www.remsterig.com

RC-1216H

Web based remote control for

ACOM-2000A Expert 1K-FA/1.3K-FA/2K-FA Elecraft KPA500 SteppIR and Rotators



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User manual

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User Manual

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Statement of Conditions

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General Description

The RC-1216H is developed especially for remote control of Amateur radio accessories like Antennas, Power Amplifiers and rotators via the Internet in a user-friendly and cost-effective way. Lot of radio accessories are designed to be controlled from a PC via a serial port (RS-232). Serial ports are not very convenient to transfer over the Internet. The RC-1216H acts as PC against the connected equipment at the same time as it shows a more user friendly web based user interface for the operator. The web interface is much more convenient to use over the Internet as no special software need to be installed in the PC and it can be reach from any Internet connected PC or other device like smartphones, pads etc. around the world. For the moment the Remote control RC-1216H can be configured to control SteppIR antennas, the ACOM-2000A Power Amp, Expert 1K-FA/1.3-FA/2K-FA Power Amp, Elecraft KPA500 Power Amp, Prositel and AlfaSpid Rotators, Yaesu rotators with GS-232B interface and other Green Heron controlled rotators.

The Remote control unit RC-1216H system is connected to the Internet primarily via 10 or 100 Mbit Ethernet and fixed connections like DSL, cable and WLAN or 3G/4G Mobile systems. The RC-1216H is easily configured via modern USB and WEB based user interfaces.

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SteppIR Control



The RC-1216 can be configured to remote control a SteppIR antenna. The controls are the same as on the SDA-100 control box. You can use Retract, Calibrate, Bi-directional, 180 degree switch etc. Frequency adjustment can be done manual or automatic.

Expert 1.3K-FA/2K-FA Control

RC-1216H - Expert 1K	-FA	
microbit	Expert1K-FA Stay David PWP, W	Standby
AmaDiar	2 5 10 15 20 25 30 40 50 60 70 80 5	0 100 110 120
IP settings Serial settings Advanced settings Dynamic Dills settings Ding settings	BARD DO ANT REPLETED PVR. 7 6m INI A1 CONTROL OF TRADE OF TTADE OF TRADE OF TTADE OF TRADE OF	125 150 175 200
Application upgrade Bootloader upgrade	50250 kHz 26 C	п
Restart device	O Half Start	ву 🔴 Ом
	OUTPUT DISPLAY MAIN OPR POWER CND PVVR STB	ON
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The RC-1216 can be configured to remote control a Expert 1.3K-FA Power amplifier. The daily used controls and indicators are available direct from the web interface. The RC-1216H also act as a serialport server so you can connect with the original PC-program in parallel if you have to do some setups.

ACOM-2000A Control

e - 0 n 0	9 192.106.0.2.90
RC-1216H - ACOM	-2000&
WEB Switch 1216H System Info Amplifier	ACOM 2000A FORWARD PRE, KW Off Unknown
IP settings Advanced settings DynDNS settings	05 1 2 3 4 5 6 8 10 12 14 16 18 20 22 24 PROT HEATER PLATE DRIVE REFLECTED PVR, W
Application upgrade Bootloader upgrade	0 0 0 0 20 30 50 100 150 200 300 450
Restart device	BADD'ANT.MODE TELP.
Microbit 2.0 AB	
	MAN READ OPR AUTO ON PAR STB TUNE OFF

The RC-1216 can be configured to remote control a ACOM-2000A Power amplifier. The controls and indicators are almost the same as on ACOM-2000A control Panel (RCU) so you will recognize them immediately.

Elecraft KPA500 Control



The RC-1216 can be configured to remote control a Elecraft KPA500 Power amplifier. The daily used controls and indicators are available direct from the web interface.

Expert 1K-FA Control

AC-1210H - Expert 1K				
microbit System Info Profiles	Expert1K-FA Star Dava PWP, W		8	andby 🔘
Amplifier :	2 5 10 15 20 25	30 40 50 1	50 70 80 90	100 110 120
IP settings Serial settings Advanced settings Dynamic DIIS settings Ding settings	Basin Dop Ann 6m INI A1 FREQUENCY TEM 50250 kHz 26 0	Ran.	ECTED PVN, W 0 75 100 125	150 175 200
Application upgrade Bootloader upgrade	FULL	1	O OPERATE	5. C
Restart device	() Half	•	O STANDET	ON ON
	OUTPUT DISPLAY	MAN	OPR	ON

The RC-1216 can be configured to remote control a Expert 1K-FA Power amplifier. The daily used controls and indicators are available direct from the web interface. The RC-1216H also act as a serialport server so you can connect with the original PC-program in parallel if you have to do some setups. **Rotator Control**

The RC-1216 can be configured to remote control rotators. At this moment it support Prosistel rotators with the D-type control box, and AlfaSpid rotators, rotators controlled by Green Heron control box, Yaesu rotators with GS-232B serial interface and other rotators with serial interfaces using the DCU-1 protocol

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Step by step RC-1216 H setup

Below follows a recommendation about how to proceed when setting up the system.

- 1. Spend some time to read thru this user manual to get familiar with the product.
- 2. Apply 12V DC (good stabilized power) to the unit.
- 3. Connect the unit with a CAT5 patch cables to the same Ethernet switch or router as your PC which you will use to setup the system is connected.
- Download the Microbit Setup Manager and the latest firmware from <u>http://www.remoterig.com</u> to your PC. Follow the instructions about how to install the Microbit Setup Manager (see chapter <u>Configuration with Microbit Setup Manager</u>).
- 5. Find out how your network is configured and configure the RC-1216H to fit into your network (see chapter <u>Initial IP Setup</u>) with the Microbit Setup Manager.
- Check the installed firmware version. If the one you find at Remoterig website is newer, update the unit with the new firmware. (see chapter <u>FW/HW</u> about how to update).
- 7. When you have configured the unit to fit into your network, Start your Web browser and connect to the unite by entering the IP-address. If you get in contact with the internal web server everything is OK.
- 8. Make the basic software configuration for your system which is described the later in this user manual.
- 9. Prepare the cables needed for your PA, Antenna or Rotator according to the cable drawings provided in this user manual and the manual of the connected equipment. Double check your home made cables with an ohm meter before connecting them to the units to prevent harm of any equipment. Microbit do not take any responsibility of damaged units or connected equipment.
- 10. After preparing the cables connect them to the controlled equipment. Connect the power to all equipment. Check with your web browser again that you are in contact with unit and can control the connected equipment.
- 11. When everything works as it should on your local network it's time to setup your Internet router so you can reach the unit from the outside world over the Internet. If you already have other equipment that you remote control you can go direct to 14 as you don't need to use a separate Dynamic DNS service.
- 12. The first thing is to determine if your Internet Service Provider (ISP) are providing you with a fixed or dynamic IP-address. Fixed IP:s are rare so you probably have a dynamic IP-address if you are not paying extra for a fixed one. A dynamic IP is no

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problem but you need to use a dynamic DNS service. You can use Remoterigs free dynamic DNS service or a DynDNS account. New DynDNS account are no longer free. For detailed information about Dynamic DNS services see the <u>Dynamic DNS chapters</u> under Configuration with WEB-Interface.

- 13. Configure the units Dynamic DNS settings (see chapter <u>Dynamic DNS Setting</u>).
- 14. Now it's time to configure your remote router. We recommend that you first enable the remote configuring of your router, you may need it later. After that's done configure port forwarding (see chapter <u>Network and Firewalls</u>). When this is done your remote control unit should be reachable over the Internet.
- 15. When back at the Control QTH try to browse to the Dynamic DNS address "Own host name" you registered and entered into the remote control unit. You should get in contact with the RC:s internal web server exactly as it was local, remember to use :port number after the dyndns address if you have changed the webserver port from 80 for example http://sm2oan.mine.nu:8000.

Enjoy the remote controlling.

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Hardware

Front



<u>RS-232</u>

The RS232 connector is used for serial communication with the controlled equipment. Eg the Power Amplifier, SteppIR control box, Rotator Control box etc. It has a male connector configured like a PC. The communication parameter is set via the web interface.



Pin no	RS-232 Interface (9-pol D-sub male)
1	
2	RXD (in)
3	TXD (out)
4	DTR (*Only used for Expert available after 2014-june-01)
5	GND
6	
7	
8	
9	

(* the DTR signal can be added easily by the user in older version)

ON LED

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Green flashing light is indicating normal status.

<u>USB</u>

The USB-interface is used to initially set up the IP parameters. It can also be used for downloading new software (can also be done via the WEB-interface). A USB-cable is included with the product.

ETHERNETand LNK

The unit can be connected to both 10 and 100 Mbit/s Ethernet based TCP/IP network. The RC126H can be configured for different connection types for Ethernet port, Auto, 10HDX, 10FDX, 100HDX, 100FDX and Auto-with-preferred-10FDX. Default is Auto-with-preferred-10FDX which works best in most cases.



Pin no	Ethernet (RJ45)
1	Out [+]
2	Out [-]
3	In [+]
4	
5	
6	In [-]
7	
8	
LNK	Green LED indicates link OK flashing LED indicates traffic
	Yellow LED indicates speed = 100Mbit/s (off = 10MBits/s)

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Back



<u>PWR</u>

The RC-1216H is powered via the PWR connector (2.1/5.5 mm) with 10-18 VDC. A DC-cord is included with the product.

Pin no	PWR
+	+ 10-18 VDC (centre)
-	GND

<u>PWR SW</u>

Inside the box is a Relay (230V/16A) connected to the socket block. Safety regulations says that max 50V can be switched with this Relay output. The Relay can are rated 10A DC at 30V or 2A DC at 40V. This means that if you want to Switch On/Off a 230V Power amplifier etc. you must control an external relay with this output.

