# O ICOM<sup>®</sup>



MEMORY SPUT CUP

ÎCOM

RS-BA

RS-BA1

1COM

RS-BA1

7.076.00 7.050.00

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### QUICK REFERENCE GUIDE

Icom America Inc.

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### Requirements



- Icom radio with most updated firmware that supports RS-BA1(IC-7600 is being used in our documentation)
- A Router for setting up Port forwarding (Linksys RV042 being used in our documentation and is in no way being recommended)
- Desktop Computer that will always remain connected to the Router that is also being used by the Icom radio. This router should be connected directly to the Internet
- Desktop or Laptop computer at the Remote Station that is On the Internet (different Network than the Icom radio network) with exceptions enabled in the Firewall setting.
- CAT-5 Straight cables
- Both Base and Remote Stations computers should have the most latest RS-BA1 driver and software installed (1.2 or Up)

# **Firewall Considerations**

The Windows operating system includes a Firewall setting as standard; this is the security function that can prevent improper access through the Internet. To let the Remote Utility work properly, add it as an exception in the Firewall

In the "Allowed programs and features" list, make sure to Add Remote Control and Remote Utility software's on the Base Station Computer.

	e program you want to add, or click Browse to find one that is not d then click OK.
Programs	:
6 Crea	te a System Repair Disc
CS-F	3020_F5010_F5020
<i>E</i> Inte	rnet Explorer
Ren Ren	note Control
Ren	note Utility
XPS	Viewer
P <u>a</u> th:	C:\Program Files\Icom\RS-BA1\RemoteUtility Browse
	the risks of unblocking a program?
that are	

You can remotely control the radio only if on the Base Station Remote Utility Software is up and running. The software should NOT be connected to the Radio under Radio list and Server List. When you remotely connect to your radio, this screen will show the BUSY icon.

IC-7600		2 0=31	AF MOD

# Connecting to the RS-BA1 Locally

### Finding the IP of your Base Station Computer

- 1. Click Start.
- 2. Click Run.



- 3. Type "cmd".
- 4. Click **OK**.



- 5. In the Command window, type "ipconfig".
- 6. Press Enter on your keyboard.



7. Record your computer's IP address. You will need this information later while setting up the RS-BA1 software. In the following example, the Base Station computer's IP is 192.168.3.106

	cm C:\Windows\system32\cmd.exe
	Windows IP Configuration
l	Ethernet adapter Local Area Connection:
i.	Connection-specific DNS Suffix . : linksys.com
ш	Link-local IPv6 Address : fe80::19a2:91ca:3a7:1bf9%10
	IPv4 Address
	Subnet Mask
	Default Gateway : 192.168.3.1

### Setting up Port Forwarding

- 1. Log into your router. The Linksys RV 042 is shown for example purposes only.
- 2. Click Setup.
- 3. Click Forwarding.
- 4. Click the Service Management tab

LINKSYS A Division of Cisco Systems, Inc.	•								
			_					(	10/100
Setup	System Summary	Setup	DHCP	System Management	Ма	Port nagement	Firewall	ProtectLink	VPN
	Network	Passwo	ard T	ime DMZ H	iost	Forwardin	g   U	PnP On	e-to-One
Forwarding									
Port Range Forwarding	1		Service			IP Addres	15	Enable	e
		All Traffic	TCP&UDP/	1~65535]	•	192.168.3.		E	
			Servi	ce Management				Add to list	

- 5. Enter RS-BA1 in the **Service Name** field.
- 6. Select **UDP** in the **Protocol** field.
- 7. Enter the Port Range from 50001 to 50003.
- 8. Click Add to List.

Service Name	All Traffic [TCP&UDP/1~65535] DNS [UDP/53~53] FTP [TCP/21~21]	^
Protocol UDP - Port Range	HTTP [TCP/80~80] HTTP Secondary [TCP/8080~8080] HTTPS [TCP/443~443] HTTPS Secondary [TCP/8443~8443] TFTP [UDP/69~69] IMAP [TCP/143~143]	н
50001 to 50003	NNTP [TCP/119~119] POP3 [TCP/110~110] SNMP [UDP/161~161] SMTP [TCP/25~25] TELNET [TCP/23~23] TELNET Secondary [TCP/8023~8023]	
Add to list	Delete selected service	

