Michael Brecker's Logic Pro EWI Environment

By George Whitty

The late great woodwind player's keyboard player worked with him to put together an amazingly sophisticated real-time environment for his Akai Electric Wind instrument.

The Logic environment pictured here, Michael Brecker's Powerbook EWI setup, started out as a bet sometime in 2004. Mike had been on the road for 20 years with two 4-foot racks packed with synths, samplers, mixers, MIDI routers, loopers, and reverbs, topped off with an Oberheim Matrix 12 synth, from which he would perform a one-man EWI masterpiece every night in the middle of the set.

It typically featured a couple hundred different sounds, layered ethnic bits, various lead sounds, drums, basses, percussion, a few beautiful polyphonic pieces (out of the monophonic EWI), and huge distorted guitars. Mike ended it with a big layered jam, created one line at a time on Lexicon's Jam-Man, in which he would layer up a groove and a bunch of Brecker-only harmonic ideas and then blow over the whole thing.

The EWI solo was always a show-stopper; in Mike's hands a lot of it seemed like magic, and one day when I mentioned that I bet we could get the whole thing to happen on a PowerBook, Mike took me up on it. He also specified that he wanted to be on stage with only a wireless EWI—no pedals or switches—which presented an interesting challenge, since the EWI really only puts out notes, pressure, program changes, pitch bend, and a couple of assignable controllers.

Apple Logic Pro's Environment, which is where the audio and MIDI pathways are set up, provides an excellent set of tools to accomplish most anything one could want in a live performance or studio situation, from simple tasks and time-savers to incredibly sophisticated concepts. When we started out with it, Logic was still only revised to 6.4.3, which meant that only one instrument could be active at a given time.

This wouldn't work for Mike, who often layered eight or ten things at once, and stepping up and down the track list via key commands was too buggy to use anyway, so we tried using Propellerhead Reason as a ReWire instrument for our sound source. Reason is such a well-written and efficient instrument that we were off and running in short order, with Reason accommodating even difficult requests easily (its MIDI implementation and routing capabilities are quite thorough, for example).

Mike always presented himself as a kind of techno-klutz, but those of us who knew him well understood that he was really a kind of unique genius both on the technical end and in the fusing of the technology with great musicianship. His ideas for things were often unusual and insightful, and he was absolutely adept at getting what he wanted out of the machine.

After starting with a basic cable-switcher and some transformers to get it going, Mike and I began to discuss what was possible from there and what he'd like to do, and I'd figure out how to do it. I could see that he was really serious about making this go, spending hours at a time in his basement working on it, so it became apparent that he needed the fastest possible access to everything he'd want to do with the input from the EWI.

So I made channel strips that came before each instrument, comprised of macros controlling things such as transposition, pressure scaling, volume scaling, note-range limiting, and various data filters, with everything presented as a simple numbered sliding fader or switch. Once Logic hit version 7 and we began incorporating Audio Units instruments directly into Logic's environment, Judd Miller began supplying a steady stream of incredible EWI-friendly sounds, mostly for Kontakt.

As the performance developed, we put in things such as a "universal sustain" that, if enabled on any channel strip, would make that sound hold if Mike had played C8 on the EWI, and release when he played B7. Several different sounds could be held at once this way, and Mike became very adept at layering up a very sophisticated thing quickly, then releasing it and doing another.

I also created a Logic-based version of Oberheim's "rotate" mode, a programmable harmony generator that rotated between several different intervallic combinations for each incoming note, producing a changing series of chords from a single-note line. Our rotators eventually incorporated several features lacking on the original, such as different numbers of notes in the rotation for each rotating voice, as well as more available rotating voic-

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es and various lights to provide feedback when programming it.

Perhaps the most difficult thing to get together on the PowerBook was the replacement of the Lexicon Jam-Man delay-loop box with a software looping device. Logic's own delays didn't do an infinite repeat (the maximum feedback was 99%, slowly losing level with each repeat), but after some looking we found the Augustus Looper, which did everything we needed it to do and was easy to control via MIDI commands.

The difficult thing with it was that Mike needed two separate loops and the ability to switch between them instantly; this part of the performance had always consisted of building up one section (the way Mike got this swinging as he built it up always reminded me of the Basie band), then switching to the B loop and building up the "bridge." Mike would then start to solo on it, and switch between the two loops as he went.

I eventually decided to work the switching out by controlling input levels to the two busses via note-ons; if Mike played something like F0 on the EWI, it would turn the volumes on bus "A" to O and the bus "B" volumes off, thus loading up the A loop. Playing F#0 would reverse them and allow input into the B loop. This whole system required a lot of thought; everything had to be done just right, but Mike eventually mastered it. One by one, we solved all the problems we encountered, and the PowerBook EWI (eventually migrated to an iMac G5 for quad outputs and more horsepower) was realized.

