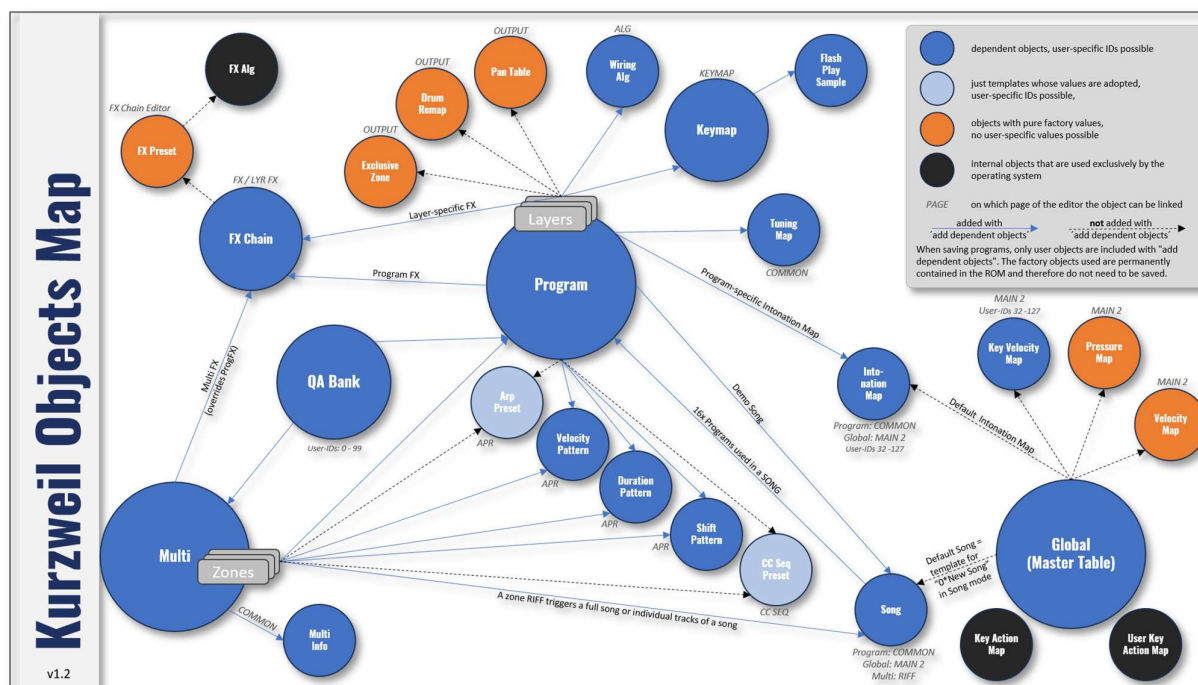


Kurzweil Objects Guide v1.2

In order to be able to reuse various settings or configurations, they are saved in so-called **objects**, e.g. effect chains (FX chains), arpeggiator settings but also programs themselves.

For example, a group of effects (reverb, chorus, flanger, ...) and their associated settings are stored in an FX Chain object under an object ID and an object name (e.g., ID:"5", Name:"Small Hall"). All programs or Multis can now use this FX chain by simply entering the corresponding ID in the FX settings. Important to know is that only the FX chain ID is stored in the Program or Multi– that's all you need, since all effect settings are already stored in the FX chain. So a program stores a reference to another object, but not its settings again. An object is thus a **dependent** of another object.

This object orientation is generally used in the Kurzweil keyboards for different object types. This image shows an overview of all object types used and their dependencies.



Updates of the factory objects are distributed together with operating system updates of the Kurzweil keyboards and also have their own version numbers. For example, the v1.10 update for the Kurzweil K2700 has the Operating System version 4.46.37288 and the Objects version 1.04. In this Objects version there are 9145 Objects (1545 Programs, 964 Keymaps, 2790 FX-Chains, ...)! By the way, these updates do not contain the factory **Samples**: they are located in a memory module in the keyboard and cannot be updated or stored anywhere else.

The factory objects are permanently installed in the memory of the Kurzweil workstations and do not need to be backed up. Programs or Multis that you create or load yourself are stored as **User Objects**. They can either use the factory keymaps, FX chains, etc. or bring new objects with them.

However, if you save or load user programs, any user objects used have to be integrated accordingly so that everything works. This is achieved by confirming the "**Store/Load Dependent Objects**" question.

The following table gives an overview of all objects used in Kurzweil Keyboards.