9. Once you see the RSBA 1 in the list, click **Update this service**.

Service Name	TELNET Secondary [TCP/8023~8023]	102
RSBA1	TELNETSSL [TCP/992~992]	^
	DHCP [UDP/67~67]	
Protocol	L2TP [UDP/1701~1701] PPTP [TCP/1723~1723]	
	IPSec [UDP/500~500]	
UDP -	UC-FR5000 [TCP/80~80]	
Port Range	Firmware 1 [TCP/41020~41020] Firmware 2 [TCP/41040~41040]	- 11
50001 to 50003	Data [UDP/41300~41300]	
	Admin [UDP/41310~41310] rcfs10-1 [TCP/41000~41007]	
	rcfs10-2 [TCP/41200~41207]	- 11
	rcfs10-3 [UDP/41220~41227]	
	HSBA1[UDP/50001750003]	

10. Select the **RSBA1 UDP** port in the **Service** field.

					10/100 4	por
Setup	System Summary	Setup DHCP M	System anagement	Port Management Fir	ewall ProtectLink VPN	Log
	Network	Password Time	DMZ Ho	# Forwarding	UPnP One-to-One N	AT
Forwarding						
rt Range Forwarding		Service		IP Address	Enable	
		Al Traffic [TCP&UDP/1~65	535] -	192.168.3.		
		Al Traffic [TCP&UDP/1~655 DNS [UDP/53~53]	535]		Add to list	
		FTP [TCP/21~21] HTTP [TCP/80~80]		8.3.11		
		HTTP Secondary [TCP/808 HTTPS [TCP/443~443]	0~8080]	1		
		HTTPS Secondary [TCP/84	143~8443]	11 3.11		
		TFTP [UDP/69~69] IMAP [TCP/143~143]		3.11 3.11		
		NNTP [TCP/119~119] POP3 [TCP/110~110]				
		SNMP [UDP/161~161] SMTP [TCP/25~25]		-		
		TELNET [TCP/23~23] TELNET Secondary [TCP/8023~8023]		elected application		
		TELNETSSL [TCP/992~99 DHCP [UDP/67~67]	2]			
	6	L2TP [UDP/1701~1701] PPTP [TCP/1723~1723]				
Port Triggering		IPSec [UDP/500~500] UC-FR5000 [TCP/80~80]		r Port Range	Incoming Port Range	
		Firmware 1 [TCP/41020~41		to	to	
		Firmware 2 [TCP/41040~41 Data [UDP/41300~41300]	040]	Add to list		

- 11. Enter your Base Station's Computer IP in the IP Address field.
- 12. Click the **Enable** Checkbox.
- 13. Click Add to List.

Setup	System Summary	Setup	DHCP		ystem agemer	nt		Port gement	Firew	all Pr	otectLink
	Network	Password	1	Time	DM2	Host	1	Forwarding	1	UPnP	One-
Forwarding											
Port Range Forwarding		s	ervice					IP Addres	s		Enable
		RSBA1 [UD	P/5000	1~50003]		•	19	2.168.3.	06		
		1	Ser	vice Mana	agement					Ad	d to list

14. After your see the RSBA1 ports forwarding box, Click Save Settings.

	Delete selected application	Add New
Application Name	Trigger Port Range	Incoming Port Range
	to	to
-	Add to list	
	Delete selected application	

Setting up the RS-BA1 Remote Utility Software for the Base Station

1. Open the RS-BA1 Remote Utility Software.



2. Select Network Setting.



- 3. Enter your Computer's Name in the **PC Name** field.
- 4. Choose FTTH in the Internet Access Line field.

Network Setting	<u> </u>	
Network About		
PC Name	TSR-Training	
Control Port(UDP)	50001	
Serial Port(UDP)	50002	
Audio Port(UDP)	50003	
Internet Acccess Line	FTTH	•
		Apply

- 5. Click Apply.
- 6. Close (exit) the RS-BA1 Remote Utility software and open it again.

Network Setting	•		? Help
Network About			
PC Name	TSR-Training		
Control Port(UDP)	50001		
Serial Port(UDP)	50002		
Audio Port(UDP)	Remote Utility	X	1
Internet Access Lin			
	Take effect after restarting t	he application.	
		[]	
		ОК	

#### 7. Select Server Setting.

Server Setting	-	
ladio Operation		
erver Setting letwork Setting		
User ID	Password	
		Administrator
		_
		Add
		Add
		Apply
		Remove

- 8. Click the User List tab.
- 9. Enter your User ID and password
- 10. Click the Administrator Checkbox
- 11. Click Add. Record/save your user ID and password for future reference.