<u>AUX SW1</u>

Inside the box is a Relay (230V/16A) connected to the socket block. Safety regulations says that max 50V can be switched with this Relay output. The Relay can are rated 10A DC at 30V or 2A DC at 40V. This means that if you want to Switch On/Off a 230V Power amplifier etc. you must control an external relay with this output.

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Configuration with Microbit Setup Manager

The initial settings of the network parameters are easiest done with the Microbit Setup Manager. The Setup Manager is a software which runs under Windows on a PC and connects to the RC via USB (an USB cable is supplied with the RC-1216H). The Setup Manager can be used for:

- IP Settings and verification
 - IP-address
 - Netmask
 - Gateway
 - o DNS
 - o DHCP
- Firmware upgrade
 - o Application
 - Bootloader
 - Factory default reset

Start with downloading the Microbit Setup Manager from the homepage <u>www.remoterig.com</u>. Install the Setup Manager by following the instructions which shows up. If you have an older Windows version where Netframework 2.0 is not installed, the installer will guide you through the installation of Netframework. When you have finished the installation a new shortcut to Microbit Setup Manager will show up on the desktop. Click on the icon to start Microbit Setup Manager



Connect your RC-1216H to 12V and connect the USB-cable between your computer and the USB jack on the front of the RC-1216H. Windows will automatically install the necessary drivers. When it's done the text in the bottom field will change from "1216H not connected" to "1216H-connected" which is an indication that you are in connection with the unit.

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FW/HW

Microbit Setup Ma	nager v1.11 by Micro	obit 2.0 AB 2009-2011(c)	
Advanced			
FW/HW version FW	update Setup Net	info	
Firmware version	Bootloader version	Hardware version	
Get	1.9	001	
FW/HW Version success SW Version successfully 1216H connected!	<mark>⊧sfully retrieved</mark> ⁄ retrieved		

Click on the "Get" button and the version of the firmware will show up in the upper window. Go to the page <u>www.remoterig.com</u> and under downloads you can find the latest firmware. If there is a newer firmware available download it to your desktop, unzip it.

Change to the "FW-update" tab.

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FW update

Microbit Setup Manager v1.11 by Microbit 2.0 AB 2009-2011(c)
Advanced
FW/HW version FW update Setup Net info
Firmware path (Application or Bootloader)
C:\Users\mist\Desktop\1216H-CRC-NEW_v1.23_2011-09-30.bin
Select file Update
Transfering firmware
FW/HW Version successfully retrieved
1216H connected!

Click on the "Select file" button and browse to the file with the new firmware, it should be something like "1216H-CRC_v1.23_2011-10-04.bin" depending on the version and release date. When you have selected the file click on the "Update" button and the update process will start, the text in the bottom field will change to "Updating firmware". <u>Attention -- Do not interrupt the update process in any way!</u>

After about a 1 minute the update is finished and the RC will restart. When the text "RC-connected" shows up again in the lower field of the Microbit Setup Manager, you can change to the "FW/HW" tab and check software version.

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Setup

m Setup	Info v1
Seri	al number:
189	0
MA	C address:
00:1	1E:FD:00:C5:3A
	DHCP
IP A	Address:
192	.168.0.236
Net	mask:
255	.255.255.0
Gat	eway:
192	.168.0.1
DN	S Server:
192	.168.0.1
	Save

A new window wills pop-up with the basic IP settings. Change the settings so they fit into your local network and press the "Save" button to save the new settings. The RC will restart again and when the text "1216H-connected" shows up again in the lower field of the Setup-Manager, you can click on the "Setup" button again to verify the changes.

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Net info

Click on the "Get" button to read the IP setting currently in use by the RC-1216H.

Advanced
FW/HW version FW update Setup Net info
MAC : 00:1e:fd:00:c5:3a IP address: 192.168.0.236 Netmask : 255.255.255.0 Gateway : 192.168.0.1 DNS : 192.168.0.1 Browse unit
Net info fetched FW/HW Version successfully retrieved SW Version successfully retrieved 1216H connected!

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Initial IP setup

The default Ip settings from the factory is 192.168.0.236. The net mask is 255.255.255.0, gateway and DNS is 192.168.0.1.

To be able to contact the RC-1216H via the network you must configure the units to fit into your home network. You can check your network configuration from your PC.

On the start menu select Run. In the Run dialog box enter cmd.

Run	? 🛛
-	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:	cmd 💌
	OK Cancel <u>B</u> rowse

You will get a DOS-window.

At the DOS-promt enter ipconfig.



Then you will get the needed information:

Your PC IP address in this example is 192.168.0.101 this means that the IP of the RC-1216H must have IP:s in the area 192.168.0.2 to 192.168.0.255.

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The Netmask is 255.255.255.0 the Netmask in the RC-1216H should be the same

The Default gateway 192.168.0.1 the Gateway and DNS server(*) in the RC should be the same

In this case all the default IP setting will be OK.

<u>m</u> s	etup Info v1 🧮	×	
	Serial number:		
	1890		
	MAC address:		
	00:1E:FD:00:C5:3A		
	DHCP		
	IP Address:		l
	192.168.0.236		
	Netmask:		
	255.255.255.0		
	Gateway:		
	192.168.0.1		
	DNS Server:		
	192.168.0.1		
	Save		

(*) In most cases the Gateway and the DNS server is the same and the IP of the router.

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In another network, this is the result of the ipconfig command.

Microsoft Windows XP [Version 5.1.2600] <c> Copyright 1985-2001 Microsoft Corp.</c>	-
P:\>ipconfig	
Windows IP Configuration	
Ethernet adapter Local Area Connection 2: Connection-specific DNS Suffix . : mb IP Address	

Your PC IP address in this example is 192.168.128.10 this means that the IP of the RC-1216H must have IP:s in the area 192.168.128.2 to 192.168.128.255.

The Netmask is 255.255.128.0 this the Netmask in the RC should be the same

The Default gateway is 192.168.128.1 the Gateway in the RC-1216H should be the same

In this case you must change the IP:s of the RC.

Use the Microbit Setup Manager to change the IP settings.

Select the Setup tab click on the "Get Setup" button and enter the IP addresses in the Setup info dialog box.

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<u>m</u> s	etup Info v1	x	Γ
	Serial number:		
	1890		
	MAC address:		
	00:1E:FD:00:C5:3A		
	DHCP		
	IP Address:		
	192.168.128.236		
	Netmask:		
	255.255.128.0		
	Gateway:		
	192.168.128.1		
	DNS Server:		
	192.168.128.1		
	Save	.4	
		.11	J

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Configuration with WEB-interface

Before you can use your RC-1216H you must configure it. The unit will have the default IP addresses 192.168.0.236. The net mask is 255.255.255.0. The configuration is easiest done via the web interface. Be aware of that your PC must be in the same net e.g. having an IP-number between 192.168.0.2 and 192.168.0.254 and not be the same as the RC-1216H. If the default IP-address the RC not fit your network please use the PC-program Microbit Setup Manager to change the IP-addresses via USB.

Select setup page from the links on the left side and edit the parameters. After each setup pages is finished press <u>Submit</u> to temporary store the new settings. When you do that a new red <u>Apply changes</u> button appears on the pages. You can now change parameters on other pages but the new settings will not take effect until you press <u>Apply changes</u>. When you do that the unit will reboot and start up with the new settings. If you change your mind after clicking on submit you can click on <u>Restart device</u> on the left to restart the device without changing any settings.

<u>m</u> .	×)⊕	<u> </u>
← → C ff 0	192.168.0.236	🔒 ૨
RC-1216H		
WEB Switch 1216H System Info Amplifier IP settings Advanced settings	Advanced settings Function type SteppIR Submit Apply changes	

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<u>m</u> .	× +	_ D X
← → C ♠ ③ 192	2.168.0.236	٩,
RC-1216H		Show help
System Info Rotator IP settings Advanced settings Dynamic DNS settings Rotator settings Application upgrade Bootloader upgrade	Company : Microbit Product : RC-1216H Software : 2.0 Hardware : 1 Bootloader: 1.9 Build : Dec 16 2011 15:26:04 S/N : 1890 PID : 128 Uptime : 1006	
Restart device Microbit 2.0 AB	MAC : 00:1e:fd:00:c5:3a IP address: 192.168.128.152 Netmask : 255.255.128.0 Gateway : 192.168.128.1 DNS : 192.168.128.1 ====================================	=2

The info page shows some static information about the RC-1216H as firmware revision etc. and also the basic IP-configuration.

