

DJ Rig Setup

This module covers setting up a DJ booth for a corporate event or brand activation: the three kinds of rig, the table and layout, the connections, setting levels with the FOH engineer, music prep, power, turntables, changeovers and the MC. It is for crew who build the booth and keep it running.

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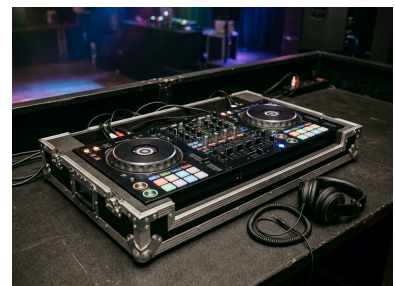
01 Three kinds of DJ rig



All-in-one (XDJ-RR type)



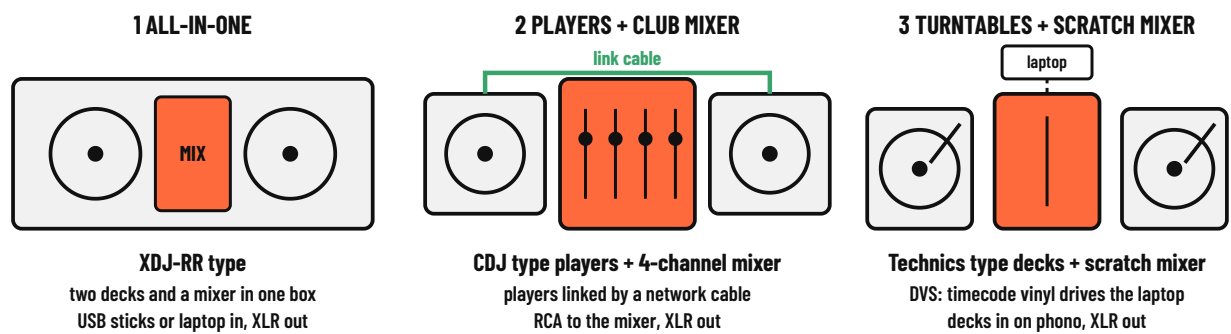
Direct-drive turntable (SL-1200)



All-in-one in a flat flight case

The rigs you will set up most. Product photos: Pioneer DJ, Technics.

Almost every DJ you meet plays on one of three rigs. Through the PA they sound the same. What differs is what you carry, how long set-up takes and what can go wrong. Ask which rig it is before the day, not on the day.



The three rigs side by side. Yellow is the mixer. Green is the link cable between media players. The dashed line on the turntable rig is the timecode signal to the laptop.

ALL-IN-ONE

Two decks and a mixer in one box. Plays tracks from USB sticks or a laptop. One power lead and one pair of outputs. Used for walk-in and dinner music, small to mid corporate functions, brand activations with a small table, and any job where set-up time is short.

Typical hire kit: an XDJ-RR type all-in-one, supplied in a case. Ask the supplier which USB format and software it expects.

MEDIA PLAYERS + CLUB MIXER

Two separate players and a 4-channel mixer. The players are linked by a network cable so they can share tracks and timing. Used for dance-floor nights and for DJs who play club gear every week and expect this layout.

Typical hire kit: two CDJ type media players, a 4-channel club mixer and the cables to link them.

TURNTABLES + SCRATCH MIXER

Two turntables and a 2-channel mixer. With DVS (digital vinyl system) the record is timecode vinyl: the laptop plays the music and the deck controls it like a real record. Used by scratch and open-format DJs who want the vinyl feel. The fussiest rig to set up.

Typical hire kit: two Technics type turntables and a scratch mixer. Confirm the DVS software and timecode vinyl are supplied.

RIG	SOURCE OF MUSIC	SET-UP TIME	MOST COMMON FAULT
All-in-one	USB sticks, laptop	Shortest	Stick not exported properly
Players + mixer	USB sticks, laptop	Medium	Players not linked, RCA in the wrong socket
Turntables + DVS	Laptop, timecode vinyl	Longest	Hum, rumble, timecode drop-outs

ASK FIRST

Which rig? What outputs does it have? Does the DJ bring their own sticks, laptop and leads? Never assume the DJ's gear matches what is on your sheet.

02 The booth

The booth is where the DJ spends the whole night. A wobbly table, a monitor in the wrong place or a drink next to the mixer ruins the set long before the sound does. Build it before you plug anything in.