In early 2005, Mike was diagnosed with myelodysplastic syndrome, a kind of precursor to leukemia. With that, the EWI project became something more than an instrument or a performance tool to both Mike and me. It was something he could work on even when chemotherapy had left him too fried to play the tenor, and he did so with a great spirit and passion.

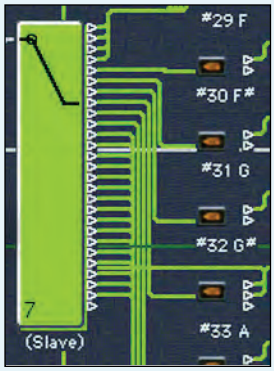
To me, it was something I could do with my friend that always seemed to give him a lift; Mike would always muster himself and we'd make each other laugh the whole time we worked on it, even when he was having a hard time getting up the stairs. We continued to work on it through December of 2006, adding things like an array of transformers that enabled an instant, separately programmed quadraphonic mix, and making a sampled version of Mike's tenor and building a network of controllers so it could be played realistically on the EWI.

Mike did some excellent recording sessions on the EWI when he felt up to it, sounding great as always, and took advantage of a break in the chemo to make one last gorgeous record on both tenor and EWI, "Pilgrimage," which will come out in May.

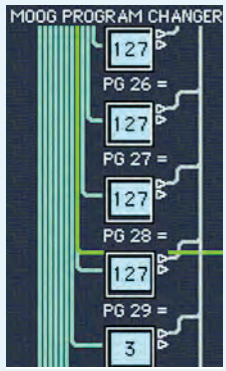
Mike passed away on January 13th of this year, after fighting tooth and nail against a horrible disease.

It's hard for me to even look at the original EWI now. A lot of this technology lives on in my road setup, and now in Herbie Hancock's live rig. But it all started off with Mike's EWI and, typical of us, we never thought to make a recording of the incredible end-product of it, though I'm hopeful that as I'm helping his wife Susan go through his computer in June, we might find a MIDI recording he made.

Mike paid me to do most of this work, but the truth is that this project was (and I think Mike would agree) more like a great treehouse that I built with one of my best friends one especially nice summer. I look at it and remember the thousands of laughs we had trying to get the damned thing to work right, cracking each other up with every absurdity that came into our heads. For such an intense musician, Mike was a very light, gentle, often silly and extremely funny person, and I miss him every single day. I've been blessed with a number of very good friends, but there was only one Michael Brecker. VI



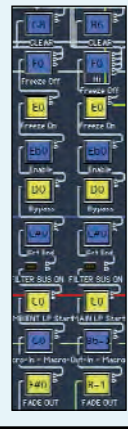
The first item in the data stream is this channel-switcher. Incoming program changes cause the switcher to select different cables, which are attached to the terminal transformers, labeled with the number of the incoming program change. Cables are then drawn from there to whatever in the environment we want to address. Next to the program change number is the note fingered on the EWI to send the program change.



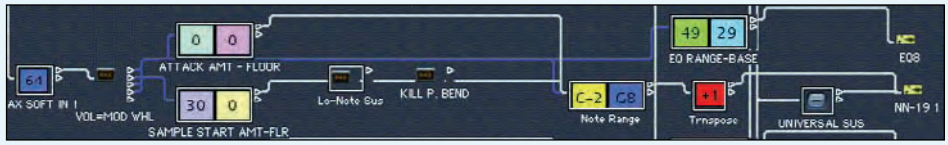
We both agreed that Arturia's Minimoog is a fantastic device, perfect for playing with the EWI. But it seemed to use an awful lot of power even just sitting there, so in order to keep only one of them inserted, we had this little set of program change translators to address that one instance. Incoming program changes would be changed into whatever we wanted to play on the Moog with these macros. As with most objects in this environment, clicking and sliding on these boxes changes the value.

