



ONE HUNDRED YEARS OF BROADCASTING

NOISE (AM)

STATUS

- Current Situation
- Evidence of things to come
- Noise Floor
- Interference
- Causes of Noise(Examples)

CONTENT

- AM Radio Stations
- Programming
- Make your own content
 - Injection
 - Transmission

PREVENTION

- ACTIONS for prevention
- Minimize Noise
- Maximize Signal Strength

1920 FIRST BROADCAST: 8MK (Detroit, MI) KDKA (Pittsburg, PA)

Number of AM/FM Radio Stations In the US: 15,330

(4728 AM STATIONS)

In 1970 50% Radio Listeners on AM, Today 15%

MOST POPULAR FORMAT—COUNTRY

Young: Rhythmic

57% STREAM ON LINE, streaming, BROADCAST LISTENING

Leading on line: Pandora

AVERAGE Listening: 106 minutes per day listening (commute)

Most Popular in US: WROD Daytona Beach, Florida

KOMO Seattle, Washington

WCCO Minneapolis, Minnesota

KDKA Pittsburg, PA

4728 AM STATIONS

535-1605 (106 CHANNELS OR SLOTS), @ 10KHz spacing

**Extended 540-1700 (1990 ITU)
116 CHANNELS**

**Simultaneous cast DIGITAL
(IBOC) In Dallas on AM band:**

KTNO 620-1 Spanish

KRLD 1080-1 News Talk

KFLC 1270-1 Spanish

KKIf 1700-1 Spanish



For decades, AM radio has felt as commonplace as a utility, such a basic fact of life that it's taken for granted. But that's changing: Across America, AM radio stations are dwindling in number and profitability, as better-sounding FM signals become cheaper to broadcast and would-be listeners turn to the internet for entertainment,

Yet even in decline, it has a strength that politicians and media insiders who want to understand America would do well to heed. In 2019, thousands of AM stations remain on the air, many of them thriving—in part because they serve unique sets of people whose voices aren't always heard loudly. For generations, it was considerably cheaper to buy or start an AM station than any other form of mass media, making ownership more accessible to people of color, immigrants, non-English speakers and those with political views outside the mainstream. Without the line-of-sight restrictions of FM radio, AM radio can also cover vast geographic areas, and so remains a staple of rural media. Even now, if you tune into the right frequency on a clear summer night, you can hear a broadcast from half a continent away—listening in on the kinds of conversations that shape identity and politics far outside the Beltway.

For devotees eager to preserve the format, AM has a would-be savior in Washington: Federal Communications Commission Chairman Ajit Pai. Better known as a free-market “net neutrality” deregulator, Pai launched an effort to revitalize AM several years ago, shortly after becoming an FCC commissioner. Growing up in Parsons, Kansas, in the 1970s and '80s, Pai has said he listened to AM radio with his parents, who had come to the United States from India with “little more than \$10 in their pockets and a radio.” But purists are concerned that in his efforts to save AM radio, Pai might be inadvertently killing off what makes it unique, potentially curtailing long-distance AM broadcasters and moving more of its broadcasts to FM.

Now, as the FCC undertakes its important Quadrennial Review, I would again implore Chairman Pai and the Commissioners to walk away from the past, lay AM radio to rest, and move all the AM stations to an all-digital, expanded FM band in the television channels' 5 and 6 spectrum. And, in addition, implement a "date certain" plan, sooner rather than later, to move the incumbent FM band, at 88 to 108 MHz, to all-digital. We already required the move, years ago, of broadcast TV from analog to digital. There is no rational reason for not mandating the same of broadcast radio. In fact, digital broadcast television is already evolving to its next, forward-looking advancement: ATSC 3.0. But we're still vainly rendering life support to AM radio.

Technology: FCC Asked to Allow All Digital Transmissions on AM Band

According to Radio World, a prominent advocate for the Standard Broadcast Band (AM band) has petitioned the FCC to allow stations to use all-digital transmissions in the US. In March, Bryan Broadcasting Corporation asked the Commission to initiate a proceeding to authorize the MA3 primary all-digital service mode for any AM station that chooses to do so. Bryan is the licensee of four AM and five FM stations (and six FM translators) in central Texas.

All HD Radio receivers in the market that have AM functionality would be able to receive such all-digital signals, the article explains, but legacy AM receivers would not.



Since last summer, WWFD in Frederick, Maryland, has had special temporary authority to broadcast in all-digital. The Bryan petition appears to be the first to seek all-digital authority. The petition said the broadcast industry's experimentation with an all-digital approach "could be accelerated by actually allowing stations to fully switch to MA3; actual experiential knowledge by stations that elect to switch will provide economic proof-of-concept for stations that delay in order to see how others fare."