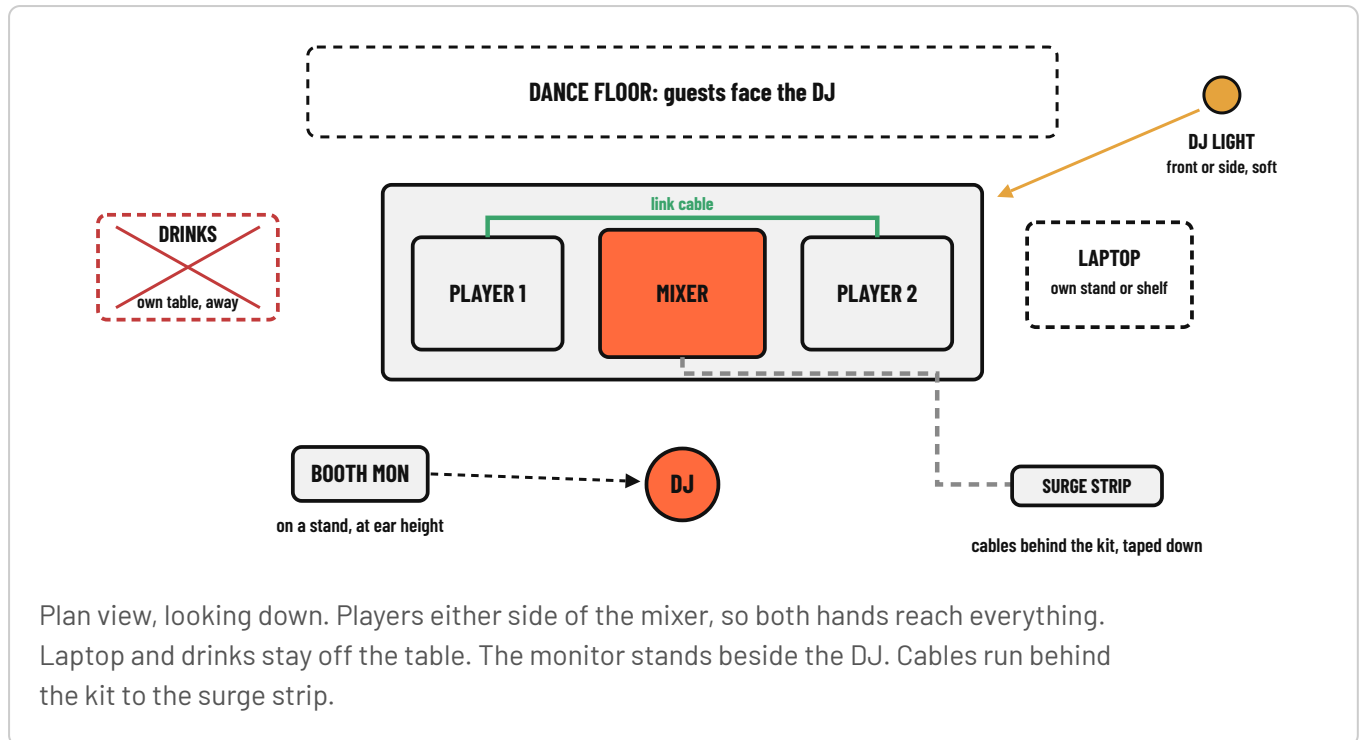
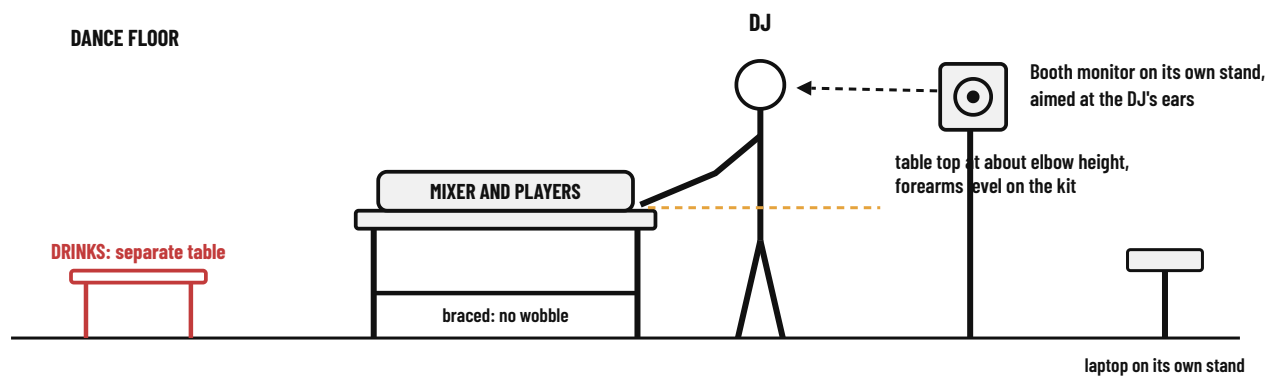


Table: height and stability

- **Height.** The top should sit about at the DJ's elbow, so the forearms are level on the kit. Let the DJ tell you. A table that is too low ruins backs by midnight.
- **Stability.** Lean on it with both hands and push hard. If it rocks, swap it. A trestle with a cloth over it wobbles, and a wobble makes players skip and turntable needles jump.
- **Size.** A three-piece rig needs at least 1.8 m of width and about 60 cm of depth. An all-in-one needs less, but the laptop shelf and the DJ's elbows still need room.
- **Dance floor.** If the floor bounces when guests jump, the table must be off that section or on a solid deck.



Side view. Table top at elbow height and braced. The monitor sits at ear height on its own stand, so table vibration never reaches the decks. Drinks live on a separate table.