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IP Settings

The IP Settings menu is used to setup the initial IP parameters needed for the unit to connect to the IP network. Down below the settings are described more in details.

and the second se			
<u>m</u> .	× 🛨	_	
← → C ♠ ③ 192	← → C ♠ ③ 192.168.0.236		
RC-1216H			Show help
System Info Rotator IP settings Advanced settings Dynamic DNS settings Rotator settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	IP settings Unit ID(Banner) DHCP IP Netmask Gateway Dns server Web server port Eth-type Web page user Web page pwd Submit	- Off 192.168.0.236 255.255.0 192.168.0.1 192.168.0.1 80 Auto, prefer 10 Mbit	

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Parameter	Setting		
Unit ID (Banner)	Text, whatever you want, that will be shown at the top of the web-page (within brackets). Used to identify different units. "empty" (default) "text"		
DHCP	Select between a fixed IP address and DHCP. Fixed IP address is recommended. No (default) Yes		
IP	IP-address (only when fixed IP-address is used) 192.168.0.236 (default) nnn.nnn.nnn		
Netmask	Net mask (only when fixed IP-address is used) 255.255.255.0 (default) nnn.nnn.nnn		
Gateway	Gateway (only when fixed IP-address is used) 192.168.0.1 (default) nnn.nnn.nnn		
Dns server	DNS-address (only when fixed IP-address is used) 192.168.0.1 (default) nnn.nnn.nnn		
Web server port	Sets the port number for the Internal webserver. This port number often has to be changed if port 80 already is used by other equipment. 80 (default)		
Eth-type	Type of Ethernet connection: Auto Auto, prefer 10 Mbit (default) 10HDX* 10FDX* 100HDX* 100FDX* Auto prefer 10 Mbit is default as more speed is not needed and the emissions from a 10 Mbit LAN is much less than from a 100 Mbit LAN (*) If you use fixed settings you must have a managed switch where you can set the same		

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Web page user	Enable password protection for the web by entering a username (this field) and a password (next field). If this field is empty the RC will not ask for password. Some of the pages are still accessible but no editing is possible. "empty" (default) "username"
Web page pwd	Password for the web pages and telnet connection. "empty" (default) "password"

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Dynamic DNS setting

The RC-1216H has a Dynamic DNS client to be used when the Internet Service Provider (ISP) uses dynamic IP addresses instead of fixed IP address. The RC-1216H supports our own **free Remoterig dynamic DNS service** and DynDNS which is not free anymore. You can choose to use one of them. The Dynamic DNS client checks what IP address your router has got from the ISP and sends the information to the Dynamic DNS:s service DNS server. When using Dynamic DNS you enter "Own host name" instead of an IP address in the web browser and you don't need to bother if the IP address at the Remote site changes. If you already have a Dynamic DNS account registered for any equipment connected to the same router at the remote site, you do not need to register any specific for the RC-1216H.

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Remoterig dynamic dns service

The Remoterig dynamic dns service only support equipment from Remoterig and Microbit like the RC-1216H, RRC-1258 and the WebSwitch 1216H etc.

The Remoterig dynamic dns service do not need any registration it's automatically generated based on the serial number on the equipment.

To activate the Remoterig dynamic dns client select "ddns.remoterig.com" from the drop down on the Dynamic DNS settings page. Also select a DNS check interval, if your IP address change often you can select a low value, if it goes month between the changes you can select a higher value. After that click on "Submit" and "Apply changes", the RRC will restart.

<u>m</u> . ← → C ↑ C	× 🕞) 192.168.0.236		
System Info Rotator IP settings Advanced settings Dynamic DNS settings Rotator settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Dynamic DNS settings Dynamic DNS check interval Dynamic DNS host name Own host name username password Submit	10 v ddns.webswitch.se v	

USER MANUAL RC-1216H

After the RC-1216H has restarted go back to the Dynamic DNS settings page. You will now see that the settings Own hostname, Username and Password are automatically generated. The only important information is the Own host name, copy the whole row, this is the information you should put into your web browsers address field when you contact the unit in the future. Store it as a Bookmark as it is difficult to remember. No more registration is needed. Remember that DNS address like this is only for use when you connect over the internet, as long as you are operating on you own LAN use the IP address.

<u>m</u> .	× +	
← → C ♠ ③ 192	2.168.0.236	٩,
RC-1216H		Show help
System Info Rotator IP settings Advanced settings Dynamic DNS settings Rotator settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Dynamic DNS settings Dynamic DNS check interval Dynamic DNS host name Own host name username password Submit	10 ddns.webswitch.se og2e46at.ddns.webswitch.se ws1216H-1890 uut3vg10

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DynDNS dynamic DNSservice

The RC1216H also supports the commercial dynamic DNS service DynDns. If your router has a DynDNS client you can also use that one, and do not activate more than one DynDNS client at the same LAN segment. DynDNS do not accept multiple updates from same IP. The DynDNS client checks what IP address your router has got from the ISP and sends the information to DynDNS:s DNS server. When using DynDNS you enter "Own host name" instead of an IP address in we browsers address field and you don't need to bother if the IP address at the remote QTH changes. You need to register an account at http://www.dyndns.com/services/dns/dyndns/ and get a domain name. There are other

http://www.dyndns.com/services/dns/dyndns/ and get a domain name. There are other providers of the same service but RC-1216H only supports DynDNS or Remoterig ddns.

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← → C ♠ © 192	2.168.0.236		٩,
RC-1216H			Show help
System Info Rotator IP settings Advanced settings Dynamic DNS settings Rotator settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Dynamic DNS settings Dynamic DNS check interval Dynamic DNS host name Own host name username password Submit	10 v members.dyndns.org v sm2oan.dnsalias.net sm2aon *******	

Parameter	Setting

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User manual

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Dynamic DNS check interval	Sets how often the external IP address of your router should be checked, value in minutes:					
	Off (Dynamic DNS client disabled) 10 20 30					
	40 50 60					
	180 600 1440					
Dynamic DNS host name	Sets which DNS service you will use ddns.remoterig.com (our own free service) members.dyndns.org (commercial service)					
Own host name	Domain name registered at DynDNS.com. Example: my-radio-site.ham-radio-op.net					
Username	Dynamic DNS account username.					
Password	Dynamic DNS account password.					

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Application firmware upgrade

The application firmware can be updated over the Internet via the web interface when bugs are fixed and/or new functionality is implemented. You don't have to be where the RC1216H is to do the updates. Download the new firmware from www.remoterig.com and save the file on your computer (it has a name like 1216H-CRC_v1.38_2011-09-04.bin).

Connect to the RC-1216H and select 'Application-upgrade'. Then click on the 'Browse' button and select the file with the new firmware. After that you click on the 'Upgrade' button and the new firmware will be transferred and saved into the RC. When the firmware is updated the RC will restart. Note -- Do not interrupt the upgrade process in any way.



Wait a minute or two then connect to the RC-1216H again and select 'Info' and verify that the Software version is updated. If it looks like its not updated empty the web browser cache, to prevent it from showing an old cached page. The update NEVER fails but the browser is a common problem.

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User manual

Bootloader firmware upgrade

This follows the same steps as the application firmware upgrade procedure above.

Restart device

Restart device can be used if you want to reset and restart the RC-1216H without saving any changes (before apply changes) or just for ordinary reset.

Networks and Firewalls

One of the major obstacles when trying to remotely control something is the fact that the Internet Service Provider (ISP) forces us to use dynamic IP addresses. We can never know, from time to time, which IP address our modem / firewall / router has on its outside interface (the IP address you will try to connect to). Most people use NAT routers that translates IP addresses on the inside (your little LAN) to one common IP address on the outside using port conversion.

At the <u>remote end</u> the router must be configured so that port 80 (default settings) is directed to the RC-1216 which should have a static IP address. If you have other remote controlled equipment connected to the router port 80 is probably already in use and you need to change the webserver port from 80 to something else. In the example below where we have setup the Linksys router we have used port 8000.

You will also need to register the RC-1216H to DynDNS (<u>www.dyndns.com</u>) so you can use a host name to connect to it regardless of its dynamic IP address (which can change without notice, but rarely does). If you already have a DynDns account registered for any equipment connected to the same router, you do not need to register any specific for the RC-1216H.

The following default IP ports are used (changeable)

port number	function
80	WEB interface

WEB interface are TCP-based.

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Portforwarding

A typical setup screen for activating port forwarding is shown below.

There is one row assigned for each port (service) all refereeing to the IP of the Radio-RRC and the RC-1216H at the 5^{th} row.

S Application & Gaming	× +								
← → C 🔘 192,168.0	.1/Forwarding.ł	htm						<u>ک</u> ک	
LINKSYS [®] A Division of Cisco Systems, Inc.							Firr	mware Version: 1.05.03	
Applications					Ether	fast® Cable/	DSL Router	BEFSR41 V3	
& Gaming	Setup !	Security	Applicat & Gam	ions Ad	dministration	Status			
	Port Range For	warding	Por	t Triggering	UPnF	PForwarding		DMZ	
Port Range Forwarding							Port Rang	e Forwarding	
	Port Range						Port Range Forwarding can be used to set up public services		
	Application	Start	End	Protocol	IP Address	Enabled	on your netv from the Inte	vork. When users rnet make certain	
	SIP	5060 to	5060		192.168.0. 228		requests on Router can f	your network, the orward those	
	Audio	11000 to	11000	UDP 💌	192.168.0. 228	v	requests to o to handle the	computers equipped requests. If, for	
	Data	12000 to	12000	UDP 💌	192.168.0. 228	~	example, you number 80 (H	a set the port HTTP) to be	
	RRC web	80 to	80	TCP 💌	192.168.0. 228	~	forwarded to 192.168.1.2,	then all HTTP	
	RC1216H	8000 to	8000	TCP 💌	192.168.0. 236	~	be forwarde	n outside users will d to 192.168.1.2. It	
		0 to	0	Both 💌	192.168.0. 0		computer u	use static IP	
		0 to	0	Both 🛩	192.168.0. 0		You may use	e this function to	
		0 to	0	Both 💌	192.168.0. 0		establish a v server via ar	veb server or FTP h IP Gateway. Be	
		0 to	0	Both 💌	192.168.0. 0		sure that you	u enter a valid	
		0 to	0	Both 💌	192.168.0. 0		more		
				Save Sett	ings Cancel	Changes			

RC-1216H setup for SteppIR Antenna Control



The RC-1216 can be configured to remote control a SteppIR antenna. The controls are the same as on the SDA-100 control box. You can use Retract, Calibrate, Bi-directional, 180 degree switch etc. Frequency adjustment can be done manual or automatic. If you want the antenna to follow the radio automatically you need to connect a cable from the Radio to the SDA-100 Control box. If you want to be able to switch between automatic adjustment and manual you have to connect the data line from the radio to the SDA-100 via the RC-1216H AUX-SW1 Relay as there the SDA-100 protocol do not support switching on/off the Autotrack remotely (We hope they will implement it later). The AUX-SW1 relay is controlled by the "serial" button. The other buttons have the same function as on the SDA-100 control box. We recommend to connect the 24V power to the SDA-100 via the RC-1216H PWR-SW relay to minimize the risk for hang up situations.

