O ICOM[®]



QUICK REFERENCE GUIDE



TTW

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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.

isted, an	Program you want to add, or click Browse to find one that is no d then click OK.
rograms	:
b Crea	te a System Repair Disc
CS-F	3020_F5010_F5020
<i>E</i> Inte	met Explorer
Ren	iote Control
Ren	iote Utility
KPS	Viewer
ath:	C:\Program Files\Icom\RS-BA1\RemoteUtility Browse
	the risks of unblocking a program?
hat are	TIC HISKS OF GEDIOCKIEG A DEOGLATE.

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.

RS-BA1 Remote Uti	lity		
Radio List Server List	About		
IC-7600	(Local) Serial Data 19200ps: CIA COM Port Num Audio Device AF Output MOD Input Virtual Audio	/ Address 7A ber 5 Default Device Default Device ICOM_VAUDIO-1 (I+2 0+3	a) AF MOD
and the second	1	1 1	CONTRACTOR OF A PRODUCTION

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.

😅 Run		
	Type the name of a program, resource, and Windows will op	folder, document, or Internet en it for you.
Open:	cmd	•
	ОК	Cancel <u>B</u> rowse

- 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

	C:\Windows\system32\cmd.exe
	indows IP Configuration
	thernet adapter Local Area Connection:
İ	Connection-specific DNS Suffix . : linksys.com
	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	9 U	PnP On	e-to-One
Forwarding									
Port Range Forwarding	1		Service			IP Addres	is	Enable	5
		All Traffic	TCP&UDP/	1~65535]	•	192.168.3.			
			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.

Second Constants		
Service Name RSBA1	All Traffic [TCP&UDP/1~65535] DNS [UDP/53~53] FTP [TCP/21~21]	ľ
Protocol UDP -	HTTP [TCP/80*80] HTTP Secondary [TCP/8080~8080] HTTPS [TCP/443~443] HTTPS Secondary [TCP/8443~8443] TFTP [UDP/69~69]	=
50001 to 50003	IMAP [TCP/143~143] NNTP [TCP/119~119] POP3 [TCP/110~110] SNMP [UDP/161~161] SMTP [TCP/25~25] TELNET [TCP/23~23]	
	SMTP [TCP/25~25] TELNET [TCP/23~23] TELNET Secondary [TCP/8023~8023]	

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

Service Name	TELNET Secondary [TCP/8023~8023]	L.
JRSBA1	TELNETSSL [TCP/992~992] DHCP [UDP/67~67]	
Protocol	L2TP [UDP/1701~1701] PPTP [TCP/1723~1723]	
UDP -	IPSec [UDP/500~500] UC-ER5000 [TCP/80~80]	
Port Range	Firmware 1 [TCP/41020~41020] Firmware 2 [TCP/41040~41040]	- ñ
50001 to 50003	Data [UDP/41300~41300]	
	Admin [UDP/41310~41310] rcfs10-1 [TCP/41000~41007]	5
	rcfs10-2 [TCP/41200~41207] rcfs10-3 [UDP/41220~41227]	
	RSBA1[UDP/50001~50003]	

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

					10/100 4-ро
Setup	System Summary Network	Setup DHCP Password	System Managemen	Port Management Host Forwarding	rewall ProtectLink VPN Lo
Forwarding					
ort Range Forwarding		Service		IP Address	Enable
		All Traffic [TCP&UD	P/1~65535]		
		Al Traffic [TCP&UDF DNS [UDP/53~53]	P/1~65535]		Add to list
Port Triggering		HTTP Secondary [T HTTPS Secondary [TFTP [UDP/63~63] IMAP [TCP/143~14 NNTP [TCP/113~11 POP3 [TCP/113~11 SMMP [UDP/161~11] SMMP [UDP/161~11] SMTP [TCP/25~25] TELNET Secondary TELNET Secondary TELNET Secondary DHCP [UDP/67~67 L2TP [UDP/1701~1] PPTP [TCP/1723~1] IPSec [UDP/1701~1] PPTP [TCP/1723~1] IPSec [UDP/500~5] UC-FR5000 [TCP/8] Firmware 2 [TCP/41] Data [UDP/41300~ Admin [UDP/41310] rds10-1 [TCP/4100]	CP/8080~8080] 443] TCP/8443~8443] 3] 99] 0] 61] 23] (TCP/8023~8023] 992~992] 1 701] 701] 723] 00] 0-80] 020~41020] 040~41040] 41300] ~41310] 0~41007]	1 11 3.11 3.11 selected application r Port Range to Add to list	Incoming Port Range

- 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	Ma	Syst	tem ement	Mana	Port igement	Firev	vall Pr	otectl	ink \
	Network	Password	1	Time	1	DMZ Host	-1	Forwarding	11	UPnP	1	One-t
Forwarding												
Port Range Forwarding		S	ervice					IP Addres	s		En	able
		RSBA1 [UD	P/5000	1~50003	8]	•	19	2.168.3.	106			
			Se	rvice Ma	nage	ement				Ad	ld to lis	t

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.

RS-BA1 Remote Util	ity	
Network Setting	•	? Help
PC Name	TSR-Training	
Serial Port(UDP)	50002	
Audio Port(UDP)	Remote Utility	
Internet Acccess Lin	Take effect after restarting the applicat	ion.
		DK

7. Select Server Setting.

Server Setting	-	
ladio Operation		
letwork Setting		
User ID	Password	
		Administrator
		_
		ADD
		Apply
		The second se

- 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

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.

