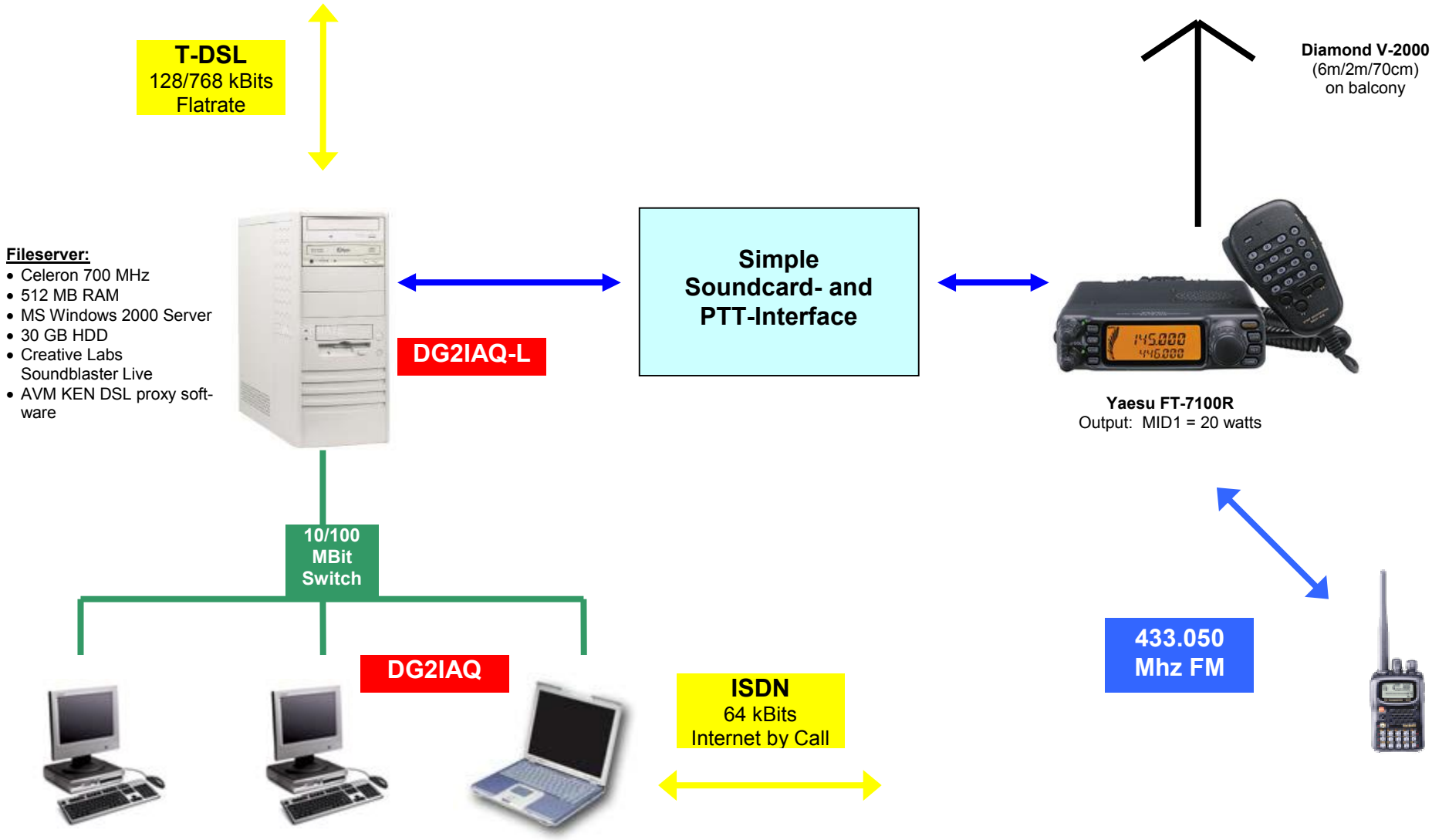
DG2IAQ-L Sysop: Jochen
German Amateur Radio Linkstation (Loc. JN48JW)
e-mail: DG2IAQ-L@web.de

Configuration Echolink

further informations: www.echolink.org

03.03.2003

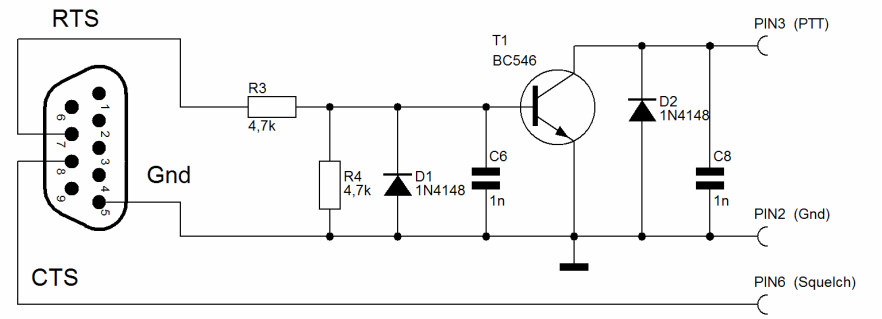


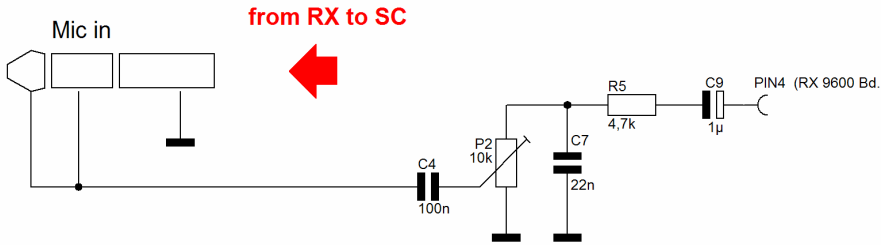
Configuration Echolink

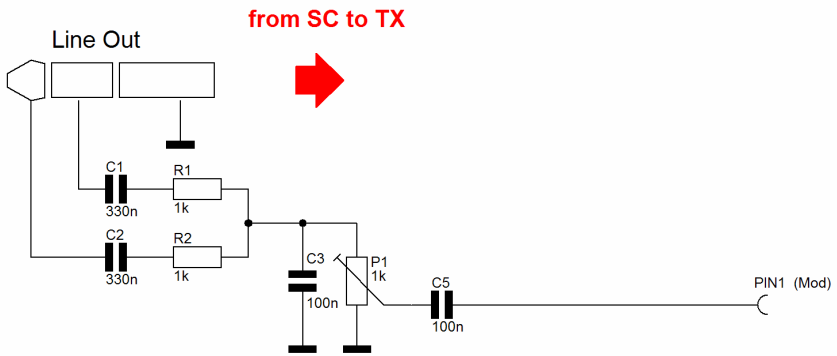
Soundcard- and PTT-Interface

Sub-D9 (F)
COM1 or COM2

Yaesu FT-7100
PS/2-Socket (DATA)