Layout and cables

- **Mixer in the middle, players either side.** On a turntable rig, the decks go either side of the mixer in the same way.
- **Laptop on its own stand or shelf** next to the table, not on the mixer. It is the heaviest, hottest thing in the booth and the easiest to knock.
- **Booth monitor** on a stand beside the DJ, at ear height, aimed at the DJ. Not on the table: it shakes the kit and blocks the view of the floor.
- **Cables behind the kit.** Run them along the back, tie them, tape the loose ones to the floor. A trailing cable is a fall, and a fall takes the whole table.
- **Light.** Put a soft light on the DJ and the mixer, from the front or side. Not behind them, not into their eyes, and never a hot light on the gear.

DRINKS

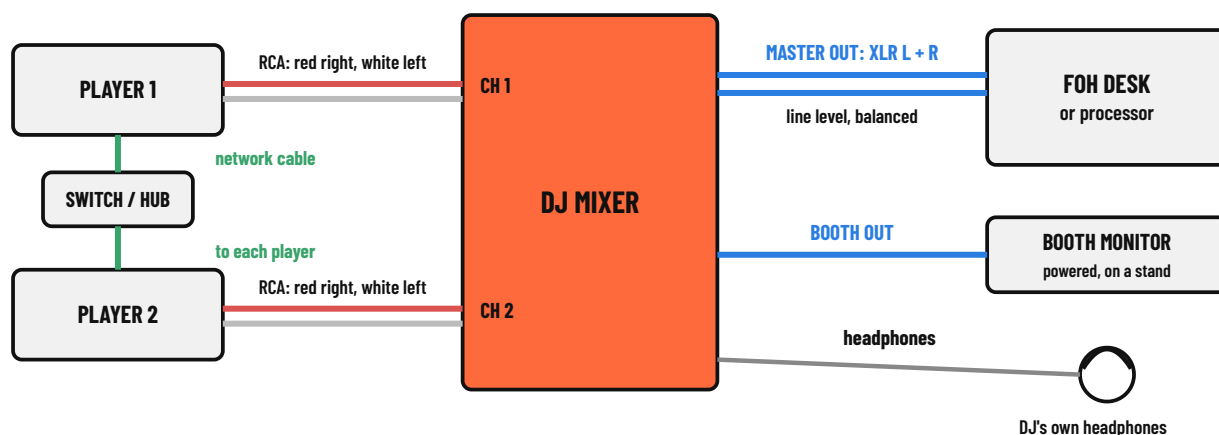
No drinks on the DJ table, ever. A spilled drink in a mixer ends the night and can end the night for everyone. Give the DJ a separate small table for the glass or bottle, with a lid if you can.

03 Connections



The back of a DJ mixer: players in on RCA, master out on XLR to FOH, booth out to the DJ's monitor.

Module 6 covered the cables. Here is how they join up on a DJ rig. Three signal jobs: the players feed the mixer, the mixer feeds the FOH desk, and the mixer feeds the DJ's monitor and headphones. A fourth job, the link between players, carries data, not audio.



Media players and a club mixer. Red and white RCA from each player into its own mixer channel. A network cable from each player into a switch so they link. Master out on XLR to the FOH desk. Booth out to the monitor.

FROM	TO	CABLE	RULE
Each player	A mixer channel	RCA, red and white	Red right, white left. One player per channel. Short leads.
Player to player	Through a hub or switch	Network cable	Carries data, not audio. Follow the player's manual: some link two directly, a switch always works.
Mixer master out	FOH desk or processor	XLR, left and right	Balanced, so long runs are fine. Label them DJ L and DJ R.
Mixer booth out	Booth monitor	The lead the monitor needs	The booth has its own level knob. It is not the master.
Mixer headphone socket	The DJ's headphones	Headphone jack	The DJ brings their own. Never hire out headphones.

Typical hire kit: a pair of XLR leads, labelled DJ L and DJ R, in the shortest length that reaches.

All-in-one

The all-in-one has fewer cables. The decks and the mixer are inside one box, so there are no RCAs and no link cable. The sources go in, the XLRs come out.



Check the unit has the outputs you need before the job. One power lead, nothing else.

