plymouth, which routinely showed up in the evening sessions. After hearing Nick's opinion about the "Cuckoo Clock" time pips at 1700 (at 1:41 in Chuck's reworked MP3, posted at <https://dreamcrafts.box.com/s/qams92h5ktn7ki93u3qlvzbvyl3y8rru>). I agree with Nick that they are most likely the Shandong 5+1 time pips alternating with the 5+1 time pips from RNZ, and not echoes from the Shandong multi-transmitter system, as originally thought.
- 927 **AUSTRALIA** 4CC, Gladstone, 5 kW. Presumed the one with a rock format dominating over Newstalk ZB at the earlier part of this recording at 0807 on 4/10
<https://dreamcrafts.box.com/s/8zjzilbrxolzk4azgz1xqoblx8neu7pd>
NEW ZEALAND Newstalk ZB, Palmerston North, 2 kW. Male speech //1035 dominating over a presumed 4CC at the end of this recording at 0808 on 4/10
<https://dreamcrafts.box.com/s/8zjzilbrxolzk4azgz1xqoblx8neu7pd>
- 936 **NEW ZEALAND** Chinese Voice, Auckland, 1 kW. One of the major surprises of the DXpedition, with awesome signals every evening. This TOH recording at 0800 on 4/10 features a Chinese ID, station promos and website information <https://dreamcrafts.box.com/s/jp8cmpqmmxbjm6bruj601g5y0i4j66f5>
UnID-Australian Mixing with Chinese Voice at 0731 on 4/9 with DU English, most likely 4PB in Brisbane
<https://dreamcrafts.box.com/s/0o7oo6i4nd6wunsncdxxs516r3wkyji>
- 945 **NEW ZEALAND** Newstalk ZB, Gisborne, 2 kW. Good signal //1035 with sports news at 0758 on 4/10
<https://dreamcrafts.box.com/s/7dl3volkdjwq4u9wa8eygb166a115lah>
- 954 **UnID-DU** A single station all alone with news at 0756 on 4/10, but just not enough content to identify
<https://dreamcrafts.box.com/s/crippbcbus3gw6g27yc767f4nqf3md7m>
- 963 **NEW ZEALAND** Star, Christchurch, 10 kW. Strong signal //909 with ID at the 10 second point, followed by Christian music
<https://dreamcrafts.box.com/s/ltk43q3f8gkj60zwyvbwlf27zk0ercb>
- 972 **UnID** For some reason this frequency was overlooked in the evening, but an apparent DU English co-channel was mixing with HLCA's Korean at 1632 on 4/12 with a talk format – most likely Rhema, in Wellington <https://dreamcrafts.box.com/s/rsjxq9ara77rrvdeg4f1dnn5fh9jgs1b>
- 981 **NEW ZEALAND** RNZ National, Kaikohe, 2 kW. Female-voiced news //567 at good level at 0723 on 4/10
<https://dreamcrafts.box.com/s/0lx9tfev0eq7qe9vj054mu60kw1oxthq>
- 990 **NEW ZEALAND** TAB Trackside, Nelson, 1 kW. In a fairly good horse race with Fiji Gold at the start of this recording at 0712 on 4/10, only to fold to Melissa Etheridge in the clutch <https://dreamcrafts.box.com/s/devsens4lrp2pul0m92m0r638yb6y79i>
- 1008 **AUSTRALIA** 4TAB, Brisbane, 10 kW. Dominating over Newstalk ZB with live horse racing at 0752 on 4/10
<https://dreamcrafts.box.com/s/oqks7pabb5rjj96eb04c49n5iseb16xv>
NEW ZEALAND Newstalk ZB, Tauranga, 10 kW. Dominating over 4TAB with male-voiced news //1035 at 0753 on 4/10
<https://dreamcrafts.box.com/s/c1qk2124yuu2hhf0cwaqjig3ev3w6q31>
- 1017 **NEW ZEALAND** Radio Sport, Christchurch, 2.5 kW. The major co-channel of A3Z in Tonga, it could usually be isolated simply by nulling out Tonga. This was the case at 0723 on 4/10, with sports-related news from the Kiwi station in the null of S9 Tonga
<https://dreamcrafts.box.com/s/4yaczeqnvcdqyv6pyuog7707lrh2uifx>
- 1026 **NEW ZEALAND** Newstalk ZB, Kaitiaki, 2 kW. Pretty good signal of the 2 kW station with male conversation //1035 at 0738 on 4/10
<https://dreamcrafts.box.com/s/6tjlvks46ygt3q8zo92768d2vcrtra1y>
- 1035 **NEW ZEALAND** Newstalk ZB, Wellington, 20 kW. Usually very strong on the frequency each evening, but a little off at 0737 on 4/10 with male conversation about gender-changed athletes <https://dreamcrafts.box.com/s/zbrxjg5cyvi1xow8nedzv9aioie2x7cc>
- 1044 **NEW ZEALAND** Newstalk ZB, Dunedin, 10 kW. Male conversation //1035 about gender-changed athletes at 0739 on 4/10
<https://dreamcrafts.box.com/s/0arbh5wji31myv9vn46r29d07qjgbi8a>
- 1053 **NEW ZEALAND** Newstalk ZB, New Plymouth, 2 kW. Great signal for the power level with (once again) male conversation //1035 about gender-changed athletes at 0740 on 4/10. Newstalk ZB has this part of the band almost monopolized
<https://dreamcrafts.box.com/s/15b7103n2w5y03foqoyk0u2xrms6pzz>