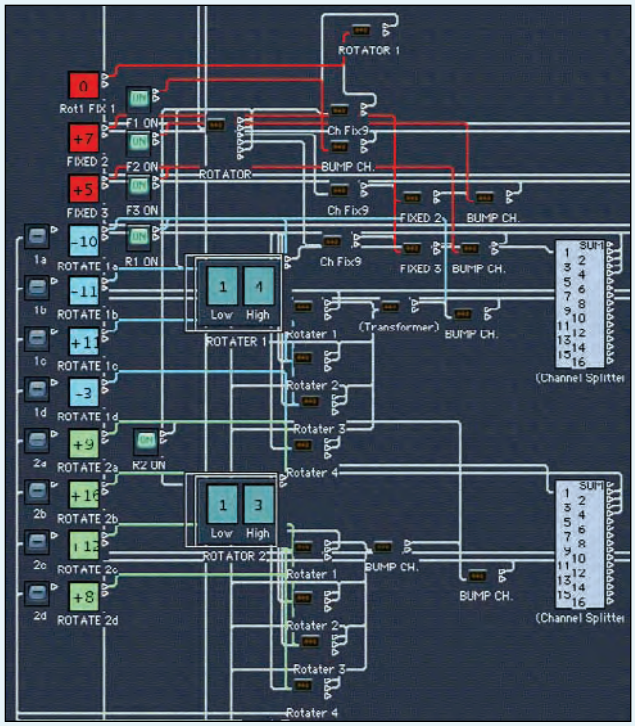
One of the 56 channel strips; each box is a value modifier for a macro that performs a function, scaling volume, setting note ranges, transposing, enabling or disabling pitch bend or a global sustain feature, which is triggered by the top two notes of the EWI. Pressure can also be translated into mod wheel by percentage to affect additional parameters of the synth.

Running the EWI in Quad presented an interesting dilemma. It wasn't as simple as putting up the surround faders and placing things, since everything had to feed busses with the Augustus Loopers on them to be part of the loops, and there was no way to get the busses downstream of the quad faders. I decided to address all the quad issues by using two busses, one of which fed the fronts, the other of which fed the rears. Same with Reason; every instrument fed two mixers, one for the fronts and one for the rears, which were then ReWired into Logic to feed the loopers.



In Mike's performances with his rack rigs, he always had a segment where he'd build up an arrangement using a Lexicon Jam-Man looper. We recreated this idea, in quad this time, using several Augustus Looper plug-ins, one each for Front loops 1 & 2 and Rear loop 1 & 2. Mike wanted to be on stage with only a wireless EWI, so a great many functions were controlled by note-ons at the very low end of the 8-octave range (the "trash octaves?"). Mike could start record, go to "play" and blow, freeze it, clear it and fade it out using note-ons selected with these macros, then go to a second loop and build up another one (the "bridge"), then switch between the two as he soloed over the top. I also put in a separate looper, used to create different kinds of looped ambient textures.