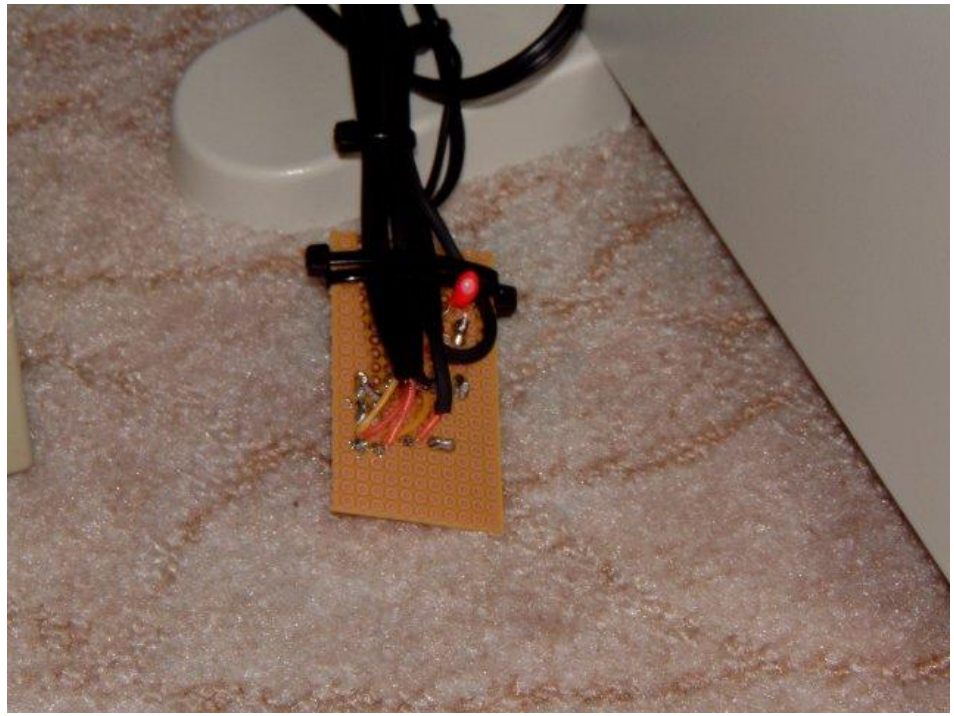


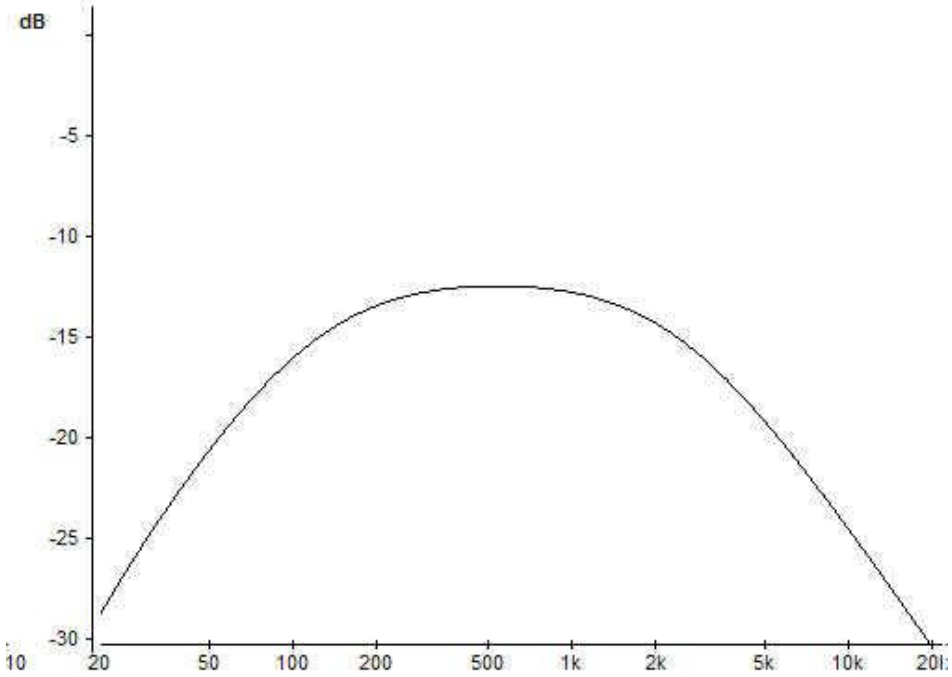


RTS Line
Pin4 on DB25
Pin7 on DB9

Ground
Pin7 on DB25
Pin5 on DB9

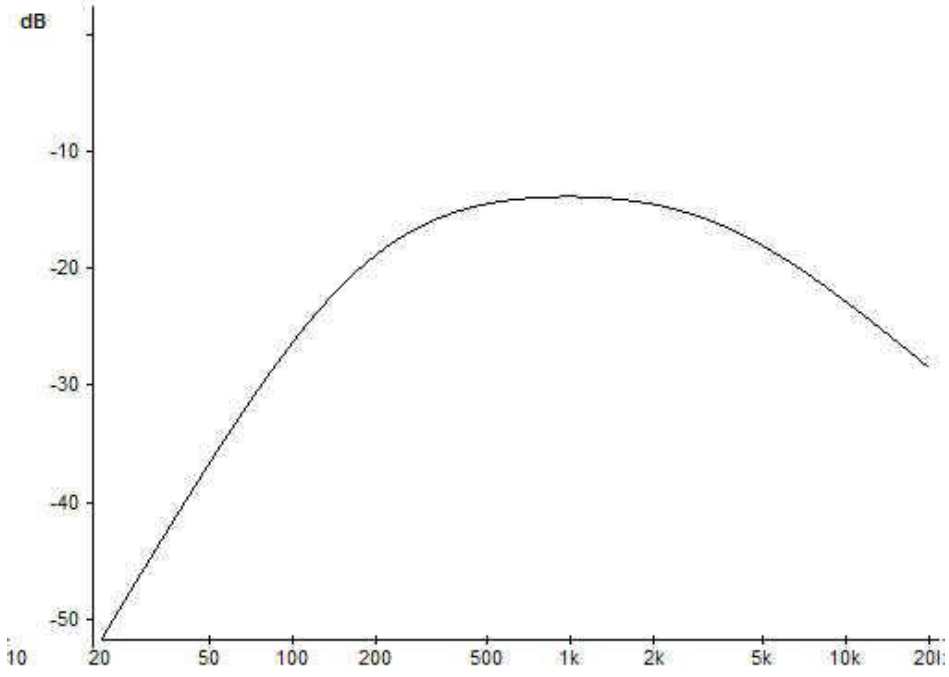
Treble + Bass





Audio frequency response

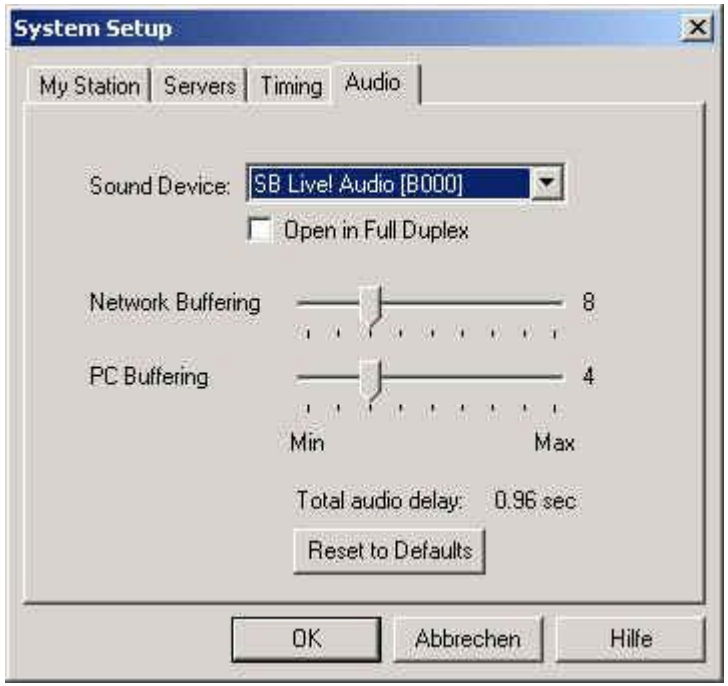
9k6 out → Soundcard Mic in

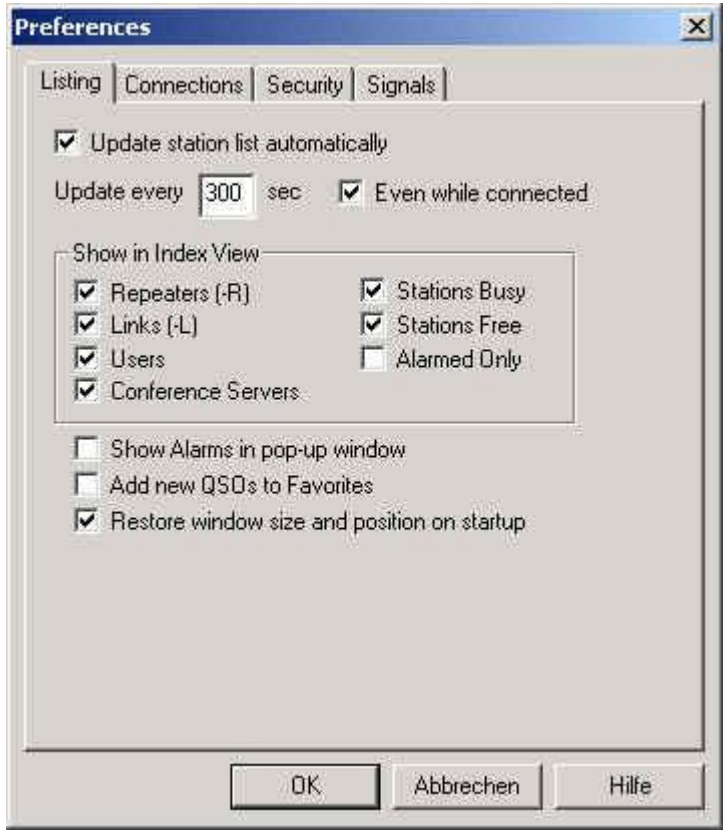


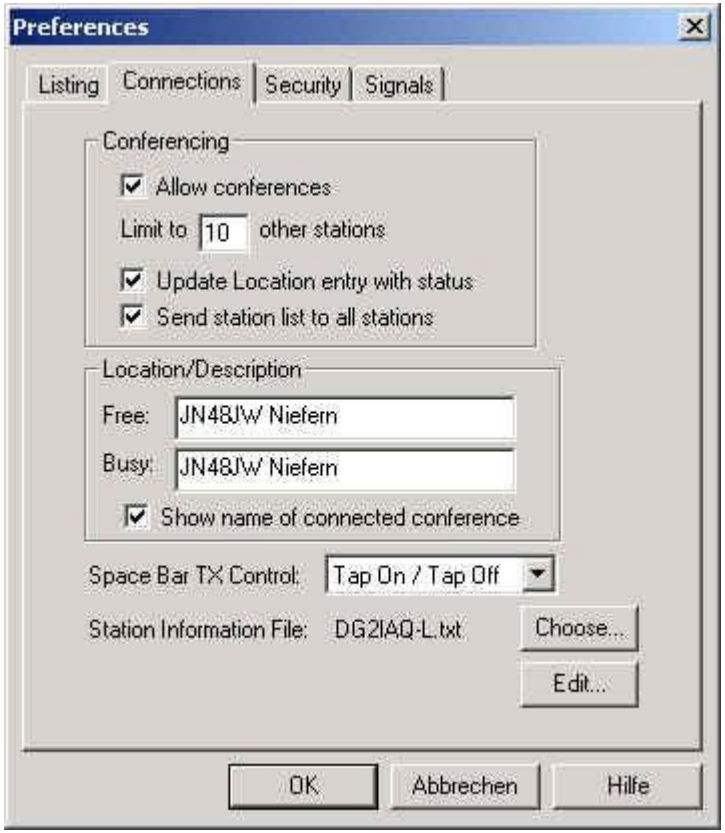
Audio frequency response

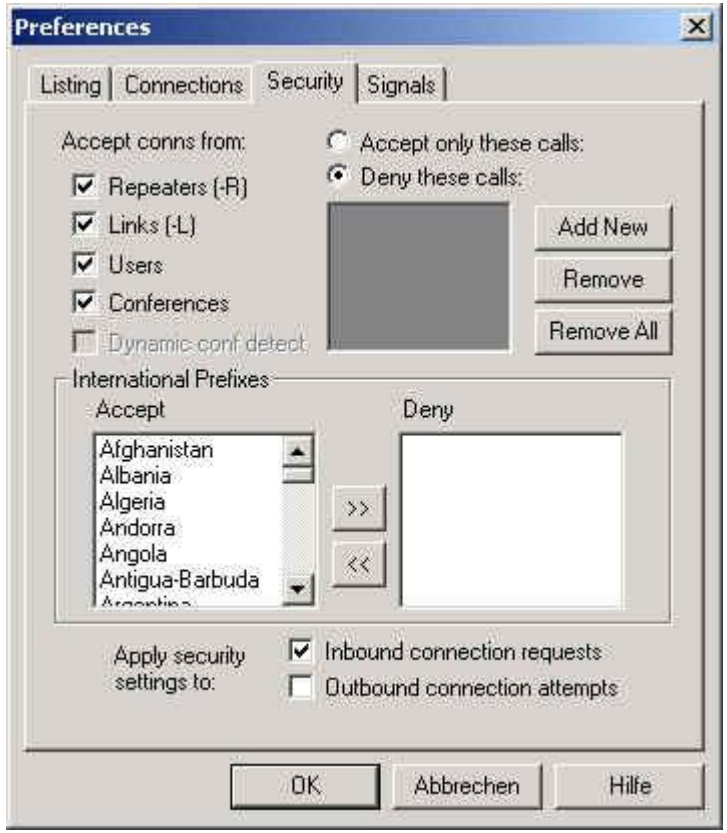
Soundcard speaker out → TX Mic in

