

ANNEXE

TABLEAU DE DEPANNAGE

Le V50 possède un grand nombre de fonctions. Chacune de ces fonctions est étroitement liée aux autres fonctions et une fonction peut parfois avoir un effet inattendu sur une autre fonction. Une autre éventualité est que votre ampli ou table de mixage ne fonctionne pas correctement. Ce chapitre vous expliquera certaines des difficultés que vous pourriez rencontrer et vous indiquera les causes possibles.

Les points suivants vous aideront à déterminer si le problème est dû au V50 lui-même ou s'il a trait au système d'amplification/ haut-parleurs ou aux connexions audio et MIDI.

- Branchez un casque d'écoute au V50 et contrôlez si le son est arrivé. S'il le son arrive, le problème se trouve au niveau de l'ampli ou de la table de mixage, ou encore dans les câbles utilisés pour les connexions.

- Contrôlez si le problème persiste avec d'autres performances ou voix.

Si le problème ne se produit qu'avec une seule voix ou performance, le problème réside au niveau du réglage de la voix ou la performance. Si le problème se produit avec toutes les voix ou performances, contrôlez les autres réglages (mode utilitaire, etc.).

Si vous avez une idée générale du niveau où réside le problème, consultez les tableaux suivants:

Problèmes au niveau de l'ampli, de la table de mixage ou des câbles audio.

Problème	Raison possible	Référence
Pas de son	L'ampli est-il sous tension?	---
	Le volume de l'ampli (ou de la table de mixage) est-il à un niveau suffisant?	---
	Les sorties du V50 sont-elles correctement connectées aux entrées de l'ampli?	10
	Les câbles audio utilisés sont-ils en bon état?	—
Son distordu	Le V50 n'est-il pas connecté aux entrées réservées aux micros?	10

Problèmes au niveau de la performance

Problème	Raison possible	Référence
Pas de son	Les réglages du nombre maximal de notes sont-ils corrects?	25
	Les canaux MIDI de réception et de transmission sont-ils compatibles?	26, 106
	Le volume est-il à un niveau suffisant pour tous les instruments?	28
	L'assignation de sortie des différents instruments n'est-elle pas désactivée?	28
	Les réglages de note limite inférieure et de note limite supérieure sont-ils corrects pour tous les instruments?	26
	Des instruments sont-ils désactivés?	26
Les touches jouent des notes dont la hauteur n'est pas correcte.	La fonction "note shift" est-elle réglée sur une valeur différente de 0?	28
	La fonction "detune" est-elle réglée sur une valeur différente de 0?	27
	Les réglages de micro-accordage sont-ils corrects?	29
Hauteur instable	Utilisez-vous des instruments désaccordés avec le mode d'assignation alternée?	27
Il n'est pas possible de jouer des accords	Les réglages du nombre maximum de notes sont-ils corrects?	26
	Utilisez-vous une voix réglée en mode mono?	51

Problèmes au niveau de la voix

Problème	Raison possible	Référence
Pas de son	Le niveau de sortie des opérateurs est-il suffisant?	49
	Le réglage du niveau PL1-PL3 d'un générateur d'enveloppe de hauteur n'est-il pas trop bas pour être entendu?	49
	Une commande au pied commandant le volume (ou une pédale de volume) n'est-elle pas réglée sur la position minimum?	52
	Les réglages EG Bias pour la commande de souffle ou l'aftertouch ne sont-ils pas trop hauts?	54, 55
Les touches jouent des notes dont la hauteur n'est pas correcte.	Le réglage de transposition n'est-il pas sur une valeur différente de C3 = DO médian?	50
	Les fréquences d'oscillateur sont-elles correctes?	46
	Les oscillateurs sont-ils désaccordés?	46

Problème	Raison possible	Référence
Hauteur instable	Si les paramètres “LFO P Mode Sens” et “P Mod Depth” sont réglés sur des valeurs élevées, le fort vibrato résultant provoquera une impression de hauteur instable.	44
	Le réglage “FC Pitch” n’est-il pas différent de zéro bien qu’aucune commande au pied ne soit connectée?	52
	La hauteur est normale si les générateurs d’enveloppe de hauteur PL1 – PL3 sont tous réglés sur 50.	49
	Le réglage du paramètre P.Bias de la commande de souffle ou de l’aftertouch n’est-il pas trop élevé?	54, 55
	Le réglage “portamento time” est-il réglé sur le maximum?	52
Il n’est pas possible de jouer des accords	Le mode mono est-il sélectionné?	51

Problèmes dans d’autres zones

Problème	Raison possible	Référence
Pas de son	Le réglage de vitesse fixe n’est-il pas trop bas?	124
	Le volume du synthétiseur n’est-il pas réglé sur zéro?	118
Certaines touches ne produisent pas de son	Le réglage “note on/off” n’est-il pas réglé sur “odd” ou “even”?	108
Les touches jouent des notes dont la hauteur n’est pas correcte.	Le réglage “Master Tuning” n’est-il pas différent de zéro?	118
Il n’est pas possible de jouer des voix ou performances de la carte.	Le contenu de la banque de la carte est-il correct?	102
	La banque sélectionnée est-elle la bonne?	102

Problèmes relatifs au séquenceur

Problème	Raison possible	Référence
Le séquenceur ne produit pas de son	Le volume du synthétiseur est-il à un niveau suffisant?	118
	Les voyants à DEL [TR1] à [TR8] ne sont-ils pas allumés?	92
	Les canaux de transmission de chaque piste correspondent-ils aux canaux de réception du synthétiseur?	26, 95

Problèmes relatifs à la boîte à rythmes

Problème	Raison possible	Référence
La boîte à rythmes ne produit pas de son.	Le volume de la boîte à rythmes est-il suffisant?	82

Voix pré-programmées

La mémoire des pré-sélections du V50 contient les voix suivantes:

00	Strings 1	26	MellowBrs	50	FolkGtr 1	75	IceBell
01	PowerBrass	28	FloatBrass	51	FolkGtr 2	76	SpaceBell
02	MetalSpace	27	Trumpet	52	E.Guitar 1	77	Sunbeam
03	Piano 1	29	Trombone	53	E.Guitar 2	78	BreathHit
04	E.Piano	30	Sax	54	Guitar	79	Suspense
05	ClinkDecay	31	Strings 2	55	FingerdB.	80	Wire 1
06	SoftCloud	32	Strings 3	56	SynBass 2	81	Whasp
07	Metalimba	33	BrightStrg	57	SynBass 3	82	Sandarimba
08	PanFlute	34	WideString	58	FretlessB.	83	Cosmic
09	SynBass 1	35	SoftString	59	UprightBass	84	Elegant
10	E.Piano 2A	36	Strings 4	60	Flute	85	HuskeyOrg.
11	E.Piano 2B	37	ClassicStr	61	Oboe	86	Wire 2
12	PianoAtck	38	Strg+Chime	62	Clarinet	87	Wire 3
13	E.Organ 1	39	CelloEns.	63	Violin	88	Wire 4
14	E.Organ 2	40	Pizzicato	64	Cello	89	Bells
15	Vibe	41	Ensemble 1	65	Whistle	90	SteelDrum
16	Marimba	42	DayBreak	66	Recorder	91	ShrineBell
17	Celeste	43	FluteVoice	67	Harmonical	92	Soffimpani
18	Clavi	44	AngelChoir	68	Harmonica2	93	OilDrum
19	LargePipes	45	Ensemble 2	69	Harp	94	HandBells
20	SolidBrs	46	PEGvoice	70	AnalogLead	95	Strike 1
21	LowCutBrs	47	Ensemble 3	71	Dist.Lead	96	Strike 2
22	HiPeakBrs	48	WoodEns.	72	MetalAtck	97	Space
23	AttackBrs	49	Universe	73	WoodThump	98	Woosh
24	SoftLead	50	Forest	74	PuffPanFlt	99	Thunder

Performances pré-programmées

La mémoire des présélections du V50 contient les performances suivantes.

00	"V"Lead 1	25	Sequence	50	Scatter 2	75	Bs/E.Piano
01	"V"Brass 1	26	VibeEp	51	W-limba	76	Bs/Wire
02	Metal 1	27	PopsBrass2	52	TakeOff	77	Bs/MuteTp.
03	BalladEp	28	SaxSection	53	GrowVoice	78	Explosion
04	Piano	29	Waahz	54	Harp	79	Ac.Guitar
05	Ensemble 1	30	Mystery	55	Ep+Strings	80	Valley
06	"V"String1	31	Fanfare	56	"V"Brass 3	81	Metal 3
07	12stGuitar	32	DeepBell	57	"V"Brass 4	82	HolloWood
08	PopsBrass1	33	E.Organ 1	58	PanFlute	83	Fugue
09	Universe	34	Clinkimba	59	Huskey	84	Dist.Lead
10	Pizzicato	35	Meteor	60	E.Guitar	85	E.Organ 2
11	SaxLead	36	Strings 1	61	VlbePiano	86	Tinkle
12	WarmStrgs	37	"V"Bass 2	62	"V"Bass 3	87	Tropical
13	"V"String2	38	"DX"Ep	63	Strings 2	88	Elegant
14	"V"Bass 1	39	FloatChime	64	Resonance	89	SteelPiano
15	PuffBrass	40	Ensemble 2	65	SoftBrass	90	Ensemble 4
16	Cotton	41	PanBells	66	Ensemble 3	91	Metal 4
17	Sunbeam	42	BigBand	67	"V"Bass 4	92	OilDrum
18	Metal 2	43	AttackBass	68	TaikoBells	93	DragonHit
19	SpaceBells	44	"V"Lead 3	69	WirePiano	94	*Pops
20	HeavyMetal	45	"V"Lead 4	70	Clavi	95	*Punk
21	Chorus	46	SeqMarimba	71	Stakkato	96	*Rock
22	"V"Lead 2	47	Bells 1	72	Harmonica	97	*Jazz
23	MildBrass	48	Bells 2	73	PuffLead	98	*Latin
24	"V"Brass 2	49	Scatter 1	74	Bs/Brass	99	*V50 Demo

Réglages de performance initialisés

SNGL

NAME	SINGLE							
INST NUMBER	1	2	3	4	5	6	7	8
ASSIGN MODE	DVA							
NOTES	0	off	off	off	off	off	off	off
VOICE NUMBER	100	*	*	*	*	*	*	*
MIDI RECEIVE CH	1	*	*	*	*	*	*	*
LIMIT / LOW	C-2	*	*	*	*	*	*	*
LIMIT / HIGH	G8	*	*	*	*	*	*	*
INST DETUNE	+0	*	*	*	*	*	*	*
NOTE SHIFT	+0	*	*	*	*	*	*	*
VOLUME	99	*	*	*	*	*	*	*
OUTPUT ASSIGN	L+R	*	*	*	*	*	*	*
LFO SELECT	1	*	*	*	*	*	*	*
MICRO TUNING	Equal							
	off	*	*	*	*	*	*	*
P. EFFECT	off	*	*	*	*	*	*	*
EFFECT	off	*	*	*	*	*	*	*

DUAL

NAME	DUAL							
INST NUMBER	1	2	3	4	5	6	7	8
ASSIGN MODE	DVA							
NOTES	0	0	off	off	off	off	off	off
VOICE NUMBER	100	100	*	*	*	*	*	*
MIDI RECEIVE CH	1	1	*	*	*	*	*	*
LIMIT / LOW	C-2	C-2	*	*	*	*	*	*
LIMIT / HIGH	G8	G8	*	*	*	*	*	*
INST DETUNE	+0	+2	*	*	*	*	*	*
NOTE SHIFT	+0	+0	*	*	*	*	*	*
VOLUME	99	99	*	*	*	*	*	*
OUTPUT ASSIGN	L+R	L+R	*	*	*	*	*	*
LFO SELECT	1	2	*	*	*	*	*	*
MICRO TUNING	Equal							
	off	off	*	*	*	*	*	*
P. EFFECT	off	off	*	*	*	*	*	*
EFFECT	off	off	*	*	*	*	*	*

SPLIT

NAME	SPLIT							
INST NUMBER	1	2	3	4	5	6	7	8
ASSIGN MODE	DVA							
NOTES	0	0	off	off	off	off	off	off
VOICE NUMBER	100	100	*	*	*	*	*	*
MIDI RECEIVE CH	1	1	*	*	*	*	*	*
LIMIT / LOW	C-2	C3	*	*	*	*	*	*
LIMIT / HIGH	B2	G8	*	*	*	*	*	*
INST DETUNE	+0	+0	*	*	*	*	*	*
NOTE SHIFT	+0	+0	*	*	*	*	*	*
VOLUME	99	99	*	*	*	*	*	*
OUTPUT ASSIGN	L+R	L+R	*	*	*	*	*	*
LFO SELECT	1	2	*	*	*	*	*	*
MICRO TUNING	Equal							
	off	off	*	*	*	*	*	*
P. EFFECT	off	off	*	*	*	*	*	*
EFFECT	off	off	*	*	*	*	*	*

8LYR

NAME	8 LAYER							
INST NUMBER	1	2	3	4	5	6	7	8
ASSIGN MODE	DVA							
NOTES	0	0	0	0	0	0	0	0
VOICE NUMBER	100	100	100	100	100	100	100	100
MIDI RECEIVE CH	1	1	1	1	1	1	1	1
LIMIT / LOW	C-2	C-2	C-2	C-2	C-2	C-2	C-2	C-2
LIMIT / HIGH	G8	G8	G8	G8	G8	G8	G8	G8
INST DETUNE	+0	+0	-1	+1	-2	+2	-4	+4
NOTE SHIFT	+0	+0	+0	+0	+0	+0	+0	+0
VOLUME	92	92	92	92	92	92	92	92
OUTPUT ASSIGN	L+R	L+R	L+R	L+R	L+R	L+R	L+R	L+R
LFO SELECT	1	2	vib	vib	vib	vib	vib	vib
MICRO TUNING	Equal							
	off	off	off	off	off	off	off	off
P. EFFECT	off	off	off	off	off	off	off	off
EFFECT	off	off	off	off	off	off	off	off