Object Type	Description	
Multi FACTORY USER DEPENDENT	A Multi is a combination of Programs arranged as layers and splits across the keyboard in max. 16 zones.	
Multi Info FACTORY USER	Multis can display a small informative text in the Multi Mode selection page. The Multi information is stored in a separate object that will always go along with the Multi it belongs to in object operations like Load, Store, Move, Save or Delete. So it's not a dependent object – it's always combined with it' multi.	
Program FACTORY USER DEPENDENT	These are normally a single instrument, such as a piano, or an organ. A Program is similar to a “preset” or “patch” on other synthesizers and contains up to 32 layers.	
Keymap FACTORY USER DEPENDENT	A keymap belongs to a program and contains a set of samples (up to 128 sample roots) and parameters determining how each sample will play when you trigger a note. Each keymap consists of a set of keyboard note ranges. Each range has a ROM or RAM sample root assigned within the range.	
Flash Play Sample FACTORY USER DEPENDENT	A list of samples (a digital file of an audio from another source) stored in the memory of the keyboard . This can be individual samples or multi-sample objects (a combination of multiple sample roots for one instrument sound).	
Wiring Algorithm (ALG) FACTORY USER DEPENDENT	Algorithms are the core of VAST programs (Variable Architecture Synthesis Technology). The sound sources in each layer can be individually processed with an algorithm containing DSP functions .	
FX Chain FACTORY USER DEPENDENT	A sequence of audio effects used to process and enhance sounds. These effects can include reverb, delay, chorus, flanger, phaser, and many others. FX Chains can be customized and edited to achieve the desired sound, allowing musicians to create unique and complex audio textures.	
FX Preset FACTORY PRESET	A list of hundreds of predefined effects divided into types (e.g. Flanger, Chorus). The FX chains are formed from any combination of these or even customized effect boxes.	
FX Alg FACTORY INTERNAL	List of KDFX (Kurzweil Digital Effects) presets first introduced in the Kurzweil K2500 series. Used exclusively within the operating system.	
Arp Preset FACTORY USER PRESET	Use the Arp Preset to recall factory or user created Arpeggiator settings . An Arp Preset contains settings for all of the parameters on the ARP page (except for the State and KeyRange parameters, which are stored with the Program or Multi).	ARPEGGIATOR (ARP)
Velocity Pattern FACTORY USER DEPENDENT	Velocity sets the attack velocity of the played Arpeggiator notes. When you set Velocity in the Arp Editor Page to Pattern, the Velocity Patt parameter appears, which allows you to select a step sequence for arpeggiator velocity patterns .	
Duration Pattern FACTORY USER DEPENDENT	Sets the duration of each arpeggiated note according to a sequenced pattern. Duration Pattern steps are played back at the rate set for Beats. The duration of each note is a percentage of the current arpeggiator Beats value.	
Shift Pattern FACTORY USER DEPENDENT	A step sequence for arpeggiator note patterns . The note number of each played key is shifted according to a sequenced pattern , thus “Shift Pattern.”	
CC Seq Preset FACTORY USER PRESET	<i>The Continuous Controller (CC) Sequencer allows you to rhythmically modulate up to 4 program parameters (such as filter frequency) based on preset or user patterns.</i> Use the CC Seq Preset to recall factory or user created CC Sequencer settings. A CC Seq Preset contains settings for all of the parameters on the CC SEQ page (except for the State parameter, which is stored with the Program/Multi).	