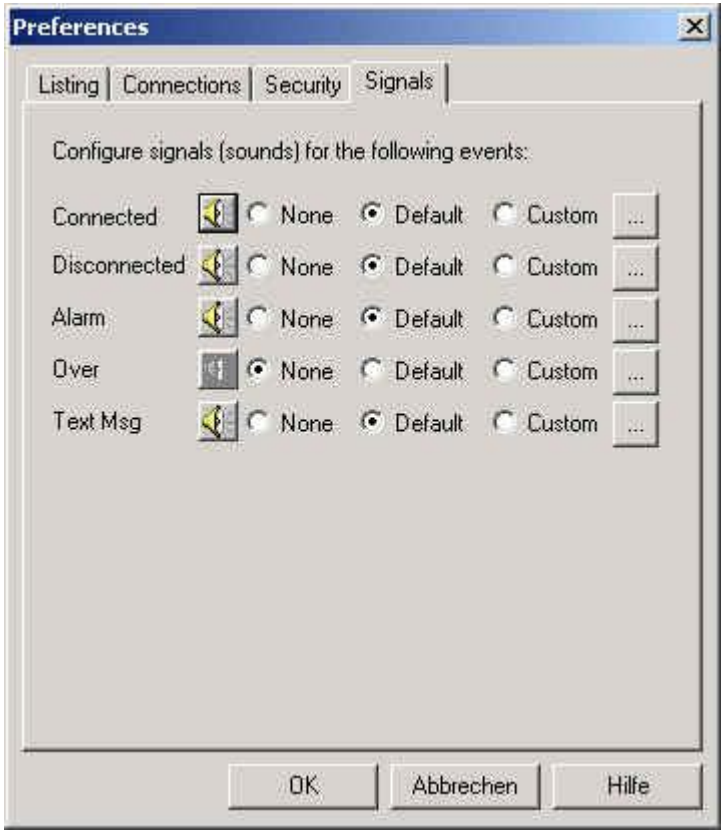
Echolink software configuration

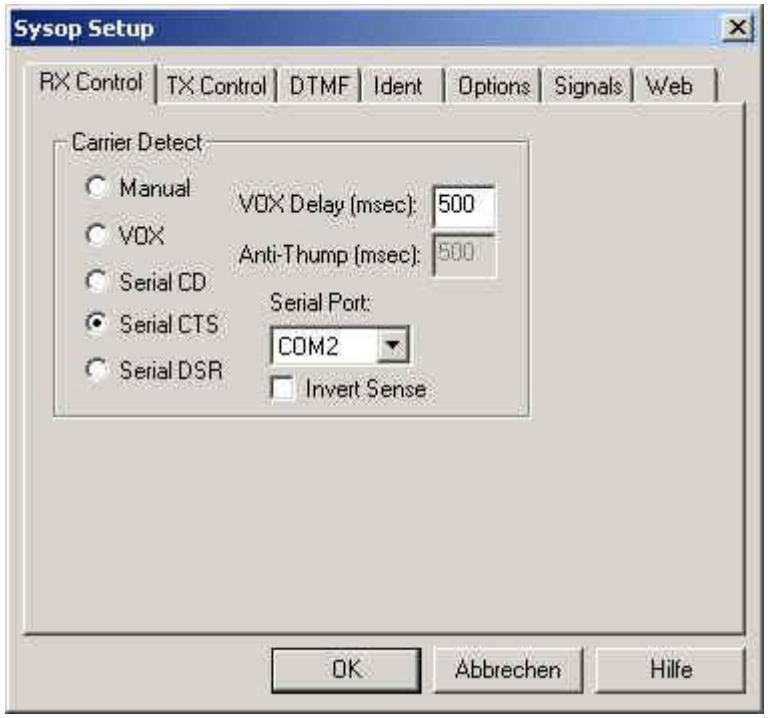


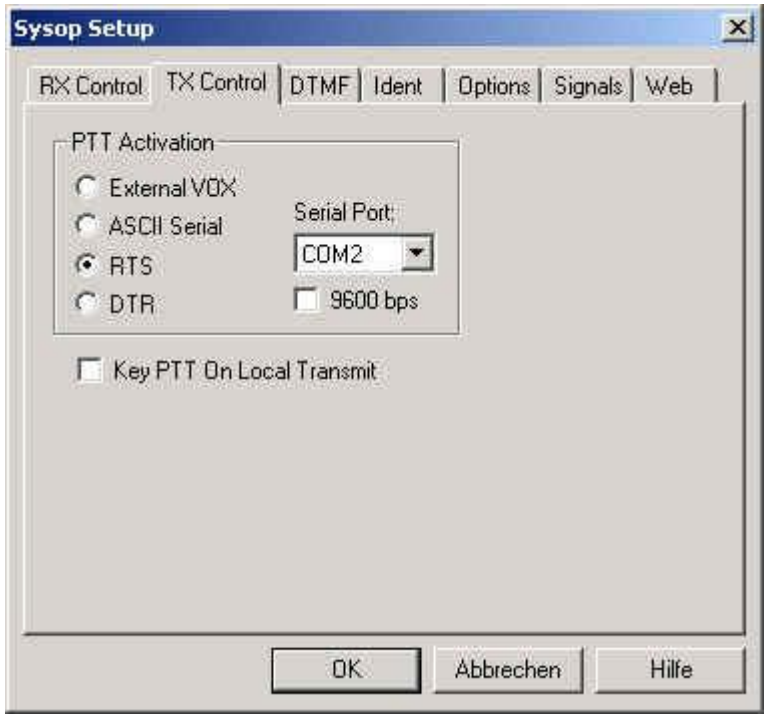


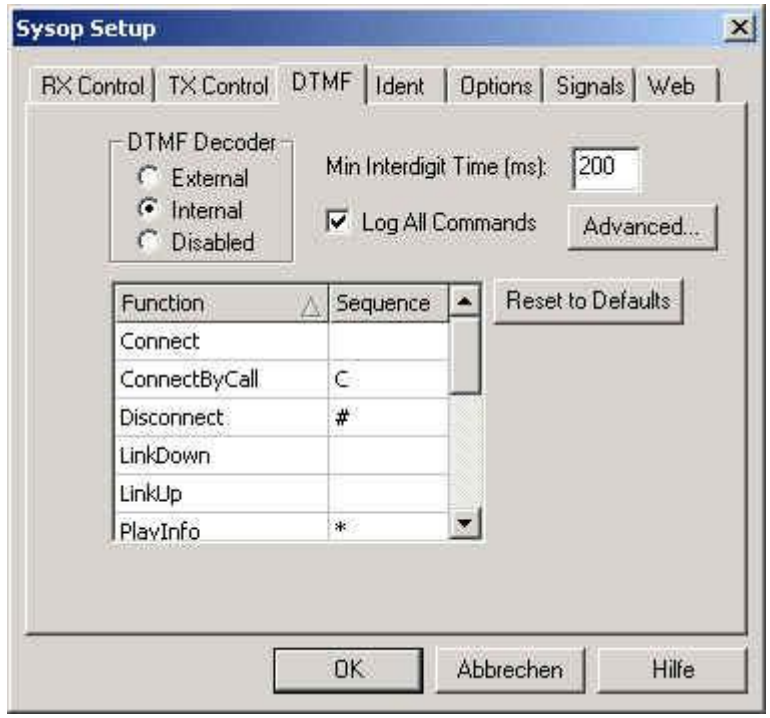

Preferences
Listing
Connections
Security
Signals
Conferencing
Allow conferences
Limit to 10 other stations
Update Location entry with status
Send station list to all stations
Location/Description
Free: JN48JW Niefern
Busy: JN48JW Niefern
Show name of connected conference
Space Bar TX Control: Tap On / Tap Off