4LYR

NAME	4 LAYER							
INST NUMBER	1	2	3	4	5	6	7	8
ASSIGN MODE	DVA							
NOTES	0	0	0	0	off	off	off	off
VOICE NUMBER	100	100	100	100	*	*	*	*
MIDI RECEIVE CH	1	1	1	1	*	*	*	*
LIMIT / LOW	C-2	C-2	C-2	C-2	*	*	*	*
LIMIT / HIGH	G8	G8	G8	G8	*	*	*	*
INST DETUNE	-2	-1	+1	+2	*	*	*	*
NOTE SHIFT	+0	+0	+0	+0	*	*	*	*
VOLUME	95	95	95	95	*	*	*	*
OUTPUT ASSIGN	L+R	L+R	L+R	L+R	*	*	*	*
LFO SELECT	1	2	vib	vib	*	*	*	*
MICRO TUNING	Equal							
	off	off	off	off	*	*	*	*
P. EFFECT	off	off	off	off	*	*	*	*
EFFECT	off	off	off	off	*	*	*	*

SEQ4

NAME	SEQUENCER4							
INST NUMBER	1	2	3	4	5	6	7	8
ASSIGN MODE	DVA							
NOTES	0	0	0	0	off	off	off	off
VOICE NUMBER	100	101	102	103	*	*	*	*
MIDI RECEIVE CH	1	2	3	4	*	*	*	*
LIMIT / LOW	C-2	C-2	C-2	C-2	*	*	*	*
LIMIT / HIGH	G8	G8	G8	G8	*	*	*	*
INST DETUNE	+0	+0	+0	+0	*	*	*	*
NOTE SHIFT	+0	+0	+0	+0	*	*	*	*
VOLUME	99	99	99	99	*	*	*	*
OUTPUT ASSIGN	L+R	L+R	L+R	L+R	*	*	*	*
LFO SELECT	1	2	vib	vib	*	*	*	*
MICRO TUNING	Equal							
	off	off	off	off	*	*	*	*
P. EFFECT	off	off	off	off	*	*	*	*
EFFECT	off	off	off	off	*	*	*	*

SEQ8

NAME	SEQUENCER8							
INST NUMBER	1	2	3	4	5	6	7	8
ASSIGN MODE	DVA							
NOTES	0	0	0	0	0	0	0	0
VOICE NUMBER	100	101	102	103	104	105	106	107
MIDI RECEIVE CH	1	2	3	4	5	6	7	8
LIMIT / LOW	C-2	C-2	C-2	C-2	C-2	C-2	C-2	C-2
LIMIT / HIGH	G8	G8	G8	G8	G8	G8	G8	G8
INST DETUNE	+0	+0	+0	+0	+0	+0	+0	+0
NOTE SHIFT	+0	+0	+0	+0	+0	+0	+0	+0
VOLUME	99	99	99	99	99	99	99	99
OUTPUT ASSIGN	L+R	L+R	L+R	L+R	L+R	L+R	L+R	L+R
LFO SELECT	1	2	vib	vib	vib	vib	vib	vib
MICRO TUNING	Equal							
	off	off	off	off	off	off	off	off
P. EFFECT	off	off	off	off	off	off	off	off
EFFECT	off	off	off	off	off	off	off	off

Réglages de voix initialisés

					VOICE NAME	INIT VOICE		
OPERATOR		1	2	3	4	POLY / MONO MODE	Poly	
ALGORITHM		1				PITCH BEND RANGE	4	
FEEDBACK LEVEL		0				FOOT SW	Sus	
LFO	WAVE	triangl				PORTAMENTO	MODE	Full
	SPEED	35				FOOT CONTROL	TIME	0
	DELAY	0					VOLUME	40
	SYNC	off					PITCH	0
	PWD	0					AMPLITUDE	0
	AMD	0				MODULATION	PITCH	50
SENSITIVITY	PWS	6				WHEEL	AMPLITUDE	0
	AMS	0					PITCH	0
	AME	off	off	off	off	BREATH CONTROL	AMPLITUDE	0
	EBS	0	0	0	0		PITCH BIAS	+0
	KVS	+0	+0	+0	+0		EG BIAS	0
OSCILLATOR	MODE	r	r	r	r	AFTER TOUCH	PITCH	0
	FIX SHIFT	*	*	*	*		AMPLITUDE	0
	FIX RANGE	*	*	*	*		PITCH BIAS	+0
	FREQUENCY	1.00	1.00	1.00	1.00		EG BIAS	0
	WAVE	W1	W1	W1	W1	REVERB	RATE	off
	DETUNE	0	0	0	0	EFFECT		
ENVELOPE GENERATOR	AR	31	31	31	31		SELECT	off
	D1R	31	31	31	31		BALANCE	*
	D1L	15	15	15	15		OUT LEVEL	*
	D2R	0	0	0	0		STERED MIX	*
	RR	15	15	15	15		PARAM 1	*
	SHIFT	off	off	off	off		PARAM 2	*
PITCH ENVELOPE GENERATOR	PR1	99					PARAM 3	*
	PL1	50						
	PR2	99						
	PL2	50						
	PR3	99						
	PL3	50						
OUTPUT LEVEL		90	0	0	0			
KEYBOARD	RATE	0	0	0	0			
SCALING	LEVEL	+0	+0	+0	+0			
TRANPOSE		C3						

● Section synthétiseur

Clavier:	61 touches (C1 – C6), sensible à la pression et à la vitesse.
Générateurs de son:	FM à 4 opérateurs, 8 algorithmes, 8 formes d'onde au choix.
Polyphonie:	16 notes max., priorité à la dernière note, multi-timbre à 8 voix.
Mémoire interne:	100 voix internes, 100 voix pré-programmées, 100 performances internes, 100 performances pré-programmées, 12 (3 × 4 types) d'effets de performance ("delay", "pan", "chord"), 2 systèmes de micro-accordage (octave, clavier), table de changements de programme, configuration du système.

● Section séquenceur

Pistes:	8 (polyphonie: 16 notes maximum par piste)
Morceaux:	8
Résolution:	1/192ème de mesure (horloge interne), 1/96ème de mesure (synchronisation MIDI), 1/32ème de mesure (enregistrement pas à pas)
Mémoire interne:	64 KO (environ 16.000 notes)

● Section rythmique

Génération des sons:	PCM
Polyphonie:	8 notes
Mémoire interne:	100 motifs pré-programmés, 100 motifs internes

● Autres

Effets numériques:	32 types (paramètres programmables pour chaque voix et performance)
Bornes:	OUTPUT L/MONO, OUTPUT R, VOLUME, FC, FS, PLAY/STOP, MIDI IN, OUT, THRU, BREATH CONTROL, PHONES
Affichage:	40 caractères × 2 lignes, éclairé par l'arrière
Consommation en courant:	25W
Alimentation:	Modèle pour les Etats-Unis et le Canada: 120V, 60Hz Modèle universel: 220 – 240V, 50Hz
Dimensions (L x H x P):	1002mm × 326mm × 98mm
Poids:	11,2 kg

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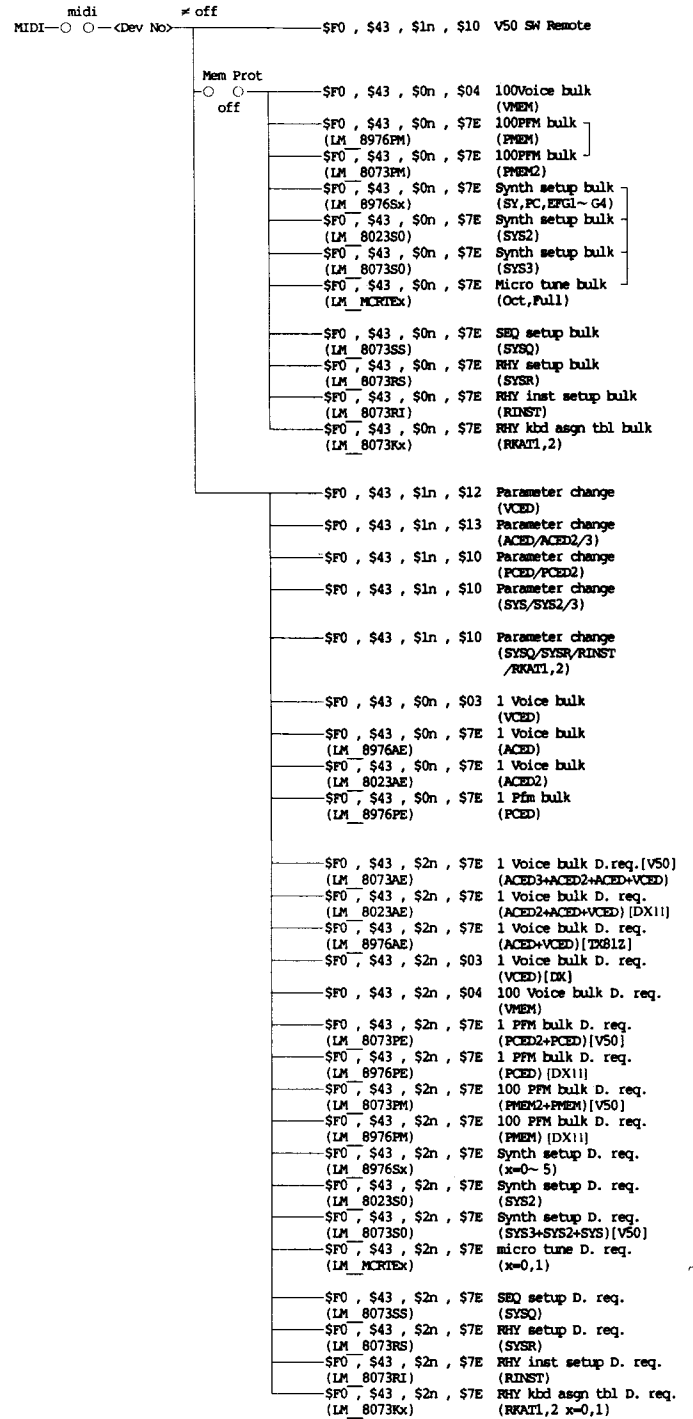
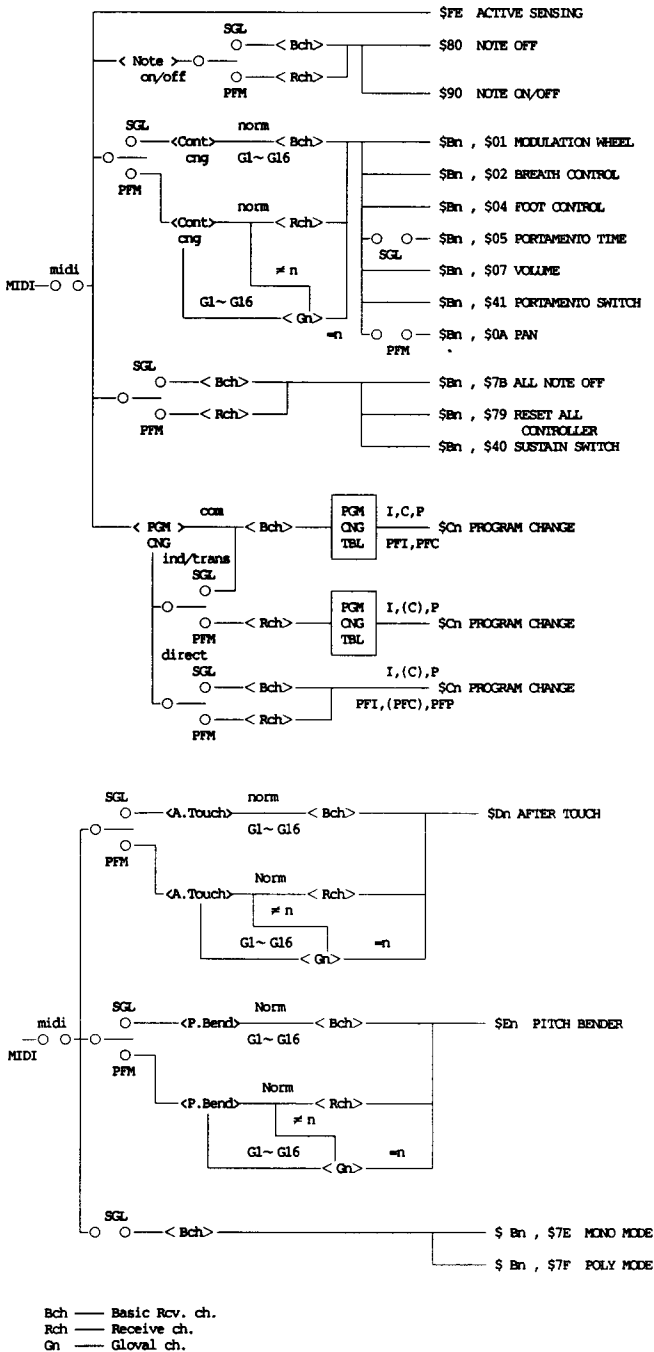
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MIDI DATA FORMAT

SYNTHESIZER SECTION

MIDI reception/ transmission block diagram

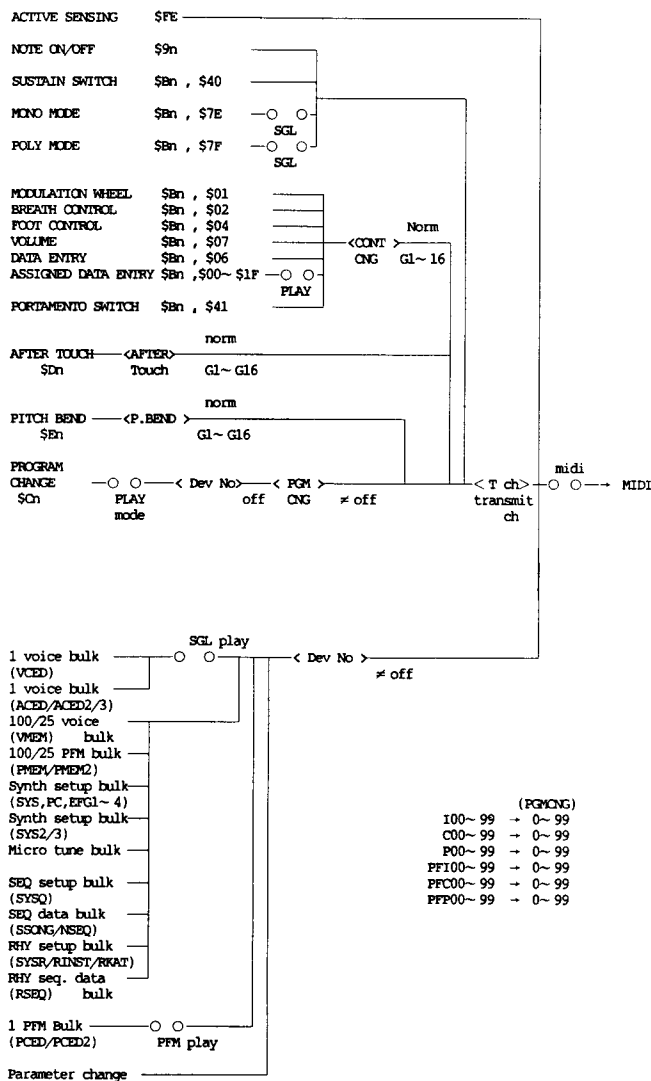
1. MIDI reception conditions



Dev No = Device Number

VCED = Voice edit buffer
 ACED = Additional voice edit buffer (for TXB12)
 ACED2/3 = Additional voice edit buffer 2/3 (for DX11/V50)
 PCED = Performance edit buffer
 PCED2 = Performance edit buffer 2
 VMEM = Voice memory
 PMEM = Performance memory
 PME2 = Performance memory 2

2. MIDI transmission condition



3. Channel message

3.1 Transmission

3.1.1 Note on/off

Transmitted note range = C1 (36) – C6 (96)
Velocity range = 0 – 127 (0: note off)

3.1.2 Control change

When the following controllers are moved, MIDI is transmitted.

ctl#	parameter	data rng
1	Modulation wheel	0...127
2	Breath control	0...127
4	Foot control	0...127
6	Data entry slider at not play mode	0...127
7	Volume pedal	0...127
64	Sustain switch	0, 127
65	Portamento switch	0, 127
0~31	Assigned Data entry slider at Play mode	0...127

*1 The control change switch cannot turn transmission on/off.