Before you can start using the RC-1216C you must check that you have the SteppIR transceiver interface 01321 installed and that the firmware in the the SDA-100 shows 99 on the lower right of the display when turning on the SDA-100. After that you need to setup the SDA-100 with serial port parameters that match the setup in the RC-1216H. See SDA-100

User manual

Manual. You have also to prepare the cabling and do the Initial setup, see Step by step RC-1216H setup.

Installation of the RC-1216H for SteppIR control



Settings for SteppIR

There are only a few settings needed for the SteppIR besides the standard IP-settings described under Step By Setup. When you do the setup only connect the 12V power do not connect the cables to the SDA-100.

- Click on the Advanced settings link to the left, When the advanced settings page shows up, select SteppIR from the "Function type" drop down.
- Click on submit to store the settings.

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RC-1216H			Show help
System Info Rotator IP settings Advanced settings Dynamic DNS settings Rotator settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Advanced setting Function type Script/CSS/Image URL Enable external help pages Submit Apply changes	S SteppIR Prosistel D ACOM 2000A SteppIR Green Heron RT-21 DCU-1 Yaesu GS-232B	6H/steppir/

- click on "apply changes" to update the RC-1216H with the new settings, The unit will restart.

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- Now connect the cables to the SDA-100.
- When the cables are connected click on "Main pwr" and the SDA-100 will power up.
- The Green Online LED will be steady, if it flashes, the connection with the SDA-100 is not OK. Check cables and baud rate settings.
- If you have a CAT cable connected from the Radio to the SDA-100 the antenna will go the last used frequency. Depending on if how you have connected the CAT cable to the SDA 100 it can also go to the Radio frequency. If you have connected the CAT cable via the RC-1216H AUX-SW1 you have to click on the "serial" button to get automatic updates from the radio.
- The other functions are the same as on the SDA-100 so you will feel familiar with them without further explanations.
- Note that the SDA-100 has a memory of it's state before it's loosing it's DC-power. For example removing the DC-cord or in this case switching of the DC-power with the relay. To store the power on state it must be switch on and left on for about 3 minutes before it is switched off by removing the DC power the first time. If you are on site never switch off the SDA-100 with the PWR switch to disturb the status memory.

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RC-1216H					Show help
System Info SteppIR IP settings Serial settings Advanced settings Dynamic DNS settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	SteppIR FREQUENCY - FINE COARSE ()	Online Band	Tuning O Norm	RETRACT O 180 CALIBR.	O MAIN PWR O BI O SERIAL

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RC-1216H setup for ACOM 2000A control



The RC-1216 can be configured to remote control a ACOM-2000A Power amplifier. The controls and indicators are almost the same as on ACOM-2000A control Panel (RCU) so you will recognize them immediately. There are controls for on/off, standby/operate, Auto tune, Antenna selections and a button for reading all parameters from the PA. The indicators are also the same as on the RCU like Forward power, Reflected power, Alarm LED:s, Band segment, Temp indicators etc.

A serial cable has to be connected from the RC-1216H to the PA RS-232 port. If you also have the ACOM antenna switch you need to make a special Y-cable. Another cable is needed from the RC-1216H AUX-SW1 socket to the PA for Remote power on. This 2 wire cable can be soldered directly into the RCU D-sub or you can make a short extension cable where you connect the 2 wires.

If you have your remote station far away and do not use a remote controlled power strip or have any other way of switching on/off the 230VAC, you can use the RC-1216H PWR SW relay to control an external relay. A possibility to control of the 230VAC will save car journeys. Remember that the relay should be 2 pole and should handle the large current needed by the ACOM-2000A. The PWR SW relay is controlled by the "MAIN PWR" Button. The "MAIN PWR"

Button must be activated for the software function even if you don't have connected anything to the PWR SW relay.

Before you can start using the RC-1216H. You have also to prepare the cabling and do the Initial setup, see Step by step RC-1216H setup.

Installation with ACOM-2000A

Standard installation of the RC-1216H and ACOM-2000A



ACOM-2000A with ACOM-2000S Antenna Switch

When the ACOM-2000S antenna switch is already connected to the RS-232 port at the PA you must use a split cable.



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ACOM-2000A – 230VAC Power switching

If you do not have a remote controlled power strip or any other way of remote control the Main 230 VAC Power to the ACOM-2000 a mains power a relay can be controlled by the RC-1216H. Be sure it's 2-pole relay and that it can handle the large current needed by the ACOM-2000A (16A at 230V).



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Settings for ACOM-2000A

There are only a few settings needed for the ACOM-2000A besides the standard IP-settings described under Step By Step Setup. When you do the setup only connect the 12V power do not connect the cables to the ACOM PA.

- Click on the Advanced settings link to the left, When the advanced settings page shows up, select ACOM 2000A from the "Function type" drop down.
- Click on submit to store the settings.

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RC-1216H			Show help
System Info SteppIR IP settings Serial settings Advanced settings Dynamic DNS settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Advanced setting Function type Script/CSS/Image URL Enable external help pages Submit	ACOM 2000A Prosistel D ACOM 2000A SteppIR Green Heron RT-21 DCU-1 Yaesu GS-232B	6H/steppir/

- When you click on submit a new page will show up with controller and amplifier addresses. In normal cases the default values will work if you have not change the settings in the PA.
- Cclick on "apply changes" to update the RC-1216H with the new settings. The Unit will restart.

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RC-1216H	-		Show help
System Info SteppIR IP settings Serial settings Advanced settings Dynamic DNS settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Advanced settings ACOM 2000A, controller address ACOM 2000A, amplifier address Function type Script/CSS/Image URL Enable external help pages Submit Apply changes	71h v 41h v ACOM 2000A v www.remoterig.com/1216H/acom/ Yes v	

- After restart you will see the ACOM 2000 window.
- Now connect the cables to the ACOM-2000A
- Click on the "Main Pwr" button
- If the connection with the PA is OK the LED at let top will go steady.
- Now you can click on the "ON/OFF" button, the PA should now start to heating Up.
- When the PA is heated up and in Stand By mode you can start using the web page in the same way as the hardware control panel.

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BandAnt/Mode, Forward Pwr, Reflected Pwr, Prot, Heater, Plate, Drive etc, has exactly the same function as on the ACOM control panel (RCU). They can be a little slower as the PA is not responding very fast. There is two dropdowns the left one is to preselect band segment, same as can be done via the up/dwn buttons on the RCU. The right one is used to select the antenna if you have the antenna switch, same as can be done with the < > buttons on the RCU. Read parameters can be used to read all measured values etc. from the PA, a pop up window will show them.

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User manual

_ D X Namnlös - Google Chrome S about:blank Reading parameters ... ********* Bias: 125.5 V DC Input: 0 W Drive: 0 W Frequency: 0 kHz Fil Voltage: 13.31 V HV: 2960.0 V IF Front Tube: 3.75 A IF Read Tube: 3.87 A I Grid: 0 mA I Plate: 0 mA I Screen: 1.0 mA Mains Voltage: 230.0 V Plate RF Voltage: 0 V Plate RF Voltage: 342.0 V Temp Front Tube: 30.0 oC Temp Rear Tube: 28.0 oC Usage: 3 ACOM S/N: 459032 Front Tube S/N: 95577 Rear Tube S/N: 2717920 CPU revison: 9

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Auto tune works the same way as with the RCU. When you press the button a pop up window will show the "Drive Power" bar. Apply 10-20W continuous carrier and the tune will be done. The window will indicate the result of the tuning and the new values will be stored. You have to manually close the window after tuning.

💿 ACOM 2000A - Google Chrome
Stugan.dnsalias.net:8017/autotunepopup
Apply 10 to 20W drive power
Waiting for drive power between 10 to 20W
•

The "Main Power" button controls an output which be used to control a Relay. Be sure it's 2pole relay and that it can handle the large current needed by the ACOM-2000A (16A at 230V). If you do not have a relay connected you need to use the "Main Power" button anyway, otherwise the PWR-ON button will not be visible.

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RC-1216H setup for Expert 1K-FA control



The RC-1216 can be configured to remote control a Expert 1K-FA Power amplifier. The controls and indicators are almost the same as on the front of the PA so you will recognize them immediately. There are controls for on/off, standby/operate, half/full power and a button for clearing the alarms. The indicators are also the same as on the PA like Forward power, Reflected power, Band segment, Temp indicators etc. The web based control is very handy to use specially when traveling etc, as you can control the PA from any device with a web browser like smartphones, pads etc.

A serial cable has to be connected from the RC-1216H to the PA RS-232 port. It's should be a standard RS-232 cable with straight connection 9PF -9PM. If you have a RC-1216H produced before 2014-june-01 you have to make a small modification to get the DTR signal working, see mods under the support tab on the Remoterig website.

You also need to connect the PA to direct to the radio to get the necessary control functions from the Radio. Remember that the RC-1216H is a complement to the remote control software from Expert, the radio connections are still needed.

If you need to connect CAT ports to the Radio, the Radio-RRC and the PA, check the Remoterig RRC-1258 manual how to use the RRC as a serial port server. Eg. you connect the PA to the RRC COM1 and the Radio to COM2.

If you have your remote station far away and do not have a remote controlled power strip or any other way of switching on/off the 230VAC, you can use the RC-1216H PWR SW relay to control an external relay. Remember that the relay should be 2 pole and should handle the large current needed by the Expert 1K-FA. The PWR SW relay is controlled by the "MAIN PWR" Button. The "MAIN PWR" Button must be activated for the software function even if you don't have connected anything to the PWR SW relay. The AUX SW1 relay can be setup to follow either the Main PWR button or the PWR ON/OFF button (see below).