Server Setting User List Radio List About	<u>•</u>	
User ID	Password	
IcomTest		Administrator
		Add
		Apply
		Remove

#### 12. Click OK



#### 13. Click the Radio List Tab.

#### 14. Click Add.

erver Setting User List Radio List About	•		? Help
[]			
	Add	Remove	Properties

- 15. Enter your radio name in the **Radio Name** field.
- 16. Click the **CI-V** checkbox and enter your CI-V address in the **Address** field. This information is available in the Instruction manual for your radio or in the **Set Mode** window.
- 17. Click the  $\ensuremath{\textbf{Public}}$  Checkbox.
- 18. Click User Permission.

adio Name IC-7600	Baud Rate 19200 V	COM Port/Audio Setteing  Auto IC-7600 0201055 COM=5  Manual	
Public     User Permissio Maximum Network Transmission Q AF		COM Port Number COM 1	
I⊄ Use	🔽 Use	AF Input Device	
Sample Rates 16kHz	Sample Rates	MOD Output Device	Y
Codecs	Codecs	Not Use 🔄 48kHz	+
Channels	Channels	Display Virtual Device	
		Search	

19. Select your Username from the Radio User Permission box and click Permit.

Radio User Permission		2010 11 1 2 11	X
Registered Users		Permitted Users	_
	Permit	I	Inhibit
		ок	Cancel

20. When you see your Username in the **Permitted Users** field, click **OK**.

Registered Users		Permitted Users	
IcomTest		IcomTest	-
	Permit	1	Inhibit
		1	_

21. When using a USB connection between your computer and Icom radio, Click Auto for COM Port/Audio Setting.

Auto IC-7600 0201055 COM=5	-
Manual	
COM Port Number COM1	*
Audio	
AF Input Device Not Use	
MOD Output Device	
MOD Output Device	

22. When setting a COM port manually, click the **Manual** Checkbox and select your COM Port in the **COM Port Number** field.

OM Port/Audio S		
Auto IC-760	00 0201055 COM=5	<u>_</u>
manual	44	

23. You can look up your COM Port number in the Device Manager window.



24. When using a USB headset/mic, select your headset under AF Input / **MOD Output Device**. Your computer should auto detect your speakers.

HOLD ITC	-7600 02	01055 COM=5	<u>v</u>	l)	
Manual					
COM Port N	umber	COM5	-	D.	
Audio					
AF Input De	vice				
Microphe	one (2-L	ogitech USB Hea	•	48kHz	-
MOD Outpu	t Device				
Speaker	s (High D	efinition Audio	•	48kHz	•
Not Use		itech US8 Heads			
Speaker		udio CODEC )			

#### 25. Click **OK**.

_	Search
	Cancel

#### 26. Click the Radio List tab and you will see your radio.

Server Setting User List Radio List About	×	? Help
IC-7600		
Public	Serial Data 19200bps: CI-V Address 7A COM Port Number 5 Audio Device AF Input Microphone (2- Logite MOD Output Speakers (USB Audio	

#### 27. Select Radio Operation.

erver Setting	
sdio Operation	

#### 28. Select your radio and click Connect.

Radio Operation	t   About		? He
IC-7600	(Local) Serial Data 19200bp: CIA COM Port Num Audio Device AF Output MOD Input Virtual Audio	[ =2 0=3]	AF MOD

29. Click **OK** on the **Remote Utility** Box (Com port number can be looked up in the Device manager).



<<**CONNECT>>** will appear if the connection is successful.

and the second s					?	Help
Ladio List Server List Abo	sut					
IC-7600	(Local) Serial Data				1021001112	
<pre><connect>&gt;</connect></pre>	19200bps CI-V COM Port Num	Address 7A ber 5				
	MOD Input	Default Devic Default Devic	•			
	Virtual Audio	ICOM_VAUDI	0-1 (1=2 0=	3]	AF N	IOD

#### **Connection Errors**

If you get a **<<CL NG>>** error, verify the following:

- Is the COM Port correct?
- Are all cables plugged in the correct connectors?
- Check that all devices are powered.
- The firmware on your Icom radio should be current and that supports the RS-BA1.
- Reboot your computer, sometimes the COM Port (regular and virtual) requires a PC reboot for complete installation.
- Audio issues can be resolved by selecting the right Output/Input Audio Device in the Settings window (below).
   This screen appears after clicking Settings.

