

Genesis G59: All Mode 160-6m SDR Transceiver Kit

"The Best SDR Kit on the Amateur Radio Market"

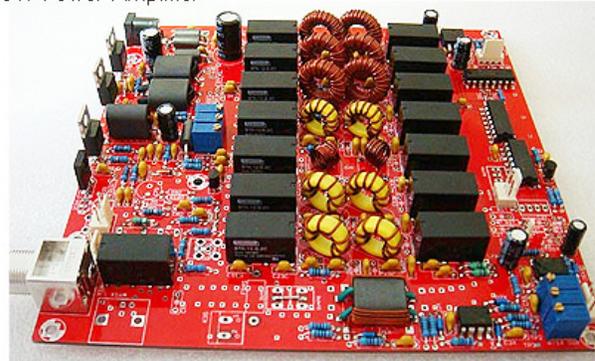
This is a bold claim but we're part of a group of dedicated builders, talking from our own experience, who are convinced that the Genesis G59 is the best performing SDR kit for the money currently available to amateur radio operators.

The G59 is an all-mode 160-6m SDR transceiver with 10mW of output power. The output is boosted to 10W with the GPA10 linear amplifier.



Genesis GPA10

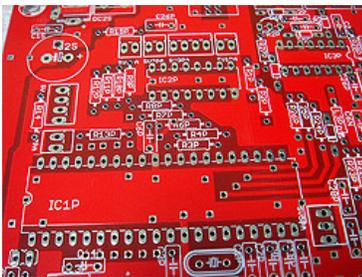
10W Power Amplifier



PRICE

The price of the **G59** is **US\$399** and the **GPA10** is **US\$249**, plus worldwide registered airmail delivery.

To order, go to [ORDER PAGE](#)

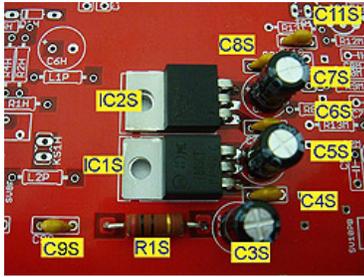


Building and operating your own equipment is still the ultimate goal of amateur radio, and Genesis will give you exactly that: Fun to build, fun to operate! There are so many things you can do with it, from regular 2-way Morse contacts, phone, digital modes like PSK, to RTTY or WSPR - Truly, the list of activities for which you can use your G59 is practically endless! If you're into QRP, DXCC chasing or serious contesting, the G59 will deliver unparalleled performance you won't find in much more expensive analog radios.

Do not underestimate this kit based on its low price - This radio is a serious performer that will give you many hours of on-air enjoyment!

The hardware and software required to get you On-Air:

G59 transceiver, GPA10 amplifier, quality SDR suitable sound card, a fast PC running Windows XP and the GSDR software.



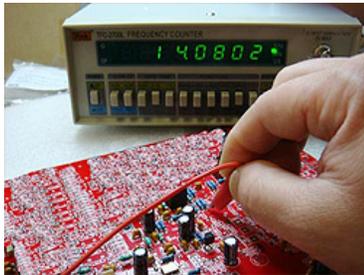
Phase One: Power Supply Assembly

The build of the G59 starts with an assembly of power supply components. Upon completion, you will have the voltages required to operate individual blocks of your G59 transceiver. A multi-meter is required to check the installed components and measure voltages. An external, stabilized DC power supply capable of 13.8V @ 5A is a must for proper operation of the G59. Avoid switch-mode units! Click [here](#) to proceed.



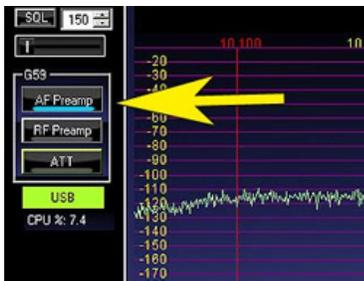
Phase Two: Microcontroller Circuit

In phase two, you will assemble the microcontroller unit and peripheral components which will allow communication between the G59 hardware and your PC. After installing the components, you will test the frequency at which the microcontroller oscillates. Now is the time to put that frequency counter to good use! Click [here](#) to proceed.



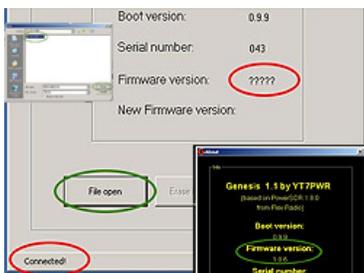
Phase Three: Local Oscillator Si570

While the G59 contains mainly classic 'through hole' components, it also has a few SMD components too. For some strange reason, SMD components are still perceived as 'difficult to handle', but this is really not true! With bit of patience and practice, you will have no problem getting the job done. Phase 3 is the installation of the Si570 oscillator. You will also perform some basic voltage and frequency checks to ensure that your G59 hardware is working properly. Click [here](#) to proceed.