- ◆ In system setup mode, the transmission mode can be selected.
 - off : No control changes are transmitted.
 - norm/G1 – G16 : Transmitted on the channel specified by Trns.ch

3.1.3 Program change

When a voice is selected in single mode, or when a performance is selected in performance mode, a program change is transmitted. Regardless of the mode, the program change number is assigned as follows.

I, P, C, PFI, PFC, PFP 00-99	→	Program change no. 00-99
---------------------------------	---	-----------------------------

Transmission can be turned on/off by mode.

- 1) off:
program changes are not transmitted
- 2) common/individual/direct:
Transmitted when voice/performance is selected in SYNTH mode.
However, program changes transmitted from the internal sequencer for data created on the V50 consist of bytes, and are transmitted as follows.

pgm change	mode & memory		
#119	IND	INT	(I)or(C)
#120	not	used	
#121	IND	PRESET	(P)
#122	SGL	INT	(I)
#123	SGL	CARD	(C)
#124	SGL	PRESET	(P)
#125	PFM	INT	(PFI)
#126	PFM	CARD	(PFC)
#127	PFM	PRESET	(PFF)

See the reception section for the meaning of mode (IND/SGL/PFM).

- 3) Transfilter:
Transmit on the channel specified by Trans ch. However program changes from the internal sequencer will be transmitted as a single byte without program changes above 119 (for SEQ mode). (For tone generators other than the V50.)

3.1.4 Pitch bend

Pitch bend is transmitted with 7 bit resolution.

- ◆ Transmission on/off is possible in system setup (off, norm, G1 – G16). The contents are the same as for control change.)

3.1.5 Aftertouch

- ◆ Transmission on/off is possible in system setup (off, norm, G1 – G16). The contents are the same as for control change.)

3.1.6 Channel mode messages

The following messages are transmitted when the mono/poly mode of a voice is changed.

- ★ MONO mode (\$Bn, \$7E, \$01) only in single mode
- ★ POLY mode (\$Bn, \$7F, \$00) only in single mode

3.2 Reception

3.2.1 Note on/off

Note reception range = C-2 — G8
Velocity range = 0 — 127 (only note on)

- ◆ In system setup, the following settings are possible.
- normal = all note numbers are received
- odd = only odd note numbers are received
- even = only even note numbers are received

3.2.2 Control change

The following parameters can be controlled via MIDI.

4. System exclusive messages

4.1 Parameter changes

This unit transmits and receives the following 13 types of parameter change. (However, 13.Remote Switch is only received.) For 13.Remote Switch, the screen will be the same as when the switch is pressed.

- 1). VCED parameter change
- 2). ACED / ACED2 / ACED3 parameter change
- 3). PCED parameter change
- 4). PCED2 parameter change
- 5). System parameter change(SYS,SYS2,SYS3)
- 6). Effect parameter change(EFG1~4)
- 7). Micro tuning parameter change(OCT,FULL)
- 8). Program change Table para. change
- 9). SEQ system parameter change(SYSQ).....SEQ setup
- 10). rhythm system parameter change(SYSR)
- 11). rhythm inst setup parameter change(RINST1,2)
- 12). rhythm keyboard assign table system parameter change(RKAT1,2)
- 13). Remote switch parameter change

Parameter change format is as follows.

★ Format for 1) — 3)

```
11110000 f0
01000011 43
0001nnnn nnnn = Device No
0ggggghh gggggg = group number , hh = sub group number
0ppppppp ppppppp = parameter number
0ddddd dddddd = data
11110111 f7
```

For details of gggggg, hh, ppppppp, dddddd, see the following items.

- ★ For the format of 4)... see 4.1.4.
- ★ For the format of 5)... see 4.1.5.
- ★ For the format of 6)... see 4.1.6.
- ★ For the format of 7)... see 4.1.7.
- ★ For the format of 8)... see 4.1.8.
- ★ For the format of 9) — 12)... see 4.1.9.
- ★ For the format of 13)... see 4.1.10.

4.1.1 VCED parameter change

```
ggggg = 00100 (4)
hh = 10 (2)
```

VCED (Voice edit buffer) messages change data one parameter at a time. For ppppppp (parameter number) and dddddd (data), see table 1.

Single mode is automatically entered when this message is received.

4.1.2 ACED / ACED2 / ACED3 parameter change

```
ggggg = 00100 (4)
hh = 11 (3)
```

ACED/ACED2 (Additional voice edit buffer) messages change data one parameter at a time. For ppppppp (parameter number) and dddddd (data), see table 1.

Single mode is automatically entered when this message is received.

4.1.3 PCED parameter change

```
ggggg = 00100 (4)
hh = 00 (0)
pppppp = (0-109)
```

PCED (Performance edit buffer) messages change data one parameter at a time. For ppppppp (parameter number) and dddddd (data), see table 1.

Performance mode is automatically entered when this message is received.

4.1.4 PCED2 parameter change

★ Format

```
11110000 f0
01000011 43
0001nnnn nnnn = Device No
0ggggghh gggggg = 00100 (4) , hh = 00 (0)
0ppppppp ppppppp = 1101110 (110)
0kkkkkkk kkkkkkk = Parameter number
0ddddd dddddd = data
11110111 f7
```

PCED2 messages change data one parameter at a time. For kkkkkkk (parameter number) and dddddd (data), see table 1.

Performance mode is automatically entered when this message is received.

4.1.5 System parameter change (SYS, SYS2, SYS3)

★ Format

```
11110000 f0
01000011 43
0001nnnn nnnn = Device No
0ggggghh gggggg = 00100 (4) , hh = 00 (0)
0ppppppp ppppppp = 1111011 (123)
0kkkkkkk kkkkkkk = Parameter number
0ddddd dddddd = data
11110111 f7
```

These messages change system data one parameter at a time.

For kkkkkkk (parameter number) and dddddd (data), see table 3.

4.1.6 Effect parameter change

★ Format

```
11110000 f0
01000011 43
0001nnnn nnnn = Device No
0ggggghh gggggg = 00100 (4) , hh = 00 (0)
0ppppppp ppppppp = 1111100 (124:EFG1),1111000(120:EFG2)
0kkkkkkk kkkkkkk = Parameter number ,1111001(121:EFG3)
0ddddd dddddd = data ,1111010(122:EFG4)
11110111 f7
```

These messages change PFM Effect (delay, pan, chord) data one parameter at a time. The value of ppppppp sets the group number.

```
EFG1 : delay1,pan1,chord1
EFG2 : delay2,pan2,chord2
EFG3 : delay3,pan3,chord3
EFG4 : delay4,pan4,chord4
```

For kkkkkkk (parameter number) and dddddd (data), see table 3.

4.1.7 Micro tuning parameter change

★ Format

```
11110000 f0
01000011 43
0001nnnn nnnn = Device No
0ggggghh gggggg = 00100 (4) , hh = 00 (0)
0ppppppp ppppppp = 1111101 (125:OCT),1111110(126:FULL)
0kkkkkkk kkkkkkk = key number
0hhhhhhh hhhhhhh = data (high)
01111111 1111111 = data (low)
11110111 f7
```

These messages change micro tuning data one key at a time. For kkkkkkk (key number) and dddddd (data), see table 3.

4.1.8 Program change parameter change

★ Format

```
11110000 f0
01000011 43
0001nnnn nnnn = Device No
0ggggghh gggggg = 00100 (4) , hh = 00 (0)
0ppppppp ppppppp = 1111111 (127)
0kkkkkkk kkkkkkk = PGM change No
0hhhhhhh hhhhhhh = data (high)
01111111 1111111 = data (low)
11110111 f7
```

These messages change the PGM Change Table data. Data has the following meaning.

#	high data	low data
0	0 - 99	I00 - I99
1	0 - 99	C00 - C99
2	0 - 99	P00 - P99
3	0 - 99	FFI00 - FFI99
4	0 - 99	FFC00 - FFC99
5	0 - 99	FFP00 - FFP99

For kkkkkkk (PGM change number), see table 3.

4.1.9 SYSQ, SYSR, RINST, RKAT parameter change

★ Format

```

11110000 f0
01000011 43
0001nnnn nnnn = Device No
0ggggghh ggggg = 00100 (4), hh = 00 (0)
0ppppppp ppppppp = 111 - 116
0kkkkkkk kkkkkkk = Parameter number
0ddddd dddddd = data
11110111 f7

p=111 : SYSQ ( SEQ system )
p=112 : SYSR ( RHYTHM system )
p=113 : RINST1 ( RHYTHM inst setup (VOL,PAN))
p=114 : RINST2 ( RHYTHM inst setup (NOTE))
p=115 : RKAT1 ( RHYTHM kbd assign table 1 )
p=116 : RKAT2 ( RHYTHM kbd assign table 2 )

```

These messages change the setup data for rhythm and sequencer, one parameter at a time. Some of these parameters are not received while playing.

For kkkkkkk (parameter number) and dddddd (data), see table 3.

4.1.10 Remote switch parameter change

★ Format

```

11110000 f0
01000011 43
0001nnnn nnnn = Device No
0ggggghh ggggg = 00100 (4), hh = 00 (0)
0ppppppp ppppppp = 1110110 (118)
0kkkkkkk kkkkkkk = switch number
0ddddd dddddd = data
11110111 f7

ddddd = 1111111 ($7F) ON
= 0000000 OFF

```

These parameters are for reception only, and allow all panel switches to be remotely controlled. They cause the same effect as when that switch is pressed. Reception for this data cannot be turned off by the various MIDI switches.

For kkkkkkk (switch number), see table 1.

4.2 Voice data bulk dump

There are two types of voice data bulk dump, as follows.

- 1) Voice edit buffer bulk dump
- 2) Voice memory bulk dump

◆ For the format details of each type of bulk data dump, see tables 1, 2, and 3.

4.2.1 Voice edit buffer bulk dump

The voice data in the voice edit buffer is transmitted when a voice is selected in PLAY mode of single mode, or when Init Voice or Recall Edit is executed. When this is received, it will be loaded into the voice edit buffer. ACED2 is parameter data added to the TX81Z parameters for the DX11. ACED3 is parameter data added to the DX11 parameters for the V50.

a) Transmission

Data is transmitted in the following order. There is a time interval of approximately 100ms between each bulk data.

- 1) ACED3 (Additional voice edit buffer3) bulk data
- 2) ACED2 (Additional voice edit buffer2) bulk data
- 3) ACED (Additional voice edit buffer) bulk data
- 4) VCED (voice edit buffer) bulk data

b) Reception

When data is received, operation is as follows. — indicates that the data does not change.

Received data	Buffer	VCED	ACED	ACED2	ACED3
VCED only		set	cleared	cleared	cleared
ACED only		—	set	cleared	cleared
ACED + VCED		set	set	cleared	cleared

ACED2 only	—	—	set	cleared
ACED2 + ACED	—	set	set	cleared
ACED2 + ACED + VCED	set	set	set	cleared
ACED3 only	—	—	—	set
ACED3 + ACED2	—	—	set	set
ACED3 + ACED2 + ACED	—	set	set	set
ACED3 + ACED2 + ACED + VCED	set	set	set	Set

4.2.2 Voice memory bulk dump

This transmits/receives data for the 100 voices in internal memory, or preset/card voice data (100 voices) all together or 25 voices at a time.

VMEM (voice memory) bulk data is the combination of VCED, ACED, ACED2, and ACED3.

(twenty-five V50 voices) + (seven INIT VOICE voices) = 32 voices

a) Transmission

Data is transmitted in the following order.

a-1) When transmitting ALL.

header (block1)
VMEM (00-24)
header (block2)
VMEM (25-49)
header (block3)
VMEM (50-74)
header (block4)
VMEM (75-99)

a-2) When transmitting one block at a time.

header (specified block)
VMEM

b) Reception

When VMEM is received, “Midi Received” and the name of the received block will be displayed. VMEM 32 voice bulk data without a header is loaded directly into 100–131.

4.3 Performance data bulk dump

There are two types of performance data bulk dump, as follows.

- 1) Performance edit buffer bulk dump
- 2) Performance memory bulk dump

4.3.1 Performance edit buffer bulk dump

When a performance is selected in PLEY mode of performance mode, or when Init Performance or Recall Performance has been executed, the performance data in the performance edit buffer will be transmitted. When this data is received, the performance data will be loaded into the performance edit buffer.

◆ For the details of the bulk dump data format, see tables 1, 2, and 3.

a) Transmission

Data is transmitted in the following order. There is an interval of approximately 100ms between each bulk data.