Tuning Map FACTORY USER DEPENDENT	Program tuning maps can be selected and edited for each Program, to set tuning offsets for each key in cents. These maps can be used to emulate stretched tuning techniques which are commonly used for acoustic pianos and other acoustic keyboard instruments.	
Intonation Map FACTORY USER DEPENDENT	A Program Tuning Map changes the overall tuning of the instrument, while an Intonation Map allows for fine-tuning of pitches within that tuning. An Intonation Map allows you to adjust the pitches of individual notes within a scale or chord to achieve more precise intonation.	
Song FACTORY USER DEPENDENT	List of MIDI-Songs which are used for: - Song Mode: to record MIDI songs with up to 16 Tracks. - Program COMMON: Demo Song for the current program - Global: Default Song which song will be used as a new song template when 0*New Song* is selected in Song mode. - Multi RIFF: Riffs are full songs or individual tracks of a song created in the Song mode that you can trigger in Multi mode.	
Pan Table FACTORY	The Pan Table allows you to select preset per-key panning tables , so that the note that each key produces is uniquely panned. These tables are particularly useful for producing the stereo image of a drum set when creating percussion programs, or for producing the stereo image of a piano when creating piano programs.	
Drum Remap FACTORY	The Drum Remap parameter defines how drum programs are mapped , so that drum sounds can be properly remapped when using the General MIDI (GM) drum map. For instance, the 'Kurz2' map designates that the current drum kit uses a PC4 drum map.	
Exclusive Zone FACTORY	The Exclusive Zone parameter applies principally to drum programs. When using a drum program, you may want the closed hi-hat sounds to "cut off" open hi-hat sounds. Since you can remap the keymaps of drum programs, this parameter remaps "cut off keys" accordingly .	
QA Bank FACTORY USER	A Quick Access Bank contains 10 Programs or Multis that can be quickly selected by pressing the corresponding keypad (or favorites on the Forte) buttons. Up to 100 QA banks can be managed under GLOBAL - OBJECTS.	
Master Table FACTORY USER	The master table saves all central, comprehensive settings , such as key velocity, transpose, default program after switching on the keyboard. There is only one unique master table. The factory table is overwritten by user changes.	
Key Velocity Map FACTORY USER	Adjust the velocity response per key . Velocity response for each key can be adjusted by +/- 50 in the Key Velocity Map editor.	GLOBAL
Pressure Map FACTORY	The Pressure Map parameter determines the way the Keyboard controls Pressure (Aftertouch) . Different maps generate different MIDI pressure values for the same physical key depending on how hard you press and hold the key.	
Velocity Map FACTORY	The Velocity Map parameter determines the way the Keyboard generates MIDI velocity information . Different maps generate different MIDI velocity values for the same physical key strike velocity. The default map (Linear) provides the widest range of velocity expression, but you may want to choose a different map if the default does not suit your playing style.	
Key Action Map FACTORY INTERNAL	Internal configuration of the installed keybed.	
User Key Action Map FACTORY INTERNAL	Internal configuration of the installed keybed.	

FACTORY	There are factory objects of this type on board (for all object types are factory elements available)
USER	It is possible to create user elements for this object type
PRESET	Presets are only used to recall settings. The most recent settings will always be saved with the Program or Multi when the Program or Multi is saved
DEPENDENT	This object type is included in "load/store dependent objects"
INTERNAL	Not accessible to users, used exclusively within the operating system

Each object type is stored in its own table. Here are the first 30 objects of each object type of the PC4 v1.16 (object version 1.11.4):

