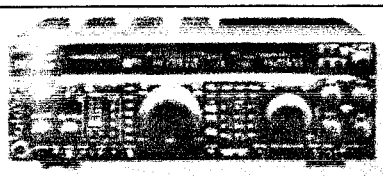
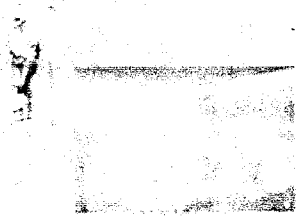
Recd 4/2/02

The Propagator





Official Newsletter of the Illawarra Amateur Radio Society

Volume 00/08 Issued 5 February 2002
Published Bi-Monthly

Editor – Rob Heyer VK2XIC

IARS meets at 19:30 Hrs. on the second Tuesday of each month (except January) in the SES LHQ Montague St. North Wollongong.

VK2AMW Since 1948

IARS PO Box 1838 Wollongong 2500.

PCI Sound Card Interface

History,

Digital modes have steadily been increasing in usage by the Amateur Radio fraternity for some years now, the widespread usage of PC's has also impacted on Amateur radio, in the beginning dedicated systems were developed and marketed. The most dramatic impact took place when free software using a PC's Sound Card as an interface was released freely on the Net. In just the last few years we have seen a dramatic increase in useag of these new modes by many amateurs, due to the fact that one simple hardware interface between the transceiver / radio and the PC sound card will support most if not all of the new modes, PSK31, MFSK16, SSTV, HELL and others.

Like many others, I was attracted to this activity by a fellow local amateur and about that time I was also developing an interest in things digital, I was trapped as they say. The scene was set and also several other locals were taking the plunge, then the horror happened, blown up sound cards, how did it happen? Lack of understanding and technical knowledge with interfacing and level control most likely, a little knowledge is dangerous as the saying goes.

Early interface circuits (which are still being published in amateur mags) are a hidden disaster to those who innocently try them, variable resistors, and transistor inverters do not an interface make. Next came audio transformer decoupling for send and receive data streams and opto isolator decouplers for the TX. PTT line. This system needed a Comm. port output and a D.C. voltage source, and for those with only two Comm. ports

usually in use, it required cable swapping to access the amateur radio interface.

An article in Sept 2000 QST suggested a method of providing a complete transformer isolated interface with the PTT generated from the send data stream, using the principle involved an interface was constructed using local parts which worked first time for me. Sharing this knowledge with other local club members was of some disappointment to some and I had no idea why. Well in due course I updated my computer to improve my SSTV program capabilities. Suddenly my digital interface no longer worked and I was in the same position as the others who could not make it work.

Solution,

Investigation proved that sound cards are not sound cards as the saying goes. The original sound card was a Sound Blaster 16 which has 2 x 2.5 watt amps capable of directly driving 8 ohm speakers. The new Multi Media PCI sound cards have much lower output intended to drive amplified speakers, and at normal program fader settings there was not sufficient output to saturate the PTT power FET nor to turn on the indicating TX LED, the measured audio output was 600 milli volts AC, which produced just over 2.1 volts DC when rectified. This being well below the 10 volts needed to saturate the MTP3055 FET, the original sound card was capable of producing 20 volts DC.

Since the FET is a voltage controlled device it draws no current, the voltage quadrupling rectifier was trialled and found to produce aprox 10.5 volts DC from the data stream using an 8 ohm /1K ohm transformer, this voltage saturated the FET, one down one to go. Several LED's were tested and a 3mm red LED was found to provide a reasonable glow at 200 micro amps of current. The clamping zener was reduced to 7.5 volts and the combination set the gate voltage at 9.6 volts with a reasonable LED glow, this being achieved at approx mid range slider settings.

Constuction,

Never being a skilled constuctor I have devoloped a method using cardboard and brass drawing pins to construct audio projects, both the data stream send and receive interface and the PCI PTT board are constructed using this method. The option to use 8/1K ohm or 1:1 isolating transformers depends on the sound card in use. Use 8/1K ohm for send path to TX with multi media PCI sound cards ,the rest of the circuit remains the same.