- 1) PCED2 (performance edit buffer 2) bulk data
- 2) PCED (performance edit buffer) bulk data

4.3.2 Performance memory bulk dump

This transmits/receives data for the 100 performances in internal, preset or card memory, either all together or 25 performances at a time.

◆ For the details of the bulk dump data format, see tables 1, 2, and 3.

a) Transmission

Data is transmitted in the following order. There is an interval of approximately 100ms between each bulk data.

- 1) PMEM2 (performance memory 2) bulk data
- 2) PMEM (performance memory) bulk data

Data is transmitted in the following order.

a-1) When transmitting ALL.

header (block1)
PMEM2 (00-24)
PMEM (00-24)
header (block2)
PMEM2 (25-49)
PMEM (25-49)
header (block3)
PMEM2 (50-74)
PMEM (50-74)
header (block4)
PMEM2 (75-99)
PMEM (75-99)

a-2) When transmitting one block at a time.

header (specified block)
PMEM2
PMEM

b) Reception

When PMEM is received, "Midi Received" and the name of the received block will be displayed. PMEM 32 performance bulk data without a header is loaded directly into PFI00 – PFI31.

When data is received, operation is as follows. – indicates that the data does not change.

Received data	Buffer	PCED	PCED2	PMEM	PMEM2
PCED only	set	default	–	–	
PCED2 only	–	set	–	–	
PCED2 + PCED	set	set	–	–	
PMEM only	–	–	set	default	
PMEM2 only	–	–	–	set	
PMEM2 + PMEM	–	–	set	set	

4.4 SYNTH system setup data bulk dump

This transmits and receives the system setup data of the V50. For transmission, this is divided into four types of bulk data. (EF is divided into EFG1 – EFG4.) SYS2 data contains parameters added to TX81Z parameters for the DX11. SYS3 data contains parameters added to DX11 parameters for the V50.

SYS System (SYS3 → SYS2 → SYS)
PCT Program Change table
P.EFCT Effect data (EFG1, 2, 3, 4)
MCT Micro tuning data (OCT, FULL)

When "SetALL" is selected and transmission executed to transmit all of the above data (except for System data), the data will be transmitted in the following order.

1. PCT
2. P.EFCT (EFG1→2→3→4)
3. MCT Transmits/receives the data currently in the OCT, FULL micro tuning buffers.

- ◆ For details of each bulk dump data format, see tables 2 and 3.
- ◆ EFG n (n = 1 – 4) indicates the set of delay n, pan n, and chord n.

4.5 SEQ data bulk dump

This transmits and receives system setup data and sequence data for the currently selected song of the V50 internal sequencer. When receiving sequence data, it will be loaded into the current song only if the current song is empty. (Data is not received while playing.) For transmission, the data is divided into three types of bulk data.

SETUP System (SYSQ)
SSONG current sequence song data
NSEQ current sequence data

If "SeqALL" is selected and transmission executed, the above three types of data will be successively transmitted in the following order.

1. SSONG
2. NSEQ
3. SETUP

- ◆ For details of each bulk dump data format, see table 2 for SETUP, and see the format table of the sequencer section for NSEQ and SSONG.

4.6 RHYTHM data bulk dump

This transmits and receives system setup data and sequence data for the V50 rhythm machine. (Data is not received while playing.) For transmission, the data is divided into four types of bulk data.

SETUP System (SYSR)
..... inst setup (RINST)
..... keyboard assign table (RKAT1,2)
RSEQ rhythm sequence data

If "RhyALL" is selected and transmission executed, data will be transmitted in the following order.

- 1) SYSR
- 2) RINST
- 3) RKAT1
- 4) RKAT2
- 5) RSEQ

- ◆ For details of each bulk dump data format, see table 4.

4.7 Dump request

Dump request is possible for all types of bulk data.

- ◆ For details of each message, see table 5.

5. System common messages (for SEQ/RHYTHM)

5.1 Status F2 (song position pointer)

Received only. (except in REC mode of SEQ/R)

5.2 Status F1, F3 ... F7

Aside from internally registering as status bytes, these have no effect.

6. System realtime messages (for SEQ/RHYTHM)

6.1 Status F8, FA, FB, FC

Received.

6.2 Status F9, FD, FF

After decoding, these have no effect.

6.3 Status FE (active sensing)

a) Transmission

FE is transmitted at intervals of approximately 170msec.

b) Reception

Once FE is received, if no MIDI data appears for longer than approximately 300msec, the MIDI reception buffer is cleared, and if there are remaining Key Ons, they are turned Off.

< Table 1 >

Parameters in the table surrounded by “%%” are parameters which have been added to or modified from TX81Z parameters.

Parameters in the table surrounded by “###” are parameters which have been added to or modified from DX11 parameters.

Parameter list of parameter change and bulk

*** VCED *** 93 byte voice edit parameter (1 bulk edit format)
para. cng g=4, h=2

VCED address (para.cng)	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
edit	0	0	0	0	—	AR	—	0-31		
1	0	0	0	—	DLR	—	—	0-31		
2	0	0	0	—	DZR	—	—	0-31		
3	0	0	0	0	—	RR	—	1-15		
4	0	0	0	0	—	DLL	—	0-15		
5##	0	—	—	—	—	—	—	0-99 with LS2(sign)		
6	0	0	0	0	0	—	RS	0-3	OP.4	
7	0	0	0	0	0	—	EBS	0-7		
8	0	0	0	0	0	0	AME	0-1		
9##	0	0	0	0	—	KVS	—	0-14	0-7(0 - +7) 8-14(-7 - -1)	
10	0	—	—	—	—	—	—	0-99		
11	0	0	—	—	—	—	—	0-63 (RATIO)		
	0	0	—	CRS	—	x	x	0-63 (FIX)		
12	0	0	0	0	0	—	DET	0-6	(center=3)	
13									OP.2	
26									OP.3	
39									OP.1	
52	0	0	0	0	0	—	ALG	0-7		
53	0	0	0	0	0	—	FBL	0-7		
54	0	—	—	—	—	—	—	0-99		
55	0	—	—	—	—	—	—	0-99		
56	0	—	—	—	—	—	—	0-99		
57	0	—	—	—	—	—	—	0-99		
58	0	0	0	0	0	0	SY	0-1	LFO SYNC	
59	0	0	0	0	0	0	—	0-3		
60	0	0	0	0	0	—	—	0-7		
61	0	0	0	0	0	0	—	0-3		
62	0	0	—	—	—	—	—	0-48	(center=24)	
function	63	0	0	0	0	0	0	MO	MONO	
	64	0	0	0	0	—	—	PR	0-12	
	65	0	0	0	0	0	0	PM	FORMOD	
	66	0	—	—	—	—	—	—	0-99	
	67	0	—	—	—	—	—	—	0-99	
###	68	0	0	0	0	0	0	SU	0-1 sus.(F.SW)	
	69	—	—	—	—	—	—	—	por.	
	70	0	0	0	0	0	0	CH	0-1 chorus set 0	
	71	0	—	—	—	—	—	—	0-99	
	72	0	—	—	—	—	—	—	0-99	
	73	0	—	—	—	—	—	—	0-99	
	74	0	—	—	—	—	—	—	0-99	
	75	0	—	—	—	—	—	—	0-100 (center=50)	
	76	0	—	—	—	—	—	—	0-99	
	77	0	—	—	—	—	—	—	32-127	
	78	0	—	—	—	—	—	—		
	79	0	—	—	—	—	—	—		
	80	0	—	—	—	—	—	—		
	81	0	—	—	—	—	—	—		
	82	0	—	—	—	—	—	—		
	83	0	—	—	—	—	—	—		
	84	0	—	—	—	—	—	—		
	85	0	—	—	—	—	—	—		
	86	0	—	—	—	—	—	—		
###	87	0	—	—	—	—	—	—	0-99	PEG
###	88	0	—	—	—	—	—	—	0-99	
###	89	0	—	—	—	—	—	—	0-99	
###	90	0	—	—	—	—	—	—	0-99	(center=50)
###	91	0	—	—	—	—	—	—	0-99	
###	92	0	—	—	—	—	—	—	0-99	

*** parameter change only ***

rn	b7	b6	b5	b4	b3	b2	b1	b0	dd	comment
(para.no)									(value)	
93	0	0	0	0	OP1	OP2	OP3	OP4	0-1	op. on(1)/off(0)

note) 5 LS
LCD -99,,,1,0,+1,,,+99
INT data/VCEDbulk LS2 1-----1,0,0-----0
(para. change) LS 99,,,1,0,1,,,99
VMEbulk LS2 1-----1,0,0-----0
LS 99,,,1,0,1,,,99

9 KVS
INT data 0,,,6,7,8,,,14
LCD -7,,,1,0,+1,,,+7
MIDI 8,,,14,0,1,,,7

*** ACED *** 23 byte additional parameters (1 bulk edit format)
para. cng g=4, h=3

NO.(para)	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0	0	0	0	0	0	0	FIX 0-1	OP.4
1	0	0	0	0	0	—	—	—	FIXRG — 0-7	0(255Hz)-7(32KHz)
2	0	0	0	0	0	—	—	—	FINE — 0-15	(7:P=0-3)
3	0	0	0	0	0	—	—	—	OSW — 0-7	
4	0	0	0	0	0	0	—	—	EGSFT- 0-3	0(off)-3(12dB)
5										OP.2
10										OP.3
15										OP.1
19										0(off)
20	0	0	0	0	0	—	—	—	REV — 0-7	0(off),7(first)function
21	0	—	—	—	—	—	—	—	FC PITCH — 0-99	function
22	0	—	—	—	—	—	—	—	FC AMPLI — 0-99	

*** ACED2 *** 10 byte additional parameter 2 for DX11/V50
para. cng g=4, h=3

NO.	para.	Nob7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	23	0	—	—	—	—	—	—	—	AT PITCH — 0-99	function
1	24	0	—	—	—	—	—	—	—	AT AMPLI — 0-99	
2	25	0	—	—	—	—	—	—	—	AT P.BIAS — 0-100	center 0 = 50
3	26	0	—	—	—	—	—	—	—	AT EG BIAS — 0-99	
4##	27	0	—	—	—	—	—	—	—	FIX RANGE MODE(OP4) — 0-1	0(HI),1(LO)
5##	28	0	—	—	—	—	—	—	—	FIX RANGE MODE(OP2) — 0-1	
6##	29	0	—	—	—	—	—	—	—	FIX RANGE MODE(OP3) — 0-1	
7##	30	0	—	—	—	—	—	—	—	FIX RANGE MODE(OP1) — 0-1	
8##	31	0	0	0	0	—	—	—	—	LS SIGN — 0-15	OP1,2,3,4
9	32	0	—	—	—	—	—	—	—	reserved	

note) 2 AT P.BIAS INT data 0,,,,,49,50,51,,,,,100
LCD -50,,,,-1, 0,+1,,,,,+50
MIDI 51,,,,,100,0,+1,,,,,+50
4-7 FIX RANGE MODE
INT data 0 , 1 Hi:255-32KHz
LCD Hi , Lo Lo:1-100Hz
MIDI 0 , 1
8 LS SIGN
b3 b2 b1 b0
op1 op2 op3 op4 0: +
1: -

*** ACED3 *** 20 byte additional parameter 3 for WT11/V50
para. cng g=4, h=3

NO.	para.	Nob7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	33	0	0	0	0	—	—	—	—	EFCT SEL — 0-32	0:off,1-32:EFCT(DSP)
1	34	0	—	—	—	—	—	—	—	BALANCE — 0-100	
2	35	0	—	—	—	—	—	—	—	OUT LEVEL — 0-100	
3	36	0	—	—	—	—	—	—	—	STEREO MIX — 0-1	
4	37	0	—	—	—	—	—	—	—	EFCT param1 — 0-100	
5	38	0	—	—	—	—	—	—	—	EFCT param2 — 0-100	
6	39	0	—	—	—	—	—	—	—	EFCT param3 — 0-100	function
7	40	0	—	—	—	—	—	—	—	reserved	
8	41	0	—	—	—	—	—	—	—	reserved	
19	52	0	—	—	—	—	—	—	—	reserved	

note) COMBINE
at COMBINE=off,
Function (function at VCED + func at ACED(REV,FCRM/AM)
+ func at ACED2(AITM/AM/PB/EB) + EFCT at ACED3) are not changed
when voice/pfm is selected. (except voice name)

*** ACED *** 23 byte additional parameters (1 bulk edit format)
para. cng g=4, h=3

NO.(para)	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0	0	0	0	0	0	FIX	0-1	OP.4
1	0	0	0	0	0	0	0	FIXRG	0-7	0(255Hz)-7(32KHz)
2	0	0	0	0	0	0	0	FINE	0-15	(7:F=0-3)
3	0	0	0	0	0	0	0	OSW	0-7	
4	0	0	0	0	0	0	0	EGSFT	0-3	0(off)-3(12dB)
5										OP.2
10										OP.3
15										OP.1
19									0(off)	
20	0	0	0	0	0	0	0	REV	0-7	0(off),7(first)function
21	0							FC PITCH	0-99	function
22	0							FC AMPLI	0-99	

*** ACED2 *** 10 byte additional parameter 2 for DX11/V50
para. cng g=4, h=3

NO.(para)	Nob7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	23	0							AT PITCH	0-99 function
1	24	0							AT AMPLI	0-99
2	25	0							AT P.BIAS	0-100 center 0 = 50
3	26	0							AT BG BIAS	0-99
4##	27	0							FIX RANGE MODE(OP4)	0-1 0(HI),1(LO)
5##	28	0							FIX RANGE MODE(OP2)	0-1
6##	29	0							FIX RANGE MODE(OP3)	0-1
7##	30	0							FIX RANGE MODE(OP1)	0-1
8##	31	0	0	0	0				LS SIGN	0-15 OP1,2,3,4
9	32	0							reserved	

note) 2 AT P.BIAS INT data 0, ..., 49, 50, 51, ..., 100
LCD -50, ..., -1, 0, +1, ..., +50
MIDI 51, ..., 100, 0, +1, ..., +50
4-7 FIX RANGE MODE
INT data 0, 1 Hi:255-32KHz
LCD Hi, Lo Lo:1-100Hz
MIDI 0, 1
8 LS SIGN
b3 b2 b1 b0
op1 op2 op3 op4 0: +
1: -