I⊽ A	F Transmission	MOD Transmission	
AF Output Device	Speakers (2-Logitech I	USB Heads	• 48kHz
MOD Input Device	Microphone (2-Logited	h USB Hea	- 48kHz
Virtual Audio Sample Rates	Not Use Default Device		48kHz
	Microphone (2-Logited Microphone (USB Audio		Save

# Setting up the RS-BA1 Remote Control Software

ile <u>V</u> iew <u>Op</u>	tion Help				
TRANSAUT	ісом re	MOTE CONTROL	SOFTWARE	RS-BA1	BAND
TRANSMIT	BW 500 SFD 0 A BPF				1.8
TUNER	PSK FIL2 TS: 10				3.5
TUNE E ANT	14.063.540				10
MONI	MEMO 1:-BLANK-				14
BK-IN	BANK 1:				18 21
FUNCTION	The second sector and	ANT :1 P.AMP:1	ROOFING NOTCH1		24
P.AMP	ALC Summittelling statistics	ATT : OFF AGC : MID	APF	OFF	28
ATT	SWR 1 15 2 25 3 00		TBW	WIDE	50 144
AGC	MODE				430
I NB	SSB CW RTTY PSK	AM	FM	DV	1200
E NR	RF POWER CW PITCH MEMORY				GENE

1. Verify that the Remote Control software is turned Off.



2. Click Option and select Connect Setting ...



3. At the **Connect Setting** window, click **Model** and select your radio (verify the revision number).

Connect Setting		×
Model		
IC-7600 (Ver1.10 - )		•
IC-756PR03		-
IC-7600 ( · Ver1.03)		_ 11
IC-7700 ( · Ver1.12)		
IC-7700 (Ver1.20 - )		
IC-7800 ( · Ver2.21) IC-7800 (Ver2.30 · )		=
IC-9100		-
COM Port	Baud rate(bps)	_
1 🔹	19200	-
CI-V address	CI-V address	
(Radio)	(RS-BA1)	
7A	EO	-
⊢Audio Device (Voice M	(emore)	
		- 1
ICOM_VAUDIO-1 (I	com Virtual Aud	-
L		
IC-PW1 is connecte	d.	ок

4. Click Remote Utility and select your radio.

Connect Setting	×
Model	
IC-7600 (Ver1.10 - )	٠
Remote Utility	
IC-7600	-
Not Use	100
IC-7600	

- 5. Click COM Port to select your port
- 6. Enter the address for your model radio in the CI-V address (Radio) field.

CI-V					
COM Port	Baud rate(bps	)			
5 💌	19200	•			
CI-V address (Radio)	CI-V address (RS-BA1)				
7A	EO	•			
Audio Device (Voice Memory)					
IC-PW1 is connected.  OK					

7. If using any USB headsets/mic, click Audio Device (Voice Memory) and select your headset/mic.



8. Turn the Remote Control Software on. Wait for the software to change its frequency.



### Accessing the RS-BA1 Remotely over the Internet

The following steps are for the Remote Base Station computer only.

- 1. Click Server List.
- 2. Click Add.

adio Operation		•			? Help
Radio List Server List	About				
	Add	Remove	Properties	Connect	Disconnect

#### 3. Enter following information:



\* You can check global IP on the Router settings. Or you do a search for "whats my ip" on Google website.

\*\* Same Username/Password that you have created previously

4. You have now created a Server on your Remote computer to talk to your Base Station network.

	RS-BA1 Remote Utility			
1.	adio Operation Radio List Server List A	•		? Help
	TSR-Training	Address Control Port(UDP) User ID	207.115.79.59 50001 IcomTest	

- 5. Select Server List.
- 6. Click Connect.

Radio List Server List	bout		
TSR-Training	Address Control Port(UDP) User ID	207.115.79.59 50001 IcomTest	
			nect Disconnect

If connection is successful, you will see the following window. **CONNECTING** means you *are* connected.