	QUICK ACCESS	MULTI	PROGRAM	KEYMAP	SAMPLES	FX			ARP			
Object ID	QA Bank	Multi	Program	Keymap	FlashPlay Sample	FX Chain	FX Preset	FX Alg	Arp Preset	Shift Patt	Velocity Patt	Duration Patt
0			None									
1	bank1	Piano/AC Bass	Dyn 9ft Grand	Piano f Left	Stereo Pizz F#1 [ROM]	Little Booth	Small Wood Booth	MiniVerb	Default Arp	None	None	None
2	bank2	Piano/Elec Bass	Bright Jazz 9ft	Piano f Right	Stereo Pizz B1 [ROM]	Soundboard	Natural Room	Dual MiniVerb	Minority Rap	major	PseudoSine	long-short
3	bank3	Piano/Frtls Bass	Smooth Grand 9ft	Piano mf Left	Stereo Pizz B1 [ROM]	Small Dark Room	PrettySmallPlace	Gated MiniVerb	Happy 4th	minor	LoHi	long-2short
4	bank4	Piano/Synth Bass	RecitalGrand 9ft	Piano mf Right	Stereo Pizz D2 [ROM]	Sax Chamber	NiceLittleBooth	Classic Place	Super Moria	Oct +	HiLoLo	long-3short
5	bank5	E. Piano/AC Bass	RecitalGrand 9ft	Piano mp Left	Stereo Pizz F2 [ROM]	Small Hall	Sun Room	Classic Verb	Mix	Oct 2x	HiLoLoHiLoHi	6steps
6	bank6	E. Piano/E. Bass	Concert Piano	Piano mp Right	Stereo Pizz G#2 [ROM]	Medium Hall	Soundboard	TQ Place	Minor down	1's n 12's	6-pattern	8steps
7	bank7	E. Piano/Fr. Bass	Fierce Rock 9ft	Piano 3Vel L	Stereo Pizz A#2 [ROM]	Green Room	Add More Air	TQ Verb	Steady	FullMajor	12-patternA	12steps
8	bank8	E. Piano/SynBass	Punchy Edge	Piano 3Vel R	Stereo Pizz D3 [ROM]	Opera House	Standard Booth	Diffuse Place	Crazy Octaves	FullMinor	12-patternB	16steps
9	bank9	E. Piano/SlpBass	Seventies Piano	Piano 3V Easy L	Stereo Pizz F3 [ROM]	Real Nice Verb	A Distance Away	Diffuse Verb	Crazy All	Major7	X0	
10	bank10	Synbass/Synth	Blues Piano	Piano 3V Easy R	Stereo Pizz G#3 [ROM]	Empty Stage	Live Place	OmniPlace	AndUpAndDown	Minor7	0X	
11	bank11	Synbass/Synth 2	New Orleans	Piano f Mono	Stereo Pizz B3 [ROM]	Med Drum Room	Viewing Booth	OmniVerb	Fast Octaves	MajorMaj7	X00	
12	bank12	Synbass/Synth 3	Modern Rock Pno	Piano mf Mono	Stereo Pizz C#4 [ROM]	AbbeyPianoHall	Small Closet	Panaural Room	Dim Shred	Sus2	X00	
13	bank13	E. Bass/Synth	Stadium Pop Pno	Piano mp Mono	Stereo Pizz E4 [ROM]	Predelay Hall	Add Ambience	Stereo Hall	Play Chords	Sus4	X000	
14	bank14	Frtl. Bass/Synth	Rich Grand 7ft	Piano 3Vel Mono	Stereo Pizz G4 [ROM]	Sweeter Hall	With A Mic	Grand Plate	Play Chords 2	FullSpanish	X000	
15	bank15	SynPad/Lead 1	Studio Grand 7ft	Piano 3V Easy M	Stereo Pizz A#4 [ROM]	Concert Hall	BrightSmallRoom	Finite Verb	Flowers	Dim	X000	
16	bank16	SynPad/Lead 2	Solo Grand 7ft	Piano 440 f L	Stereo Pizz C#5 [ROM]	Symphony Hall	Bassy Room		Test Drive	Dim7d	X0000X	
17	bank17	SynPad/Lead 3	Intimate Pno 7ft	Piano 440 f R	Stereo Pizz E5 [ROM]	Cathedral Chorus	Percussive Room		Test Drive2	Dim7m	X0000X	
18	bank18	Synth/Lead 1	Stereo Pno K26	Stereo Pno K26	Stereo Pizz G#5 [ROM]	DeepChorsDlyHall	SmallStudioRoom		Octave Machine	PentaA	X0000X	
19	bank19	Synth/Lead 2	Concert Pno K26	Piano 440 mf R	Stereo Pizz C6 [ROM]	Omni Stage	ClassRoom		OctaveMachine2	PentaB	X0000X	
20	bank20	Synth/Lead 3	Horowitz Grand	Piano 440 mp L	Stereo Pizz E6 [ROM]	Classic Plate	Utility Room			PentaC	X000000X	
21	bank21	Pad/Synth 1	Rubenstein Comp	Piano 440 mp R	Stereo Pizz G#6 [ROM]	MediumWarm Plate	Thick Room			Maj Arp Oct	X000000X	
22	bank22	Pad/Synth 2	Deb's Ghost Pno	Piano 440 3Vel L	Stereo Pizz C7 [ROM]	Real Plate	The Real Room			Root 5 Oct 5	X000000X	
23	bank23	Pad/Synth 3	VintageGrand 7ft	Piano 440 3Vel R	Stereo Trem F1 [ROM]	Smooth Plate	Small Drum Room			Root 5/4/5	X000000X	
24	bank24	Pad/Synth 4	Olde Pub Piano	Piano 440 3VEZ L	Stereo Trem A1 [ROM]	Gated Plate	Real Big Room			1st inv M	X000000X	
25	bank25	Pad/Synth 5	Upright Piano	Piano 440 3VEZ R	Stereo Trem C#2 [ROM]	Basic Delay 1/8	The Comfy Club			1st inv M2	X000000X	
26	bank26	Pad/Synth 6	Pub Piano	Piano 440 f Mono	Stereo Trem D#2 [ROM]	4-Tap Delay BPM	Spitty Drum Room			1st inv M	X000000X	
27	bank27	String/Voice 1	Mono Upright	Piano 440 mf M	Stereo Trem F#2 [ROM]	Echo Flecks BPM	Stall One			2nd inv M	X000000X	
28	bank28	String/Voice 2	Mono Piano	Piano 440 mp M	Stereo Trem A#2 [ROM]	Timbered Taps	Green Room			2nd inv M	pat12A	
29	bank29	String/Voice 3	R&B Stack	Piano 440 3Vel M	Stereo Trem C#3 [ROM]	Dub Delay	Table Room			BacknForth	pat12B	
30	bank30	String/Voice 4	Bright PnoPad7ft	Piano 440 3VEZ M	Stereo Trem D#3 [ROM]	Sm Stereo Chorus	Large Room			1InvMin3	pat12C	

