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Superheterodyne AM Radio DIY Instruction Manual

In mid 1900, due to a steadify available stock of domestic made transistions, there was a trigo DIV washer or branssor made in Christ. The big state for a DIV transition ratio is frow to make it look good. In \$2.75 persestor ratio, cake was made to fulfill this hope dement.

Half century went on many DIY radio hobbyst still have a food memory of the 2P3 case. When they challed about DIY radios 2P3 is always on their center of topic. People who filters they be their 2P3 proper are provid of their athrevements and people unable to finish if this left helmed But bods the 2P3 case is very hard to find rarely sufficied specime becomes a Collectors hot grab and letthers a lot of money. Thus, to find one 2P3 case becomes a new The 2P3 case is delicate and exclusion coco on the market it is warmly welcomed Many people sewed money to got one case and made many deferrent reservors of DY indica insulged from one-transistic representative. All mado is su-christistic superhericorium AM mado is su-christistic superhericorium AM mado is fulfied there demans of assembling a DV mado with beautiful machine made case therewere there were people who bugght the 2P3 case but due to various fimiliations was not able to get all necond components thus unable is finish the project.

dream today

Responding to many hobbyes appeals, we recreated the 293 case, designed a superheterogine AM and occuraty suitable for DIY project, together with all the components as a DIY kit, make it available for both old hobbyes to fulfill their dream, and new DIYers to home their trakening skills.



Second IF Amp. First IF Amp.

Detector

Audio Amplifier

100

C15

103 5-1mA

1c2 0.3-0.6mA 1c1 0.3-0 6mA 2 × 3 Mixing

#<u></u> 58p 11 (80) VC4

2P3 Superheterodyne AM Radio Working Principal

Specifications
Frequency SOOME-1620Mz
Frequency Power requirements DC 3 V Iwo R6 (size AA) batteries
Sensitivity crim/m
Maximum Oxford 170mW

I Mining circuit Mang circuit is broken down into three sections, light funed circuit, local sectiliation and moter Mangerite, enteres indicate adea uppai, feets into a harmonic comprised or variable capacitor VC4 and L1, where the suparal frequency identical to the faming circuit resolutions frequency is selected and indicated on L2, the process is called the funed radio signal into the base of miser O1 (59018) O1 has the funed roots.

A Local Oscillator Q1 working with VC3, C2 and T1, generate an equiampitude sine wave at a frequenc

Figure 2 293 Superheterodyne AM Radio

A closed fortune of a reward production of the control of the cont

4. Automatic Gain Control. After passing detector D1, if it intered by C7, R11, part of it feeds through C6. R92, C4 to be prodome and finance providing a regaline that to G2. When radio upant is stronger. Inghair if R92 can causing 20 to reduce amplification, it works reversely when appail is wasker, inches introger and weaker station and have relatively sentiar roloums. As some supplies to the control of the causing and sential relation and inches the control feeds to Audio amplifier (C1 (C07368) through C6, to be amplified and feeding speaker.

N (3)

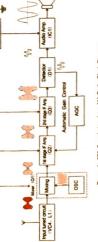
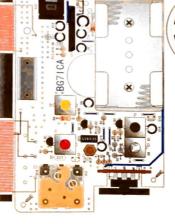