÷	adio Operation adio List Server List	▼.			? Help
	TSR-Trainir	n <b>g</b> Address	207.115.79.59		
	CONNECTIN	G Control Port(UDP) User ID	50001 IcomTest		
		Internet Access Line	FTTH Round-trip	70msec Packet Loss	0%
		1	1		
		Add Remo	Propertie	S Connect	Disconnect

7. Click **Radio List** and you will see your radio come up.

Radio Operation	•	? Help
Radio List Server List	t About	
IC-7600	(TSR-Training 20) Serial Data 19200bps CI-V Virtual COM Po Audio Device AF Output MOD Input Virtual Audio	AF MOD

- 8. Click your radio.
- 9. Click Settings.

Radio List Server List About					
IC-7600	(TSR-Training 20 Serial Data 19200bps CI-\ Virtual COM Po Audio Device AF Output MOD Input Virtual Audio	/ Address 7A	AF MOD		
	Virtual Audio		AF HOD		
Settings Conne	ct Disconnect	AF MOD Monito	or Delete		

10. Click **Virtual Com Port Number** and select your virtual COM Port (You can look up your Virtual Comport in the Device Manager).

ľ	-Network Setting						
l		🗹 AF	Transmission		🔽 MOD Transmi	ssic	n
l	Sample Rates	16kH:	2	•	8kHz		•
l	Codecs	LPCM	1ch 16bit	•	LPCM 1ch 16bit		•
	Prebuffer(ms)	┠		100			150
		🔽 Re	transmission			R	ecommended
	Client Device Setting	s					
l	Virtual COM Port Num	iber	COM19			•	
	AF Output Device		COM19 COM23			^	48kHz 💌
l	MOD Input Device		COM24 COM25				48kHz 💌
	Virtual Audio Sample R	Rates	COM26 COM27				48kHz 💌
			COM28 COM29 COM30				Save

#### 11. Click Save.

12. Click Connect.

Client Device Settings					
Virtual COM Port Number	COM19	•			
AF Output Device	Default Device	•	48kHz	•	
MOD Input Device	Default Device	•	48kHz	•	
Virtual Audio Sample Rates (become effective after application reboot.) 48kHz 💌					
	Save				

IC-7600	(TSR-Training 20 Serial Data 19200bps CI-\ Virtual COM Po Audio Device			
	AF Output MOD Input Virtual Audio	Default Device Default Device ICOM_VAUDIO-1 [I=1 0=0]	AF MOD	
	A RUGG PORTO		and another a	
Settings Conne	et Disconnect	AF MOD Monito	or Delete	

13. Click **OK** on the **Remote Utility** window.



If you see **<<CONNECT>>** on the window your connection is successful.

Radio Operation		? Help
Radio List Server List Abo	(TSR-Training 207.115.79.59) Serial Data 19200bps: CI-V Address 7A Virtual COM Port Number 19 Audio Device AF Output Default Device MOD Input Default Device Virtual Audio ICOM_VAUDIO-1 [I=1 0=0]	AF MOD
Settings Connect	Disconnect AF MOD Monitor	Delete

14. Open the RS-BA1 Remote Control software on the Remote Station computer and set it up as described in <u>Setting</u> <u>up the RS-BA1 Remote Control Software</u>.



### **Errors Explained**

You will get the **OFFLINE** error on the remote computer Utility Software if the Remote Utility software on the Base Station computer is not running. In order to use the Radio remotely (over IP), you should have the Remote Utility running (but *Not Connected*).

Radio Operation	•				? Hel	lp
Radio List Server List Ab	out					
7600	(Tsr-Training)					
OFFLINE						
					AF MOD	
					AF MUD	
Settings Connect	Disconnect	AF	MOD	Monitor	Delete	

You will see a **BUSY** error on the remote computer's Utility Software if the Remote Utility on the Base Station computer is connected to the radio (Locally). You won't be able to connect because local Base computer is connected to radio.

Radio Operation Radio List Server	 List   About		? Help
7600 BUSY Local	(T sr-T raining 207 Serial Data 19200ps CIA Vritual COM Pr Audio Device AF Output MDD Input Virtual Audio	/ Address 7A	AF MOD
	, nicial Padao		

A **Server is out** error displays on the remote computer's Utility Software when network goes down on the Base station computer and its Remote utility software.

Remote Utility 🛛 🔀	
Tsr-Training Connection with the server is ou	
ОК	

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