Conclusion,

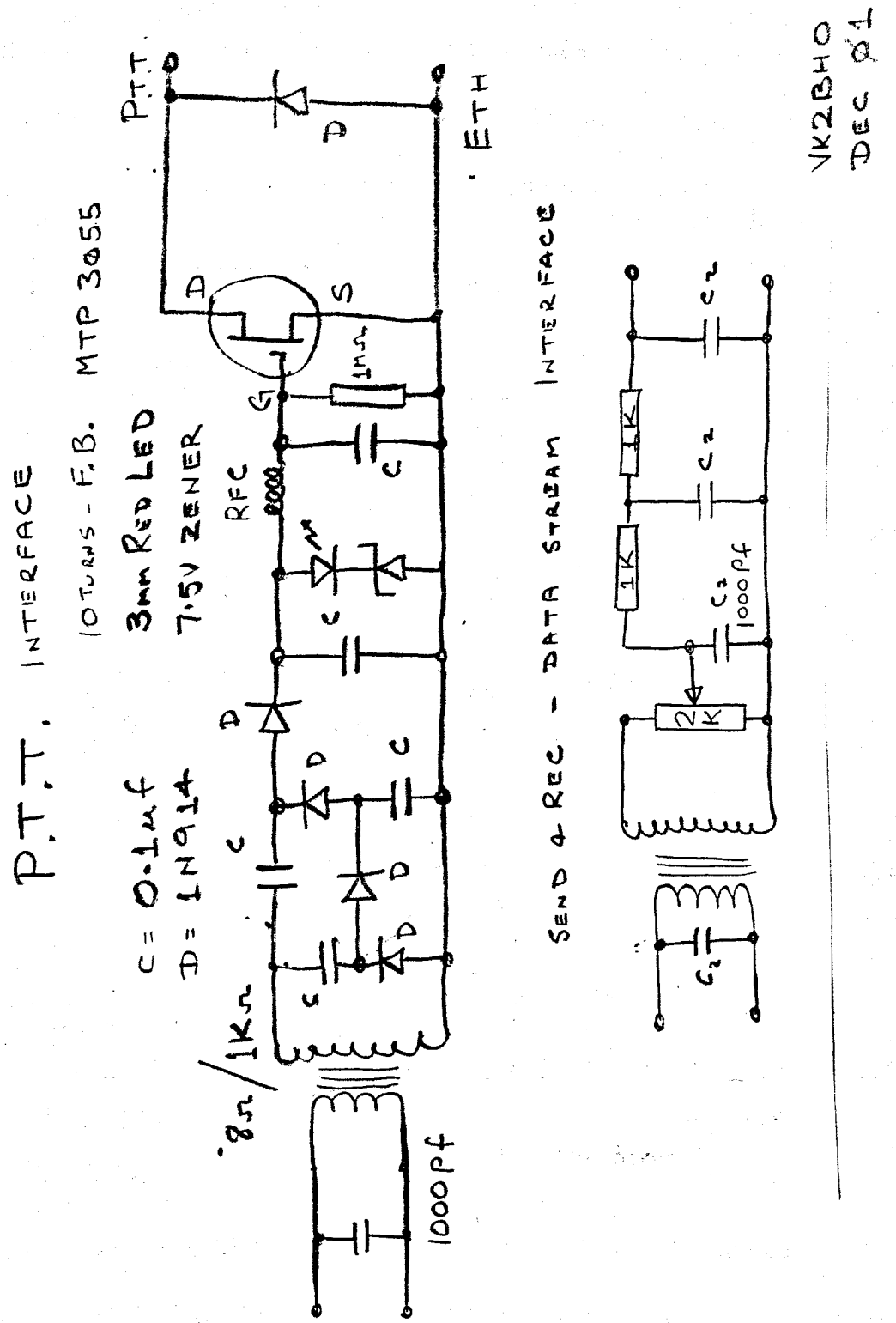
- A PCI sound card interface with complete isolation between the radio and PC,
- Data stream generated PTT which frees the Comm port connection making the interface connection simpler,
- Achieved at normal slider settings " not end stopped "
- It worked for me, maybe it will for you.

73,

John VK2BHO. *ref.pcisound nov 2001 11 Burge Place Warilla. 2528*

Many thanks to John VK2BHO for his excellent project I trust that there is one or two such projects tucked away in John's resume.
It would be an encouragement to us all to receive information of projects being worked on by other members who may be experimenting with something at the moment.