Before you can start using the RC-1216H. You have also to prepare the cabling and do the Initial setup, see Step by step RC-1216H setup.

Installation with Expert 1K-FA

Standard installation of the RC-1216H and Expert 1K-FA



 RC-1216H
 Expert 1K-FA

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 3 °
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 4 °
 ° 4

 5 °
 ° 5

 D-SUB
 SERIAL CABLE
 D-SUB

 9P-F
 9P-M

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User manual

Expert 1K-FA – 230VAC Power switching

If you do not have a remote controlled power strip or any other way of remote control the Main 230 VAC Power to the Expert PA a 230VAC Mains power a relay can be controlled by the RC-1216H. Be sure it's 2-pole relay and that it can handle the large current needed by the Expert 1K-FA (16A at 230V).



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Settings for Expert 1K-FA

There are only a few settings needed for the Expert 1K-FA besides the standard IP-settings described under Step By Step Setup. When you do the setup only connect the 12V power do not connect the cables to the PA.

- Click on the Advanced settings link to the left, When the advanced settings page shows up, select Expert 1K-FA from the "Function type" drop down.
- Click on submit to store the settings.

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RC-1216H - Expert 1K-	FA		
microbit System Info	Advanced settings		
Profiles	Function type Script/CSS/Image	Expert1K-FA Prosistel D	6H/expert/
Amplifier	URL Enable external	SteppIR Green Heron RT-21	
IP settings Serial settings Advanced settings	Submit	DCU-1 Yaesu GS-232B	
Dynamic DNS settings Ping settings		Expert1K-FA	
Application upgrade Bootloader upgrade			
Restart device			
	4		•

- When you click on submit a new page will show up with controller and amplifier addresses. In normal cases the default values will work if you have not change the settings in the PA.
- Click on "apply changes" to update the RC-1216H with the new settings. The Unit will restart.

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m Expert 1K-FA	×		
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RC-1216H - Expert 1K	-FA		
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping settings Application upgrade Bootloader upgrade Restart device	Advanced setting Function type Script/CSS/Image URL Enable external help pages Submit	S Expert1K-FA www.remoterig.com/1216H/expert/ No V	
			•

- After restart you will see the Expert window.
- Now connect the serial cable to the PA
- Click on the "Main Pwr" button.
- Click on the ON/OFF button.
- If the connection with the PA is OK the LED at right top will first show starting and then Standby.
- When the PA is ready and in Standby mode you can start using the web page in the same way as the hardware control panel.

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RC-1216H - Expert 1K	-FA	
microbit System Info Profiles	Expert1K-FA Stby Drive PWR, W	Standby
Amplifier	2 5 10 15 20 25 30 40 3	50 60 70 80 90 100 110 120
P settings erial settings dvanced settings ynamic DNS settings ing settings	BAND/INP/ANT I 6m IN1 A1 FREQUENCY TEMP.	REFLECTED PWR, W 25 50 75 100 125 150 175 200
Application upgrade Sootloader upgrade	FULL	OPERATE
Restart device	O HALF	STANDBY ON
	OUTPUT DISPLAY MAI POWER CMD PWF	N OPR ON OFF OFF
	IN ANT	

In standby mode the PWR scale will be rescaled to show the driving power from the TX.

The selected band, frequency*, selected radio port and selected antenna port, power selection, operating status and temp are shown as they are reported from the PA.

*The frequency is what the PA reports and the accuracy can vary.

There are control buttons for

- OUTPUT POWER Switching between half and full
- DISPLAY CMD Used to clear the alarms, like overdriving etc.
- MAIN PWR Controls the Relay for Mains on the RC-1216H. (must be on even if you have not connected the relay)
- OPR / STBY Change mode from operate to standby
- ON/OFF Normal ON/OFF control (same as on the front of the PA)
- IN selects the inputs (eg radio) (same as on the front of the PA)
- ANT selects the antenna connection (same as on the front of the PA)

The antenna selection function is not supported by older versions of the Expert 1K-FA

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Expert 1K-FA	×	and the second of
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C-1216H - Expert 1K	-FA	
nicrobit ystem Info	Expert1K-FA Forward PWR, KW	Operate 🔵
mplifier	.02 .05 .10 .15 .20 .25 .30 .40	.50 .60 .70 .80 .90 1.0 1.1 1.2
P settings erial settings dvanced settings lynamic DNS settings ling settings	BAND/INP/ANT 6m IN1 A1 FREQUENCY TEMP.	REFLECTED PWR, W 25 50 75 100 125 150 175 200
pplication upgrade ootloader upgrade	0 kHz 29 C	Operate
estart device	() Half	STANDBY ON
licrobit 2.0 AB	OUTPUT DISPLAY MA POWER CMD PV	AIN OPR ON ON STB OFF

In operate mode the PWR scale is rescaled and are showing PA output power.

ATTENTION !

Before you try to operate the PA via RC-1216H be sure that you have done all settings in the PA, connected all cables and that you are able to use the PA as normal controlled from the front panel of the PA.

Remember that the PA cannot be set in to "operate" if it has no communication with the radio.

Error and Warnings

If a Fault situation occurs the Expert 1K-FA may send a Error message or a Warning which need to be "Confirmed" before the PA can be used again. In this situation a popup window will show up with the Error/Warning code. Click on the "Confirm" button to clear the Fault situation.

Note! You must allow popup windows in your web browser to be able to use this function..

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Expert 1K-FA - Google Chrome	
192.168.144.35/expert1kpopup	
NO CURRENT WARNING	
CURRENT ALARM HISTORY:	
WARNING CODE 15	
WARNING CODE 18	
WARNING CODE 20	
Confirm	

AUX SW1 Relay

At the Advanced settings page there is a Settings where you can decide how the spare relay output AUX SW1 should behave. It can be set to follow either the Main on/off button or the on/off button. I use it myself to control a koax relay which switch between the Solid state and Tube PA.

m Expert 1K-FA	×	
← → C fi 🗅	192.168.0.236	
RC-1216H - Expert 1	LK-FA	
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping settings Advanced settings Dynamic DNS settings Ping settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Advanced setting Function type Script/CSS/Image URL AUX relay follows Enable external help pages Submit	S Expert1K-FA ▼ www.remoterig.com/1216H/expert/ On/Off ▼ Disabled Main Pwr On/Off

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Serial port server

The RC-1216H can act as a serial port server in parallel with the web interface, meaning that you can use the Expert PC software to control the PA simultaneously. This is convenient if you need to change some settings like the automatic selection of antenna ports or other things which the web interface do not support.

To use this feature there are some preparations you need to do.

- Select a port for the RC-1216H to listen for the connection at.
- Setup port forwarding for the port in your router

Expert 1K-FA	
← → C ₩ D	192.168.0.236
RC-1216H - Expert 1I	(-FA
System Info	Serial settings Remote serial TCP port 13100
Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings	Submit
Ping settings Application upgrade Bootloader upgrade Restart device	
Microbit 2.0 AB	

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Using Setup Microbit Setup Manager to create a virtual serial port

Start the Microbit Setup Manager (it must be v1.27 or later), select the serial port tab, select a free serial port, enter the IP address or DDNS hostname and the same TCP port as you set in the RC-1216H. When all settings are done press save.

Microbit Setu	p Manager v	1.27 by	Microbit 2.0 /	AB 2009-201	4(c)	
Advanced						
Current working p	rofile: Alway	s defau	lt			
FW/HW version	FW update	Setup	Net info/find	Wi-Fi Setup	Serial Port	
Serial Port	IP Addres	s/Host n	ame		TCP Port	
Save	Port statu:	ddns.rem s:	oteng.com		13100	This feature is used to setup Webswitch 1216H's remote serial port
Remove	Disconne	cted			Refresh	
Device connected FW/HW Version succes Device disconnect Net info fetched Device connected FW/HW Version succes	! uccessfully ret ssfully retrieve ed! ! uccessfully ret ssfully retrieve	rieved d rieved d				

Start the Expert PC software

EXPERT Console Rel.11_12_06_B	
<u>F</u> ile S <u>e</u> tup	
EXPERT 1K-FA Fully Automatic Solid State	Linear Amplifier
	1200
➡ 0 50 100 150	200 O <u>N</u>
PW REV	0.0 W pep
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	
0 12.5 25 37.5 <u>T</u> UNE I PA Inninninninninninninninninninninninninni	50
IN BAND ANT CAT OUT	SWR TEMP
ALRM TUNE SET 1 160 m NONE NONE HALF	0°C ON OP TX
IN	◆ <u>−</u> <u>±</u> ◆ <u>S</u> ET
Serial port: COM6 Remote connection: OFF	1.

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EXPERT Console Rel.11_12_0	06_B								
File Setup									
Serial Port		COM1	IIIV Auto	omatic Se	olid Stat	te Linear	Amplifie	r	
		COM 2						·	
	۲	COM 3							
		COM 4		C00	000		1200		
🗢 🖢 🛛 🗛 OUT		COM 5	hudunlun	luuluuluuli	uluuluulu	, 1111111111111111		0.0 W nen	0 <u>F</u> F
		COM 6		100	150		200	11 404	
PW REV	Inn	handandandandan		luuluuluulu	uluuluulu	, 1111111111111111		0.0 W nen	<u> </u>
← <u>C</u>	0	15		20	45		60	11 444	POWER
V PA	Inn	na n	daadaadaaa	so huduuluuli	uluuluulu	mhudud		0.0 V	
	Π	12.5		25		5	50		DISPLAT
<u>T</u> UNE I PA	Ĭ			luuluuluulu		Muuluuluul		0.0 A	OPERATE
	1	N BAND	ANT	CAT	OUT	SWR	TEMP		
		160 m	NONE	NONE	HALF		0 °C		
ALRM TONE SET									
ĪN	+		► <u>A</u> NT	<u>C</u> AT		≁ _	± ♣	<u>s</u> et	
Serial port: COM3 Remote	con	nection: OFF							

Open the Setup tab and select the same COM port as you selected in the Setup manager

When you have selected serial port go back to the Setup Manager Window and click on the refresh button. Now Port status should change to "Connected".