- 1062 **NEW ZEALAND** Radio Sport, Wanganui, 1 kW. Sports play-by-play with good signal for the power level at 0742 on 4/10
<https://dreamcrafts.box.com/s/9h4ib0fg3in4xnnfqw6ue00zqi3o6lbb>
- 1071 **NEW ZEALAND** TAB Trackside, Ashburton, 1 kW. Believed to be the Kiwi-accented station at the end of the recording at 1700 on 4/13 under the dominant UnID Australian (thanks to Bryan Clark for accent assistance) <https://dreamcrafts.box.com/s/4zu1wp0eykwxy3598w45dtpjirs5nif>
UnID Australian Mention of "Melbourne" at the 18 second point, but no definite ID clues at 1700 on 4/13
<https://dreamcrafts.box.com/s/4zu1wp0eykwxy3598w45dtpjirs5nif>
- 1080 **NEW ZEALAND** Newstalk ZB, Auckland, 10 kW. Powerful signal at 0745 on 4/10 with sports-related news over very weak co-channel (KWAI in Hawaii?)
<https://dreamcrafts.box.com/s/f8lqy6xhvv56fdsyauyebt1t28wlxcsp>
- 1089 **NEW ZEALAND** Radio Sport, Palmerston North, 2.5 kW. Sports play-by-play //1062 at 0746 on 4/10
<https://dreamcrafts.box.com/s/chasv9jgq78avz0gsgsl2760p3b01707>
- 1098 **NEW ZEALAND** Newstalk ZB, Christchurch, 5 kW. The usual co-channel of V7AB in the Marshall Islands, it could usually be isolated by nulling V7AB, as in this strong recording //1035 (with the gender-changed athlete discussion) at 0749 on 4/10
<https://dreamcrafts.box.com/s/cidqz29yfbvsfge3xn2e3v5e11tppudt>
- 1107 **NEW ZEALAND** Radio Live, Tauranga, 1 kW. Talk-format station all alone at 0750 on 4/10 with good signal for the power level
<https://dreamcrafts.box.com/s/ixt6fum9c0eejx979eps4i1h7pwmzg4k>
- 1116 **UnID-DU** A mix of a strong UnID music station (RNZ?) and a probable 4BC from Brisbane at 0752 on 4/10
<https://dreamcrafts.box.com/s/a5pe6fmk17tnr90zlh4irx2jf36xld9>
- 1125 **NEW ZEALAND** Radio Sport, Napier-Hastings, 1 kW. Great signal for the low power with local ads and promo for shared sports program on sister network Newstalk ZB at 0753 on 4/10 <https://dreamcrafts.box.com/s/wp65skhg3czwx2sk1i1yzu8k4j5wzllb>
- 1143 **NEW ZEALAND** RNZ National, Hamilton, 2.5 kW. Great signal with music and speech //567 at 0754 on 4/10
<https://dreamcrafts.box.com/s/b2f1mcjzkek1s2147rm2scj1m25nbqeo>
- 1152 **NEW ZEALAND** Newstalk ZB, Timaru, 2 kW. Good signal all alone with male conversation //1035 at 0756 on 4/10 regarding (once again) gender-changed athletes <https://dreamcrafts.box.com/s/hpf4368fgakui2ivax59ms8fpnpibww>
- 1161 **NEW ZEALAND** Te Reo Irirangi o te Ika, Wellington, 5 kW. Good signal //603 with Maori language speech at 0750 on 4/10; a parallel segment on 603 is included at the end of the recording. On some evenings this station would be wiped out by 1160-KSL in Salt Lake City
<https://dreamcrafts.box.com/s/glyd7160c5ihz1v9hrydblksldk36524>
- 1377 **NEW ZEALAND** Radio Sport, Levin/Kapiti, 2 kW. Local ads and a promo for Commonwealth Games sport coverage at 0803 on 4/11
<https://dreamcrafts.box.com/s/n10gl1ok4wg4fec69ve999dknb982wde>
- 1386 **NEW ZEALAND** Radio Tarana, Auckland, 10 kW. The Kiwi big gun pounded in with female-voiced local ads in English and male Hindi speech at 0806 on 4/11 <https://dreamcrafts.box.com/s/9a3myg4nvwzptp2jckmdnlpo2datmpdax>
- 1395 **NEW ZEALAND** Newstalk ZB, Oamaru, 2 kW. Good level with female-voiced news and male-voiced ID at 1:10, with promo of Commonwealth Games sport coverage at 0810 on 4/11 <https://dreamcrafts.box.com/s/tiesp5tmnigghdog2spx1zxxfxbese86>
- 1404 **NEW ZEALAND** Rhema, Invercargill, 5 kW. Another good signal with Christian music and local ads at 0813 on 4/11
<https://dreamcrafts.box.com/s/qoxlo02gy396wp5weocmnrmdx3ev2kfi>
- 1413 **NEW ZEALAND** Newstalk ZB, Tokoroa, 2 kW. Male-voiced news //1035 at 0819 on 4/11
<https://dreamcrafts.box.com/s/td3jhm3ad49uaouiagzea4zk7r8xbtry>
- 1440 **NEW ZEALAND** Te Reo O Tauranga Moana, Tauranga, 200 w. In one of the more bizarre moments of the entire trip, the 200 watt Maori station hijacks the frequency from Radio Kiribati at the 50 second point in the following recording (at 0807 on 4/11)
<https://dreamcrafts.box.com/s/2jpcqll1odzjbrxak8u00brzpqz2uba>
- 1449 **NEW ZEALAND** RNZ National, Palmerston North, 2.5 kW. Strong signal with female-voiced news //567 at 0837 on 4/11
<https://dreamcrafts.box.com/s/40nmrktl0ggcawrx2iwwjdcziqop7pez>