Circuit Diagram on next Page 4



JohnVK2BHO - Circuit Diagram

The Propagator
ILLAWARRA AMATEUR RADIO SOCIETY

GENERAL MEETING TUESDAY, 11 DECEMBER 2001.

MEETING OPENED AT: 7.56PM.

Attendance: 23. Apologies: ZWG, TTH, TNK, BHL.

CORRESPONDENCE IN: 1/. Email W.1.A. Re Sale Equipment. 2/. Sublime Point Base Station Site. A/C.
3/. Conference of Clubs. 4/. Lease for Scout Hall.

NEWSLETTERS IN: Smoke Signals, BRAG and Dragnet.

CORRESPONDENCE OUT: Propagator, W.I.A. Re Meeting.

Correspondence Moved EZI, Seconded HPR.

Minutes Confirmed: Moved: WRJ. Seconded: HPR.

Matters Arising: NIL.

TREASURER'S REPORT: Moved: CAV. Seconded: UBF.

REPEATER REPORT. MT gave a report that he had visited Mt. Boyne last Wednesday with regards to Transgrid. New equipment, Feedlines, Antenna has been installed and by reports has made a marked improvement.

MOVED: UBF. SECONDED: TB17.

GENERAL BUSINESS: New Membership Application was received by Mr. Michael TAYLOR, VK2VKA and as there were no objections it was Carried.
After discussions it was decided to hold the next meeting on Tuesday 12 February 2002 at the S.E.S. It was also decided That our April and October meetings be Barbeques at Cataract Dam.

RAFFLE: Won by XQX Simon.

MEETING CLOSED: 9.15PM.

The Propagator

ILLAWARRA AMATEUR RADIO SOCIETY INC

PO BOX 1838 WOLLONGONG 2500

TREASURERS REPORT FOR NOVEMBER 2001
Opening balance $4286.41

INCOME

Raffle sales.....		$33.00
Membership dues (Receipt 94)		$20.00
Advertising	(" 93)	$60.00
Donation	(" 95)	$1.00
Auction levy		$25.00
Auction profit		$96.00

~2-35-00 (Bank $210)$4496-41

EXPENSES
Raffle cost (P Reid cash) $25-00
Petty cash still o/h $28-20
..... $25-00 (No cheques) $4496-41

PROFIT FOR THB MONTH $210-00)Closing bank balance $4496-41

H Treasurer IARS INC

The Propagator

The

Central Coast Field Day

for

RADIO AMATEURS AND ENTHUSIASTS,
COMPUTER AND ELECTRONIC HOBBYISTS

Sunday 24th February 2002
Gates Open 8.30 AM

Don't be a headbanger avoid disappointment book your seat for the Field Day

Bookings can be made by contacting Ken VK2TKE

If there are insufficient numbers the bus will not be hired, so if you intend to go
BOOK NOW

This interesting clipping supplied by *Jim VK2CAV*

Now our understanding of radio propagation is greater than when Marconi made the trans – Atlantic contact, would you accept his findings? He apparently operated on the frequency of 820 kHz. QRM would not have been a problem. *Rob VK2XIC*

Did Marconi Cheat?

Debate continues over radio's inventor, writes **Laurie Margolis.**

It goes down as one of the great moments in science, along with Fleming's mouldy dish of penicillin. All it amounted to was three sounds: click-click-click. The time was 12.30pm on December 12,1901, at Signal Hill, a gale-swept cliff on the Newfoundland coast.

Some 3520 kilometres away, at Poldhu in Cornwall, it was 4.30pm, dusk. There, on the English coast, was a radio transmitter, the most powerful then built, sending groups of three Morse code dots, repeating the letter S There is nothing special about S, other than that it comprised only dots. It was feared anything longer, a dash, might cause the transmitter to break down.

It is the scene in Newfoundland that requires analysis. It shouldn't have been Newfoundland. The North American end of the experiment was to have been sited at Cape Cod, but dreadful weather had destroyed a huge aerial system built there. So at short notice, on that clifftop, in a hut, were two men: the Italian Guglielmo Marconi, and his assistant, George Kemp. They had what passed in 1901 for a state-of-the-art radio receiver connected to a makeshift aerial - 160 metres of wire supported by kites.