*** ACED3 *** 20 byte additional parameter 3 for WT11/V50
para. cng g=4, h=3

NO.(para)	Nob7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	33	0	0	0	0				EFCT SEL	0-32 0:off,1-32:EFCT(DSP)
1	34	0							BALANCE	0-100
2	35	0							OUT LEVEL	0-100
3	36	0							STEREO MIX	0-1
4	37	0							EFCT param1	0-75
5	38	0							EFCT param2	0-99
6	39	0							EFCT param3	0-99 function
7	40	0							reserved	
8	41	0							reserved	
19	52	0							reserved	

note) COMBINE
at COMBINE-off,
Function (function at VOED + func at ACED(REV,FCRM/AM)
+ func at ACED2(ATEM/AM/PB/EB) + EFCT at ACED3) are not changed
when voice/pfm is selected. (except voice name)

*** PCED *** 110 byte Performance data (edit format)
para. cng g=4, h=0

No.prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0	0	0	0	0	0	0	MAX NOTES	0-16 INST1
1 ##	0	0	0	0	0	0	0	0	VTYPE	0-1 voice type 0:int/card 1:preset
2 ##	0								Voice Number	0-99
3	0	0	0	0					Recv. ch	0-16 16(ambi)
4	0								LIMIT/L	0-127 0(C-2)-127(G8)
5	0								LIMIT/H	0-127
6	0	0	0	0	0				DETUNE	0-14 7(center)
7	0	0							NOTE SHIFT	0-48 24 (center)
8	0								VOLUME	0-99
9	0	0	0	0	0	0	0	0	OUT ASGN	0-3 0(off),1(L),2(R) 3(L+R)
10	0	0	0	0	0	0	0	0	LFOS	0-3 0(off),1(1st Inst) 2(2nd Inst),3(vib)
11	0	0	0	0	0	0	0	0	MTE	0-1
12										INST2
24										INST3
36										INST4
48										INST5
60										INST6
72										INST7
84										INST8
96	0	0	0	0	0	0	0	0	MTEBL	0-12 0(oct),1(full)
97 ##	0	0	0	0	0	0	0	0	ASMODE	0-2 0(norm),1(alter) 2(DWA)
98 ###	0	0	0	0	0				EFSEL	0-12
99	0	0	0	0	0				REV	0-11 0(C)-11(B)
100	0								PFM NAME 1	32-127 ASCII
101	0								PFM NAME 2	
109	0								PFM NAME 10	

note) 98 EFSEL=0(off),1(delay1),2(pan1),3(chord1),4(delay2),5(pan2),.....
.....,11(pan4),12(chord4)

*** PCED2 *** 33 byte Performance data 2 (edit format) for V50/WT11
para. cng g=4, h=0, p=110

No.prm#	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0	0	0	0	0	0	0	RESERVE NOTES	0-17 0(off),1-17(0-16)INST1
1	0	0	0	0	0	0	0	0	EFCTE	0-1 EFCT(DSP) on/off
2										INST2
3										
4										INST3
5										
6										INST4
7										
8										INST5
9										
10										INST6
11										
12										INST7
13										
14										INST8
15										
16	0	0	0	0					EFCT SEL	0-32 0:off,1-32:EFCT(DSP)
17	0								BALANCE	0-100
18	0								OUT LEVEL	0-100
19	0								STEREO MIX	0-1
20	0								EFCT param1	0-100
21	0								EFCT param2	0-100
22	0								EFCT param3	0-100
23	0								reserved	0-2 LFO CONTROL for WT11
24	0								reserved	
32	0								reserved	

*** remote switch ***
para. cng g=4, h=0, p=118

g	h	p	k	switch	k	switch
4	0	118	0	performance	31	tenkey minus
			1	single	32	increment
			2	internal	33	decrement
			3	card	34	tr1
			4	preset	35	tr2
			5	sequencer	36	tr3
			6	rhythm	37	tr4
			7	record	38	limit/lo
			8	bwd	39	limit/hi
			9	stop	40	tr5
			10	play	41	tr6
			11	fwd	42	tr7
			12	seq/rhy job	43	tr8
			13	pf1	44	others
			14	pf2	45	efct
			15	pf3	46	ut-card
			16	pf4	47	ut-midi
			17	pf5	48	ut-disk
			18	pf6	49	ut-prot
			19	pf7	50	ut-setup
			20	pf8	51	ut-others
			21	tenkey 0	52	store
			22	tenkey 1	53	compare
			23	tenkey 2	54	efct bypass
			24	tenkey 3	55	demo
			25	tenkey 4	56	POWER ON(restart)
			26	tenkey 5		
			27	tenkey 6		
			28	tenkey 7		
			29	tenkey 8		
			30	tenkey 9		

< Table 2 >

Detail of Bulk Dump Format

##	★	VCED	f = 3 data size = 93 (\$005D) data format = 7bit binary total bulk size = 93+8 = 101
			f0,43,0n,03,00,SD,<VCED data>,sum,f7
##	★	VMEM	block header f0,43,1n,44,07,<block No 1-4>,f7
			f = 4 data size = 128x32 = 4096 (\$1000) data format = 7bit binary total bulk size = 4096+8 = 4104
			f0,43,0n,04,20,00,<VMEM data>,sum,f7
##	★	ACED	f = 126 LM_8976AE data size = 23+10 = 33 (\$0021) data format = 7bit binary total bulk size = 33+8 = 41
			f0,43,0n,7e,00,21,LM_8976AE,<ACED data>,sum,f7
###	★	ACED2	f = 126 LM_8023AE data size = 10+10 = 20 (\$0014) data format = 7bit binary total bulk size = 20+8 = 28
			f0,43,0n,7e,00,14,LM_8023AE,<ACED2 data>,sum,f7
##	★	ACED3	f = 126 LM_8073AE data size = 20+10 = 30 (\$001e) data format = 7bit binary total bulk size = 30+8 = 38
			f0,43,0n,7e,00,1e,LM_8073AE,<ACED3 data>,sum,f7
##	★	PCED	f = 126 LM_8976PE data size = 110+10 = 120 (\$0078) data format = 7bit binary total bulk size = 120+8 = 128
			f0,43,0n,7e,00,78,LM_8976PE,<PCED data>,sum,f7
##	★	PCED2	f = 126 LM_8073PE data size = 10+33 = 43 (\$002B) data format = 7bit binary total bulk size = 43+8 = 51
			f0,43,0n,7e,00,2b,LM_8073PE,<PCED2 data>,sum,f7
##	★	PMEM	block header f0,43,1n,10,75,01,<block No 0-3>,f7
			f = 126 LM_8976PM data size = 10+76x32 = 2442 (\$098A) data format = 7bit binary total bulk size = 2442+8 = 2450
			f0,43,0n,7e,13,0a,LM_8976PM,<PMEM data>,sum,f7
##	★	PMEM2	f = 126 LM_8073PM data size = 10+25x32 = 810 (\$032A) data format = 7bit binary total bulk size = 810+8 = 818
			f0,43,0n,7e,06,2a,LM_8073PM,<PMEM2 data>,sum,f7
##	★	system setup	f = 126 LM_8976Sx (x=0,1,2,3,4,5)
			X = 0(SYS) data size = 10+27 = 37 (\$0025) data format = 7bit binary total data size = 37+8 = 45
			f0,43,0n,7e,00,25,LM_8976S0,<system data>,sum,f7
##	★	PC	X = 1(PC) data size = 10+128x2 = 266 (\$010A) data format = 7bit binary total data size = 266+8 = 274
			f0,43,0n,7e,02,0a,LM_8976S1,<PCNGTBL data>,sum,f7
##	★	EFG1	X = 2(EFG1) delay1,pan1,chord1 data size = 10+55 = 65 (\$0041) data format = 7bit binary total data size = 65+8 = 73
			f0,43,0n,7e,00,41,LM_8976S2,<effect group1 data>,sum,f7
###	★	EFG2	X = 3(EFG2) delay2,pan2,chord2
			f0,43,0n,7e,00,41,LM_8976S3,<effect group2 data>,sum,f7
###	★	EFG3	X = 4(EFG3) delay3,pan3,chord3
			f0,43,0n,7e,00,41,LM_8976S4,<effect group3 data>,sum,f7
###	★	EFG4	X = 5(EFG4) delay4,pan4,chord4
			f0,43,0n,7e,00,41,LM_8976S5,<effect group4 data>,sum,f7
##	★	micro tuning buffer	f = 126 LM_MCRTEX (x=0,1)
			X = 0(OCT) data size = 24+10 = 34 (\$0022) data format = 7bit binary total bulk size = 34+8 = 42
			f0,43,0n,7e,00,22,LM_MCRTEX,<MCR OCT data>,sum,f7
##	★	Full	X = 1(Full) data size = 10+256 = 266 (\$010a) data format = 7bit binary total bulk size = 274
			f0,43,0n,7e,02,0a,LM_MCRTEX,<MCR Full data>,sum,f7
###	★	system setup 2 for V2	f = 126 LM_8023Sx (x=0)
			X = 0(SYS2) data size = 16+10 = 26 (\$001A) data format = 7bit binary total data size = 26+8 = 34
			f0,43,0n,7e,00,1a,LM_8023S0,<system data>,sum,f7
##	★	system setup 3 for V50	f = 126 LM_8073S0
			data size = 32+10 = 42 (\$002A) data format = 7bit binary total data size = 42+8 = 50
			f0,43,0n,7e,00,2a,LM_8073S0,<system data3>,sum,f7

```

##      ★ SEQ system setup (SYSQ) for V50
          f = 126 LM_8073SS
          data size = 33+10 = 43 ( $002B)
          data format = 7bit binary
          total data size = 43+8 = 51

          f0,43,0n,7e,00,2b,LM_8073SS,<SEQ system data>,sum,f7

##      ★ RHYTHM system setup (SYSR) for V50
          f = 126 LM_8073RS
          data size = 16+10 = 26 ( $001a)
          data format = 7bit binary
          total data size = 26+8 = 34

          f0,43,0n,7e,00,1a,LM_8073RS,<RHYTHM system data>,sum,f7

##      ★ RHYTHM inst setup (RINST) for V50
          f = 126 LM_8073RI
          data size = 183+10 = 193 ( $0141)
          data format = 7bit binary
          total data size = 193+8 = 201

          f0,43,0n,7e,01,41,LM_8073RI,<RINST data>,sum,f7

##      ★ RHYTHM kbd assign table (RKAT1,2) for V50
          f = 126 LM_8073Kx (x=0:user1,1:user2)
          data size = 61+10 = 71 ( $0047)
          data format = 7bit binary
          total data size = 71+8 = 79

          f0,43,0n,7e,00,47,LM_8073K0,<RKAT1 data>,sum,f7
          f0,43,0n,7e,00,47,LM_8073K1,<RKAT2 data>,sum,f7

```

< Table 3 >

*** VMEM *** 128 byte (88 byte is used) voice data (memory format)

*	address	b7	b6	b5	b4	b3	b2	b1	b0	dd	comment	*
*										(value)		*
*	0	0	0	0	AR					0-31		*
*	1	0	0	0	D1R					0-31		*
*	2	0	0	0	D2R					0-31		*
*	3	0	0	0	0	RR				1-15		*
*	4	0	0	0	0	D1L				0-15	OP.4	*
*	5	0			LS					0-99		*
*	6	0	AME		EBS					0-1,0-7,0-7		*
*	7	0			OUT					0-99		*
*	8	0	0		CRS					0-63 (RATIO)		*
*		0	0		CRS					0-63 (FIX)		*
*	## 9	0	LS2	KVS2	RS			x	x	0-1,0-1,0-3,0-6		*
*										LS2,KVS2 (sign)		*
*	10										OP.2	*
*	.											*
*	.											*
*	20										OP.3	*
*	.											*
*	.											*
*	30										OP.1	*
*	.											*
*	.											*
*	40	0	SY		FBL					0-1,0-7,0-7		*
*	41	0			LFS					0-99		*
*	42	0			LFD					0-99		*
*	43	0			PMD					0-99		*
*	44	0			AMD					0-99		*
*	45	0		PMS		AMS				0-7,0-3,0-3		*
*	46	0	0		TRPS					0-48		*
*	47	0	0	0	0					0-12		*
*	48	0	x	x	CH	MD	SU	PO	PM	0-1,0-1,0-1,0-1,0-1		*
*	49	0			PORT					0-99		*
*	50	0			PC VOL					0-99		*
*	51	0			MW PITCH					0-99		*
*	52	0			MW AMPLI					0-99		*
*	53	0			BC PITCH					0-99		*
*	54	0			BC AMPLI					0-99		*
*	55	0			BC P BIAS					0-100		*
*	56	0			BC E BIAS					0-99		*
*	57	0			VOICE NAME	1				32-127		*
*	58	0			VOICE NAME	2						*
*	59	0			VOICE NAME	3						*
*	60	0			VOICE NAME	4						*
*	61	0			VOICE NAME	5						*
*	62	0			VOICE NAME	6						*
*	63	0			VOICE NAME	7						*
*	64	0			VOICE NAME	8						*
*	65	0			VOICE NAME	9						*
*	66	0			VOICE NAME	10						*
*	67	0			PR1					0-99		*
*	68	0			PR2					0-99		*
*	69	0			PR3					0-99		*
*	70	0			PL1					0-99		*
*	71	0			PL2					0-99		*
*	72	0			PL3					0-99		*

note) KVS,KVS2

	MIDI		LCD
at VCED	at VMEM		
KVS	KVS2	KVS	
0	0	0	0
1	^	1	+1
.	^	.	.
.	^	.	.
7	0	7	+7
8	1	7	-7
.	^	.	.
.	^	.	.
14	1	1	-1

5 LS LCD VMEMbulk LS2 -99,...-1,0,+1,...+99
LS 1,...-1,0,0,...0
LS 99,...1,0,1,...,99

*** VMEM ***

No.	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0										same as DX21 VMEM
.										
67										PEG PR1
.										
72										PEG PL3
73 ##	0	FIXRM	-EGSFT-	FLX		FIXRG				OP.4
74	0		OSW			FINE				
75										OP.2
.										
77										OP.3
.										
79										OP.1
.										
81	0	0	0	0	0		REV			FUNCTION
82	0						FC PITCH			
83	0						FC AMPLI			