The petition also noted discussions that the AM band has "become so overwhelmed by interference and impulse noise that the resultant audio product is rendered unacceptable to modern listeners." The petition said the noise floor generated by unlicensed devices and affecting the AM band "has been noticeable -- and increasing -- for years." According to the petition, Bryan has tried to quantify the noise floor increase, but that studies have not been undertaken in the US. The petition said experience in other countries suggests a rise from anywhere between 10 dB and 40 dB between the 1970s and the early 2000s."

Code of Federal Regulations, Title 47, Part 15 (47 CFR 15) is an oft-quoted part of Federal Communications Commission (FCC) rules and regulations regarding unlicensed transmissions. It is a part of Title 47 of the Code of Federal Regulations (CFR), and regulates everything from spurious emissions to unlicensed low-power broadcasting. Nearly every electronics device sold inside the United States radiates unintentional emissions, and must be reviewed to comply with Part 15 before it can be advertised or sold in the US market.



radio-locator

find US radio stations by location



city/zip

Sachse

state

TX

find by callsign

Easily Customized & Scaled

▶ Top Vendor Of Mobile Surveillance Video Products In North America. #1 in North America. Safety Vision®

OPEN

There are 88 radio stations that may be within distant listening range of Sachse, Texas. (32° 58' 35" N, 96° 35' 10" W)

③ Info: Click to get more information about a station or to submit a change.

⚡ Bitcaster: Indicates that the station broadcasts its audio on the Internet.

Distances show the distance between the station and your location in Sachse, Texas.

[Find unused frequencies](#) in Sachse, Texas.

Site Navigation:

[home page](#)

[city search](#)

[format search](#)

[u.s. state search](#)

[canadian search](#)

[international search](#)

[advanced search](#)

[vacant frequencies](#)

Call Sign	Freq.	Dist./Signal	City	School	Format
⚡ ③ KDFT	540 AM	32.0 mi	Ferris, TX		Spanish Christian
⚡ ③ KLIF	570 AM	20.6 mi	Dallas, TX		News/Talk
⚡ ③ KTBB	600 AM	93.8 mi	Tyler, TX		News/Talk
⚡ ③ KTNO	620 AM	18.6 mi	Plano, TX		Spanish Christian
③ KWPN	640 AM	168.0 mi	Moore, OK		Sports
⚡ ③ KSKY	660 AM	21.4 mi	Balch Springs, TX		Talk
⚡ ③ KHSE	700 AM	17.1 mi	Wylie, TX		Asian
⚡ ③ KKDA	730 AM	27.7 mi	Grand Prairie, TX		Asian
⚡ ③ KSEO	750 AM	73.8 mi	Durant, OK		Oldies
⚡ ③ KAAM	770 AM	3.9 mi	Garland, TX		Religious
★ ③ WBAP	820 AM	42.1 mi	Fort Worth, TX		News/Talk
⚡ ③ KJON	850 AM	24.9 mi	Carrollton, TX		Spanish Christian
⚡ ③ KFJZ	870 AM	46.7 mi	Fort Worth, TX		Business News
⚡ ③ KATH	910 AM	24.5 mi	Frisco, TX		Religious
⚡ ③ KHVN	970 AM	42.9 mi	Fort Worth, TX		Gospel Music

③ KCFD	990 AM	20.2 mi	Farmersville, TX		Spanish Christian
⚡ ③ KGGP	1040 AM	16.0 mi	Dallas, TX		Gospel Music
★ ③ KRLD	1080 AM	6.9 mi	Dallas, TX		News
★ ③ KVTT	1110 AM	70.8 mi	Mineral Wells, TX		Asian
③ KHFX	1140 AM	67.9 mi	Cleburne, TX		Spanish Christian
⚡ ③ KBDT	1160 AM	64.6 mi	Highland Park, TX		Talk
★ ③ KFXR	1190 AM	24.9 mi	Dallas, TX		Talk
⚡ ③ KZEE	1220 AM	71.1 mi	Weatherford, TX		Asian
⚡ ③ KSST	1230 AM	58.8 mi	Sulphur Springs, TX		Oldies
★ ③ KFLC	1270 AM	39.1 mi	Benbrook, TX		Spanish Sports
⚡ ③ KTCK	1310 AM	20.6 mi	Dallas, TX		Sports
③ KAND	1340 AM	59.9 mi	Corsicana, TX		Country
★ ③ KMNY	1360 AM	26.0 mi	Hurst, TX		Spanish
⚡ ③ KGVL	1400 AM	31.1 mi	Greenville, TX		Classic Hits
⚡ ③ KFYN	1420 AM	48.1 mi	Bonham, TX		Country
★ ③ KEXB	1440 AM	17.5 mi	University Park, TX		Religious
③ KCLE	1460 AM	48.8 mi	Burleson, TX		Asian
★ ③ KNGO	1480 AM	22.1 mi	Dallas, TX		Asian
③ KJIM	1500 AM	49.4 mi	Sherman, TX		Nostalgia
③ KZMP	1540 AM	27.0 mi	University Park, TX		Spanish Sports
⚡ ③ KPYK	1570 AM	25.3 mi	Terrell, TX		Nostalgia
⚡ ③ KGAF	1580 AM	54.1 mi	Gainesville, TX		Adult Contemporary
③ KRVA	1600 AM	17.9 mi	Cockrell Hill, TX		Asian
③ KKGW	1630 AM	33.2 mi	Fort Worth, TX		Gospel Music
③ KKLF	1700 AM	10.0 mi	Richardson, TX		Tejano