Station Information File: DG2IAQ-L.txt
Choose...
Edit...
OK
Abbrechen
Hilfe

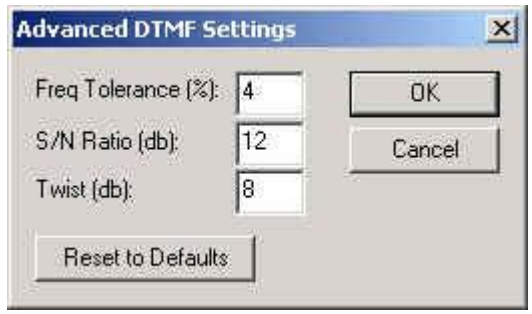

Preferences
Listing
Connections
Security
Signals
Accept conns from:
Repeaters (-R)
Links (-L)
Users
Conferences
Dynamic conf detect
Accept only these calls:
Deny these calls:
Add New
Remove
Remove All
International Prefixes
Accept
Deny
Afghanistan
Albania
Algeria
Andorra
Angola
Antigua-Barbuda
>>
<<
Apply security settings to:
Inbound connection requests
Outbound connection attempts
OK
Abbrechen
Hilfe

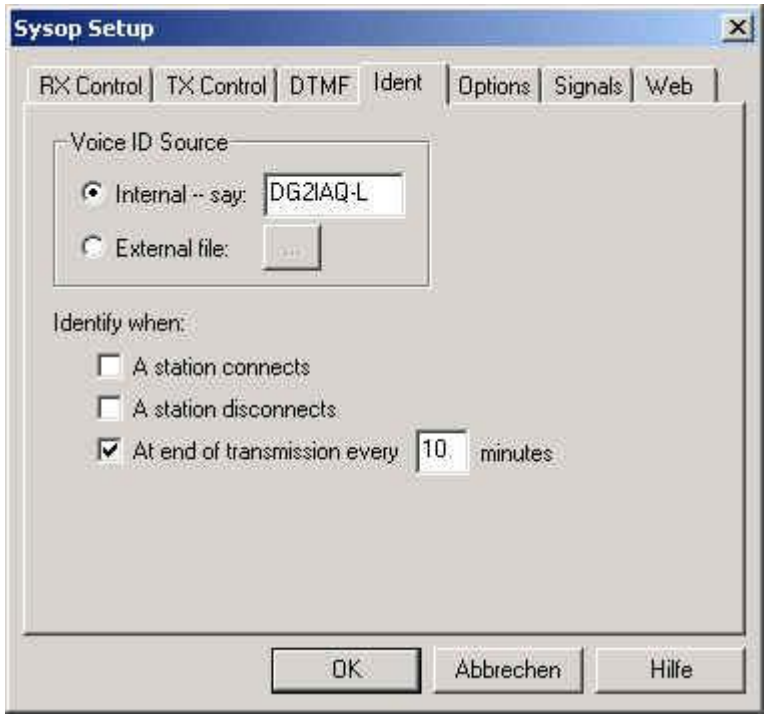

Preferences
Listing
Connections
Security
Signals
Configure signals (sounds) for the following events:
Connected
Disconnected
Alarm
Over
Text Msg
None
Default
Custom
...
OK
Abbrechen
Hilfe

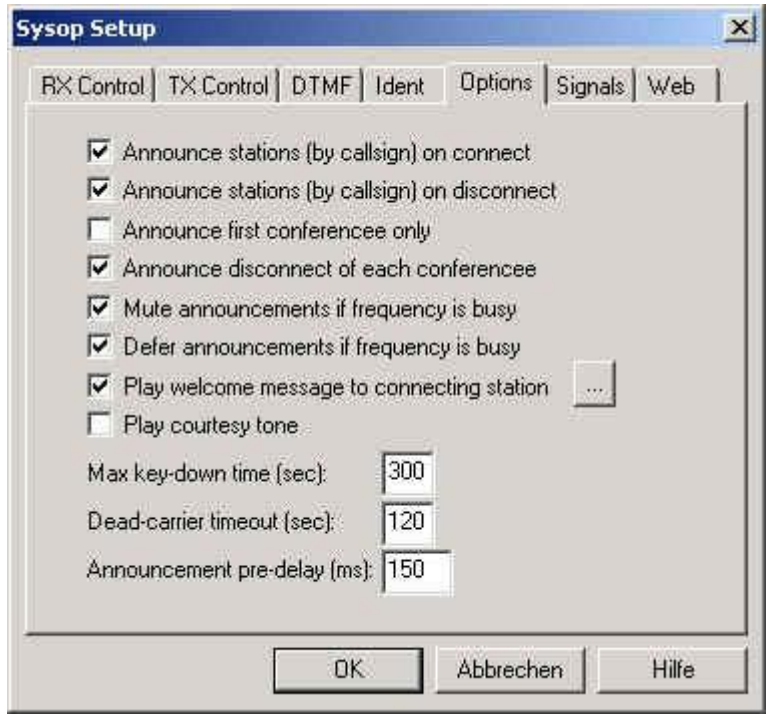

Sysop Setup
RX Control
TX Control
DTMF
Ident
Options
Signals
Web
Carrier Detect
Manual
VOX
Serial CD
Serial CTS
Serial DSR
VOX Delay (msec):
500
Anti-Thump (msec):
500
Serial Port:
COM2
Invert Sense
OK
Abbrechen
Hilfe