*** VMEM for DX11/V50 ***

No.	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
84	0									AT PITCH
85	0									AT AMPLI
86	0									AT P.BIAS
87	0									AT EG BIAS
88	0									reserved
89	0									reserved
90	0									DS55 delay
91	0	0	0	0						-EFFECT PRESET NO-
92	0	0								EFFECT TIME
93	0									EFFECT BALANCE
94 ##	0	0	0							EFCT SEL
95 ##	0									BALANCE
96 ##	0									OUT LEVEL
97 ##	0									STEREO MIX
98 ##	0									EFCT param1
99 ##	0									EFCT param2
100 ##	0									EFCT param3
101-127	0	0	0	0	0	0	0	0		

note) AT P.BIAS INT data 0,...,49,50,51,...,100
LCD -50,...-1, 0,+1,...,+50
MIDI 51,...,100,0,+1,...,+50

FIX RANGE MODE INT data 0, 1
LCD Hi, Lo
MIDI 0, 1

VMEM receive block (parameter change) g=9,h=0 same as EOS

paramNo.	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
7	0	0	0	0	0					0-4 0:32voice 1-4:block

*** PMEM *** 76 byte Performance data (memory format)

No.	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0 ##	0	OUT_ASGN	VTYP	-MAX NOTES(MAX1)-						INST1
1 ##	0			VOICE NO						
2	0	-LFOS-		RCV CH						
3	0			LIMIT/L						
4	0			LIMIT/H						
5	0	0	0	DETUNE						
6	0	MTE		NOTE SHIFT						
7	0			VOLUME						
8										INST2
16										INST3
24										INST4
32										INST5
40										INST6
48										INST7
56										INST8
64 #####	0	EFSEL3	-EFSEL2-		MTIBL					
65	0		KEY		EFSEL1- ASMOD1					
66	0			PFM NAME 1						
67	0			PFM NAME 2						
75	0			PFM NAME 10						

note1) effect select

PCED	EFSEL	PMEM	EFSEL2	EFSEL1
0	off		%00	%00
1	delay1			%01
2	pan1			%10
3	chord1			%11
4	d2		%01	%01
5	p2			%10
6	c2			%11
7	d3		%10	%01
8	p3			%10
9	c3			%11
10	d4		%11	%01
11	p4			%10
12	c4			%11
			%01	%00 →off(%00 %00)
			%10	%00 →off(%00 %00)
			%11	%00 →off(%00 %00)

EFSEL(PCED)= EFSEL2 x 3 + EFSEL1

note2) Effect select Compatibility (DX11 → TX81Z)

PMEM bulk	DX11	TX81Z
delay1, delay2, delay3, delay4	→	delay
pan1, pan2, pan3, pan4	→	pan
chord1, chord2, chord3, chord4	→	chord
PCED bulk	DX11	TX81Z
delay1	→	delay
pan1	→	pan
chord1	→	chord
delay2 - chord4	→	chord

*** PMEM2 *** 25 byte Performance data 2(memory format) for V50/WT11

No.	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0 ##	0	EFCTE	0		RESERVE NOTES				0-1,0-17	INST1
1 ##	0	EFCTE	0		RESERVE NOTES				0-1,0-17	INST2
2 ##	0	EFCTE	0		RESERVE NOTES				0-1,0-17	INST3
3 ##	0	EFCTE	0		RESERVE NOTES				0-1,0-17	INST4
4 ##	0	EFCTE	0		RESERVE NOTES				0-1,0-17	INST5
5 ##	0	EFCTE	0		RESERVE NOTES				0-1,0-17	INST6
6 ##	0	EFCTE	0		RESERVE NOTES				0-1,0-17	INST7
7 ##	0	EFCTE	0		RESERVE NOTES				0-1,0-17	INST8
8 ##	0	0	0		EFCT SEL				0-32	0:off,1-32:EFCT(DSP)
9 ##	0				BALANCE				0-100	
10 ##	0				OUT LEVEL				0-100	
11 ##	0				STEREO MIX				0-1	
12 ##	0				EFCT param1				0-100	
13 ##	0				EFCT param2				0-100	
14 ##	0				EFCT param3				0-100	
15	0				reserved					LFO CONTROL for WT11
16 ##	0	x	x	x	x	x	x	x	0-1 (DVA flag)	
17 ##	0	x	x	x	MAX2	MAX2	MAX2	MAX2	0-1,0-1	INST1, INST2
18 ##	0	x	x	x	MAX2	MAX2	MAX2	MAX2	0-1,0-1	INST3, INST4
19 ##	0	x	x	x	MAX2	MAX2	MAX2	MAX2	0-1,0-1	INST5, INST6
20 ##	0	x	x	x	MAX2	MAX2	MAX2	MAX2	0-1,0-1	INST7, INST8
21	0				reserved					
22	0				reserved					
23	0				reserved					
24	0				reserved					

note) MAX NOTES= 8 x MAX2 + MAX1 (<=16)

MAX NOTES Compatibility (V50 → DX11) MAX1 only

ASMODE=2 x ASMOD2 + ASMOD1

PMEM receive block (parameter change) g=4,h=0,p=117,

paramNo.	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
1	0	0	0	0	0	0	0	0	0-3	0-3:block

* SYSTEM SETUP bulk dump *

*** SYS *** 27 byte system set up for TX81Z
para. cng g=4, h=0, p=123

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0								TUNE	0-127 master tune center=64
1	1	0	0	0						MIDBCH	0-16 basic rcv ch 16:omni
2	2	0	0	0	0					MIDTCH	0-15 trans ch
3	##3	0	0	0	0	0				PGMSW	0-4 pgm cng sw
4	4	0	0	0	0					CONTSW	0-17 cont.cng sw 1:norm 2-17(G1-G16)
5	5	0	0	0						PBSW	0-17 p.bend sw 1:norm 2-17(G1-G16)
6	6	0	0	0	0	0	0	0		NOTESW	0-2 note on/off 0:all,1:odd 2:even
7	##7	0	0	0						DEVICE NO	0-17 device number 0:off,17:all (V2 exclusive on/off)
8	8	0	0	0	0	0	0	0	0	MLOCK	0-1 mem. protect
9	9	0	0	0	0	0	0	0	0	CMBIN	0-1 combine
10	10	0	0	0	0	0	0	0	0	ATBCSW	0-1 AT to BC sw on/off(not used)
11	11	0								ID1	32-127 ID (ascii)
12	12	0								ID2	
13	13	0								ID3	
26	26	0								ID16	

note) 3 PGMSW

0:off, 1:common, 2:individual, 3:direct, 4:TrnsFilter

*** SYS2 for DX11 *** 16 bytes system set up 2
para. cng g=4, h=0, p=123

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	27	0	0	0	0	0	0	0	0	MIDIE	0-1 midi on/off
1	28	0	0	0	0	0	0	0	0	LOCALF	0-1 local on/off
2	29	0	0	0						ATSW	0-17 After T.SW 1:norm 2-17(G1-G16)
3	30	0	0	0						DEASGN	0-31 D.E. asgn
4	##31	0								CRDCLK	0-124 card bank(1-32) x4
5	32	0	0	0	0	0	0	0	0	CNTRST	0-1 controller reset
6	33	0	0	0	0	0	0	0	0	CRDLCK	0-1 card prot
7	34	0								FIXTCH	0-127 fixed velocity
8	35	0	0	0	0	0	0	0	0	EGFDMP	0-3 EG forced damp
9	36	0								reserved	
10	37	0								reserved	
11	38	0								reserved	
12	39	0								reserved	
13	40	0								reserved	
14	41	0								reserved	
15	42	0								reserved	

*** parameter change only (receive only) ***

43	0	QEDATK	0-99
44	0	QEDREL	0-99
45	0	QEDVOL	0-99
46	0	QEDSRI	0-99

*** SYS3 for V50 *** 32 byte system setup 3
para. cng g=4, h=0, p=118

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	47	0				ID17				32-127	ID2 (ascii)
1	48	0				ID18					
2	49	0				ID19					
.	.	.									
23	70	0				ID40					
24	71	0				SWN VOL				0-99	synth volume
25	72	0				INTERVAL				0-10	MDR interval time
26	73	0				VEL CURVE				0-7	
27	74	0				VOICE DAMP				0-1	
28	75	0				reserved					
29	76	0				reserved					
30	77	0				reserved					
31	78	0				reserved					

** parameter change only **

para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
79	0	0	0	0	0	0	0	0	BYPASS	0-1 effect bypass

*** P.EFFECT *** 55 byte performance effect data
para. cng g=4, h=0, p=124,120,121,122

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0				EF1T				0-127	effect 1 time 0.01s-1.28s
1	1	0	0			EF1P				0-48	effect 1 pitch center=24
2	2	0	0	0	0	0	0			0-7	effect 1 feed back
3	3	0				EF1L				0-99	effect 1 out level
4	5	*1	0	0	0	0	0	0		0-2	effect 2 select 0(LFO),1(velocity) 2(note)
5	4	*2	0	0	0	0	0	0	0	EF2D	0-1 effect 2 direction 0(L->R),1(L<-R)
6	6	0				EF2R				0-99	effect 2 range
7	7	0	0			CHORD				0-49	effect 3 chord note center=24 no use=49
8	8										
9	9										
10	10										KEY C3
11	11										
12	12										
13	13										
14	14										KEY C#3
.	.										
51	51										
52	52										
53	53										
54	54										KEY B3

note) *1,*2

parameter change No.(4,5) is not same as bulk No.
*1 (EF2S) para. change No=5
*2 (EF2D) para. change No=4

*** PGM CNG *** 256 byte program change table (extend to 2 byte per 1 number)
para. cng g=4, h=0, p=127

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0	0	0	0	0	0			0-5	voice type
										0-99	No PGM1
1	1										PGM2
.	.										
127	127										PGM128

(note)

##	type	number	display
0		0 - 99	I00 - I99
1		0 - 99	C00 - C99
2		0 - 99	P00 - P99
3		0 - 99	PF100 - PF199
4		0 - 99	PF000 - PF099
5		0 - 99	PF000 - PF099

* micro tuning bulk dump

*** OCTAVE *** 24 byte micro tuning data (octave)
para. cng g=4, h=0, p=125

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0				MS BYTE of MCT				13-107	(CH-1-B6)
						LS BYTE of MCT				0-63	C
1	1										C#
2	2										
.	.										
11	11										B

*** FULL KBD *** 256 byte micro tuning data (full keyboard)
para. cng g=4, h=0, p=126

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0				MS BYTE of MCT				13-107	
						LS BYTE of MCT				0-63	C-2 (0)
1	1										C#-2 (1)
2	2										
.	.										
127	127										G8 (127)

* SEQUENCER bulk dump

*** SYSQ *** 33 byte sequencer system setup
para. cng g=4, h=0, p=111

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0	0	0	0	0	0	0	0	TEMPO1	0-1 tempo data 30-240 (7bit)
1	1	0								TEMPO2	0-127
2	2	0	0	0	0	0	0			METRO	0-3 metronome 0:off,1:rec,2:rec/play 3:always
3	3	0	0	0	0	0	0	0	0	SYNC	0-1 sync 0:int,1:midi SEQ/R common
4	4	0	0	0						SEQSRCH	0-16 receive ch in rec mode 0-15:1-16ch,16:omni 17:kbd
5	5	0	0	0	0	0	0	0	0	SEQSATSW	0-1 after touch record sw
6	6	0	0	0	0	0	0	0	0	SEQSVELSW	0-1 velocity record switch
7	7	0	0	0	0	0	0			SEQSSONG NO	0-7 sequence song number
8	8	0								SEQTSIG1	0-15 time signature
9	9	0								SEQTSIG2	2-4 TSIG1/TSIG2 TSIG=0:1...15:16 TSIG2=2:1/4 3:1/8 4:1/16
10	10	0								SEQSSONG NAME1	32-127 song name (ASCII)
11	11	0								SEQSSONG NAME2	
17	17	0								SEQSSONG NAME8	
18	18	0	0	0						SEQSTCH(TRACK1)	0-16 transmit channel 16:off
19	19	0	0	0						SEQSTCH(TRACK2)	
25	25	0	0	0						SEQSTCH(TRACK8)	
26	26	0	0	0	0	0	0	0	0	REC_TYPE	0-2 recording mode 0:real,1:step,2:punch
27	27	0	0	0	0	0	0	0	0	REPLACE	0-1 flag of replace 0:over dub,1:replace
28	28	0								reserved	
29	29	0								reserved	
30	30	0								reserved	
31	31	0								reserved	
32	32	0								reserved	

note) 1. ..current edit parameter
2. all parameter change is not received under playing
3. \$.ignored when bulk is received

 * RHYTHM SYSTEM SETUP bulk dump *

*** SYSR *** 16 byte rhythm system setup
 para. cng g=4, h=0, k=112

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0								0-99	rhythm master volume
1	1	0	0	0	0	0	0	0	0	-RYSDEP-	0-2 dsp sw 0:off,1:on,2:mix
2	2	0	0	0	0	0	0	0	0	ASGN	0-1 kbd asgn sw 0:rhy,1:syn
3	3	0	0	0	0	0	0	0	0	-RYSQUANTIZE-	0-7 quantize 1/4 - off
4	4	0	0	0	0					-RYSRCH-	0-17 receive ch 1-16,omni
5	5	0	0	0	0					-RYSRCH-	0-16 transmit ch 1-16,off
6	6	0	0	0	0	0	0	0	0	VEL	0-1 velocity sw 0:off,1:on
7	7	0	0	0	0	0	0	0	0	CLICK	0-1 click sw 0:rec,1:play
8	8	0	0	0	0	0	0			-RYSCLICK-	0-6 click value 1/4 - 1/32
9	9	0	0	0	0	0	0			-RYSASGN-	0-4 assign table number
10	10	0	0	0	0	0	0	0	0	PTYPE	0-1 preset1-3,user1-2
11	11	0								-RYSPIN NUM-	0-99 pattern type 0:int,1:preset
12	12	0	0	0	0	0	0			-RYS SONG NUM-	0-99 pattern number 0-99
13	13	0	0	0	0	0	0	0	0	REC	0-7 song number
14	14	0	0	0	0	0	0	0	0	SONG	0-1 record type 0:realtime
15	15										1:step
15	15										R mode 0:ptn 1:song

note) 1. parameter change(No=12-14) is not received under playing
 2. parameter change(No=10-11) is received at PIN mode only
 3. parameter change(No=12) is received at SONG mode only