Figure 4: 2P3 Superheterodyne AM Radio Block Diagram



1	
2P3 Superheterodyne AM Radio Circuit Board and Assembling Diagram	6
9	
Bourg	

Table 1: 2P3 Superheterodyne AM Bill of Material

3

Packet	Index	Name	ABIO	No.
	06. 07. 015	Ceramic Capacitor	203 (0 02 p.F.)	/
	62	Polyester Capacitor	223 (0 022 p.f.)	1
	63	Ceramic Capacitor	306	1
	2	Electrolytic Capacitor	10 pF/16Y	Mand Polanty
	85	Electrolytic Capacitor	1 . F/50v	Land Potenty
-	8	Polyester Capacitor	152 (1500pF)	1
	C10, C11,	Flectrolytic Capacitor	100 F / 10V	. Mari Brissa
	614, 616	and and and and and and		1
	C12	Electrolytic Capacitor	220 pF / 6 3V	Mind Polanty
	613	Electrolytic Capacitor	470 . F / 10V	Mand Potenty
	SFU	Ceramic Filter	SF0455	1/1
	=	Resistor	12040	- Benfrich
	R2. R3	Resistor	010 -	- Bundry RGH
	78	Resistor	22040	BENGA
	22	Resistor	1810	BurdyOrgan
	R6	Resistor	240	RBROM
-	87	Resistor	010	C COMPBGIL
C	RB	Resistor	15040	BunGYGel
1	R9, R13, R14	Resistor	0.401	// BwnBOrditt
	R10, R12	Resistor	1000	1 BuntithanGa
		Resistor	046 -	, BunGROM
	10	Detector Diode	1460	Mind Potenty
	02. 03. D4	Ocote	184148	Mend Posterity
	01, 92, 63	- Transistor	80018	Mind new
		Speaker Wire	Black White	1
		Self-tapping Screw	62*6PA ×3	Circuit Board
1		Self tapping Screw	OZPOPBA X 6	Grit. Antenna
C		Screw	1× 847+4 10	· E
2		Screw	62 5*5PB X1	Turing Kinch Summer
		Soren	92 5*4KB ×2	Varietie Canartin
)		Screw, Nuts	63-5KB ×2	Battery Acre
		Heraponal screw column standoff	×1 884	Bars Com
		Shield cover	01×01	12
		Cane	-	1
	2	Speaker	40/18	Man man
	5	Earphone Socket	0.3 Smm	
	*	Potentiometer	4	1
	VC3/VC4	Variable Capacitor	500/1400	4
	101	Audio Ampillier	C07348	7
		The second name of the last of		

0 07 R9 10k Sk N

7000

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Med Po Money

							and the same of th	2111	13	2	
Nan-conductive screwdings	Volume Knob	Turning Knob	Circuit Board	cogo	Antenna Support	Plyade Ribbon	3V Battery Bus.	Magnetic Antenna	W Transfermer	# Transformer	-
10	0	10	0	//	0	9	****	-45T 15	YD2F303	YD2P301	PURE
Adjusting of Transformer/Caps						Fix Antenna	Mind Polarity	Mipd Primary/Secondary	Black Cap	Yellow Cap	/ roma

Common Electronics Components and schematic symbols

_					Form	-
	Wire	Ground	Battery	Switch	Name	Common Laboration Combonisme and administration almost
_		4-	1.	<u>}</u>	Symbol	a din accionance
			Mind Polarity		Notes	ajiiiooo 🗨

Crossed, but not connected

1.8K and 18K resistors have similar color bandings, don't mix.

Diode

Mind Pins

Common Electronics Components ometer with switch





















1



Cathode Mark



IC has many different form factors, the CD7388 IC used in this radio has a form factor of SIP, its pins are identified below.

Integrated Circuit (IC)



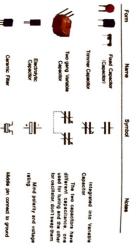
Cut comer Model Mark Indicates pin1 Location

Assembling Instructions

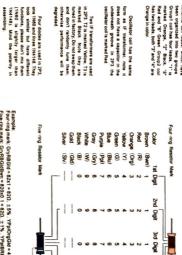
I Cleat components Dwide components by type, cross reference with schematics and bill of material, double check every component type and value is correct. It is advised to test all components prior of seamily, many resources are available on the Internet by searching key words "feating featuresic Components"

2. Start assembling. We abrese to assemble each stage by the following order: Audio amplifier-sector John F. List E-Burnop Stage Fligure 5), Check every stage function before starting the exest.
3. According to the position man on cross located Fligure 6), but the components in and solder on cut interesting to the exesting process should be quick, se abrise to use a 25-40W soldering iron testing to use a 125-40W soldering iron release to the last soldering from the lease man 3 seconds. Check to make sure solder points are properly connected and will be as altered to.