Microbit Setu	p Manager v	1.27 by	Microbit 2.0	AB 2009-201	4(c)	
Advanced						
Current working p	orofile: Alway	s defau	lt			
FW/HW version	FW update	Setup	Net info/find	Wi-Fi Setup	Serial Port	
Serial Port	IP Addres	s/Host n	ame		TCP Port	
COM3 vr4g5hjk.ddns.remoterig.com Save Port status:			13100	This feature is used to setup Webswitch 1216H's remote serial port		
Remove	Connecte	d			Refresh	
Device connected FW/HW Version succe Device disconnect Net info fetched Device connected FW/HW Version succe	! uccessfully ret ssfully retrieve ed! ! uccessfully ret ssfully retrieve	rieved d rieved d				

Ba-RC1216H-A14.docx

Browse the System info page in the RC-1216H you should see that RFC2217 now have changed to "connected". If you already have the page up, click F5 to refresch the page.

M Expert 1K-FA	
← → C ♠ _ xr RC-1216H - Expert 1K-	4g5hjk.ddns.remoterig.com
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping settings	Company : Microbit Product : RC-1216H Software : 4.4 Hardware : 2 Bootloader: 1.10 Build : Jun 5 2014 08:56:14 S/N : 2620 PID : 140 Uptime : 0 Days, 0 Hours, 5 Mins, 34 Secs RFC2217 : Connected 194.117.163.228 , Uart:rx 23546, tx 19, TxOverflows 0, RxErrors 0 ====================================
Application upgrade Bootloader upgrade Restart device	MAC : 00:1e:fd:00:c8:14 IP address: 192.168.0.42 Netmask : 255.255.255.0 Gateway : 192.168.0.1 DNS : 192.168.0.1
ncroat 2.0 AB	Max available memory = 17101 bytes Last Dynamic DNS status: Inactive Ping status (watchdog): Off Active profile: Default Last WD Reset: 12

Be sure that the PA is ON, if not switch it ON from the web page.

$ \underbrace{\mathbf{m}}_{\text{Expert 1K-FA}} \leftarrow \rightarrow \mathbf{C} \widehat{\mathbf{m}} \boxed{\mathbf{n}}_{\text{XFA}} $	4g5hjk.ddns.remoterig.com
RC-1216H - Expert 1K-	FA
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Expert1K-FA Standby STBY DRIVE PWR, W 2 2 5 10 15 20 25 30 40 50 60 70 80 90 100 110 120 BAND/INP/ANT REFLECTED PWR, W 6m 6m N1 10 110 120 BAND/INP/ANT REFLECTED PWR, W 6m 111 25 50 75 100 125 150 175 200 0 kHz 28 C OPERATE OPERATE ON ON ON OUTPUT DISPLAY MAIN OPR ON OFF ON OFF

Ba-RC1216H-A14.docx

Now you can press the On Button in the PC program and the program should be able to control the PA as normal

EXPERT Co	onsole Rel.11_12_	_06_B	x
<u>rite setup</u>	E	XPERT 1K-FA Fully Automatic Solid State Linear Amplifier	
		OPERATE MODE	
⇔L	PA OUT	0 150 300 450 600 100100100100100100100100100100100100100	O <u>F</u> F
	PW REV	0 50 100 150 200 100 150 200 0.0 W pep	0 <u>N</u>
	V PA		
TUNE	I PA	0 12.5 25 37.5 50 100100100100100100100100100100100100100	PERATE
		IN BAND ANT CAT OUT PA GAIN TEMP	
ALRM TU	UNE SET	T 6 m T YAESU HALF dB 28 °C ON OP	TX
	<u>I</u> N	← BAND BAND → ANT CAT <=<	
Serial port: C	COM3 Remot	te connection: ON	11.

You can now use both the web page and the PC program simultaneously.

When you have done this setup once the virtual serialport is installed in the PC and you do not need to start the Setup Manager any more to use the port. You only need the Setup manager if you want to make some changes or check the status

Ba-RC1216H-A14.docx

RC-1216H setup for Expert 1.3K-FA or Expert 2K-FA control



The RC-1216 can be configured to remote control a Expert 1.3K-FA or 2K-FA Power amplifier. The controls and indicators are almost the same as on the front of the PA so you will recognize them immediately. There are controls for on/off, standby/operate, low/middle/high power and a button for clearing the alarms. The indicators are also the same as on the PA like Forward power, SWR, Band segment, Antenna selections, Temp indicators etc. The web based control is very handy to use specially when traveling etc, as you can control the PA from any device with a web browser like smartphones, pads etc.

A RS-232 serial cable has to be connected from the RC-1216H to the PA RS-232 "PORT" connector. Note that the PORT connector at the PA do not have a standard configuration so a custom made serial cable has to be built. A custom cable for the power on signal must also be built. Se drawings for these cables below.

You also need to connect the PA to direct to the radio to get the necessary control functions from the Radio. Remember that the RC-1216H is a complement to the remote control software from Expert, the radio connections are still needed.

User manual

If you need to connect CAT ports to the Radio, the Radio-RRC and the PA, check the Remoterig RRC-1258 manual how to use the RRC as a serial port server. Eg. you connect the PA to the RRC COM1 and the Radio to COM2.

If you have your remote station far away and do not have a remote controlled power strip or any other way of switching on/off the 230VAC, you can use the RC-1216H PWR SW relay to control an external relay. Remember that the relay should be 2 pole and should handle the large current needed by the Expert PA. The PWR SW relay is controlled by the "MAIN PWR" Button. The "MAIN PWR" Button must be activated for the software function even if you don't have connected anything to the PWR SW relay.

Before you can start using the RC-1216H. You have also to prepare the cabling and do the Initial setup, see Step by step RC-1216H setup.

Installation of Expert 1.3-FA or 2K-FA

Standard installation of the RC-1216H and Expert 1.3K-FA and 2K-FA



User manual

Expert Linear – 230VAC Power switching

If you do not have a remote controlled power strip or any other way of remote control the main 230 VAC to the Expert Linear a relay can be controlled by the RC-1216H. Be sure it's 2-pole relay and that it can handle the large current needed by the Expert Linears (16A at 230V).



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Settings for Expert 1.3K-FA/2K-FA

There are only a few settings needed for the Expert PAs besides the standard IP-settings described under Step By Step Setup. When you do the setup only connect the 12V power do not connect the cables to the PA.

- Click on the Advanced settings link to the left, When the advanced settings page shows up, select Expert 1.3K-FA/2K-FA from the "Function type" drop down.
- Click on submit to store the settings.

			🔺 Du	_		×
/ <u>m</u> Expert 2K-FA	×					
← → C ⋒ 🗋 qk	yz60tj.ddns.webs	switch.se			2	
RC-1216H - Expert 2K-F	A				Show	help
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping/Watchdog settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Advanced setting Function type Script/CSS/Image URL Enable external help pages Visually impaired support Submit	Expert 1.3/2 K-FA Prosistel D ACOM 2000A SteppIR Green Heron RT-21 DCU-1 Yaesu GS-232B AlfaSpid RAK Expert1K-FA KPA500 Expert 1.3/2 K-FA				

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- Click on "apply changes" to update the RC-1216H with the new settings. The Unit will restart.

<u> </u>	× kyz60tj.ddns.web	switch.se	Du _	□ ×
RC-1216H - Expert 2K-	FA			Show help
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping/Watchdog settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Advanced settin Function type Script/CSS/Image URL Enable external help pages Visually impaired support Submit	gs Expert 1.3/2 K-FA ▼ Yes ▼ No ▼		

- After restart you will see the Expert window.
- Now connect the serial cables to the PA
- Click on the "Main Pwr" button.
- Click on the ON/OFF button.
- If the connection with the PA is OK the LED at right top will first show starting and then Standby.
- When the PA is ready and in Standby mode you can start using the web page in the same way as the hardware control panel.

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<u> </u>	×
RC-1216H - Expert 2K-F	A Show help
System Info Profiles Amplifier IP settings Advanced settings Dynamic DNS settings Ping/Watchdog settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Expert 1.3/2 K-FA STBY I IN ANT 2 5 NO ALARMS 60 70 80 90 100 150 200 BANDI R 20m II NO WARNINGS TEMP(LWR) 1.0 1.3 1.5 1.8 2.0 2.5 3.0 3.5 MAX 26 C MID TEMP(CMB) OPERATE LOW 25 C O STANDBY ON OUTPUT DISPLAY MAIN OPR ON OVF ON OUTPUT DISPLAY MAIN OPR ON OFF ON NO ALARMS NO WARNINGS

In standby mode the PWR scale will be rescaled to show the drive power from the TX.

The selected band, frequency^{*}, selected radio port and selected antenna port, power selection, operating status and temp are shown as they are reported from the PA.

*The frequency is what the PA reports and the accuracy can vary.