Radio Name IC-7600	Baud Rate 19200 💌	COM Port/Audio Setteing	
Maximum Network Transmission Q	MOD	- Audio	
I⊽ Use	🔽 Use	AF Input Device	
Sample Rates	Sample Rates	Not Use	48kHz 🔻
	8kHz	MOD Output Device	
Codecs	Codecs	Not Use	48kHz 💌
LPCM 16bit	LPCM 16bit	Display Auto Detect Device	
Channels	Channels	Display Virtual Device	
1ch	tch		
Ц			Search

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

Radio User Permission			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	•
Manua	4	
COM Po	rt Number COM1	*
Audio -	t Device	
Not	Use	
MOD OL	utput Device	

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

Auto IC-76	500 0201055 COM=5	
manual		
COM Port Num	iber COM5	-

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.

HULU	IC-7600 (0201055 COM=5	<u>v</u>	I	
Manual					
COM Por	t Number	COM5]	
Audio					
AF Input	Device				
Micro	phone (2-	Logitech USB Hea	•	48kHz	-
MOD OU	tput Devic	e	_		
Spea	kers (High	Definition Audio	•	48kHz	•
Matt	lse				
NOLC	core (2-1 c	igitech US8 Heads			
Spear	ALCO	LUNE CODEE 1			

25. Click **OK**.

_	Search

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- Logity MOD Output Speakers (USB Audio	ech USB Hea 5 CODEC)

27. Select Radio Operation.

erver Setting	
vio Operativo	

28. Select your radio and click Connect.

Radio List Server List	t About			? He
IC-7600	(Local) Serial Data 19200bp: CIA COM Port Num Audio Device AF Output MOD Input Virtual Audio	/ Address 7A ber 5 Default Device Default Device ICOM_VAUDIO-1	[=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.

t Server List About	1				
600 ແ	Local) Iocal Data				
CONNECT >>	19200bps CI-V COM Part Num	Address 7A			
A	udio Device				
	AF Output MOD Input	Default Device Default Device			
	Virtual Audio	ICOM_VAUDIO-	1 [[=2 0=3]	A	e MUU

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.

C-7600 (Local)			2 ×
A 🗐	F Transmission	MOD Trans	mission
AF Output Device	Speakers (2-Logite	ech US8 Heads	✓ 48kHz
MOD Input Device	Microphone (2-Log	itech USB Hea	▼ 48kHz •
Virtual Audio Sample Rates	Not Use Default Device		48kHz
	Microphone (2-Log Microphone (USB A	itech US8 Hea udio CODEC)	Save

Setting up the RS-BA1 Remote Control Software

RS-BA1 Remo	ote Control		
<u>File View Op</u>	otion Help		
		2	
TRUME	Гсом	REMOTE CONTROL SOFTWARE RS	-BAI BAND
TRANSMIT	BW 500 SET 0 _A_	BPF	1.8
TUNER			3.5
TUNE		0	10
I ANT	14.063.54	ŧU	14
I MONI	BANK 1:		18
BK-IN	1 3 5 7 9 +20 +40	+600 ANT :1 ROOFING : 6k	21
FUNCTION	S/Pol 0 10 25 50 10	PAMP:1 NOTCH1:OFF ATT:OFF NOTCH2	24
P.AMP	COMP 0 5 10 15 20	dB AGC : MID APF : OFF	50
	5 1 15 2 25 3	oo ibw :wil	144
AGC		MODE	430
I NB	SSB CW RTTY	PSK AM FM C	1200
	RF POWER CW PITCH ME	MORY	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)		
IC-7700 (· Ver1.12)		_
IC-7700 (Ver1.20 -)		
IC-7800 (• Ver2.21)		-
IC-9100		-
COM Port	Baud rate(bps)	
1 💌	19200	•
CI-V address	CI-V address	
(Radio)	(RS-BA1)	
7A	EO	- I
		_
-Audio Deuise Moise N	(amore)	
Addio Device (voice in	remotyj	_
ICOM_VAUDIO-1 (Id	com Virtual Aud	-
☐ 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	
IC-7600	
and a second sec	

- 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)						
C-PW1 is connected	d	ок				

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	Demoue	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			
R	adio Operation Radio List Server List A	• bout		? 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	

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

R	adio Operation	▼.			? Help
	TSR-Trainir	ng 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	7.115.79.59) Address 7A rt Number Undefine Default Device Default Device ICOM_VAUDIO-1 [I=1 O=0]	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	7.115.79.59) / Address 7A xt Number 19 Default Device Default Device ICOM_VAUDIO-1 [I=1 0=0]	AF MOD		
	Vittual Audio	ICOM_VAUDIO-1 (I=1 U=0)	AF MOD		
Settings Conne	ct Disconnect	AF MOD Monite	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	ssio	n
l	Sample Rates	16kH:	2	•	8kHz		•
l	Codecs	LPCM	1ch 16bit	•	LPCM 1ch 16bit		•
	Prebuffer(ms)	┠		100			150
		🔽 Re	transmission			F	ecommended
	Client Device Setting	s					
l	Virtual COM Port Num	ber	COM19			•	
	AF Output Device		COM19 COM23			~	48kHz 💌
l	MOD Input Device		COM24 COM25				48kHz 💌
	Virtual Audio Sample I	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	48kHz	•		
Connect				

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			
Settings Conne	et Disconnect	AF MOD Monit	or Deleb	

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					? Help
7600	About (Tsr-Training)			-	
OFFLINE					
				Ā	F MOD
Settings Connec	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.

idio List Server Lis 7600 BUSY	st About (Tsr-Training 207 Serial Data 19200bps CIA		
Local	Audio Device AF Output MOD Input Virtual Audio	SigmaTel Audio SigmaTel Audio ICOM_VAUDIO-1 (I=1 0=0)	AF MOD

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 🛛 🔀	J
Tsr-Training Connection with the server is out.	
ОК	



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