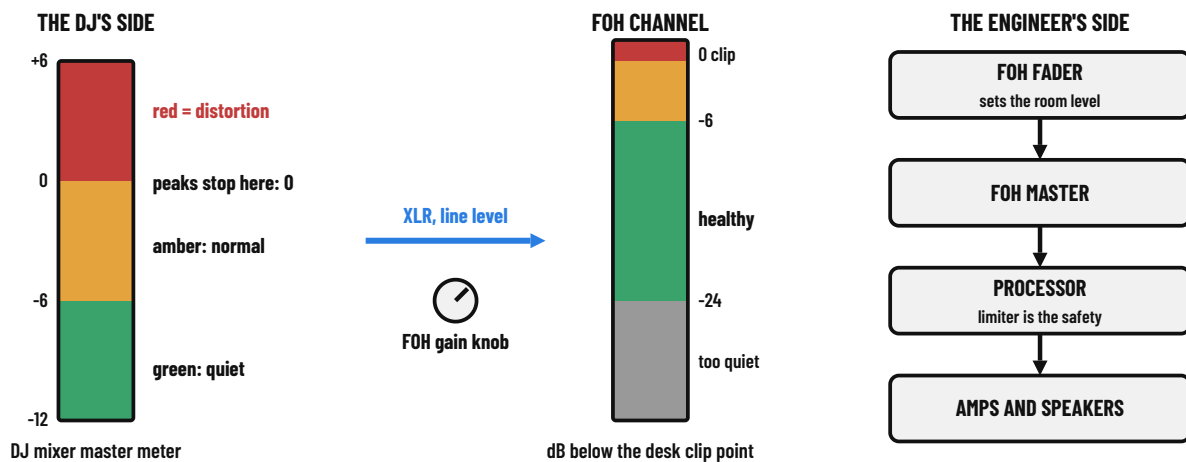
An all-in-one. Sticks (and a laptop backup) in. XLR left and right to the FOH desk. Booth out only if the unit has one.

AT THE FOH DESK

The DJ feed is line level. Plug the two XLRs into two desk channels, panned hard left and hard right. Gain right down, phantom power OFF, then bring the gain up while the DJ plays.

04 Levels and the limiter

Two people set levels on a DJ feed, and each owns a different knob. The DJ owns the mixer: the master meter. The FOH engineer owns the desk: the channel gain and the room level. If the DJ pushes the master into red, the signal is already distorted and nothing the engineer does can fix it.

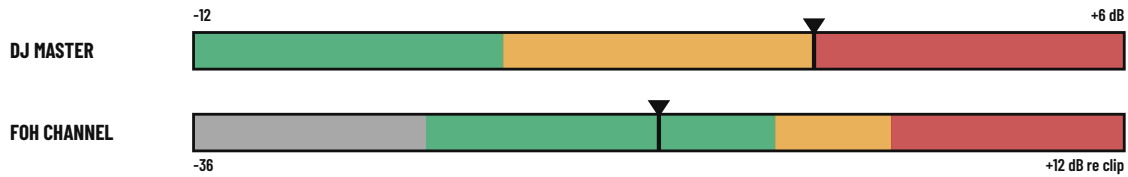


Left: the DJ keeps the master peaks at 0, never into red. Right: the engineer sets the desk gain so the channel has plenty of room below clip. The room volume is the FOH fader and the processor limiter behind it.

- **DJ master peaks at 0.** On the loudest part of the loudest track the meter touches the top of amber. Red lights mean distortion. Pull the master down.
- **Leave the master alone.** The DJ controls the loudness of each track with the channel gain (trim), not by driving the master up and down. The room volume is the engineer's job.
- **Engineer sets the FOH gain** while the DJ plays the loudest track. The desk channel should peak well below its clip light.
- **Booth monitor** only as loud as the DJ needs to hear. A loud booth leaks into the mics, causes feedback and wears out the DJ's hearing. The OHS limit is 85 dB(A) over 8 hours.
- **The limiter** in the processor is the last safety (Module 7). It protects the speakers from a mistake. It is not a volume control and it does not fix a distorted feed.

Typical hire kit: the engineer owns the room level, and the processor's limiter is the last safety.

TRY IT: SET THE DJ LEVEL INTO THE DESK



DJ MASTER PEAK	FOH GAIN	RESULT
0 dB	0 dB	Clean. Desk peaks 12 dB below clip.
+3 dB	0 dB	Mixer clipping. Red lights. Pull the DJ master down.
0 dB	+14 dB	FOH input clipping. Turn the desk gain down.
-12 dB	-5 dB	Too quiet. Raise the DJ master first, then the desk gain.

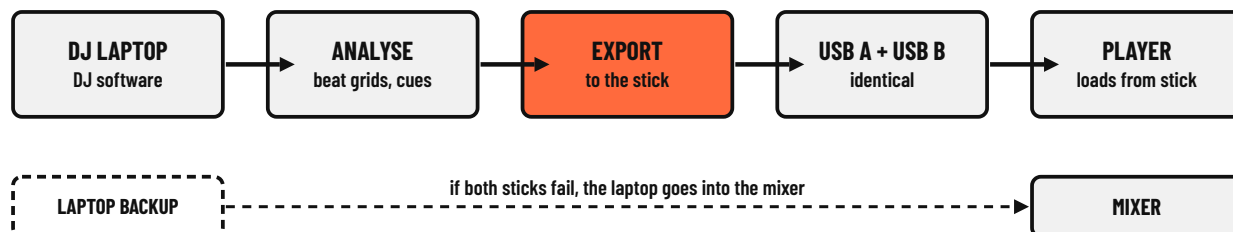
Simplified model: the desk peaks 12 dB below clip when the mixer is at 0 dB and the desk gain at 0 dB. Real desks differ, so always set the gain by ear and by the desk's own meter.

FIELD RULE

DJ master: peaks at 0, no red. Engineer: gain set with the loudest track playing. Nobody fixes a distorted feed downstream. Fix it at the mixer.