*** RINST *** 183 byte rhythm instrument set up
 para. cng g=4, h=0, p=113(RINST1) VOL,PAN
 p=114(RINST2) NOTE

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0	0	0	0					VOLUME	0-15 inst volume of BD1
1	1	0	0	0	0					VOLUME	0-15 inst volume of BD2
60	60	0	0	0	0					VOLUME	0-15 inst volume of VBRSLP
61	61	0	0	0	0	0				PAN	0-6 inst pan of BD1
62	62	0	0	0	0	0				PAN	0-6 inst pan of BD2
121	121	0	0	0	0	0				PAN	0-6 inst pan of VBRSLP
122	0	0								NOTE	0-127 inst note of BD1
123	1	0								NOTE	0-127 inst note of BD2
182	60	0								NOTE	0-127 inst note of VBRSLP

order of instruments is as follow.

	x0	x1	x2	x3	x4	x5	x6	x7	x8	x9
0x	BD 1	BD 2	BD 3	H.BD	GateBD	E.BD	SD 1	SD 2	Pic1SD	H.SD 1
1x	H.SD 2	GateSD	E.SD	Rim 1	Rim 2	Tom 1	Tom 2	Tom 3	Tom 4	F.Tom1
2x	F.Tom2	F.Tom3	F.Tom4	E.Tom1	E.Tom2	E.Tom3	E.Tom4	HHc1os	HHc1os	HH1/4o
3x	HHpdl	Ride	Edge	Crash	FMprc1	FMprc2	FMprc3	GlsCsh	BellTr	TimpnH
4x	TimpnL	Claps	Shaker	Cowbel	TimblH	TimblL	Whst1L	Whst1L	CgaHWT	CgaHOP
5x	Cga LO	Bgo HI	Bgo LO	Quicah	Quical	Ago HI	Ago LO	Tambm	Claves	Cstnt
6x	VbrSlp									

*** RKAT *** 122 byte rhythm keyboard assign data
 para. cng g=4, h=0, p=115 (user assign 1)
 p=116 (user assign 2)

No.	para	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0								INST NUMBER	0-61 inst of C1
1	1	0								INST NUMBER	0-61 inst of C1
2	2	0								INST NUMBER	0-61 inst of D1
60	60	0								INST NUMBER	0-61 inst of C6

< Table 4 >

Dump Request Messages

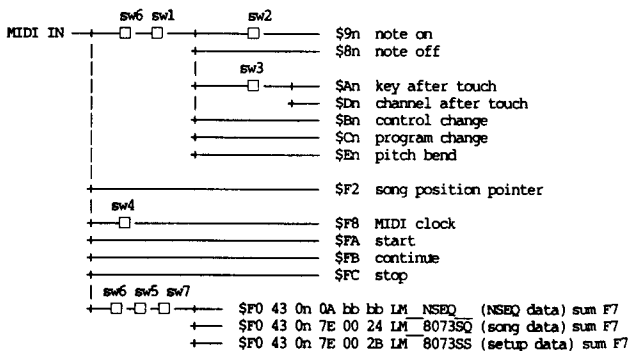
	★	VCED	f0,43,2n,03,f7
##	★	VMEM (V50 100 voice bulk)	f0,43,2n,04,f7
	★	ACED + VCED [TX81Z]	f0,43,2n,7e,LM_8976AE,f7
%%	★	ACED2 + ACED + VCED [V2]	f0,43,2n,7e,LM_8023AE,f7
##	★	ACED3 + ACED2 + ACED + VCED (V50 1voice bulk)	f0,43,2n,7e,LM_8073AE,f7
	★	PCED [V2]	f0,43,2n,7e,LM_8976PE,f7
##	★	PCED2 + PCED (V50 1 pfm bulk)	f0,43,2n,7e,LM_8073PE,f7
	★	PVMEM	f0,43,2n,7e,LM_8976PM,f7
##	★	PVMEM2 + PVMEM (V50 100 pfm bulk)	f0,43,2n,7e,LM_8073PM,f7
	★	system setup	f0,43,2n,7e,LM_8976Sx,f7 (x = 0,1,2)
%%	★	setup(effect grp2-4)	f0,43,2n,7e,LM_8976Sx,f7 (x = 3,4,5)
%%	★	system setup 2	f0,43,2n,7e,LM_8023S0,f7
##	★	system setup 3 + 2 + 1	f0,43,2n,7e,LM_8073S0,f7
	★	micro tuning buffer	f0,43,2n,7e,LM_MCRTE0,f7 (x = 0 , 1)
##	★	SEQ system (SYSQ)	f0,43,2n,7e,LM_8073SS,f7
##	★	SEQ sequence data(NSEQ)	f0,43,2n,0A,LM_NSEQ_,f7
##	★	SEQ song data(SSONG)	f0,43,2n,7e,LM_8073SQ,f7
##	★	RHYTHM system (SYSR)	f0,43,2n,7e,LM_8073RS,f7
##	★	RHYTHM inst setup (RINST)	f0,43,2n,7e,LM_8073RI,f7
##	★	R kbd assign table (RKAT1) (user1)	f0,43,2n,7e,LM_8073K0,f7
##	★	R kbd assign table (RKAT2) (user2)	f0,43,2n,7e,LM_8073K1,f7
##	★	R seq data(RSEQ)	f0,43,2n,7e,LM_8073RY,f7
note)		Ascii number	HEX
	★	LM_8976AE	4c,4d,20,20,38,39,37,36,41,45
	★	LM_8023AE	4c,4d,20,20,38,30,32,33,41,45
	★	LM_8976PE	4c,4d,20,20,38,39,37,36,50,45
	★	LM_8976PM	4c,4d,20,20,38,39,37,36,50,4d
	★	LM_8976S0	4c,4d,20,20,38,39,37,36,53,30
	★	LM_8976S1	4c,4d,20,20,38,39,37,36,53,31
	★	LM_8976S2	4c,4d,20,20,38,39,37,36,53,32
	★	LM_8976S3	4c,4d,20,20,38,39,37,36,53,33
	★	LM_8976S4	4c,4d,20,20,38,39,37,36,53,34
	★	LM_8976S5	4c,4d,20,20,38,39,37,36,53,35
	★	LM_8023S0	4c,4d,20,20,38,30,32,33,53,30
	★	LM_MCRTE0	4c,4d,20,20,4d,43,52,54,45,30
	★	LM_MCRTEL	4c,4d,20,20,4d,43,52,54,45,31
	★	LM_8073AE	4c,4d,20,20,38,30,37,33,41,45
	★	LM_8073PE	4c,4d,20,20,38,30,37,33,50,45
	★	LM_8073PM	4c,4d,20,20,38,30,37,33,50,4d
	★	LM_8073S0	4c,4d,20,20,38,30,37,33,53,30
	★	LM_8073SS	4c,4d,20,20,38,30,37,33,53,53
	★	LM_NSEQ	4c,4d,20,20,4e,53,45,51,20,20
	★	LM_8073SQ	4c,4d,20,20,38,30,37,33,53,51
	★	LM_8073RS	4c,4d,20,20,38,30,37,33,52,53
	★	LM_8073RI	4c,4d,20,20,38,30,37,33,52,49
	★	LM_8073K0	4c,4d,20,20,38,30,37,33,4b,30
	★	LM_8073K1	4c,4d,20,20,38,30,37,33,4b,31
	★	LM_8073RY	4c,4d,20,20,38,30,37,33,52,59

< Table 5 >

<<< \$F0,\$43,\$1n,... >>>			
VCD	\$12(g=4,h=2),p=0-92,93		
VCD2(DX21)	\$12(g=4,h=2),p=94-127		
ACED	\$13(g=4,h=3),p=0-22		
ACED2(DX11)	\$13(g=4,h=3),p=23-32		
ACED3(V50)	\$13(g=4,h=3),p=33-52		
SYS(81Z remote)	\$13(g=4,h=3),p=64-75		
SYS(DX11remote)	\$13(g=4,h=3),p=76-124		
PCED	\$10(g=4,h=0),p=0-109		
PCED2	\$10(g=4,h=0),p=110	k=0-32	
SYSQ(seq system)	\$10(g=4,h=0),p=111	k=0-32	
SYSR(r system)	\$10(g=4,h=0),p=112	k=0-15	
RINST1(vol,pan)	\$10(g=4,h=0),p=113	k=0-121	
RINST2(note)	\$10(g=4,h=0),p=114	k=0-60	
RKAT1(user1)	\$10(g=4,h=0),p=115	k=0-60	
RKAT2(user2)	\$10(g=4,h=0),p=116	k=0-60	
VMEM bulk header	\$44(g=9,h=0),p=7,	(d=1-4)	
VMEM bulk header	\$10(g=4,h=0),p=117,	(d=0-3)	
V50RM(V50remote)	\$10(g=4,h=0),p=118	k=0-56	
WT11SYS(system)	\$10(g=4,h=0),p=119,	k=0-15	
WT11SYS(remote)	\$10(g=4,h=0),p=119	k=64-74	
SYS(effect gp2)	\$10(g=4,h=0),p=120,	k=0-54	
SYS(effect gp3)	\$10(g=4,h=0),p=121,	k=0-54	
SYS(effect gp4)	\$10(g=4,h=0),p=122,	k=0-54	
SYS(system)	\$10(g=4,h=0),p=123,	k=0-26	
SYS2(DX11system)	\$10(g=4,h=0),p=123,	k=27-46	
SYS3(V50system)	\$10(g=4,h=0),p=123,	k=47-79	
SYS(effect gp1)	\$10(g=4,h=0),p=124,	k=0-54	
MCT(oct)	\$10(g=4,h=0),p=125,	k=0-11	
MCT(full)	\$10(g=4,h=0),p=126,	k=0-127	
SYS(pgmchg)	\$10(g=4,h=0),p=127,	k=0-127	

SEQUENCER SECTION

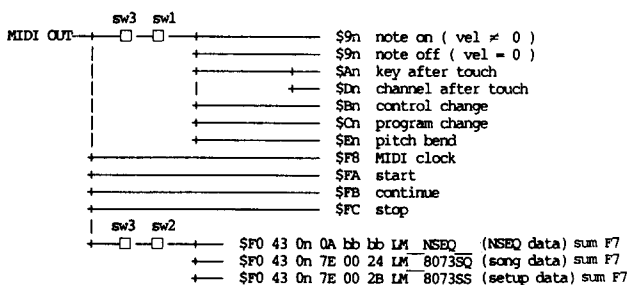
Reception flow diagram



(Note)

- sw1: When in RECORD, the SETUP reception channel
 sw2: When in RECORD, the SETUP velocity on/off
 sw3: When in RECORD, the SETUP aftertouch on/off
 sw4: When in PLAY, this is on when SETUP sync is set to "MIDI"
 sw5: Set by the UTILITY (setup) device number
 sw6: Received only when UTILITY (setup) midi sw = on
 sw7: Received only when UTILITY int memory protect = off

Transmission flow diagram



(Note)

- sw1: Set for each track in MIDI TRANSMIT CHANNEL
 sw2: Set in Device No. of utility (setup)
 sw3: Transmitted only when UTILITY (setup) midi sw = on

Channel messages:

Received only during RECORD. Transmitted only during PLAY and during overdub. For transmission/reception conditions, see the reception flow diagram and the transmission flow diagram.

Mode messages:

Neither received nor transmitted.

System common messages:

Only \$F2 (song position pointer) is received. (However not in recording mode, nor during playback.) Other than this, neither received nor transmitted.

BULK DUMP:

Three types of bulk data are transmitted and received. The transmission/reception channel can be set in synthesizer mode.

- 1) \$F0 43 0n 7E 00 2B LM_8073SS (setup data) sum F7
- 2) \$F0 43 0n 7E 00 24 LM_8073SQ (song data) sum F7
- 3) \$F0 43 0n 0A bb bb LM_NSEQ_ (NSEQ data) sum F7

Reception is possible only when not playing back or recording. When 2.song data and 1.NSEQ data (sequence data) is received, it will be loaded into song memory only if the current song is empty.

Transmission occurs when MIDI exclusive "bulk dump" is executed, or when a dump request is received.

The data format for NSEQ data and seq song data is explained below. For the seq (SYSQ) data format, see the data format table for the synthesizer section (table 4).

Bulk data with a header of "LM—NSEQ1—" can also be received. (However, macros, time signature changes, exclusive, etc. in the data will be ignored.)

NSEQ DATA FORMAT

NSEQ data for a one song consists of multiple tracks beginning with F0 0n (n=track number) and ending with F2. Empty tracks are not included.

The time/event/control data explained in the supplement are between the F0 0n and the F2.

hex	description
F0 00	top of track #1
—	time/event/control data
F2	end of record
—	track #2 ~ #7 data
F0 07	top of track #8
—	time/event/control data
F2	end of record

Supplement: NSEQ time/event/control data format (expressed in binary)

short time	0ttttttt	(384th note length / bit)
long time	0ttttttt 0ttttttt	(in the order of MS byte - LS byte)
short note	10ddddd 0kkkkkkk 0vvvvvvv	
long note	110ddddd 0ddddd 0kkkkkkk 0vvvvvvv	
short note	10ddddd 1kkkkkkk	(when velocity = \$40)
long note	110ddddd 0ddddd 1kkkkkkk	(when velocity = \$40)

ddd = duration (96th note length / bit)
 kkk = MIDI note number
 vvv = MIDI velocity

measure mark	11111011	(measure mark)
no operation	11111000	(does nothing)

(The following are the same as MIDI format except for the MS byte.)

poly a.touch	11111010 0kkkkkkk 0vvvvvvv
control change	11111011 0ccccccc 0vvvvvvv
program change	11111100 0ppppppp
channel a.touch	11111101 0vvvvvvv
pitch bend	11111110 0vvvvvvv 0vvvvvvv

SEQ SONG DATA FORMAT

Song data consists of tempo, beat (time signature), and song name. It has the following format.