- 1458 **NEW ZEALAND** RNZ National, Westport, 400 w. Amazing signal (for 400 watts) with female-voiced news //1449 at 0841 on 4/11
<https://dreamcrafts.box.com/s/9ewn2baonkqjcirnux6toly2m06ccr0q>
- 1476 **NEW ZEALAND** TAB Trackside Radio, Auckland, 5 kW. Horse payout report followed by live race at 0843 on 4/11
<https://dreamcrafts.box.com/s/ekhhx7xmuoteg8p0w4vlr3d5xqd4x4m5>
- 1485 **NEW ZEALAND** TAB Trackside Radio, Gisborne, 1 kW. Good level with horse racing results at 0846 on 4/11
<https://dreamcrafts.box.com/s/ja3gjhauoxre7kxxeqe1hvmp05t9u5gx>
- 1494 **NEW ZEALAND** Radio Sport, Timaru, 2.5 kW. Commonwealth Games soccer coverage (NZ-Australia) mixing with Star's Christian music at 0849 on 4/11
<https://dreamcrafts.box.com/s/6hijjntpnhr02lihpc1dx4rhwrbt6v29>
NEW ZEALAND Star, Hamilton, 2.5 kW. Christian vocal music under Radio Sport's soccer coverage at 0849 on 4/11
<https://dreamcrafts.box.com/s/6hijjntpnhr02lihpc1dx4rhwrbt6v29>
- 1566 **AUSTRALIA** 3NE, Wangaratta, 5 kW. This was the major pest blocking any attempts at reception of India. The "Australia Overnight" program ID at 1:40 (and Rick Springfield's music prior to that) are at typical strength <https://dreamcrafts.box.com/s/qdch9evwszf8h0sei1t7gd6x0lhfkvh8>
UnID-DU During a rare fade in 3NE's obnoxious signal at 1641 on 4/12 an attempt was made to record a mix of two other DU English stations, possibly the 100w Norfolk Island and 200w 4GM. This was the wacky result (in a mix with HLAZ's Chinese)
<https://dreamcrafts.box.com/s/hysvrh4f7i8u16f3740ch5azam0iervx>
- 1701 **AUSTRALIA** Radio Brisvaani, Brisbane, 100 w. Presumed the one with South Asian music at 1645 on 4/12
<https://dreamcrafts.box.com/s/6pmgn2a89jlr3savncx0axkkigicotxl>