There are control buttons for

- OUTPUT POWER Switching between Low, Mid and Max.
- DISPLAY CMD Used to clear the alarms, like overdriving etc.
- MAIN PWR Controls the Relay for Mains on the RC-1216H. (must be on even if you have not connected the relay)
- OPR / STBY Change mode from operate to standby
- ON/OFF Normal ON/OFF control (same as on the front of the PA)
- ON/OFF Normal ON/OFF control (same as on the front of the PA)
- IN selects the inputs (eg radio) (same as on the front of the PA)
- ANT selects the antenna connection (same as on the front of the PA)

Ba-RC1216H-A14.docx

Expert 2K-FA	× ×
← → C fi 🗅 1	92.168.0.236 😒 🚍
RC-1216H - Expert 2K-F	A Show help
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping/Watchdog settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Expert 1.3/2 K-FA FORWARD PWR, KW 0.02 .04 .08 .14 .20 .24 .30 .40 .50 .60 .70 .80 .90 1.0 1.1 1.2 BAND IND/ANT TEMP(UPR) SWR 6m IN1 A3 25 C TEMP(UWR) 1.0 1.3 1.5 1.8 2.0 2.5 3.0 3.5 MAX 26 C MID TEMP(CMB) OPERATE LOW 27 C UTPUT DISPLAY MAIN POWER CMD PWR STB ON OFF IN ANT NO ALABMS NO WARNINGS

In operate mode the PWR scale is rescaled and are showing PA output power.

ATTENTION !

Before you try to operate the PA via RC-1216H be sure that you have done all settings in the PA, connected all cables and that you are able to use the PA as normal controlled from the front panel of the PA.

Remember that the PA cannot be set in to "operate" if it has no communication with the radio.

Ba-RC1216H-A14.docx

Error and Warnings

If a Fault situation occurs the Expert Linear may send a Alarm message or a Warning which will be shown below the Buttons. Most times the PA will be set to standby and the reason of the Alarm/Warning will be shown in 10 secs and then disappear. Some Alarms need to be "Confirmed" with the DISPLAY/CMD button before the PA can be used again. In most cases it's enough to set the PA in "Operate" mode again after dealing with the reason of the alarm.



Ba-RC1216H-A14.docx

Serial port server

The RC-1216H can act as a serial port server in parallel with the web interface, meaning that you can use the Expert PC software to control the PA simultaneously. This is convenient if you need to change some settings like the automatic selection of antenna ports or other things which the web interface do not support.

To use this feature there are some preparations you need to do.

- Select a port for the RC-1216H to listen for the connection at.
- Setup port forwarding for the port in your router
- Download the Expert KTerm 1.3K or 2K package from SPE website.

∫ <u>m</u> Expert 2K-FA ← → C ☆ □ 19	× 2.168.0.236	A DJ		< =
RC-1216H - Expert 2K-F	A		Show hel	P
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping/Watchdog settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Serial settings Remote serial TCP port 13100 Submit			

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Using Setup Microbit Setup Manager to create a virtual serial port

Power on the PA from the web GUI as normal.



Start the Microbit Setup Manager (it must be v1.30 or later), select the serial port tab, select a free serial port, enter the IP address or DDNS hostname and the same TCP port as you set in the RC-1216H. click create, when all settings are done press save.

Microbit Setup	5(c)	_		×				
Advanced								
Current working pro	file: Alway	s defau	ılt					
FW/HW version F	W update	Setup	Net info/find	Wi-Fi Setup	Serial Port			
Serial Port	IP Addres	s/Host n	ame		TCP Port			
COM2 ~	qkyz60tj.	ddns.weł	oswitch.se		13100	This f	eature is i	used
Save	Port statu	s:				1216 serial	lp webs I's remote port	e
Remove	Installed				Refresh			
Device disconnected	11							

Ba-RC1216H-A14.docx

Start the Expert PC software

In this case Term_2k_232.exe

Term_2K_	232: Virtual	Com Port	×
<u>C</u> 0)M Port:	COM2	
•		×	
	OK)	Cancel	

When the Com port selection window shows up and select the same COM port as you selected in the Setup manager

Select "Connect" from the File dropdown

🍯 Term_2K_232 - Rel. 120512_B _ \times <u>File View H</u>elp EXPERT 2K-FA Solid State Fully Automatic Standby CAT OUT IΝ BAND ANT SMR TEMP 20 m LOW $\overline{27}$ KENMD. 1 1 ON-LINE F3 W: 733 H: 204 Virtual Com Port: COM2 Term_2K_232: Keypad INPUT ANT ٦ ل L ► | DISPLAY 0<u>N</u> ± 🕨 < -< C <u>C</u> 🕨 POWER CAT SET OFF T<u>U</u>NE **OPERATE** SET ΠN ТX

Now the program should connect to the PA and you can control it

Ba-RC1216H-A14.docx

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If you now look at the web GUI you will see that the status on the top right has changed to Remoted. The web GUI is blocked whil the PC-program is in use, only the On/Off buttons is enabled.

Expert 2K-FA	×		×
← → Ĉ 🖬 🗋 qky	z60tj.ddns.webswitch.se	Ś	≡
RC-1216H - Expert 2K-FA	N	Show h	elp
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping/Watchdog settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Expert 1.3/2 K-FA FORWARD PWR, KW .02 .05 .10 .15 .20 .25 .30 .40 .50 .60 .70 .80 .90 1.0 1.1 1.2 BAND/INP/ANT TEMP(UPR) SWR 20m IN1 A1 27 C TEMP(LWR) 1.0 1.3 1.5 1.8 2.0 2.5 3.0 3.5 Max 26 C MID TEMP(CMB) OPERATE 0N OUTPUT DISPLAY MAR 0PR ON OFF NO ALARMS NO WARNINGS	-	

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USER MANUAL RC-1216H

Browse the System info page in the RC-1216H you should see that RFC2217 now have changed to "connected". If you already have the page up, click F5 to refresch the page.

Expert 2K-FA	×		🔺 Du 🔄		×
← → C 🕯 🗋 qk	yz60tj.ddns.webswite	ch.se		5	∎
RC-1216H - Expert 2K-F/	A			Show	help
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping/Watchdog settings Application upgrade Bootloader upgrade Restart device	Company Product Software Bootloader Build S/N PID Uptime RFC2217 ===================================	Microbit RC-1216H 4.24 3 1.12 Feb 19 2016 11:20:26 9999 132 0 Days, 2 Hours, 2 Mins, 14 Secs Connected 94.198.67.141, Uart:rx 454694, tx 822 00:1e:fd:00:e4:e7 44.140.64.125 255.255.254 44.140.64.97 8.8.8.8	:6, TxOverflows 0, RxErr	ors O	
Microbit 2.0 AB	Max available memory DNS status Dynamic DNS <u>status</u> Ping status (watchdog) Active profile Last WD Reset TCP Error counter	16501 OK, remoterig.com = 213.180.92.20 OK Off Default 1390596242 O			

When you have done this setup once the virtual serialport is installed in the PC and you do not need to start the Setup Manager any more to use the port. You only need the Setup manager if you want to make some changes or check the status

User manual

RC-1216H setup for Elecraft KPA500 control



The RC-1216 can be configured to remote control a Elecraft KPA500 Power Amplifier. The controls and indicators are almost the same as on the front of the PA so you will recognize them immediately. There are controls for on/off, standby/operate. The indicators are also the same as on the PA like Forward power, SWR, Band segment, Temp indicators etc. The web based control is very handy to use specially when traveling etc, as you can control the PA from any device with a web browser like smartphones, pads etc.

A serial cable has to be connected from the RC-1216H to the PA RS-232 port. It's should be a standard RS-232 cable with straight connection 9PF -9PM.

You also need to connect the PA to direct to the radio to get the necessary control functions from the Radio. If you need to connect CAT ports to the Radio, the Radio-RRC and the PA, check the Remoterig RRC-1258 manual how to use the RRC as a serial port server. Eg. you connect the PA to the RRC COM1 and the Radio to COM2.

User manual

If you have your remote station far away and do not have a remote controlled power strip or any other way of switching on/off the 230VAC, you can use the RC-1216H PWR SW relay to control an external relay. Remember that the relay should be 2 pole and should handle the current needed by the PA. The PWR SW relay is controlled by the "MAIN PWR" Button. The "MAIN PWR" Button must be activated for the software function even if you don't have connected anything to the PWR SW relay. The AUX SW1 relay can be setup to follow either the Main PWR button or the PWR ON/OFF button (see below).

Before you can start to use the RC-1216H. You have also to prepare the cabling and do the Initial setup, see Step by step RC-1216H setup.

Installation with Elecraft KPA500

Standard installation of the RC-1216H and KPA500.



RC-1216H		Elecraft KPA-500
2 0		° 2
3 0		
5 0		
D-SUB 9P-F	SERIAL CABLE	D-SUB 9P-M

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Elecraft KPA-500 – 230VAC Power switching

If you do not have remote controlled power strip or any other way of remote control the 230VAC Mains power, a relay can be controlled by the RC-1216H. Be sure it's 2-pole relay and that it can handle the current needed by the KPA-500.



Settings for Elecraft KPA500

There are only a few settings needed for the Elecraft KPA500 besides the standard IP-settings described under Step By Step Setup. When you do the setup only connect the 12V power do not connect the cables to the PA.

- Click on the Advanced settings link to the left, When the advanced settings page shows up, select Elecraft KPA500 from the "Function type" drop down.
- Click on submit to store the settings.

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microbit

<u>m</u> кразоо ← → C ㎡ ⊡ 19	× 2.168.0.236		
RC-1216H - KPA500 microbit System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Advanced settings Function type AUX relay follows Script/CSS/Image URL Enable external help pages Submit	KPA500 Prosistel D ACOM 2000A SteppIR Green Heron RT-21 DCU-1 Yaesu GS-232B AlfaSpid RAK Expert1K-FA KPA500	Show help
	•		

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USER MANUAL RC-1216H

- When you click on submit a new page will show up with controller and amplifier addresses. In normal cases the default values will work if you have not change the settings in the PA.
- Click on "apply changes" to update the RC-1216H with the new settings. The Unit will restart.