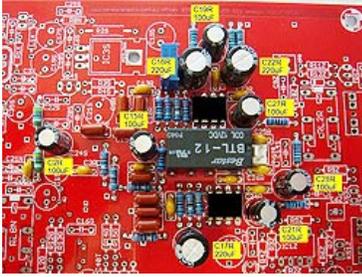
Phase Four: G59 USB Connection

In this phase you will connect, for the first time, your G59 hardware with your PC running the GSDR software. Basically, you will be testing the communication between the G59 and GSDR. Connectivity between the hardware and software is generally a straightforward procedure, however we have provided several troubleshooting tips just in case... Click [here](#) to proceed.



Phase Four-A: Firmware Update

Your G59 comes with pre-loaded firmware which allows you to check basic communication with the GSDR. Now is the time to upgrade your firmware to latest version! No soldering in phase 4A - just bit of cabling, downloading and running an application. This phase will only take 10 minutes to complete and you'll be on your way... Click [here](#) to proceed.



Phase Five: G59 Receiver Assembly

After completion of phase 5, your G59 receiver will come to life! You will be able to tune to your favourite HF band and enjoy the software-defined radio experience! Even as is -without any filters or preamplifier - the receiver will perform surprisingly well. You will also learn how to adjust the image rejection with both hardware and GSDR software. Finally, you will have your G59 connected to DIGI modes and start receiving and uploading WSPR spots! Great fun! Click [here](#) to proceed.



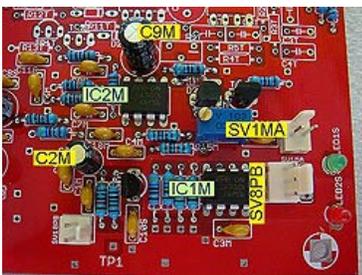
Phase Six: Installation of Components Input-Output High-Pass Low-Pass Filters, Attenuator and Preamplifier

In this phase, you will install components in the HP-LP filters, attenuator and preamplifier. Next, you will interconnect the preamplifier and attenuator with the microcontroller and check their performance. Your receiver will be fully functional once you complete phase six. Click [here](#) to proceed.



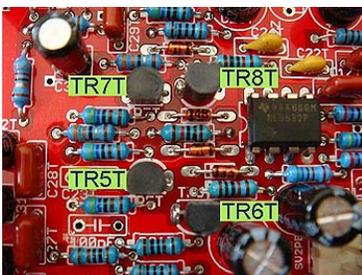
Phase Seven: Band Pass Filters and Control Logic

Phase 7 is the installation of capacitors and inductors for the individual band pass filters. Your receiver is now completed and fully functional! The beauty of the Genesis G59 band pass filter design is in a good compromise between the performance and simplicity of assembly: there is not a single toroid to be wound! Instead, G59 utilizes easy to install, custom-value designed, molded inductors. It's as simple as that! Click [here](#) to proceed.



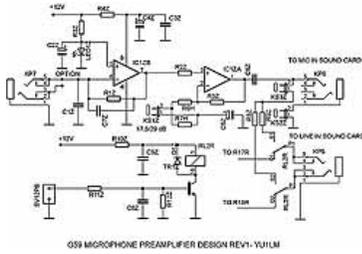
Phase Eight: CW Monitor

It's time to crank up your paddle and spark some good old Morse! Complete phase 8 and have fun playing with the GSDR built-in iambic keyer! Another easy to build block... Click [here](#) to proceed.



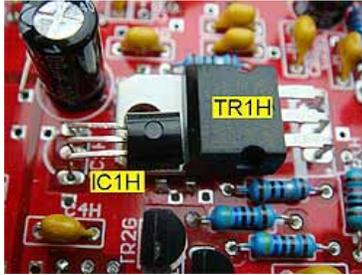
Phase Nine: Transmitter Circuits

While the transmitter and sample-and-hold modulator are not overly complex, the component placement is absolutely crucial. Both channels must be perfectly balanced so each of the 116 components must be installed in their designated place on the PCB. This is the phase you don't want to rush through. Adjust the signal levels and TX image rejection and you are now ready to take off! 10mW of output power may not sound like a lot, but many Genesis G59 owners transmitting at this power level received good WSPR and QRSS reports up to 7,000 Km. The fun begins now! Click [here](#) to proceed.