73 and Good DX, **Gary DeBock** (DXing on Aitutaki, Cook Islands)

All New Zealand/Australian loggings made with a 7.5" loopstick CCrane Skywave SSB portable
<https://dreamcrafts.box.com/s/oephi2ru7ejk31saxdq2tjijqx9db0ros>

ADDITIONAL RESOURCES

5 inch (13 cm) "Frequent Flyer" FSL antenna demonstration video <https://www.youtube.com/watch?v=bRaOnWS-5lg>



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USB Isolators/Ground Loop Eliminators for Software Defined Radio Applications by Bruce Conti – May 2018

Intro to USB

USB stands for Universal Serial Bus. It's an internationally standardized specification designed for easy plug-and-play hot connection between peripherals and a host computer. In other words, the USB connection can be safely plugged in and unplugged from the peripheral and host without powering down the device or computer.

USB data transfer rates, specified in bits per second (bps), are low speed 1.5 Mbps, full speed 12 Mbps, high speed 480 Mbps, super speed 5 Gbps, and 'super speed plus' at 10 to 20 Gbps. The USB 1.1 data rate is specified for low and full speeds. USB 2.0 can operate at low, full, and high speeds, but not all USB 2.0 devices are capable of high speed. USB 3.0 supports data transfer rates up to super speed, 3.1 to 10 Gbps, and 3.2 to 20 Gbps super speed plus. Software defined radio (SDR) receivers covering LW, MW, and SW, such as the Microtelecom Perseus and WiNRADiO Excalibur, typically require USB 2.0 high speed. Some of the extra wideband SDR's for FM broadcast spectrum capture such as the Elad S2 and S3 units may require USB 3.0 super speed.

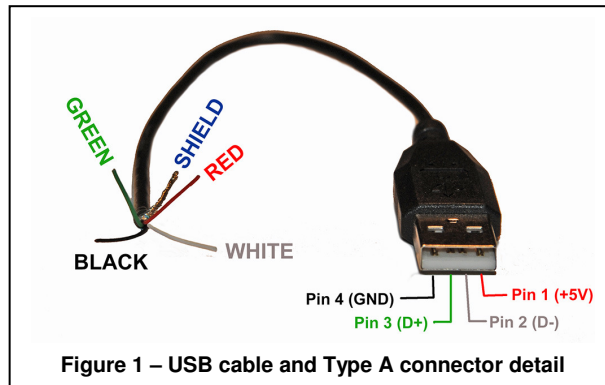


Figure 1 – USB cable and Type A connector detail

The typical USB 2.0 high speed cable for connecting a SDR receiver peripheral to a host computer consists of four wires (see Figure 1). The power from the host is via red (+5 VDC) and black (ground) wires. The differential data lines of the USB serial interface are green (D+) and white (D-). The more expensive high-end USB 2.0 high speed cables are typically shielded, sometimes including a ferrite bead at each cable end for common mode choking of RF emissions. Cheaper cables may not have a black wire, instead using the shield as the power supply ground. The cheapest USB 2.0 low/full speed cables aren't shielded, and may only consist of three wires, combining the data return line and power supply ground via the same wire – stay away from these! Maximum high speed cable length is specified at 5 meters to limit 'round-trip delay between host and peripheral. If the host sends an instruction to the peripheral and it doesn't receive a reply in time due to excessive cable delay, then USB operation will fail.

The USB 2.0 high speed power supply voltage specification is +5 VDC nominal, +5.25 maximum, and minimum +4.40 at the peripheral to allow for voltage drop across the cable. A low power peripheral requires up to 150 mA of current (0.75 watts at 5 volts). A high power USB 2.0 peripheral can draw as much as 500 mA (2.5 watts at 5 volts), while a USB 3.0 device may demand 900 mA (4.5 watts at 5 volts).

The standard USB 2.0 connector at the host computer is Type A; pin 1 = +5 VDC, pin 2 = D-, pin 3 = D+, pin 4 = ground. While a Type B connector with the same pinout but different style is common for peripheral connection, the type of connector used by a SDR can vary in pinout, shape, and size between several standard types. There are also multiple grades of connectors from cheap consumer types to heavy-duty industrial. Industrial strength connectors for general electronics applications are constructed with higher reliability contacts specified for at least 1,500 mating cycles. Additionally the locking tactile feel of a high retention industrial connector ensures proper insertion and prevents it from coming loose.

The USB Ground Loop Problem

I learned that the USB ground loop problem existed after stumbling upon a number of pro audio websites and blogs that discuss this as a major problem in the recording industry. According to my internet research, numerous issues involving artifacts and dynamic range of digital audio can be traced to USB ground loops. So USB isolators/ground loop eliminators are extremely popular among audiophile and pro audio circles. They talk about vibrant soundstage and deeper blackness when describing the improved audio performance achieved by breaking the USB ground loop. Then I connected the dots between the pro audio reports and recently experienced computer noise issues during a group DXpedition. It was one of those "Ah ha!" moments.