05 Music prep

Most "DJ problems" on the night are prep problems. A stick that does not load, a track that is a bad rip, a set with nothing for the speeches. Prep is done at the DJ's desk days before, and you check it again at soundcheck.



Copying files into a folder is not exporting. The player reads the exported library.

Prep in the DJ's software. Analyse, build the playlists, export to the stick. Two identical sticks. The laptop is the third copy.

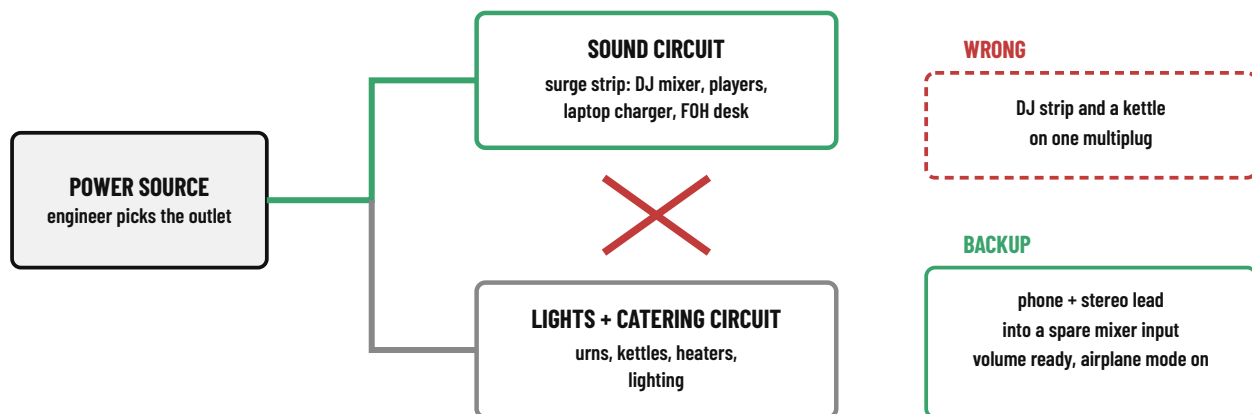
- **Export, do not just copy.** Players read the library the DJ software exports. Drag-and-drop of files into a folder gives a stick the player cannot browse, or one with no cues and no beat grids.
- **Format.** Most players read FAT32 or exFAT. Check the player's manual for others. FAT32 cannot hold a single file over 4 GB. Format the stick on the DJ's laptop, never on a hire player.
- **Two sticks.** Identical, labelled A and B. Keep one in the DJ's pocket. A single stick is a single point of failure.
- **Laptop backup.** The same music on the laptop with the DJ software, charged, with a lead to the mixer.
- **File quality.** No low-bitrate rips and no video-site downloads: they sound thin and harsh through a PA. Use high-quality MP3 (320 kbps) or lossless if the player accepts it.
- **Sorted playlists.** At least four, named for the job: **Walk-in, Dinner, Dance, Speeches and fillers.** For a corporate client, clean versions only: no explicit lyrics.
- **Test at the venue.** At soundcheck, load each stick in the actual player, play a track from each playlist and set a cue. Do not find out at 6 p.m. with guests arriving.

FIELD RULE

Two sticks, one laptop, four playlists. If the DJ has one stick and one playlist, say so to the engineer before doors.

06 Power

A DJ rig draws very little power. It is also the most easily ruined by bad power. A hum, a crackle or a reset in the middle of a song usually starts with what else is on the circuit.



Plug the DJ kit into the sound circuit, through a surge-protected strip. Lights, urns and kettles go on their own circuit. A kettle and a DJ strip on one multiplug is the classic mistake.

- **Separate circuit.** The DJ kit and FOH desk sit on the sound circuit. Lights, catering urns, kettles and heaters sit on another. Heavy loads switching on and off throw spikes and dips into the sound.
- **Surge strip.** One protected power strip for the booth: mixer, players, laptop charger. One lead from the strip to the distro. The engineer decides which outlet.
- **Never share.** No kettle, heater, phone charger bank or hair straightener on the same multiplug as the DJ kit.
- **Crew plug in only.** You plug leads into the outlets you are given. You never open a plug or work on a distribution board. That is an electrician's job.
- **Power cut plan.** If the power drops, music must not stop. Keep a phone with a playlist and a stereo lead ready, in airplane mode, volume up. If the DJ mixer still has power, plug into a spare input on it. If the DJ circuit is dead, plug straight into a spare FOH channel.