Marconi and Kemp waited for three days, their ears battered by atmospheric noise. They knew what they hoped to receive: three clicks. And this is extremely important. At 12.30pm, Marconi became convinced he could hear the signal. According to a Science Museum specialist, Keith Geddes, Marconi handed his earphone to Kemp. "Can you hear anything, Mr Kemp? he demanded. Kemp confirmed the weak but unmistakable signals. Marconi's notebook records simply: "Sigs at 12.30, 1. 10 and 2.20." Marconi and Kemp had successfully received the first radio signals ever to cross the Atlantic. It was a massive moment; everything in telecommunications followed on from that click-click-click.

Except that it may never have happened. It could have been imagination. It could have been made up. It is one of science's great unsolved mysteries. This week's centenary of that event has resurrected all the doubts.

Marconi had pioneered radio transmissions over greater and greater distances, so that by 1901 he was able to send Morse code over distances of about 130 kilometres.

Radio transmission works by using the ionosphere, a zone of the atmosphere 80 kilometres up. The ionosphere bounces short-wave radio energy across the world by bending signals back to earth.

The problem is that, as far as can be judged, Marconi's equipment was transmitting in what we now know as the medium wave, or the AM broadcast band, between about 500 and 850 kilohertz. Now, even mediumwave signals can go long distances, but only at night. On a daylight path, and it is crucial that the Cornwall Newfoundland path was entirely in daylight medium-wave signals fade quickly. It is defying credibility to suggest that Marconi could have got his signal from Cornwall to Newfoundland on the medium wave in daylight, however powerful his transmitter or huge his aerials.

But there is an explanation that exonerates Marconi. It lies in the simplicity of the equipment. Modern radios need three qualities: sensitivity, the ability to hear a signal; stability, the ability to stay on the required frequency; and selectivity, to sort out the wanted signal from all the other radio rubbish. Marconi's gear had little of any of these. His receiver may well have been picking up a large chunk of the radio spectrum, not just the frequency he intended. Likewise, his transmitter, though theoretically broadcasting in the modern - day medium wave band, may well have been blasting away across a wide range, generating transmissions on much higher frequencies.

It i's possible that, unknown to him, Marconi was using a short-wave frequency well above the medium wave. This part of the spectrum was unknown in 1901, but was soon found to allow easier long-distance coverage. So maybe Marconi and Kemp really did hear the S's, but with their equipment transmitting and receiving on quite unexpected frequencies.

Even if Marconi wasn't quite there in 1901, he was close. Within a year he had established reliable communication with ships more than 3200 kilometres away, albeit at night. **The Guardian**

Weekend Edition, SMH December 15-16, 2001

The Propagator

SELLING ENTIRE RADIO STATION EQUIPMENT

DATE 27/12/01

Quantity	Make	Item	Price
1		COMPLETE RADIO TOWER with CRETE	
2		ROTATOR & CABLE &ANTENNA &CABLE & FITTINGS	$1800.00
3		TRI-BANDER & 2M 70CM ANTENNAS & WINCH	
		REMOVE AND TAKEAWAY FOLDS ON TO UTILITY	
		SOLD IN LOT 's AS ABOVE	
4		KENWOOD TS850S RADIO WITH SP950 SPEAKER	
5		AND MICROPHONE MC85 AND IF232C INTERFACE	$2500.00
6		KENWOOD SW2100 METER	
7			
8		KENWOOD TS 180S RADIO & MIC	$ 150.00
9		KENWOOD 2MTR TM241A RADIO? MAY SELL?	$ 200.00
10			
11		EMTRON EAT300 ANTENNA TUNER	$ 150.00
12		EMTRON ESP 20s POWER SUPPLY	$ 100.00
13		EMTRON SWR METER	$ 80.00
14			
15		REALISTIC 1000 CHANNEL SCANNER .	$ 200.00
16		PKRATT 232MBX? MAY SELL?	$ 200.00
17			
18		ITEM NO.1.2.3.SOLD AS COMPLETE PACKAGE ONLY	
19		ITEM NO.4.5.6.SOLD AS COMPLETE PACKAGE ONLY	
20			
21		ITEM's 8.9.11.12.13.15.16. SOLD AS SINGLE UNITS	
22		MANY EXTRA'S NOT ON LIST	
23			

CONTACT Brian Farrar vk2ubf on 4267 2296 after 3pm most days or e-mail below for more details.