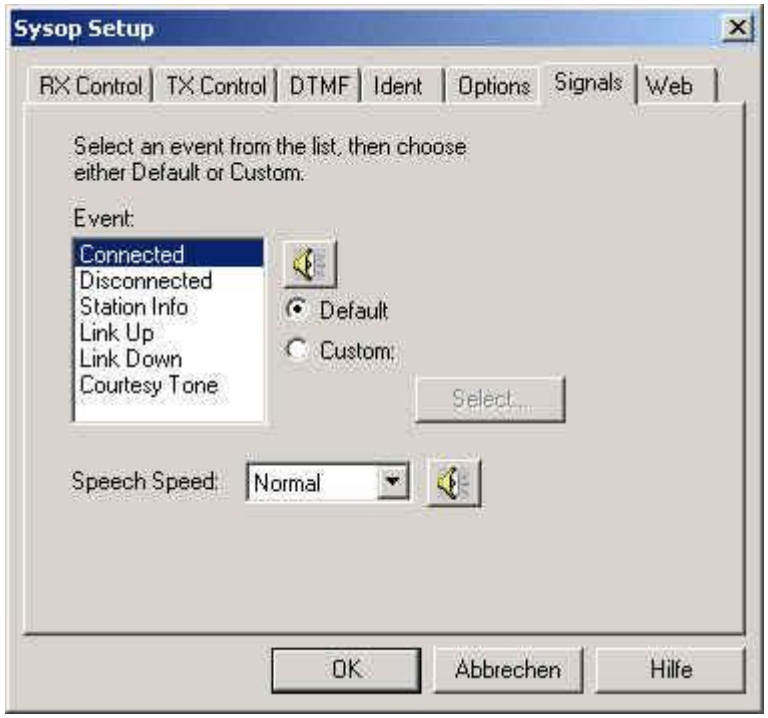

Sysop Setup
RX Control
TX Control
DTMF
Ident
Options
Signals
Web
PTT Activation
External VOX
ASCII Serial
RTS
DTR
Serial Port:
COM2
9600 bps
Key PTT On Local Transmit
OK
Abbrechen
Hilfe


Sysop Setup
RX Control
TX Control
DTMF
Ident
Options
Signals
Web
DTMF Decoder
External
Internal
Disabled
Min Interdigit Time (ms):
200
Log All Commands
Advanced...
Function
Sequence
Reset to Defaults
Connect
ConnectByCall
C
Disconnect
#
LinkDown
LinkUp
PlayInfo
*
OK
Abbrechen
Hilfe


Advanced DTMF Settings
Freq Tolerance (%):
4
S/N Ratio (db):
12
Twist (db):
8
OK
Cancel
Reset to Defaults


Sysop Setup
RX Control
TX Control
DTMF
Ident
Options
Signals
Web
Voice ID Source
Internal -- say:
DG2IAQ-L
External file:
...
Identify when:
A station connects
A station disconnects
At end of transmission every
10
minutes
OK
Abbrechen
Hilfe


Sysop Setup
RX Control
TX Control
DTMF
Ident
Options
Signals
Web
Announce stations (by callsign) on connect
Announce stations (by callsign) on disconnect
Announce first conferencee only
Announce disconnect of each conferencee
Mute announcements if frequency is busy
Defer announcements if frequency is busy
Play welcome message to connecting station
...
Play courtesy tone
Max key-down time (sec):
300
Dead-carrier timeout (sec):
120
Announcement pre-delay (ms):
150
OK
Abbrechen
Hilfe


Sysop Setup
RX Control
TX Control
DTMF
Ident
Options
Signals
Web
Select an event from the list, then choose either Default or Custom.
Event:
Connected
Disconnected
Station Info
Link Up
Link Down
Courtesy Tone
Default
Custom:
Select...
Speech Speed:
Normal
OK
Abbrechen
Hilfe

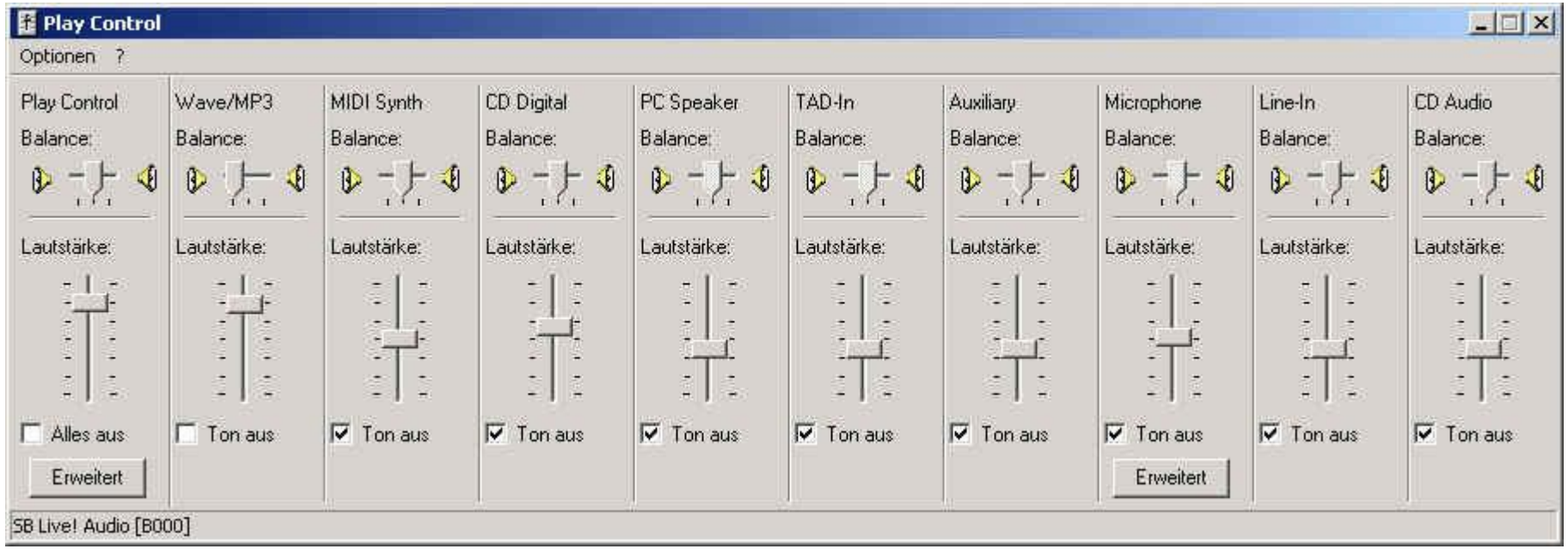
Sound card configuration

Playback Control

The playback sound is going to the modulator or MIC IN socket of the transceiver.