very strong signal

strong signal

moderate signal

weak signal

very weak signal



50,000 WATTS



<300 WATTS

FORMATS FOR BOTH AM/FM IN THE U.S.

Format	Jun2017	Jun2018	Change
Country	2159	2183	1%
News/Talk	2046	2022	-1%
Religion (Teaching, Variety)	1944	1977	2%
Contemporary Christian	1185	1200	1%
Spanish	1157	1178	2%
Variety	1053	1105	5%
Classic Hits	994	1026	3%
Sports	759	733	-3%
Alternative/Modern Rock	648	628	-3%
Top 40	623	622	0%
<i>Source: Precisiontrak.com</i>			

FORMATS FOR THE 40 STATIONS IN LISTENING AREA

FOREIGN	17
NEWS	6
SPORTS	2
TALK	3
RELIGIOUS	5
COUNTRY	2
NOSTALGIA	5

FACTORS THAT AFFECT SIGNAL STRENGTH

POWER

TRANSMITTING ANTENNA LOCATION

DIRECTIONAL ANTENNA(S)

DAY OR NIGHT RECEPTION

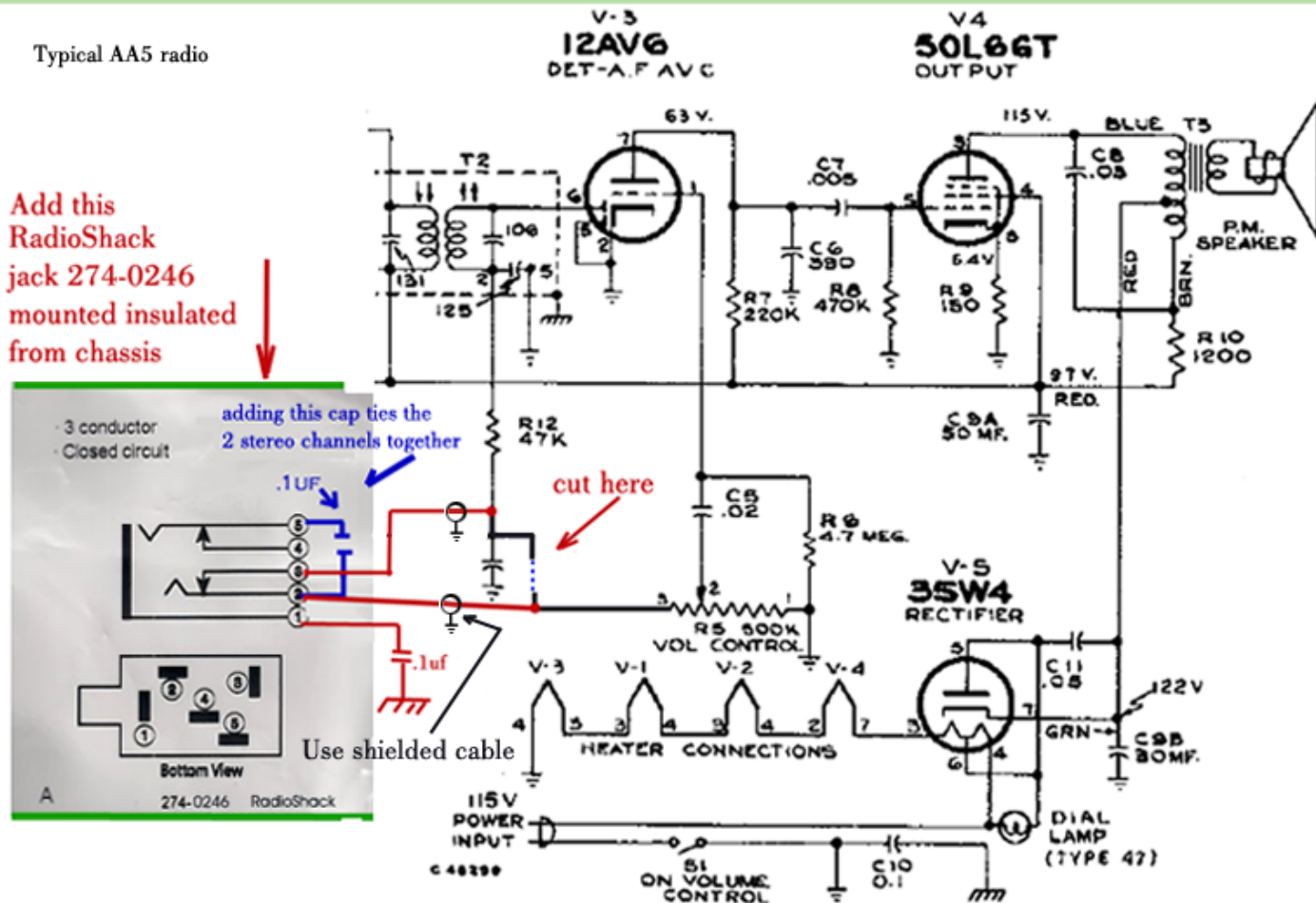
DISTANCE TO TRANSMITTING ANTENNA

LOCATION AND HEIGHT OF RECEIVING ANTENNA

TYPICAL SIGNAL INJECTION

Typical AA5 radio

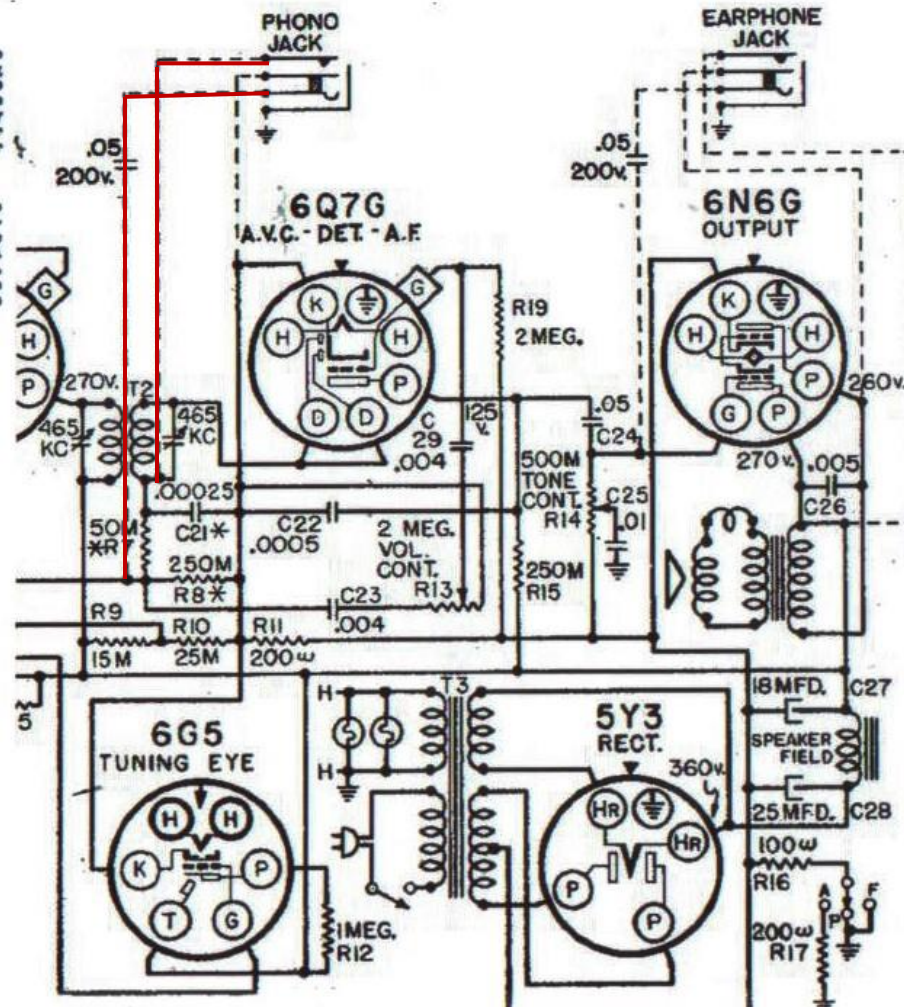
**Add this
RadioShack
jack 274-0246
mounted insulated
from chassis**