A ground loop may actually exist between an SDR and computer, or between the antenna and computer, via the USB cable. The result is a higher noise floor. As indicated earlier, audio performance may also be impacted by a USB ground loop, so it shouldn't be thought of solely as a receiver RF noise issue.

Think of this differently than an antenna noise problem. Ground loop currents can introduce noise not only through the SDR RF input, but also in the computer audio. The USB isolator breaks a ground loop between the computer and SDR. *After judiciously reducing noise at the antenna which remains mission critical in any DX setup*, breaking the USB ground loop may provide an additional 3 to 6 dB of headroom and improve audio clarity, which could make the difference between observing a weak signal and hearing audio. Testing with the WiNRADiO Excalibur SDR and a laptop computer proved it out, however results may vary with different SDR's and host computers.

Break the Ground Loop Construction Project

One simple solution to breaking a USB ground loop and reducing noise is to disconnect the often dirty +5 VDC power at the USB output of the host computer. Note that this does not completely isolate the USB between the host computer and SDR because the D+ and D- data lines will still be connected. Ground loop currents may yet flow through the data lines, so results could be insignificant to nil but worth trying for the cost savings versus purchase of a USB isolator. This project also allows the USB power from the host computer to be replaced by an external low-noise power supply via the binding posts which may prove to reduce noise for SDR's that aren't powered by a separate supply. See Figures 2 and 3 for details.

Parts List

- 1 x short-length USB 2.0 type A male to USB 2.0 type A female high speed extension cable
- 1 x double pole double throw on/on toggle switch
- 1 x red binding post
- 1 x black binding post
- 1 x non-polarized ceramic bypass capacitor, 0.1 μf
- 1 x small plastic project box

Construction

1. Cut the USB extension cable in half. De-jacket a few inches of the outer insulation from each half of the cable.
2. If the cable is shielded, cut away the shield to expose the internal wires. There should be four internal wires; red, black, green, white.
3. Drill holes of appropriate size for mounting the switch and two binding posts in the project box.
4. Cut two slots on the sides of the project box to accommodate the USB cable ends.
5. Solder the USB cable red wire of the female end (peripheral SDR) to the common terminal of one switch, solder the USB cable red wire from the male end (host computer) to one of the on positions, and wire the red binding post to the other on position. Refer to the schematic diagram.
6. Follow the same wiring procedure for the USB cable black wires and binding post to the remaining switch.
7. Solder the 0.1 μf bypass capacitor between the black and red wires of the switch common terminals.
8. Solder the green wire from the cable female end to green of the male end, then solder white to white.
9. Complete assembly by marking USB/isolated switch positions appropriately, secure the cables and close the box.

Installation and Operation

1. Plug the USB isolator into the host computer and into the USB cable of the SDR.
2. Set the switch to the USB position.
3. If the SDR requires USB power, ie the SDR doesn't have its own external power supply, then an external +5V low-noise power supply must be connected to the binding posts.
4. Power up the SDR and start the SDR software as you would normally.
5. Once the SDR is in operation, toggle the switch from USB to isolated position.

Note: If the SDR has its own separate power supply (not powered by USB), this start-up procedure must still be followed. In most cases, the +5V from the USB host computer is required to initialize the USB circuitry of the SDR. Without +5V, the SDR may fail to start up properly. Once the SDR is powered up and operating, then the switch can be toggled to the isolated position.