	ALG	CC SEQ	OUTPUT			COMMON			GLOBAL - MASTER TABLE					
Object ID	Wiring Alg	CC Seq Preset	Excl Zone	Drum Map	Pan Map	Inton Table	Tuning Map	Song	Master Table	Veloc Map	Key Velocity	Press Map	Key Action Map	User Key
														Action Map
0														
1	ALG	Simple Filter	DrumExcl1	Normal	Drmpan01	Equal	Railsback	New Song	PC4 Master Table	Linear	Flat	Linear	TP40H_BA v0	TP40H
2	ALG	Keys Up Sync	DrumExcl2	PC2ReMap		Just	Grand Eight Ft	Rock & Funk		Light1		Easy	TP40H_WA v0	TP40L
3	ALG	Slight Random	DrumExcl3	Kurz1ReMap		Just/b7th	Tines EPiano	Pop & Country		Light2		Easier	TP40L_BA v0	TP10MDF
4	ALG	Modwheel	DrumExcl4	Kurz2ReMap	Pnopan40	Harmonic		Late Bloomer		Light3		Easiest	TP40L_BR v0	TP8LF
5	ALG	Pan	DrumExcl5	Kurz3ReMap	Pnopan25	JustHarm		AOR Landscape		Hard1		Hard	TP40L_WA v0	TP40Lv1
6	ALG	Sync to Arp	DrumExcl6	Kurz4ReMap	Pnopan20	Werkmeister				Hard2		Harder	TP40L_WR v0	
7	ALG	Mono Power	DrumExcl8		Perc Pan	1/5thComma				Hard3		Hardest	TP8LF_BA v0	
8	ALG	Expression Trian	PercExcl1		GMpan01	1/4thComma				PianoTouch			TP8LF_WA v0	
9	ALG	Filter Freq+Reso	GMExcl01		GMpan02	IndianRaga				Easy Touch			TP10MDF_WA v0	
10	ALG		GMExcl02		DrumPan02	Arabic	Late Bloomer			GM Receive			TP10MDF_BA v0	
11	ALG		DrumExcl09		DrumPan03	BaliJava1	Gina Piano						TP10MDF_WR v0	
12	ALG		DrumExcl10			BaliJava2	PianoMellow1						TP10MDF_BR v0	
13	ALG					BaliJava3	Country Piano						TP40L_WA v1	
14	ALG					Tibetan	Rock Piano						TP40L_BA v1	
15	ALG					Carlos A	CP80 1							
16	ALG					Pyth/avg4	Deep Fuzz EP							
17	ALG					Pyth/dim5	Wah EP							
18	ALG					EastMed	Wdstk EP Reed							
19	ALG						PianoGospel							
20	ALG						ClavRokWAHswitch							
21	ALG						ClavFunk Comp							
22	ALG						ClavFunk Comp2							
23	ALG						ClavDisco							
24	ALG						ClavWAHfunk							
25	ALG						Ezra's Burner							
26	ALG						Boston Screamer							
27	ALG						Mellow Mitch							
28	ALG						HotTubeGospel							
29	ALG						Blues&Gospel							
30	ALG						ELQstrings							

The user objects are stored in their own area, which is ID 4096 – 8191 for the PC4/K2700 and ID 1024 – 4095 for the Forte (for exceptions, see Object Map). The user area of the PC4/K2700 is completely unoccupied and usable. Forte users should know that some of the IDs in the user area are occupied by factory objects.

MODE:Global Object Utils		6/14
1:	Program 4096 Dyn 9ft Grand	
2:	Program 4097 Suitcase EP	
3:	Program 4098 Rich Grand 7ft	
4:	Program 4099 Clavi AC	
5:	Program 4100 Stevie Fuzz	
6:	Program 4101 Big Rotary B3	
7:	Program 4102 EG Style Organ	
8:	Program 4103 Studio A Strings	
9:	Program 4104 VerySlowVeryThick	
10:	Program 4105 Evolving Pad	
11:	Program 4106 Divider	
12:	Program 4107 Classic Saws	
SELECT	TYPE	OPTIONS
MOVE	DELETE	QA BANKS

Use the **Global Object Utils** page to check, move, delete User objects or to edit your QA Banks.

Caution: Deleted User objects can not be restored. All User objects that you wish to save should be saved to an external USB device before deleting. Dependents can be added under OPTIONS.

Regularly back up your user data on different devices and keep different versions for a while!