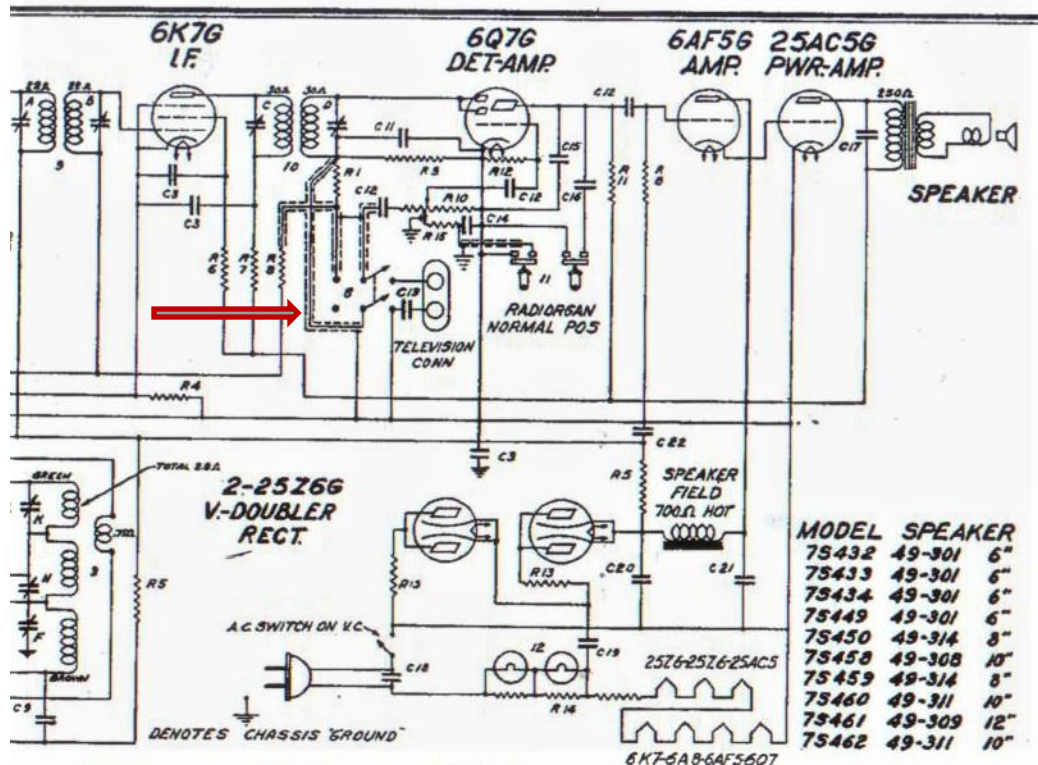
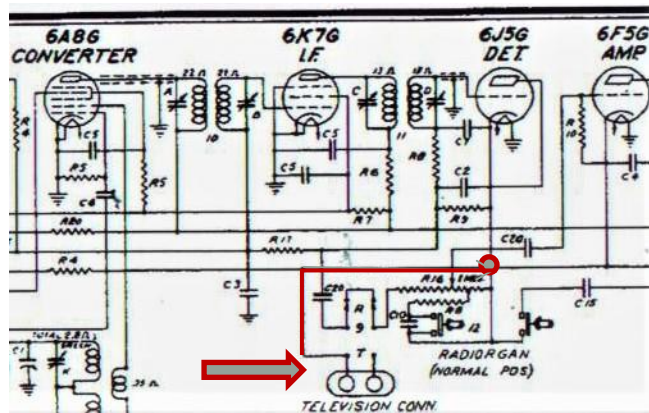
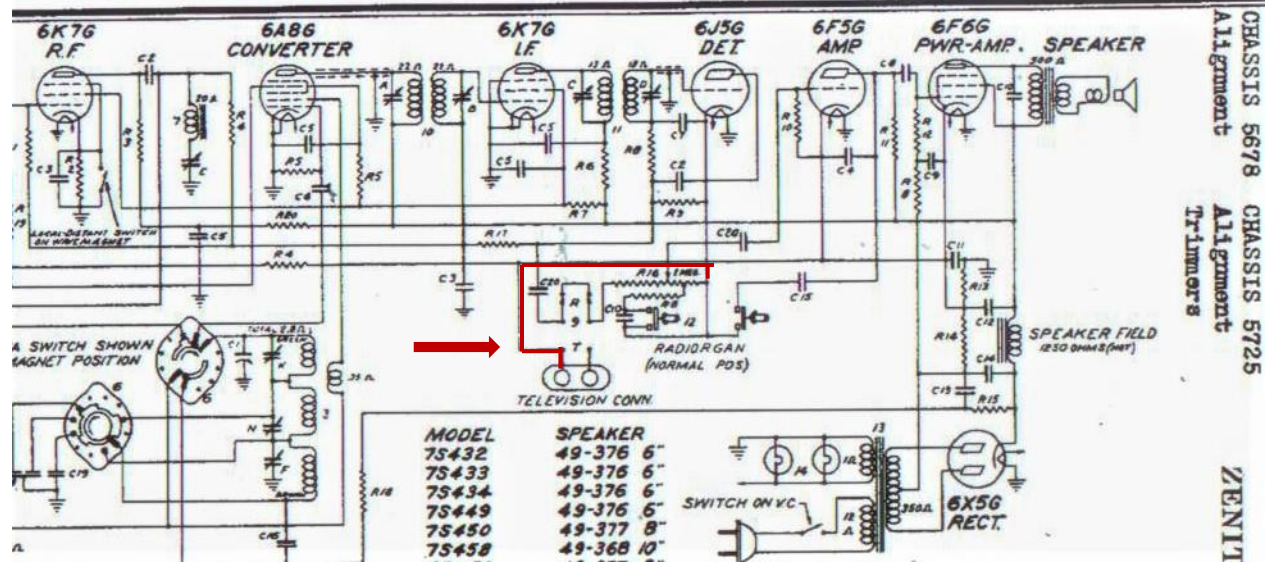
SIGNAL INJECTION