DO NOT CURE HUM BY REMOVING AN EARTH

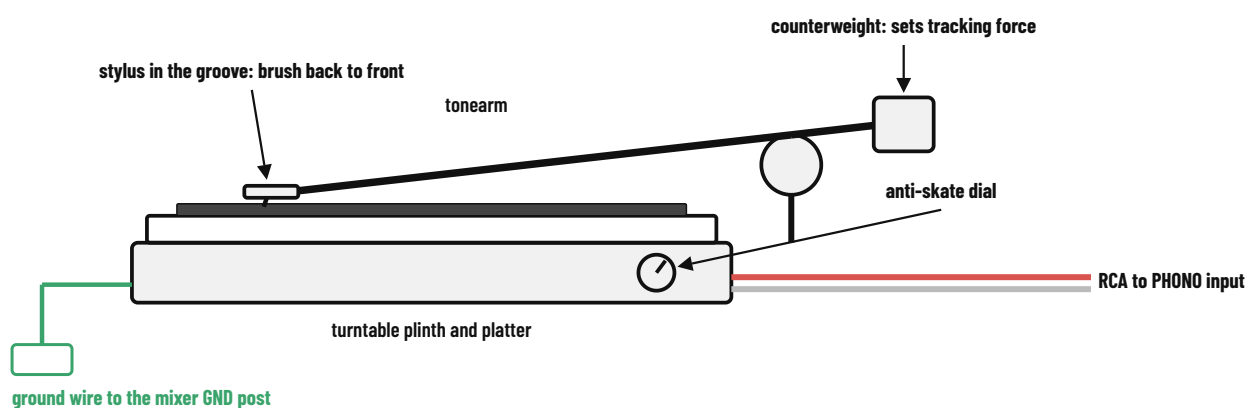
If a lead hums, the fix is a different lead or a different outlet. Never lift a mains earth or use a pin adapter that defeats it.

07 Turntables



Turntables either side of the scratch mixer, laptop on a stand behind, cables dressed at the back.

A turntable is the most delicate thing in the booth. A good deck set up wrong sounds worse than a cheap deck set up right. Before the first record: tonearm, stylus, ground wire, and where the subs are.



Side view of a turntable. The counterweight and the anti-skate dial set how the stylus sits in the groove. The ground wire runs to the mixer's GND post. The RCA leads go to the phono inputs.

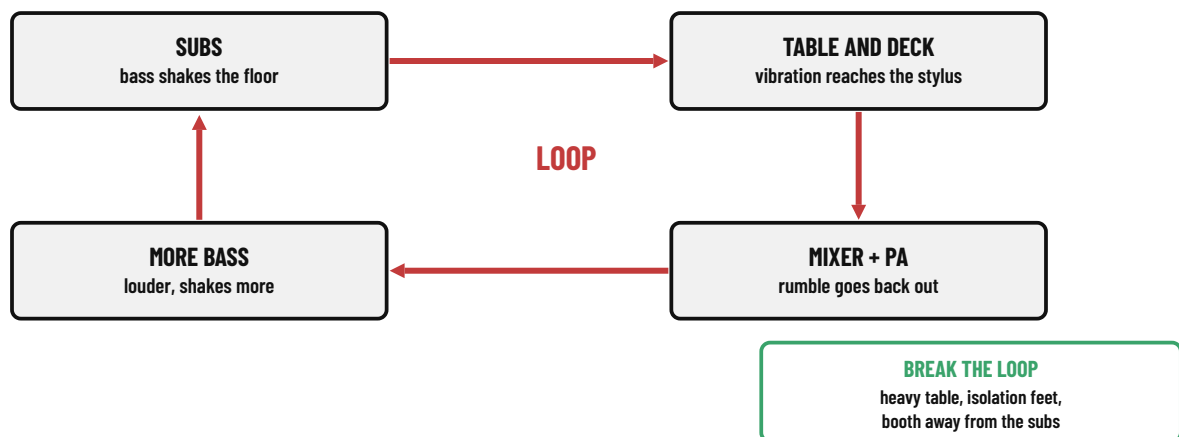
- **Tonearm.** Set the counterweight to the tracking force the cartridge maker gives. Transport knocks it, so check it on site every time.
- **Anti-skate.** Set it to the cartridge maker's figure. If the maker gives no figure, follow the deck's manual. Do not guess.

- **Stylus care.** Guard on for transport. Brush it gently from back to front with a stylus brush. Never sideways, never with a finger, and never drop the arm onto bare platter.
- **Phono input.** A turntable needs a phono input, because its signal is tiny and needs the phono stage to lift it. Plugged into a line input it is very quiet and thin. Set the mixer's channel switch to PHONO.
- **Ground wire.** The thin wire from the deck goes under the GND screw on the mixer. Without it you get a loud hum that fades when you touch the deck. This is a signal ground, not a mains earth.

Typical hire kit: check the tonearm against the cartridge maker's figures on site, because transport knocks it. Keep the booth well away from the subs.

Feedback from the subs

Bass from the subs shakes the floor and the table. The stylus picks the shake up like it was music, the mixer sends it to the PA and the subs shake more. A low rumble builds until the system howls. On DVS rigs it also drops the timecode, so the music stutters.