So with this you do the alignment of the transmittet HF.

Try to align the frequency response of bass and the treble first to get the best results with the audio response of your transceiver. When the audio quality is ok then you can align the WAVE and PLAY CONTROL to get the correct modulation or deviation graduance.



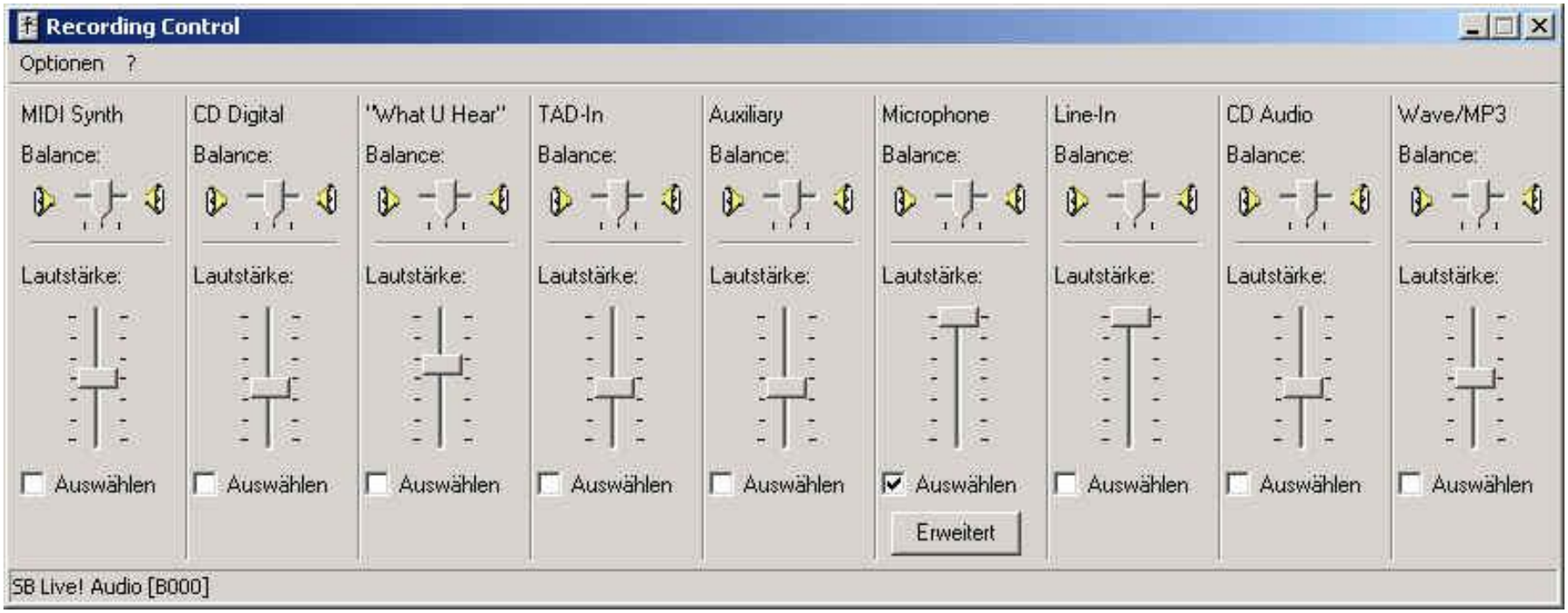
Erweiterte Einstellungen für Play Control
Mit diesen Einstellungen können feinere Audioeigenschaften angepasst werden.
Toneinstellung
Diese Einstellungen bestimmen die Audioeigenschaften.
Tiefen:
Niedrig
Hoch
Höhen:
Niedrig
Hoch
Andere Einstellungen
Diese Einstellungen verändern zusätzlich die Audioeigenschaften. Weitere Informationen finden Sie in der Hardwaredokumentation.
1 Digital Output Only
Schließen

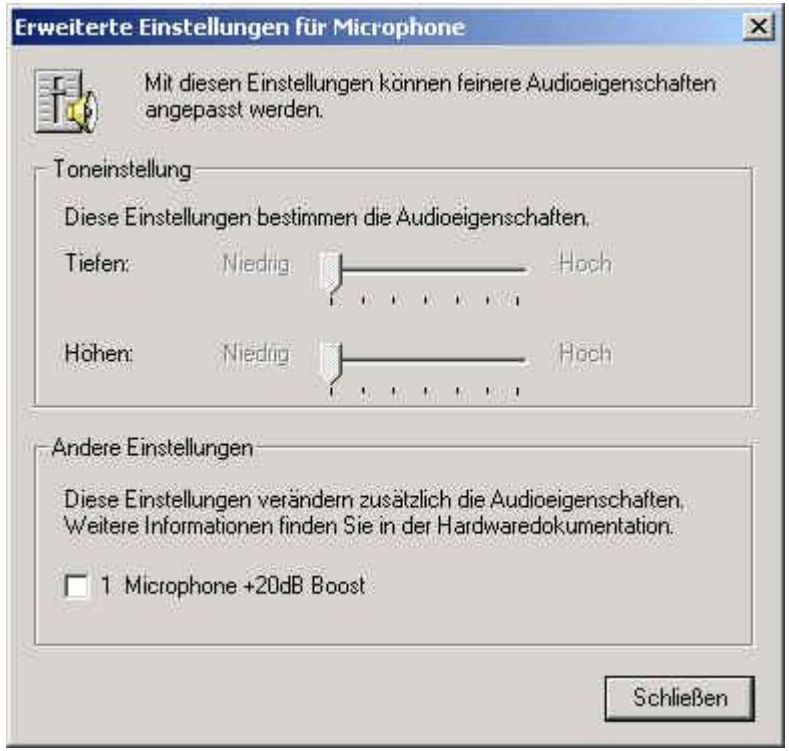
Recording Control

With the recording control you do the alignment of the received HF signal from your transmitter which is injected and send via Echolink.