CONNECTING A PHONOGRAPH PICK-UP JACK OR AN EARPHONE JACK:

A hole, plugged with a brass insert, will be found at the rear of the chassis. This hole is provided for the installation of either a phonograph pick-up jack or an earphone jack. The circuits are shown in the illustration below. The additional condensers are .06 mfd. 200 volts. The part number of the jack is 101B13685.



MODELS 4465, 4485, 4565, 4585
Phone-Jack Connections
Interference Elimination
Notes

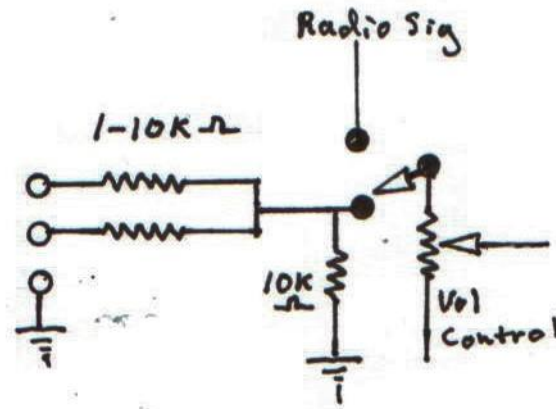




SIGNAL INJECTION(protecting the source)