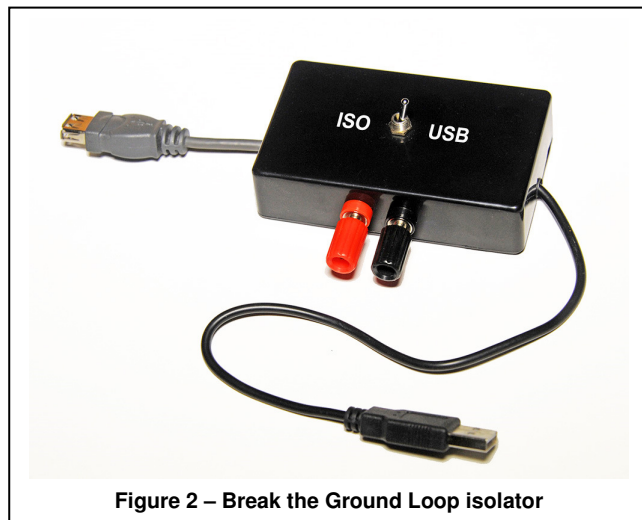


Figure 2 – Break the Ground Loop isolator

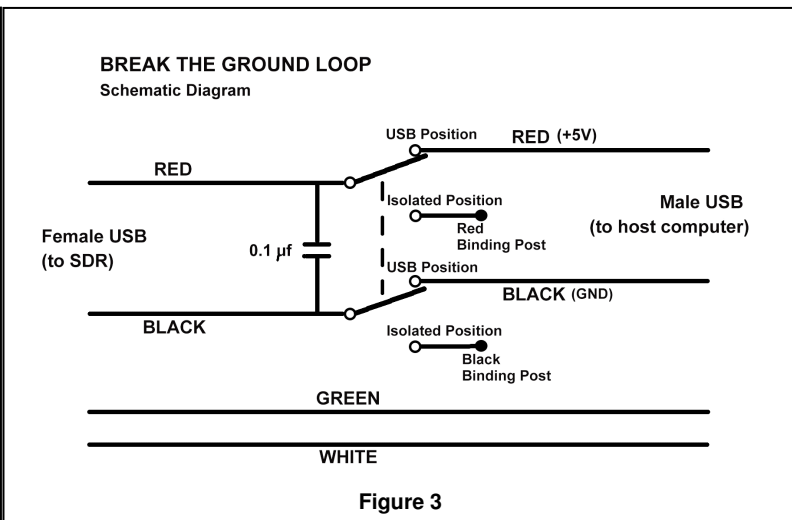


Figure 3

The short length of USB extension cable is used to simplify wiring and prevent miswiring. Alternatively, bulkhead/panel mount male and female connectors can be mounted on the project box for a cleaner more professional looking unit, but extra caution must be taken not to miswire the connector pins. It's much easier and less confusing to take advantage of the color coded wires of the halved cable.

If this homebrew USB ground loop breaker reduces the noise floor by 3 dB or more, awesome! You've saved yourself hundreds of dollars. If it doesn't produce the desired results, then a true USB isolator might be necessary to get the job done. Read on....

Intona USB 2.0 Hi-Speed Isolator

The USB isolators used in pro audio are typically only full speed (12 Mbps), Analog Devices ADuM chip-based designs, not fast enough for SDR applications. The high speed (480 Mbps) isolators are much more expensive as they require more elaborate circuitry. I found and purchased the Intona USB 2.0 Hi-Speed Isolator (<https://intona.eu/en/products>), pricey but not too far out of reach, and it works! It reduced the noise floor by 3 to 6 dB, as seen in Figure 4. This could make a huge difference in trying to dig out weak signal DX on clear frequencies such as 828 South Africa or 1206 Mozambique, or in my case getting audio from weak transpacific signals at dawn. The Intona is plug and play. Simply insert the unit between the host computer and SDR with high speed USB cables, then power up the SDR normally.

It isn't perfect. I discovered an open carrier at approximately 488 kHz intervals; 731.9, 1219.9, 1707.9 kHz, etc. It's a very quiet spike like an open carrier, no noise, buzzes, or blips. My guess is that it's related to the galvanic isolation 5VDC to 5VDC internal switching power supply frequency, although adding bypass capacitors to filter out the noise was unsuccessful. The Intona also has a Xilinx Spartan XC3S50A FPGA on each side, so the clock frequency could be the source unless it's synchronized with the switcher frequency. To remove USB jitter, a primary cause for concern in pro audio applications, the FPGA on the host computer side unpacks the USB data for the isolators, and then the FPGA on the peripheral SDR side repacks/reclocks the USB data. Since USB communication is bidirectional, the same repacking is done from the SDR to host. Apparently this also eliminates latency problems encountered when isolating USB data, a limiting factor in cheaper USB 2.0 full speed devices. Serial data isolation is through Si8660 6-channel digital isolator chips.

The Intona is manufactured in Germany. It's available in consumer and industrial grade models for under \$400 from US distributor Kitsune HiFi ([KitsuneHiFi.com](https://kitsunehifi.com)) and Canada distributor L'Atelier Audio (atelier-audio.com).