Mobile phone security

To check your Mobile phone's serial number, key in the following on your phone: star hash zero six hash as (*#06#)

A 15 digit code will appear on the screen. This number is unique to your handset. Write it down and keep it somewhere safe.

Should your phone get stolen, you can phone your service provider and give them this code. They will then be able to block your handset so even if the thief changes the Sim card your phone will be totally useless.

You probably won't get your phone back, but at least you know that whoever stole it, can't use or sell it either.

Some Humour

The Pig

Farmer Jones got out of his car and while heading for his friend's door, noticed a pig with a wooden leg. His curiosity roused, he ask, "Fred, how'd that pig get him a wooden leg?"

"Well Michael, that's a mighty special pig! A while back a wild boar attacked me while I was walking in the woods. That pig there came a runnin', went after that boar and chased him away. Saved my life!"

"And the boar tore up his leg?" "No he was fine after that. But a bit later we had that fire. Started in the shed up against the barn. Well, that ole pig started squealin' like he was stuck, woke us up, and 'fore we got out here, the darn thing had herded the other animals out of the barn and saved 'em all!"

"So that's when he hurt his leg, huh, Fred?" "No, Michael. He was a might winded, though. When my tractor hit a rock and rolled down the hill into the pond I was knocked clean out. When I came to, that pig had dove into the pond and dragged me out 'fore I drownded. Sure did save my life."

"And that was when he hurt his leg?" "Oh no, he was fine. Cleaned him up, too."

"OK, Fred. So just tell me. How did he get the wooden leg?"

"Well", the farmer tells him, "A pig like that, you don't want to eat all at once."
(Thanks to Alan G4YQQ)

"M" Theory will be continued next issue

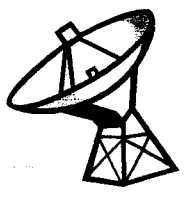
The Propagator

The IARS Repeaters

The Illawarra Amateur Radio Society operates several repeaters on the Illawarra South Coast. Below is the listing of frequencies in use.

Access tons are not required. Their status is also displayed along with the type of repeater. The listing below also includes the Satellite Gateway and BBS run by John Simon VK2XGJ.

Call sign	Freq In/Out	Type	Location	Linked To
VK2RUM	29.520/29.620	Voice	Knights Hill	Off Air
VK2RBT	146.075/146.675	Voice	Mt Boyne	RMP & RIS
VK2RMP	146.250/146.850	Voice	Maddens Plains	RIS & RBT
VK2RIS	146.375/146.975	Voice	Saddleback Mt	RBT & RMP
VK2RUW	433.225/438.225	Voice	Knights Hill	Off Air
VK2RMP	433.725/438.725	Voice	Maddens Plains	RGN, RHR RGI & RTW
VK2AMW-3	144.700/144.700	NODE DIGI	Maddens Plains	VK2AMW-4
VK2AMW-4	144.925/144.925	NODE DIGI	Maddens Plains	VK2AMW-3
VK2AMW-5	147.575/147.575	NODE DIGI	Mt Boyne	
VK2AMW-7	147.575/147.575	NODE DIGI	Mt Murray	
VK2XGJ	53.100/53.100	BBS / SATGATE	Dapto	
VK2XGJ	144.700/144.700	BBS / SATGATE	Dapto	
VK2XGJ	147.575/147.575	BBS / SATGATE	Dapto	
VK2XGJ	440.050/440.050	BBS / SATGATE	Dapto	



The Propagator

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	John Lawer	VK2KEJ	
	Jim Beaver	VK2ZWG	
	Peter Read	VK2HPR	
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	Graeme Dowse	VK2CAG	
	Lyle Patison	VK2ALU	
	Rob McKnight	VK2MT	

Club meetings are held 7:30 PM on the second Tuesday of each month, (except January) at the SES Building Montague Street North Wollongong

Committee meetings are held on the third Wednesday of each month.
Membership:

Full - $20 Concession - $15. Membership expires after the AGM in August.

Visit the Illawarra Amateur Radio Society inc. Homepage IARS@1earth.net.au
IARS Email IARS@1earth.com.au