(***		
<u>т</u> кразоо	×	
← ⇒ C fi	192.168.0.236	=
RC-1216H - KPA5(00	Show help
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Advanced settings Function type AUX relay follows Script/CSS/Image URL Enable external help pages Submit	KPA500 V Main Pwr V Yes V
	4	

- After restart you will see the KPA500 window.
- Now connect the serial cable to the PA
- Click on the "Main Pwr" button.
- Click on the ON/OFF button.
- If the connection with the PA is OK the LED at right top will first show starting and then Standby.
- When the PA is ready and in Standby mode you can start using the web page in the same way as the hardware control panel.

<u>m</u> KPA500 ← → C ㎡ 19	× 2 22.168.0.236
RC-1216H - KPA500	Show help
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	KPA500 STEY DRIVE PWR, W 2 5 10 15 20 25 30 40 50 60 70 80 90 100 110 120 SWR TEMP. SWR SWR SWR SWR SUR SWR 27 C 1.0 1.1 1.3 1.5 1.8 2.0 3.0 5.0 STANDEY OPERATE OPERATE ON ON OPF ON OFF

In standby mode the PWR scale will be rescaled to show the driving power from the TX.

The selected band, operating status and temp are shown as they are reported from the PA.

There are control buttons for

- MAIN PWR Controls the Relay for Mains on the RC-1216H. (must be on even if you have not connected the relay)
- OPR / STBY Change mode from operate to standby
- ON/OFF Normal ON/OFF control (same as on the front of the PA)
- Band If the PA is not connected via CAT to the Radio, the band can be selected manually via the drop down menu. If the PA is connected to the Radio via CAT use the – setting.

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<u>т</u> кра500	×	
← → C ⋒ 19 RC-1216H - KPA500	2.168.0.236	Show help
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	KPA500 Forward PWR, W 100 125 150 175 200 22 TEMP. 29 C BAND: 60m - V	Operate 25 250 300 350 400 450 500 550 600 650 700 SWR 1.0 1.1 1.3 1.5 1.8 2.0 3.0 5.0 OPERATE OPERATE STANDBY ON MAIN OPR ON OFF

In operate mode the PWR scale is rescaled and are showing PA output power.

ATTENTION !

Before you try to operate the PA via RC-1216H be sure that you have done all settings in the PA, connected all cables and that you are able to use the PA as normal controlled from the front panel of the PA.

Error and Warnings

If a Fault situation occurs the KPA500 may send a Error message or a Warning which need to be "Confirmed" before the KPA500 can be used again. In this situation a popup window will show up with the Error/Warning code. Click on the "Confirm" button to clear the Fault situation.

Note! You must allow popup windows in your web browser to be able to use this function..

M KPA500 - Google Chrome	Γ
192.168.144.35/kpa500popup	
Current warning code: 12	
Confirm	

AUX SW1 Relay

At the Advanced settings page there is a Settings where you can decide how the spare relay output AUX SW1 should behave. It can be set to follow either the Main on/off button or the on/off button. I use it myself to control a koax relay which switch between the Solid state and Tube PA.

<u>m</u> kpasoo ← → C ㎡ ि	× 192.168.0.236	
RC-1216H - KPA500)	Show help
System Info Profiles Amplifier IP settings Serial settings Advanced settings Dynamic DNS settings Ping settings Application upgrade Bootloader upgrade Restart device	Advanced settin Function type Script/CSS/Image URL AUX relay follows Enable external help pages Submit	g5 KPA500 ▼ t On/Off ▼ Disabled Main Pwr On/Off

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RC-1216H setup for Rotator control



The RC-1216 can be configured to remote control rotators. At this moment it support Prosistel rotators with the D-type control box, AlfaSpid rotators, rotators controlled by Green Heron control box and other rotators with serial interfaces using the DCU-1 protocol. The controls and indicators are quite simple, you have digital azimuth indicator and analog indicator which shows the approximate direction. There are also 8 memory buttons which you can program to your favorite directions.

A serial cable has to be connected from the RC-1216H to the rotator control box or serial interface. The example shows cabling for the Prosistel rotators. If you have others check the rotator manual for the connector pinning so you make proper cables.

If you have your remote station far away and do not have any other way of switching on/off the 230VAC, you can use the RC-1216H PWR SW relay to control an external relay. A possibility to control the 230VAC will save car journeys. Remember that the relay should be 2 pole and should handle the Current and Voltage needed by the Rotator. The PWR SW relay is controlled by the "MAIN PWR" Button. The "MAIN PWR" Button must be activated for the software function even if you don't have connected anything to the PWR SW relay. Before you can start using the RC-1216H. You have also to prepare the cabling and do the Initial setup, see Step by step RC-1216H setup.

Installation example with Prosistel or AlfaSpid

Standard installation of the RC-1216H and a Prosistel or AlfaSpid rotator.



20		° 2
3 0		o 3
5 0		° 5
D-SUB 9P-F	SERIAL CABLE	D-SUB 9P-M

Rotator – 230VAC Power switching

If you need to control the 230VAC Mains power a relay can be controlled by the RC-1216H It should be connected to the PWR-SW connector. Be sure it's 2-pole relay and that it can handle the current and voltage needed.



AlfaSpid Power switching

The 12V power to the AlfaSpid control box can be switched directly by the RC-1216H PWR SW relay. No external relay is needed.

Ba-RC1216H-A14.docx

User manual

Settings for Rotator control

There are only a few settings needed to setup the Rotator control function besides the standard IP-settings described under Step By Setup. When you do the setup only connect the 12V power do not connect the cables to Rotator.

- Click on the Advanced settings link to the left, When the advanced settings page shows up, select the rotator function that you want from the "Function type" drop down. We use Prosistel in the example.
- Click on submit to store the settings.

m Microhit		
← → C ♠ 🗋 192	2.168.0.236	<u>8</u> 3
RC-1216H - Microbit		Show help
System Info Profiles Rotator IP settings Advanced settings Dynamic DNS settings Ping settings Rotator settings Application upgrade Bootloader upgrade Restart device Microbit 2.0 AB	Advanced settings Function type Enable external help pages Submit Apply changes	Prosistel D Prosistel D ACOM 2000A SteppIR Green Heron RT-21 DCU-1 Yaesu GS-232B AlfaSpid RAK

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- If you want to setup presets you can do that by clicking on the Rotator settings link.
- The Rotator settings page will show up. On the top there is a Rotator image URL. It point out where the pictures for the compass is stored. Do not change the address if you do not have your own pictures stored locally.
- On the lines below you can set a azimuth and a corresponding text for the 8 preset buttons.
- When done click on "submit" and "apply changes". The unit will restart.

	-		
Rotator	× 🛨		
← → C ₦ ©) 192.168.0.236	S 🕹	
RC-1216H - Rotato	RC-1216H - Rotator		
microbit	Rotator setting	15	
Rotator	Rotator image URL	www.remoterig.com/1216H/azi	
IP settings Advanced settings	Preset 1 degree	0	
Rotator settings	Preset 1 text	0 KH6	
Application upgrade	degree	55	
Bootloader upgrade	Preset 2 text	55 JA	
Restart device	degree	85	
Microbit 2.0 AB	Preset 3 text	85 VK	
	degree	120	
	Preset 4 text	120 VU	
	degree	180	
	Preset 5 text	180 ZS	
	Preset 6 degree	248	
	Preset 6 text	248 PY	
	Preset 7 degree	295	
	Preset 7 text	295 EC	
	Preset 8 degree	333	
	Preset 8 text	333 WC	
	Submit		

After restart you will see the Rotator Screen



Until you have connected the rotator and power it on it will show "Disabled"

- After restart you can connect the cables to the Rotator control box.



- When power on the RC-1216 will connect to the rotator and show the Azimuth. As long as the green LED is on it will show live data, when it change to red data is not updated live. Reload the page to get it live again.
- You can now rotate the antenna by entering a direction and click "Go!", or by using one of the preset buttons.
- The azimuth readings and the compass will change live while the rotator is moving.
- The compass will show a rough direction with 5 degrees resolution.

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Appendix D - Technical Data

Product/Art no:	Remoterig RC-1216H
Dimensions (LxHxD):	105 x 90 x 39 mm
Weight:	250 g
Ip class:	IP20
Power supply requirement:	10-18V DC via DC Plug 2.1 mm/5.5mm
Current drain at 13,8V:	App. 160 mA
Network connection:	RJ45 T-Base10/100
Relay Switches	30VDC - 10A or 40VDC - 2A
Protocol Internet:	TCP/IP, UDP, DHCP, DNS, DynDNS etc.
USB:	USB 2.0 (mini)
Serial port :	RS-232 (1200-57600 baud)
Usable temp range:	0 to +40 °C
Humidity range:	30% to 90% RH





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Appendix E - Safety and Regulatory Information

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety Notice

- Do not use this product near water, for example, in a wet basement or near a swimming pool.
- Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.
- Warning: Never operate this device with a headset or other audio accessories at high volume levels. Hearing expert's advice against continuous high volume operation, if you experience a ringing in your ears, reduce the volume level or discontinue use.
- Never connect a power supply of more than 18 VDC to the power jack. The supply voltage must be between 10 V and 18 V. to prevent damaging the device.

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Disclaimer

The author has written this document to the best of his knowledge, but does not guarantee that the contents will satisfy the desire and expectation of the reader. The author or Microbit takes no responsibility for damage or injuries of any kind that may arise from the use and miss use of the product or information contained. The author do not warrant the accuracy and correctness of the information contained. All brand and names mentioned are trademarks or registered trademarks of their respective holders.

FCC / CE - Declaration of conformity



Appendix F - Contact Information

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