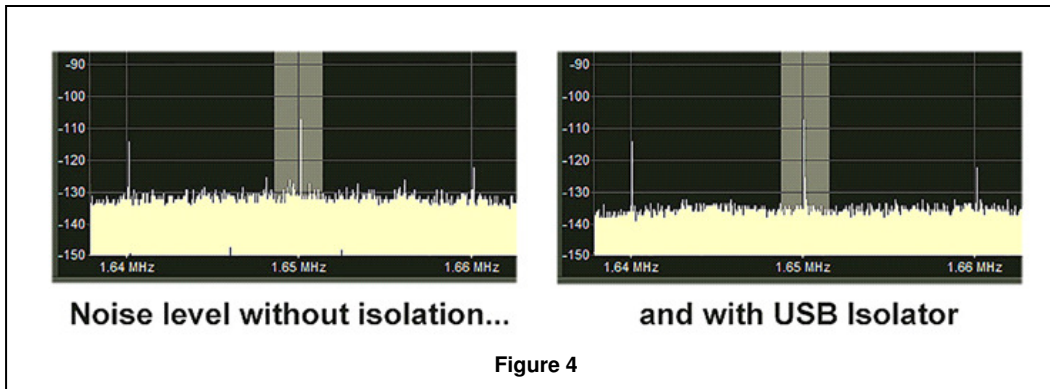


Figure 4

iFi iGalvanic 3.0

The iFi iGalvanic 3.0 USB isolator (ifi-audio.com) is promoted as the world's first USB 3.0 galvanic isolation device. The iGalvanic 3.0 meets USB 3.0 standards with USB 3.0 connectors and it operates up to super speed 5.0 Gbps. (USB 3.0 connectors have more pins/wires than USB 2.0, but the USB 3.0 connectors are backward compatible with USB 2.0 cable connectors.)

Like the Intona USB 2.0 Hi-Speed Isolator, the iFi iGalvanic 3.0 uses an internal switching power supply to provide isolation between the host computer 5V USB power and the device, resulting in RF noise spikes at regular intervals. The iFi and Intona USB isolators are designed primarily for professional audio applications. Although extremely effective at elimination of ground loop hum and noise issues at audio frequencies, apparently the designers don't pay much attention to RF noise.

Initial tests show that the iGalvanic 3.0 isn't as good as the Intona USB 2.0 Hi-Speed Isolator, perhaps due to the higher operating speed and higher current power supply required for USB 3.0. The iGalvanic 3.0 internal switching power supply is noisier than the Intona USB 2.0 especially at frequencies above 20 MHz.

iFi iDefender 3.0 and iPower 5V

The iFi iGalvanic 3.0 USB isolator was purchased as part of a package deal for under \$400 from Music Direct that included the iDefender 3.0 Ground Loop Breaker and iPower 5V (www.musicdirect.com/accessories/iFi-Nano-iGalvanic30iDefender30iPower-Bundle). The iDefender 3.0 operates similar to the "Break the Ground Loop Construction Project" by disconnecting the USB 5V power from the host computer and replacing it with a low noise external power supply, in this case the iPower 5V. The iDefender 3.0 automatically switches from USB power to the external low noise power source when that external power is applied via a micro USB connector on the iDefender. The iPower 5V power supply has an audio band noise floor spec of 1 μ V utilizing active noise cancellation technology with a "super-silent" 12 element output array. The iDefender 3.0 and iPower 5V combo would be an ideal alternative for those who aren't equipped to build the homebrew project.

Installation of the iDefender 3.0 and iPower 5V on the output of the iGalvanic 3.0 isolator eliminated much of the switching power supply noise of the iGalvanic, bringing it closer to the performance level of the Intona. As of this writing, the iFi iGalvanic 3.0, iDefender 3.0, and iPower 5V package deal is probably the only USB 3.0 super speed isolation available in the under \$400 price range, but if the SDR only requires USB 2.0 high speed then definitely get the Intona.

Ciunas Audio USB-HUB

While test and documentation for this article were well underway, I became aware of another candidate for SDR applications; the USB-HUB from Ciunas Audio in Ireland (www.ciunas.biz). It uses an internal battery to provide USB 5 volts on the isolated peripheral side instead of a 5 VDC to 5 VDC switch mode power supply as used in the Intona and iFi units. The up side is that it eliminates switching power supply noise. On the down side, it will only run for 8 to 10 hours before the battery needs to be recharged which is unacceptable for overnight automated SDR operation that can exceed 14 hours. However the USB-HUB will run continuously on an included external trickle charger.

"The ISO-HUB is powered directly from Lithium Phosphate battery, no voltage regulators which impose their own noise signature," said John Kenny at Ciunas. "The high speed USB isolation is achieved through a chip dedicated to this purpose rather than FPGA's, and finally the isolated USB signal is relocked/reformed to remove the USB jitter that all isolators introduce. All is housed in an aluminum case for RF shielding, and there are 4 isolated high speed USB 2.0 output ports, not one."

The USB-HUB sells for twice the cost of the Intona; \$746 in US dollars, and it's only available direct from the manufacturer with no North American sales reps. Ciunas Audio contacted me after reading news in a shortwave bulletin about my USB isolation investigation. A unit was reported to be under test by a SDR user (WiNRADiO and SDRSpy), and Ciunas Audio promised to forward the test results to me. That was months ago and still no test results have been promulgated, so the performance of this unit for SDR applications remains unknown but promising.