On my Yaesu FT-7100 I opened the squelch on FM and get the loud FM noise of the receiver. Then I aligned the “Line-In” controller for a maximum level of 50 – 60% on the red peak line.

If the audio of your receiver is too poor you have to use the “Mic In” instead. On the microphone line of several soundcards you can switch on a 20 dB preamplifier in addition and that should be enough to get the 50 – 60% output.





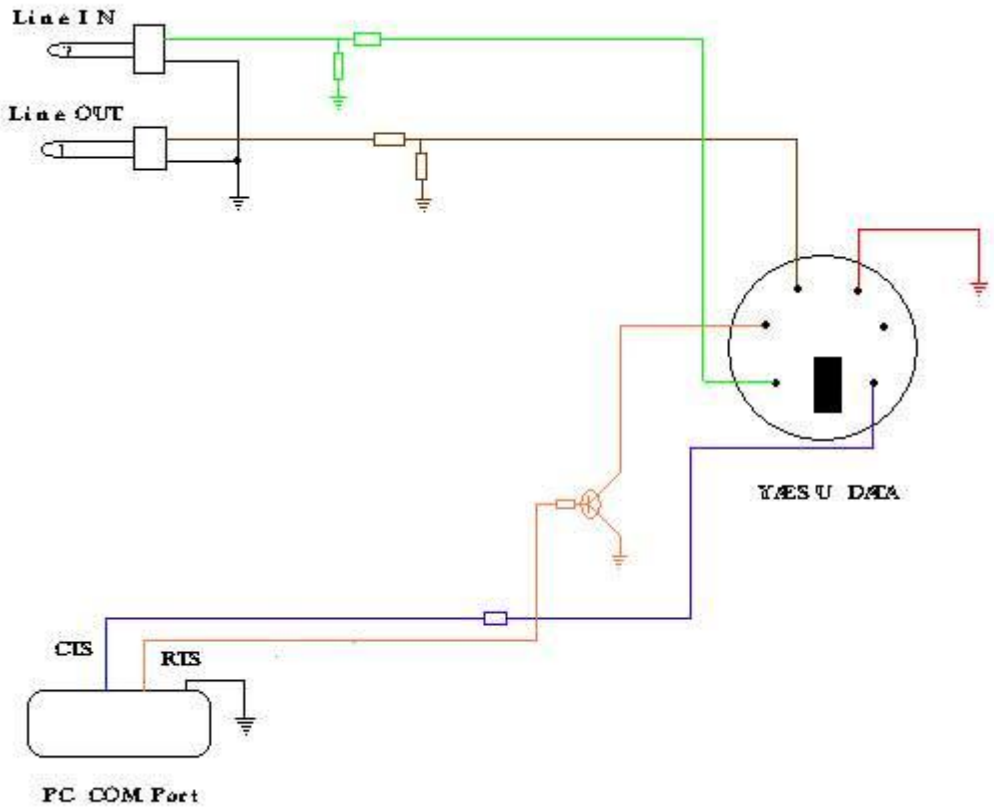
Attention ! ! !

Don't (!!) check the „+20dB Boost" button until you have enough audio input to Echolink. You mostly would get a additional ALC but the back-ground noise is raising too much and the readability is worse, especially on mobile operations. You hear the car noise drastically.

History

07.01.2003	The premiere ! First online test with this simple PTT circuit and it works great..
08.01.2003	Getting also good audio reports from a local mobile station. I'm talking back with my second computer and echolink via ISDN.
10.01.2003	I do some additional modifications on my FT-7100. I changed two capacitors on the FM receiver part (one for VHF, one for UHF) from 100 nF to only 10 nF. So the af lowpass was raised from 280 Hz (!!!) up to 2.800 Hz. This gives a much clearer receiving sound even if the FM noise is raised too. And this better sound quality is going to the DATA socket too (1200 Bd packet out). So with this modification I get additionally much more af level on the DATA socket, so I changed the connection on the computer side from "Mic.In" back to "Line In". Now the level meter goes up to 50% on FM receiving and the audio quality on the echolink side is fine. Some soundcards have build in af filters like high- or lowpass to suppress pumping effects of the microphone. So the "Line In" socket is the better choice to get best sound results. The mixer levels of the soundcard are realigned.
15.01.2003	I remove C1 and P1 of my simple soundcard adapter. It works better and has less distortions. Don't know why but it must be a soundcard problem and you never get any informations or circuit diagrams from the manufacturers. But sometimes I had a sound like a "burst" on the audio on the FT-7100 TX (so from the Echolink send on air via the FT-7100). So C1 must have produced some voltage bursts to the soundcards "Mic In" or "Line In". Without the RC components I haven't any burst sounds yet. But don't ask me why !! I changed the two capacitors of my FT-7100 receiver and raised the value from 10 nF up to 22 nF. Now the af lowpass is about 1.500 Hz and it doesn't sound as sharp as before. The audio into Echolink is even better too. As the af output goes down a little bit I switched back from "Line In" to "Mic In" on the soundcards side and realigned the soundcard levels. The Bass level is now in the middle or a little left and the Treble level is on maximum for clearest modulation send on air through my FT-7100. Now I'm very satisfied since my WB2REM board is shipped. All working stations over my link are giving me very good audio reports too.
21.01.2003	Now the COS is working !! With the absolute primitive wiring ! I put a cable from PIN 6 (SQL) of the FT-7100 DATA socket to PIN 8 (CTS) of my 9pole serial socket. Then I optimized the parameters of the Echolink software to get the fastest response on transmissions without loosing the audio end of the transmissions. I reduced the maximum number of Conferece Users from 10 to 7. This is for a safe condition cause every logged in user reserves a bandwidth of 16 kBits for his connection. So with the T-DSL Uplink rate of 128 kBits the maximum possible users would be 8. I've taken 7 to be on the safe side.

	- Serial CTS on COM2 - VOX Delay reduced from 1.000 to 150 msec While reducing the Network and PC Buffering to the minimum values I didn't recognized any packet losses or errors yet. It works !! And is even faster. Enhance the params for better detection of DTMF codes.
03.03.2003	Version 2.0 of my station description I build up a small and easy circuit between the soundcard and the TRX. It's needed to enhance the audio sound and the alignment procedure of the audio level. Now the crisp 9k6 af output is more clear and the DTMF codes are detected fine cause of the reduction of the FM noise. The S/N ratio is raised drastically on both sides (RX to soundcard and soundcard to TX). It works fine with most stations, even on mobile operation.



Yaesu linkcable schematic of http://hb9tlk.com

PRO

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CONTRA

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