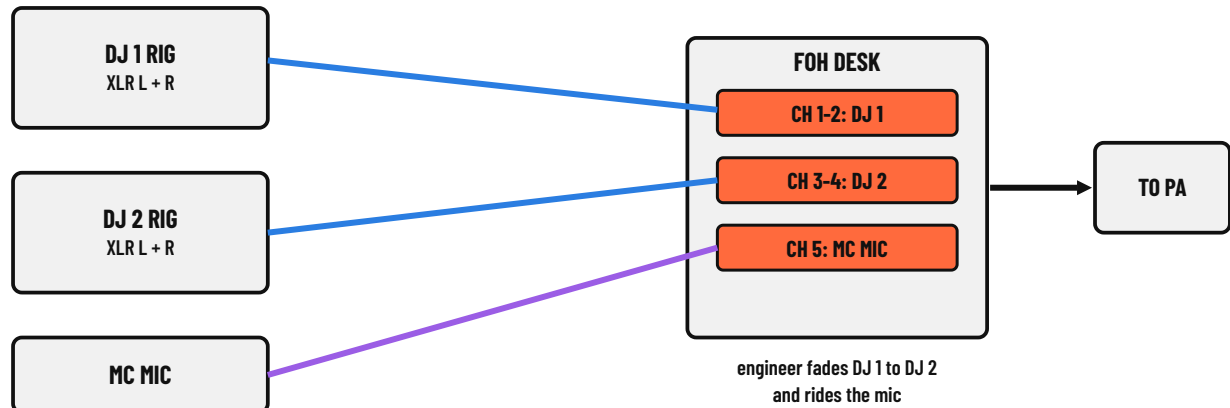
The loop. Break it anywhere: a heavy, solid table, isolation feet or foam under the decks, and the booth well away from the subs.

FIELD RULE

Turntable booth: heavy table, isolation under the decks, away from the subs, never on a deck beside a sub. Ask the engineer to cut the very low end on the turntable channels if rumble still builds.

08 Changeovers and the MC

At a corporate event the DJ changes, or an MC takes the floor, and silence is the enemy. Plan for a changeover the way you plan for a power cut: the music must not stop.



The safest set-up: each DJ rig has its own XLR pair into its own FOH channels, and the MC mic has its own channel too. The engineer fades between them. No cable is ever pulled while music is playing.

Swapping DJs without silence

1. **The second DJ sets up first.** Their rig is wired and level-checked while the first DJ is still playing.
2. **Two options.** Best: the second rig has its own XLRs into spare FOH channels. Next best: the second DJ plugs into the free channel on the same mixer, or uses the free player.
3. **Check with headphones.** The second DJ cues the first track in headphones, not through the PA.
4. **Match the level.** The new DJ's peaks should sit at 0, same as the first. A new DJ who is quieter or louder makes the room jump.
5. **Hand over.** The engineer or the first DJ fades. Only then does anyone touch the old rig.

NEVER PULL A STICK

Do not pull a USB stick from the player that is playing. It stops the music. Load the next stick on the free player.

MC mic: DJ mixer or FOH?

The MC mic can go into the DJ mixer's mic input, or into its own FOH channel. **FOH is better.** The engineer controls the gain, the EQ and the level, and can pull it down at

once if it feeds back. A mic on the DJ mixer is controlled by the DJ, who is looking at the decks and cannot hear what the room hears.

Speeches in the middle of a set

- Agree the order with the DJ and the MC first: who speaks, how long, and who gives the cue.
- The DJ brings the music down rather than stopping it dead, or hits a pause and a cue point. Then brings it back up when the MC is done.
- Turn the booth monitor down while a mic is live, or point it away. A live mic and a loud booth is the quickest feedback.

09 Booth checklist and fault table

Print it, tick it, and do it in this order every time. It takes ten minutes and finds the problem while the room is still empty.

1

☐ TABLE AND LAYOUT

Table solid, at elbow height. Players either side of the mixer. Laptop on its own stand. Monitor on a stand. Drinks on a separate table.

2

☐ POWER

Surge strip on the sound circuit. Nothing from the catering or light circuit on it. Backup phone and lead ready.

3

☐ WIRE THE SOURCES

RCA red right, white left, into the right channels. Link cable through the switch. Turntables: ground wire on, switch to PHONO.

4

☐ WIRE THE OUTPUTS

Master out on two labelled XLRs to the FOH desk. Booth out to the monitor. Everything off at the far end.

5

☐ MUSIC CHECK

Both sticks load in the actual player. Four playlists there. Laptop backup charged and ready.

6

☐ GAINS AND FADERS DOWN

Channel faders, master and booth all down. Power on from the source to the speakers.

7

☐ LEVEL WITH THE LOUDEST TRACK

DJ plays the loudest track. Master peaks at 0, no red. Engineer sets the FOH gain.

8

☐ BOOTH LEVEL

Raise the booth monitor until the DJ can hear. No further.

9

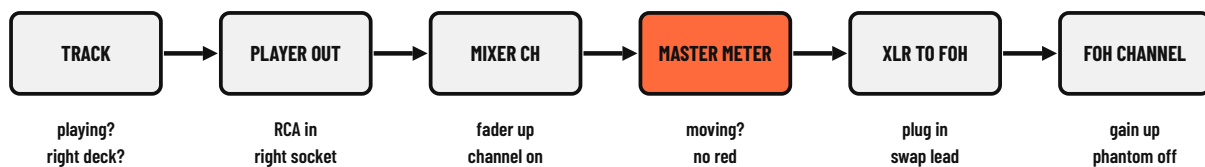
☐ TEST THE SECOND PLAYER AND THE MC MIC

Each player in turn, and the MC mic on its FOH channel. No feedback with the booth up.