Common Electronics Components and schematic symbols

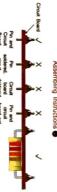






Oscillator Coll

Example: Four-ring mark: GryRBGid = 82x1 = 82Ω, ±5%, YPplOrgGid = 47x1000 = 47000Ω = 47xΩ,±5%, Five-ring mark: GryRBGidBwn = 820x0 1 = 82Ω, ±1%, YPplBRBwn = 470x100 = 47000Ω = 47xΩ, ±1%, Five-ring Resistor Mark



4. When essenbling battery box wires, speakers, electrolytic capacitors, diodes and translators, mind polarity and different pins. Mind different marks on magnetic antenna colls, do not solder wires on wrong positions.







Circuit Board

Support screw

Magnetic antenna is fixed to the support by plastic ribbon,

Fix magnetic antenna

6 Viften assembling finished, double obsek wrings and solderings against schematics and dagrams. After confirming all wrings and solderings are correct, users can proceed to radio calibration (suitable for beginers without special calibration equipment).

2P3 Radio Calibration

Tools: Multimeter, Non-conductive screwdriver(Included), this procedure is suitable for people who don't have special calibration equipment.



1. Bas current algulatement
Pul new batteries inno ballary box, switch radio on, use multimeter to measure current on point A. B and C to
Pul new batteries inno ballary box, switch radio on, use multimeter to measure current and properly soddered.
But net correct, by change R.F. May feel 81 to smaller or to larger value to stee correct and properly soddered.
Build not correct, by change R.F. May find 88 to smaller or to larger value to tree correct and measured. But in the stee correct and stee of the st

2 If Faville productions to the control of the cont

asty lobrats handle gamly.

2) Calibrate higher band, find a known radio station on higher band (e.g. 1400lbHz), use Non-conductive
2) Calibrate higher band, find a known radio station on higher band (e.g. 1400lbHz), use Non-conductive
80 exause lower band calibration and higher band calibration are macrelated, repeat step 1 and 2 multiple a best calibration is achieved.

lower band and higher band are calibrated, mid band dial readings are usually correct.

red, until luppal is most clear and pound is pudges.

2) Rearive a higher bourd ratio station (e.g. 1400Hz), use Non-conductive screedings to adjust "Ca" on the of the variable capacitor, until appair is nost clear and bound at loudes.

3) Repeatings 1 and 2 until lover bound attains and byte cand station are most clear and sound to destine the positions are most clear and sound to destine the positions. Note No wax 40 Use his clinic to mail some wax, drip between L1, L2 and antenna notice in their positions. Note No wax 1) Receive a lower band radio station (e.g. 640kHz), move antenna coil (L1 L2) across magnetic antenn

albend on "Ce" and "Ce".

Alternatively multimate DC measurement across VR (FP1-TP2) can be used for more accurate allignment.

If set operatively multimate DC measurement across VR (FP1-TP2) can be used for more accurate allignment.

If set operatively multimate DC measurement across VR (FP1-TP2) can be used for more accurate allignment.

All forband, put back cover on and upsten screw, your self-assembled 7P3 supernetworther AM radio is ready for anyonyment.

Common Electronics Components and schematic symbols

Form

Notes

Magnetic anisense cost and if transformers used in this radio are includive components. Changing cost are turns, adjusting cost position on anisense and adjusting magnetic cap on if impedement will change their inductance.

Common Electronics Companents

nmon inductance unit. Н (Henry), mH (milli-Henry), pH (micro-Henry) tversion: 1H = 1000mH, 1mH = 1000pH

0 § 6 Mind Pin Arrangement, 58018 to NPN Type Mind Polenty

Conversion: 1µF = 1x1000000 pF

Capacitor Mark (unit: pF)

apacitance unit of pf

1st digit 2nd digit Power of 10

Commonly Used Units: Q(Ohm), kQ (Klib-Ohm), MQ (Mega-Ohm) Convention: 1MD = 1000kQ, 1kQ = 1000kQ

3, 365 10, 1065 101, 10410 = 10065 223, 27210 = 2200065 = 0 022 F

Two gang Variable

Common Electronics Components

There are two types of mark, four-ring and five-ring, see below chart : (Unit: 0) Digit 3rd Digit 1 5

* Fifth ring indicates error rate, note there is a wider gap between other four rings. each used for funing a oscillation. The warte capacitor used in 29'3 i different capacitance of