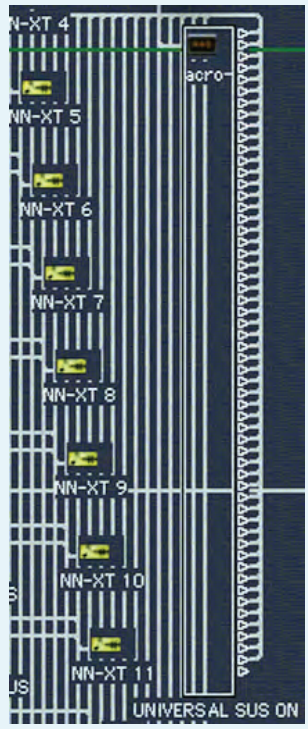


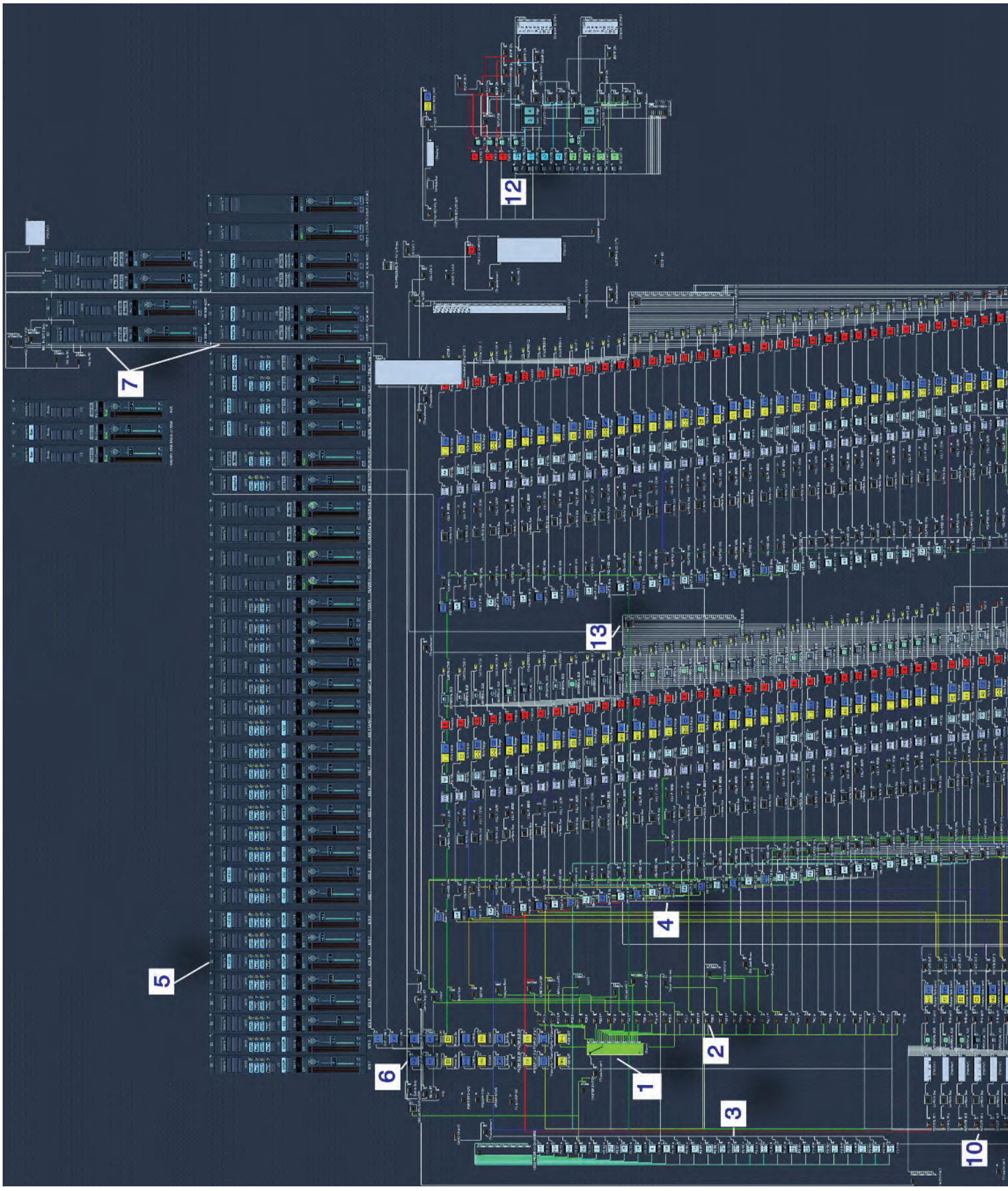
We tried hard as hell to make a really realistic, playable sampled version of Mike's sax. This idea was worked up on several instances of Reason's original sampler, the NN-19, because it allowed MIDI control of parameters we needed, such as sample start time. There were four different NN-19s with samples of different intensities, selected by the last pressure value before the note-on. This series of macros and transformers took pressure information and translated it into such things as sample start time and attack time (playing softly started the sample progressively later, after the initial attack, and added a little time to the attack parameter) and also ran a novel attempt at faking "more intensity" by both turning up the level on a wide band of upper-mid EQ and sweeping the frequency up somewhat as pressure increased. We eventually got this to where Mike enjoyed playing it, but it never really reached its full potential, mostly because in the initial thrill of the chase the original sampling wasn't done all that carefully.

Oberheim's "rotate mode" on steroids, this harmony generator (the secret to how Mike got chord progressions out of the monophonic EWI) features three fixed-interval voices and two that rotate between two, three, or four selectable intervals. Any note played into this would be harmonized by the three fixed intervals and two notes that "rotated" between the values chosen in the blue and green boxes. I found it interesting that Mike always had some voices rotating above the note he was playing, meaning he never quite knew what his top note would be, but he had a real gift for getting great progressions out of this thing. The eight small boxes on the left light up each time that voice is activated, so by playing slowly we can see who's doing what to the harmony and adjust accordingly. This system is so packed with macros that it exceeds the limit to pack the whole thing (I think 256 objects) so it sits there with all its guts exposed.

The objects at "10" set up input parameters to the 12 rotators; Mike often had just a couple octaves sent to the rotator, with two more for bass, one for sound effects, and a couple for a lead instrument, all on the same program change. The instruments at "11" were each panned to the four corners of the room; in quad, that 12th rotator sent each incoming note bouncing around the room (or distributed the four notes of a chord to a different speaker each). When Mike overdubbed a few passes into the looper with this thing in it turned into a real carnival ride. At "12" is an extra rotator that sits before the sequencer input so Mike could record its output as MIDI. The rotator, properly programmed, can sometimes come up with surprisingly great progressions, which Mike wanted to be able to record and look at as an idea for a tune. I use them for certain sorts of things in the writing I do, for example to harmonize a fast string line instantly for a certain sort of sound. The very sharp-eyed will notice a couple devices in this thing from the collection of Len Sasso, Godfather of the Environment, from whose work I've learned a lot.