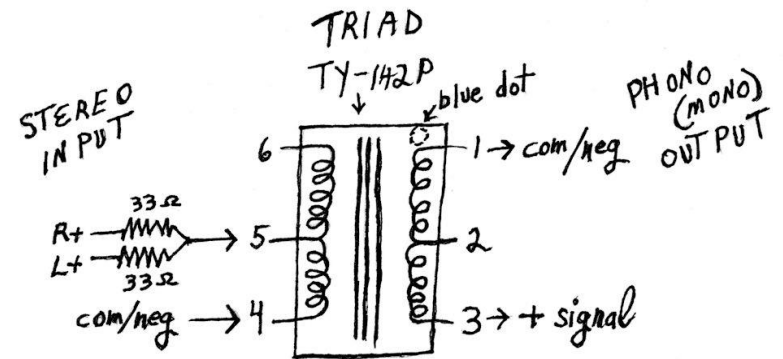
**PROGRAM
SOURCE**

**STEREO
JACK**



RADIO

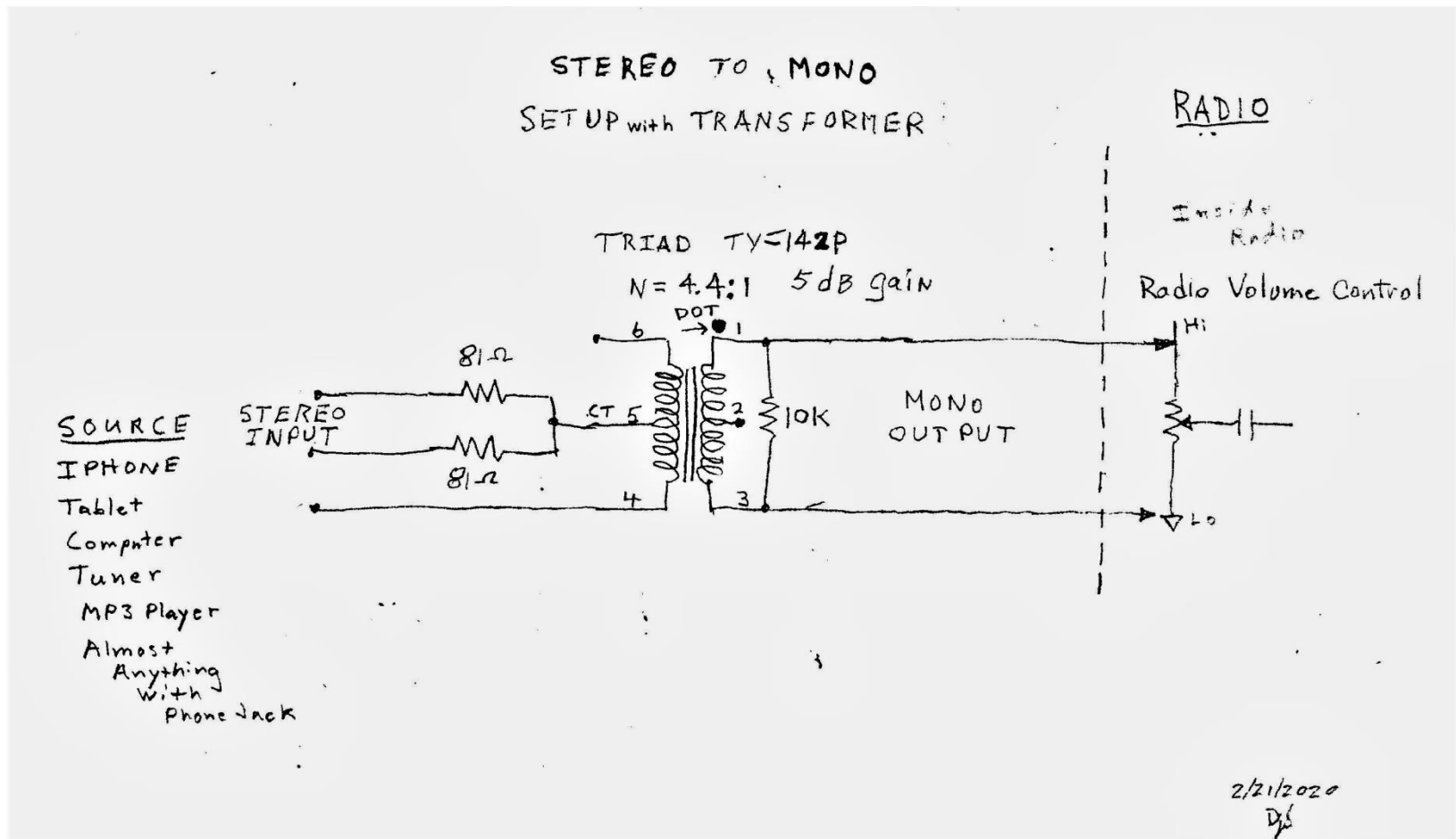
Quantity	Part	Mouser Part #
1	Triad TY-142P transformer	2731380 2731380
1	Project box	546-1591LS-BK 546-1591LS-BK
2	33-ohm resistor	SFR16S0003309JA500
3	RCA panel jacks	568-NYS367-0 568-NYS367-0



IPOD/SMARTPHONE ADAPTOR FOR
VINTAGE RADIO WITH PHONO INPUT

SOURCE INJECTION USING ISO-TRANSFORMER

CONVERTS STEREO SOURCE TO MONO FOR INJECTION



The transformer is from Mouser but one can use a 12v AC wall-wort with 12v side toward source.
Mouser part Tyiad # TY-142P .