10

☐ HAND OVER TO THE DJ

The DJ checks their cues, headphones and tone. Cables taped down, nothing left on the table that should not be.



Meter moving: the fault is after the mixer. Meter dead: the fault is before it.

Where does the signal stop? Check the master meter first. If it is moving, the fault is after the mixer. If it is dead, the fault is before it.

If it is wrong

SYMPTOM	MOST LIKELY	CHECK
No sound from one player	RCA out of its channel, channel off or fader down, wrong input selected	RCA both ends, channel input switch, channel meter. Swap to the other channel to prove the player.
Hum	Missing turntable ground wire, bad lead, shared circuit	Ground wire on the GND post. Swap the lead. Plug the booth into the sound circuit.
No link between players	Network cable out, switch off, players not on the link setting	Both cable ends, switch power, link light on the player.
USB not reading	Not exported, wrong format, stick not seated	Reload on the free player. Use stick B. Re-export from the laptop. Check FAT32 or exFAT.
Booth monitor feeding back	Monitor too loud or pointed at a live mic	Turn it down, or point it away from the mic. Check the MC mic is on FOH.
Distortion on the whole system	DJ master in the red, or FOH channel clipping	DJ mixer meter first, then the desk's clip light.
Rumble that builds	Feedback from the subs into a turntable	Move the booth, add isolation, ask the engineer to cut the very low end.

THE WHOLE MODULE IN ONE LINE

Solid table, short leads, balanced out to FOH, peaks at 0, two sticks, separate power, and the engineer owns the room.

Check what you learnt

Ten questions. Circle one answer for each. The answer key is on the last page. Pass mark: 8 out of 10.

1. What is the main reason to choose an all-in-one rig?

- ☐ A It sounds better than separate players
- ☐ B Short set-up: one box, one power lead, one pair of outputs
- ☐ C It does not need a mixer output
- ☐ D It works with turntable timecode vinyl

2. A DJ asks for the table to sit at what height?

- ☐ A Knee height
- ☐ B Chest height so the kit is easy to see
- ☐ C Whatever the trestle is
- ☐ D About the DJ's elbow, with forearms level on the kit

3. Where should the booth monitor go?

- ☐ A On its own stand beside the DJ, at ear height, aimed at the DJ
- ☐ B On the DJ table next to the mixer
- ☐ C On the floor in front of the table
- ☐ D Behind the dance floor

4. How are two media players linked so they share tracks?

- ☐ A With an RCA lead between them
- ☐ B With an XLR lead
- ☐ C With a network cable through a hub or switch
- ☐ D They link themselves over the air

5. Which cable carries the DJ mixer's master out to the FOH desk?

☐ **A** RCA, red and white

☐ **B** XLR, left and right

☐ **C** Speakon

☐ **D** A headphone jack

6. On the DJ mixer's master meter, red lights mean what?

☐ **A** The signal is distorting. Pull the master down

☐ **B** Perfect level

☐ **C** The booth is too loud

☐ **D** The FOH gain is too low

7. Who sets the room volume?

☐ **A** The DJ, using the master fader

☐ **B** The booth monitor level

☐ **C** The FOH engineer, at the desk

☐ **D** The MC

8. What is the correct way to put music on a USB stick for a player?

☐ **A** Drag the files into a folder

☐ **B** Rename the files with a track number

☐ **C** Copy them from the player

☐ **D** Export from the DJ's software to the stick

9. The DJ kit shares a multiplug with a kettle. What is the problem?

- ☐ **A** None, a DJ rig uses little power
 - ☐ **B** Spikes and dips from the kettle reach the sound
 - ☐ **C** The kettle will be cold
 - ☐ **D** The multiplug will be too heavy
-

10. A turntable booth rumbles and the rumble builds. What do you do?

- ☐ **A** Turn the subs up
- ☐ **B** Swap the cartridge
- ☐ **C** Move the booth away from the subs and add isolation
- ☐ **D** Plug the turntable into a line input

Answer key

1. **B.** An all-in-one holds two decks and a mixer in one box, so set-up is the fastest.
2. **D.** Elbow height keeps the forearms level and the back happy. Let the DJ tell you the exact height.
3. **A.** On a stand, so table vibration never reaches the decks, aimed at the DJ's ears.
4. **C.** The link carries data, not audio. Use a network cable through a hub or switch and follow the manual.
5. **B.** Balanced XLR tolerates long runs and is the standard for line level to the desk.
6. **A.** Red means clipping at the source. Nothing downstream can fix it. Fix it at the mixer.
7. **C.** The DJ keeps the master peaks at 0. The engineer controls the room level.
8. **D.** Players read the library the DJ software exports, with cues and beat grids. Copying files is not exporting.
9. **B.** Heavy loads switching on and off pollute the supply. Keep the DJ kit on the sound circuit.
10. **C.** Sub bass shakes the table and the stylus picks it up. Break the loop with distance and isolation.

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