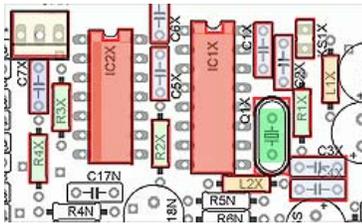
Phase Ten: Microphone Pre-amplifier

Phase 10 is the installation of the microphone pre-amplifier and additional components which will allow for the use of one single sound card for phone operation. This feature will be supported with the new release of GSDR (coming soon!). Click [here](#) to proceed.



Phase Eleven: Si570 Quasi Oven Circuit

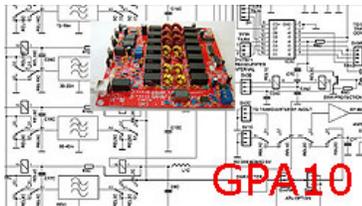
The stability of the Si570 oscillator is very important for narrow bandwidth digital mode communication. For that reason your G59 is equipped with a quasi-oven circuit of a very unique design. Within just a few seconds of power up, the G59 oscillator will be set to its optimal working temperature and will remain there no matter what the outside circumstances are, ensuring rock-steady stability. Click [here](#) to proceed.



Phase Twelve: G59 Receiver Image Calibrator

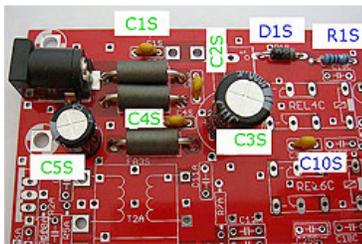
The Receiver Image Calibrator is the last building block of the G59 assembly. The comb marker generates frequencies up to 150 MHz with marker raster of 113 KHz required to automatically calibrate the receiver's image rejection on all bands. The calibrator contains just 18 components and is an easy, straight-forward 20 minute assembly. Click [here](#) to proceed.

Genesis GPA10 Amplifier



Getting Started: GPA10

This is your first step to getting started with the GPA10. Get familiar with the [Schematic Diagrams](#), [Component Values and Designators List](#) and [Inventory List \(BOM\)](#). After going over these documents, complete a parts inventory of your kit. Then you're ready to move forward!



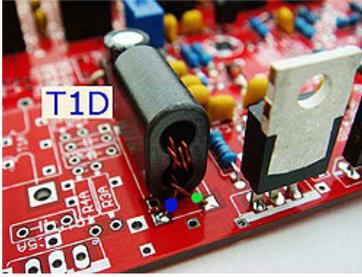
Phase One: Power Supply

This is the first step in the assembly of the GPA10. In this phase, you will set up the power supply unit. Click [here](#) to proceed.



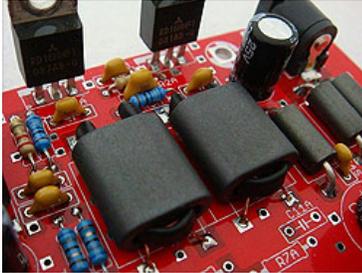
Phase Two: Control Logic Circuit

In phase two, you will install the control logic components. The phase is divided into 3 easy steps, and you will be able to check your progress upon completion of each step. Finally you will connect the GPA10 to the G59, and with the GSDR software, the control logic will come to life! Click [here](#) to proceed.



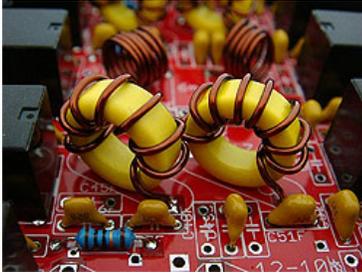
Phase Three: The Driver

Phase 3 is the assembly of the driver for the output amplifier. Upon the completion of assembly, you will be ready for some on-air fun! The driver will boost the G59's 10mW output to a solid 1 watt. With an efficient antenna and 1W output you will be able to make two-way contacts in digital modes and CW. Click [here](#) to proceed.



Phase Four: Output Amplifier

In this phase of assembly you will install the GPA10's muscle unit: output transformers, resistors, capacitors and finally a pair of robust Mitsubishi RD16HHF1 MOSFET which easily produce a minimum of 10W output power on the 160-6m band. Click [here](#) to proceed.



Phase Five: LP Filters

This phase is not difficult to assemble, but it requires concentration and punctuality. Once completed, your amplifier will be ready for more on-air action. A 10-15 watt output power is respectable and you will be able to make 2-way contacts on HF worldwide. Click [here](#) to proceed.

Need help? email: info@GenesisRadio.com.au

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