This is the master bussing transformer that carries the "universal sustain" ons and offs, as well as other bits of information such as an all-notes-off panic button, to all the objects; there's a switch in each row that either enabled or disabled the sustain function for each track. The most recent version of Nile Steiner's EWI features a sustain switch, but Mike preferred to use that more for a kind of instant sustain, to build a quick chord for example, rather than something that carried across several different sounds like the universal switch can. The universal sustain was toggled by two different notes on the EWI, usually the two highest.

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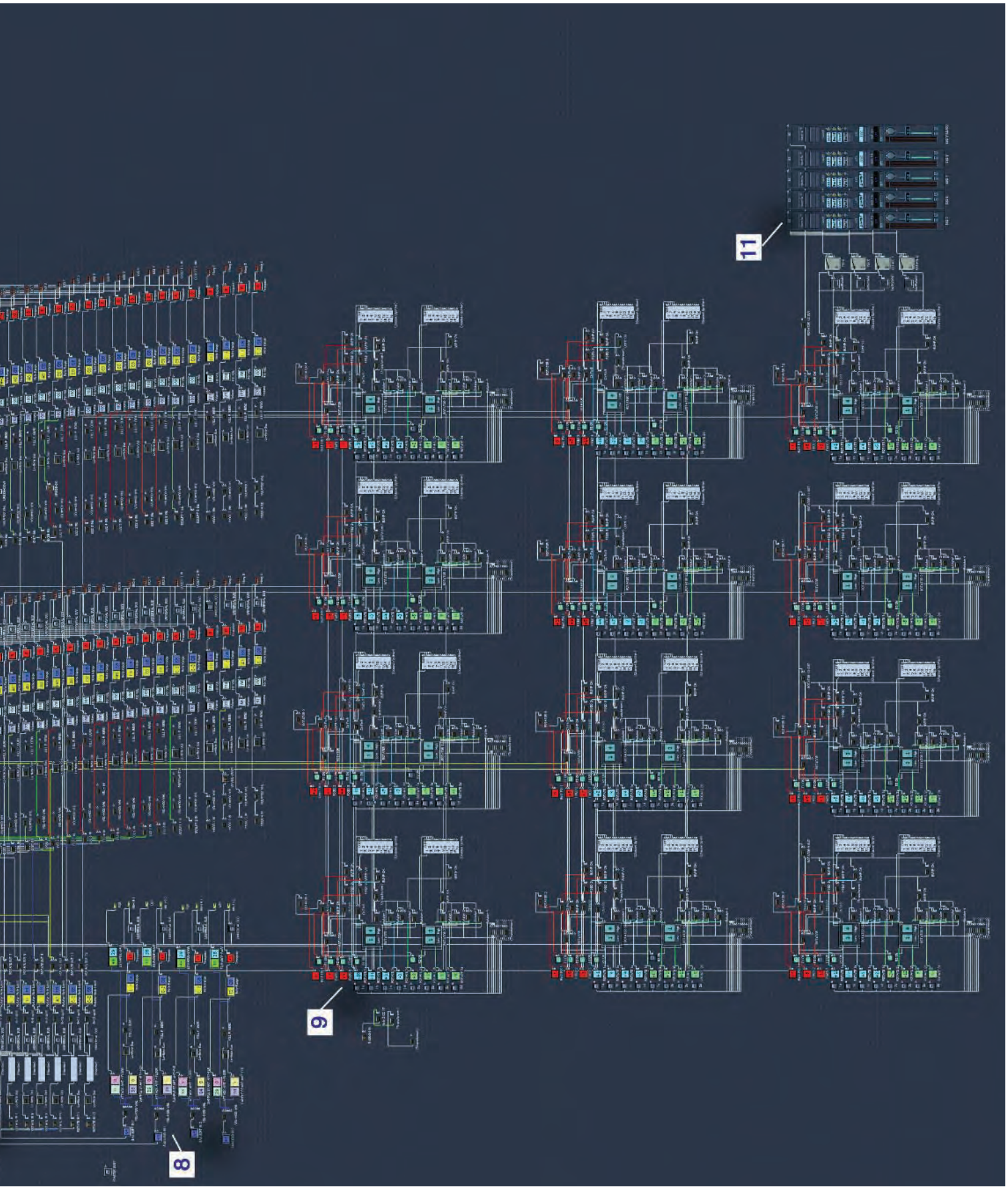
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