TRANSMITTING TO YOUR AM RADIO

Part 15 AM Transmitters

knight-kit



RADIO BROADCASTER - AMPLIFIER



Bluetooth AM Transmitter

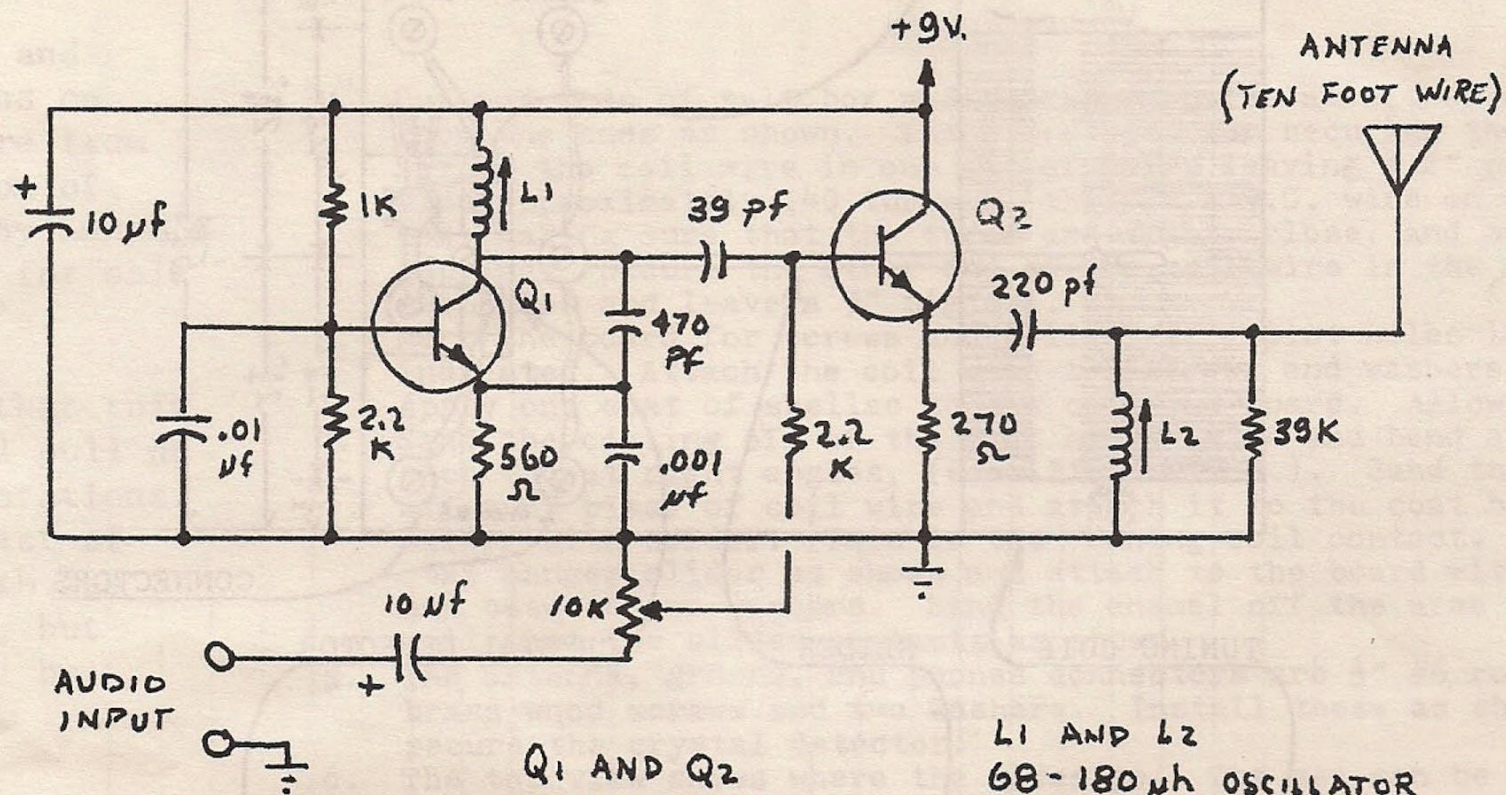
The majority of the Antique Radios manufactured in the 20s thru the 40s received only the AM Broadcast band and or Short wave band. Today Talk and Sports dominate these bands. Owning a US made Vintage radio should be more than an antique just setting in your room. It should be played. The Bluetooth AM transmitter enables both bluetooth and standard 3.5 mm music sources (mp3, ipods, CD players) to be heard on your vintage radio. The Bluetooth AM transmitter is an upgrade to the original Portable AM transmitter.



AUDIOVOX
CAR CONVERTER
fm to am

Talking House AM Radio Transmitter





Q_1 AND Q_2
2N2222

L_1 AND L_2
68-180 μh OSCILLATOR
COIL MILLER 9055
OR EQUIVALENT

PREVENTION OF HUM

LOCATE EXTERNAL SOURCES

USE BREAKER-BOX SWITCHES TO ISOLATE OFFENDERS

USE A HAND-HELD BATTERY RADIO TO LOCATE

SWITCH SUSPECTS ON/OFF, OBSERVE EFFECT

DISCONNECT UNUSED APPLIANCES

Try USING AN ISOLATION TRANSFORMER OR LINE FILTER

ALLOW YOUR RADIO TO PERFORM ITS BEST

RECAP AND REPLACE O/S RESISTORS

POLARIZE CAPS, IF POSSIBLE

ALIGNMENT TO FACTORY SPECS

USE GOOD WIRING PRACTICES, IE SHORT LEADS

USE POWER GROUNDING 3 PRONG OR POLARIZED PLUGS

IF RADIO HAS GROUND TERMINAL, USE IT(EARTH)

GIVE RADIO BEST POSSIBLE SIGNAL STRENGTH (S/N)

ORIENT RADIO ANTENNA OR USE OUTSIDE ANTENNA (MAX SIG)



That's all Folks!