Epilogue

Highly recommended for AM HF (LW, MW, SW) hardcore SDR DXing: Combination of the Intona USB 2.0 Hi-Speed Isolator with either the homebrew USB ground loop breaker or the iFi iDefender 3.0 Ground Loop Breaker and iPower 5V installed on the peripheral side of the Intona (Figure 5). This eliminates much of the Intona switching power supply/clock noise in the higher frequencies of shortwave, but the 'open carrier' signals at 488 kHz intervals, three of which are in the broadcast band, still show up. Not a problem. It's the best performing device found so far in the emerging technology of USB ground loop/noise elimination devices.

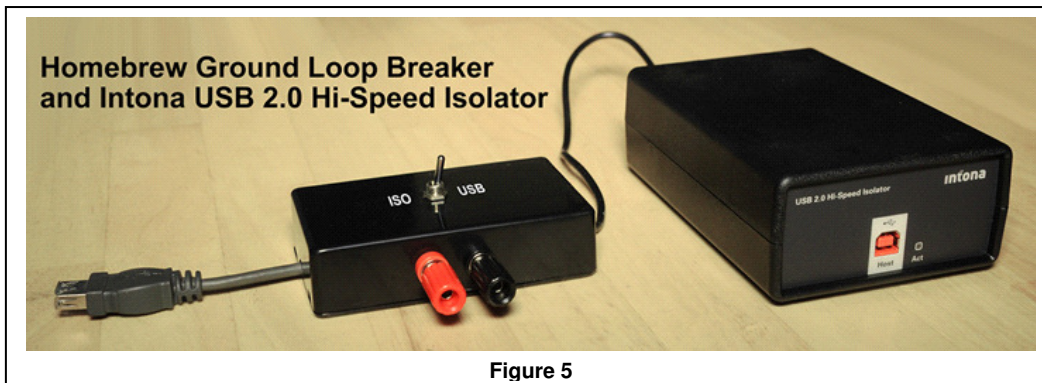


Figure 5

As more and more peripherals are requiring high speed and super speed USB data rates, the development of USB isolation devices is trying to catch-up. One to watch in the under \$100 price range is the HiFiMe High Speed USB Isolator (<https://hifimedi.com/high-speed-usb-isolator-480Mbps>) using the recently developed Silanna ICE08USB chip for data isolation. The HiFiMe high speed isolator was announced nearly a year ago, perhaps prematurely as it has yet to become available, currently listed as delayed.

Another worth considering at \$199.99 is the CoolGear USB 2.0 High Speed 480 Mbps Isolator Adapter (<http://www.coolgear.com/product/usb-isolator-high-speed>). It's the first I've found to use the new Silanna chip. Promoted as "the first of its kind to fully support USB 2.0 480 Mbps data transfer speeds," little else is known about the performance of this isolator. It can be powered by USB or an external supply if like other designs an internal switch mode supply generates RF noise.

The design of USB isolation devices is driven primarily by the pro audio market, where demand is increasing for higher speed USB to operate higher sample rate DAC's and processors. So it's expected that in the future more high speed and super speed USB isolation devices will become available at lower cost for SDR noise reduction applications. Otherwise early adopters of the technology unfortunately will find that the choices are limited and the entry price is steep, but well worth the investment for hardcore DXing not to mention the added benefits of improved audio.

73 and Good DX!

(This article first appeared in the June 2018 edition of National Radio Club's *DX News*, and is used with permission of the author. It is also available at <https://www.bamlog.com/usbisolator.htm> See the website for any further updates.)



2017-2018 IRCA DX CONTEST – Manager: Nancy Johnson – 2922 S Olivewood – Mesa AZ 85212-2923
E-mail: NancyJohnson@prodigy.net

June 15 2018 – Final Contest Standings

1. John C Johnson 316	3. Dennis Vroom 200	5. Nancy Johnson 110	7. Phil Bytheway 15
2. Tim Noonan 256	4. Greg Hall 171	6. Nigel Pimblett 43	8. Mike Sanburn 1

Congratulations John for being the contest winner this season! Thank you to all that participated. The 2018-2019 contest rules will be published in August and the new contest will begin September 1 2018. – Nancy

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For those preferring a hard copy, one can be ordered from the IRCA.

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A DXers Technical Guide, 4th Edition (Spring 2004)

In its nearly 200 pages you will learn about the principles underlying the design of successful receivers, antennas and receiving accessories, find reviews of the best commercially available DXing equipment in different price ranges, as well as detailed instructions for building one's own antennas and other DXing aids. Although it focuses on the technical backdrop to medium wave DXing, it will also be of interest to serious shortwave listeners and low band radio amateurs.

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