*** SSONG *** 26 byte sequencer song data

No	b7	b6	b5	b4	b3	b2	b1	b0	Data	note
0	0	0	0	0	0	0	0	0	SETUP	0-1 setup store flag
1	0	0	0	0	0	0	0	0	TIME_SIG	0-31 packed time signature
2	0	0	0	0	0	0	0	0	TEMPO1	0-1 tempo 30-240 (7bit)
3	0	0	0	0	0	0	0	0	TEMPO2	0-127
4	0	0	0	0	0	0	0	0	SONG_NAME1	32-127 song name (ASCII)
5	0	0	0	0	0	0	0	0	SONG_NAME2	
11	0	0	0	0	0	0	0	0	SONG_NAME8	
12	0	0	0	0	0	0	0	0	SEQ_TCH(TRACK1)	0-16 transmit channel 16:off
13	0	0	0	0	0	0	0	0	SEQ_TCH(TRACK2)	0-16 transmit channel 16:off
19	0	0	0	0	0	0	0	0	SEQ_TCH(TRACK8)	0-16 transmit channel 16:off
20	0	0	0	0	0	0	0	0	S.MODE	0-1 synth mode
21	0	0	0	0	0	0	0	0	V.TYPE	0-2 0:SGL,1:PFM mode synth voice type 0:internal 1:card, 2:preset
22	0	0	0	0	0	0	0	0	VOICE/PPM NO	0-99 synth voice/ppm No
23	0	0	0	0	0	0	0	0	R.MODE	0-1 Rhythm mode 0:PIN 1:SONG
24	0	0	0	0	0	0	0	0	R.NO1	0-1 Rhythm song/ptn No
25	0	0	0	0	0	0	0	0	R.SONG/PIN_NO2	0-127 0 - 99:100-199 100-199:P00-P99

note) 1 TIME_SIG

0 - 3 : 1/4 - 4/4
4 - 11 : 1/8 - 8/8
12 - 27 : 1/16 - 16/16

(Table 1) 1. Transmission data

1-1 Channel information

(1) Channel voice information

(1.1) KEY ON/OFF			
STATUS	1001nnnn	(9n)	n = channel number
NOTE No.	0kkkkkkk		k=0(C-2)~111(D#7)
VELOCITY	0vvvvvvv	(v≠0)	KEY ON
	00000000	(v=0)	KEY OFF
(1.2) POLYPHONIC AFTER TOUCH			
STATUS	1010nnnn	(An)	n = channel number
NOTE No.	0kkkkkkk		k=0(C-2)~127(G8)
Value	0vvvvvvv		v=0~127
(1.3) CONTROL CHANGE			
STATUS	1011nnnn	(Bn)	n = channel number
CONTROL No.	0ccccccc		c=0~121
CONTROL Value	0vvvvvvv		
(1.4) PROGRAM CHANGE			
STATUS	1100nnnn	(Cn)	n = channel number
PROGRAM No.	0ppppppp		p=0~99
			mode(if pgm cng sw is not TransFilter)
			p=119:IND int(at PFI)
			card(at PFC)
			p=121:IND preset
			p=122:SGL int
			p=123:SGL card
			p=124:SGL preset
			p=125:PFM int
			p=126:PFM card
			p=127:PFM preset
(1.5) AFTER TOUCH			
STATUS	1101nnnn	(Dn)	n = channel number
Value	0vvvvvvv		v=0~127
(1.6) PITCH BENDER			
STATUS	1110nnnn	(En)	n = channel number
Value	0uuuuuuu		
Value	0vvvvvvv		

1-2 System information

(1) System realtime messages

(1.1) TIMING CLOCK STATUS	11111000	(F8)
(1.2) START STATUS	11111010	(FA)
(1.3) CONTINUE STATUS	11111011	(FB)
(1.4) STOP STATUS	11111100	(FC)

(2) System exclusive messages

(2.1) SEQUENCE DUMP

STATUS	11110000	(F0)
ID No.	01000011	(43)
SUB STATUS	0000ssss	(0s) s=device number
GROUP NUMBER	00001010	(0A)
BYTE COUNT(MSB)	0bbbbbbb	
BYTE COUNT(LSB)	0bbbbbbb	
CLASSIFICATION	01001100	ASCII'L
NAME	01001101	ASCII'M
	00100000	ASCII'—
	00100000	ASCII'—
DATA FORMAT	01001110	ASCII'N
NAME	01010011	ASCII'S
	01000101	ASCII'E
	01010001	ASCII'Q
	00100000	ASCII'—
	00100000	ASCII'—
DATA	0ddddd	
CHECK SUM	0eeeeeee	
BOX	11110111	(F7)

(2.2) UNIVERSAL BULK DUMP (Seq song data)

STATUS	11110000	(F0)
ID No.	01000011	(43)
SUB STATUS	0000ssss	(0s) s=device number
GROUP NUMBER	01111110	(7E)
BYTE COUNT(MSB)	00000000	(00)
BYTE COUNT(LSB)	00100100	(24)
CLASSIFICATION	01001100	ASCII'L
NAME	01001101	ASCII'M
	00100000	ASCII'—
	00100000	ASCII'—
DATA FORMAT	00111000	ASCII'8
NAME	00110000	ASCII'0
	00110111	ASCII'7
	00110011	ASCII'3
	01010011	ASCII'S
	01010001	ASCII'Q
DATA	0ddddd	
CHECK SUM	0eeeeeee	26 bytes
BOX	11110111	(F7)

(Table 2) 2. Reception data

2-1 Channel information

Same as transmission

2-2 System information

(1) System common messages

(1.1) SONG POSITION POINTER STATUS 11110010 (F2)

(2) System realtime message

Same as transmission

(3) System exclusive message

(3.1) SEQUENCE DUMP

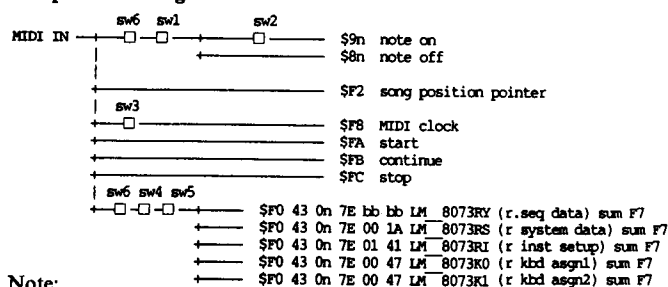
Same as transmission

(3.2) UNIVERSAL BULK DUMP (Seq setup data)

Same as transmission

RHYTHM SECTION

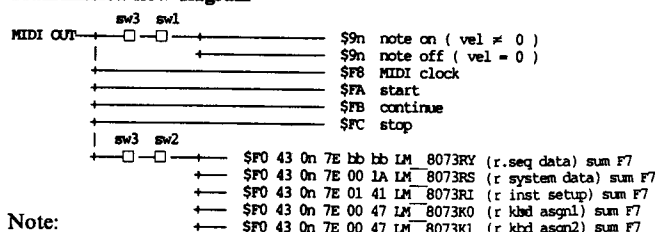
Reception flow diagram



Note:

- sw1: Reception channel in SETUP
sw2: When in RECORD, the SETUP velocity on/off
sw3: When in PLAY, this is "on" when the SETUP sync is set to "MIDI"
sw4: The device number selected in utility (setup)
sw5: Received only when the utility setting memory protect is "off".
sw6: Received only when UTILITY (setup) midi sw = on

Transmission flow diagram



Note:

- sw1: The transmit channel in SETUP.
sw2: The device number in utility (setup)
sw3: Transmitted only when UTILITY (setup) midi = on

Channel messages:

Transmitted only during PLAY and while recording. For the reception and transmission conditions, see the reception flow diagram and the transmission flow diagram.

Mode messages:

Neither received nor transmitted.

System common messages:

Only \$F2 (song position pointer) is received (however not when in recording mode nor during playback). Other messages are neither received nor transmitted.

System Realtime Messages:

\$F8, \$FA, \$FB, and \$FC are transmitted and received. (However when in recording mode, \$FA, \$FB, and \$FC are not received.)

BULK DUMP:

Five types of bulk data are transmitted and received. The transmission/reception channel can be set in synthesizer mode.

- \$F0 43 0n 7E bb bb LM_8073RY (r.seq data) F7
- \$F0 43 0n 7E 00 1A LM_8073RS (r system data) F7
- \$F0 43 0n 7E 01 41 LM_8073RI (r inst data) F7
- \$F0 43 0n 7E 00 47 LM_8073K0 (r kbd asgn1) F7
- \$F0 43 0n 7E 00 47 LM_8073K1 (r kbd asgn2) F7

Reception is possible at any time except while playing or recording. Transmission occurs when MIDI exclusive "bulk dump" has been executed, or when a dump request has been received.

For the data formats of system (SYSR), inst setup (RINST), and kbd assign table (RKAT), see the data format table of the synthesizer section (table 4).

(Table 1) 1. Transmission data

1-1 Channel information

(1) Channel voice messages

(1.1) KEY ON/OFF	1001nnnn	(9n)	n = channel number k=0(C-2)~127(G8)
STATUS	0kkkkkkk	(v≠ 0)	KEY ON
NOTE No.	0vvvvvvv	(v= 0)	KEY OFF
VELOCITY	00000000		

1-2 System information

(1) System realtime messages

(1.1) TIMING CLOCK		
STATUS	11111000	(F8)
(1.2) START		
STATUS	11111010	(FA)
(1.3) CONTINUE		
STATUS	11111011	(FB)
(1.4) STOP		
STATUS	11111100	(FC)

(2) System exclusive messages

(2.1) RHYTHM SEQUENCE DUMP

STATUS	11110000	(F0)
ID No.	01000011	(43)
SUB STATUS	0000ssss	(0s) s=device number
GROUP NUMBER	00001010	(0A)
BYTE COUNT(MSB)	0bbbbbbb	
BYTE COUNT(LSB)	0bbbbbbb	
CLASSIFICATION-	01001100	ASCII'L
NAME	01001101	ASCII'M
	00100000	ASCII' -
	00100000	ASCII'N
DATA FORMAT-	01001110	ASCII'N
NAME	01010011	ASCII'S
	01000101	ASCII'E
	01010001	ASCII'Q
	00100000	ASCII' -
	00100000	ASCII' -
DATA	0ddddd	
	0ddddd	
CHECK SUM	0eeeeeee	
EOK	11110111	(F7)

Note 1) data format

count	size(byte)	data
0 - 217	218	pattern/song directory
218 - 317	100	time signature of 100 pattern
318 - 417	100	bar of 100 pattern
418 - 481	64 (8x8song)	song name
482 - 10239(max)	9758 (max)	pattern/song data

The above data is divided into MSB4 bits and LSB 4 bits, and each converted into an ASCII code. If the data count exceeds 4K bytes, the data from "BYTE COUNT" to "CHECK SUM" is repeated for every 4K bytes.

(Table 2) 2. Reception data

2-1 Channel information

Same as for reception

2-2 System information

(1) System common messages

(1.1) SONG POSITION POINTER	
STATUS	11110010 (F2)

(2) System realtime messages

Same as for reception

(3) System exclusive messages

(3.1) RHYTHM SEQUENCE DUMP	
Same as for transmission	

V50 ERROR MESSAGE TABLE

Display	Reason
1. MIDI	
Midi buffer full !	Too much MIDI data has been transmitted or received too rapidly. Reduce the amount of transmitted data.
Midi data error !	MIDI data was incorrectly received.
Memory protected !	Bulk data other than 1 voice or 1 performance was received when the internal memory protect was turned on.
Midi checksum err !	An error occurred when receiving bulk data.
Midi is off !	The MIDI on/off setting is off, and transmission or reception is not possible.
Data empty !	You tried to transmit sequence data (bulk), but there was no data.
Bulk rejected; song exists !	The currently selected song number already contains other data, so sequence data (bulk) cannot be received. Select an empty song number.
Song memory full	Incoming sequence data (bulk) filled up the internal memory, and could not be received completely.
2. Card	
Card not ready !	A card is not correctly inserted.
Memory protected !	The internal or card protect switch is turned on, so data cannot be loaded or saved.
Card protected !	The memory protect switch of the card itself is turned on, so data cannot be loaded or saved.
Bank unavailable !	The specified bank of the card is not valid.
Illegal format !	The card format is incorrect.
Verify error !	Data was not correctly saved to card.
3. Battery	
Change int battery !	The internal backup battery of the V50 has run down.
Change card battery !	The backup battery of the card has run down.
4. Disk	
Disk not ready !	A disk is not correctly inserted.
Illegal changed !	During backup, the new and old disks were inserted in an incorrect order.
Illegal disk !	The data on disk is bad.
Bad disk!	The disk is bad.
Files not found !	No files were found on disk.
Write protected !	The write protect slider of the disk is in the protect position.
Disk full !	There is no more free space on the disk.
Directory full !	The directory area of the disk is full, and no more files can be created.
Media type error !	The disk is an incorrect type.
Illegal file !	The file is not for the V50.
SEQ memory full !	The internal sequence memory is full.
No data received !	In MDR mode, no bulk data was received.

TABLEAU DES MESSAGES D'ERREUR V50

Afichage	Cause
1. MIDI	
Midi buffer full !	Trop de données MIDI ont été reçues ou transmises trop rapidement. Réduire la quantité de données transmises.
Midi data error !	Les données MIDI n'ont pas été correctement reçues.
Memory protected !	Des données en bloc autres que voix ou performance ont été reçues alors que la fonction interne de protection de mémoire est activée.
Midi checksum err !	Une erreur s'est produite lors de la réception de données en bloc.
Midi is off !	Le réglage MIDI ON/OFF est OFF et la transmission ou la réception ne sont pas possibles.
Data empty !	Vous avez essayé de transmettre des données de séquence (en bloc), mais il n'y avait pas de données.
Bulk rejected; song exists !	Le numéro de morceau sélectionné contient déjà d'autres données, et les données de séquence (en bloc) ne peuvent donc pas être reçues. Sélectionner un numéro de morceau vide.
Song memory full	Les données de séquence (en bloc) en cours de réception ont rempli la mémoire interne et il n'a pas été possible de les recevoir toutes.
2. Cartouche	
Card not ready !	La cartouche n'est pas correctement mise en place.
Memory protected !	La fonction de protection interne ou le contacteur de protection de la carte sont ON et il n'est pas possible de charger ou de sauvegarder des données.
Card protected !	Le contacteur de protection de la cartouche elle-même est ON et il n'est pas possible de charger ou de sauvegarder des données.
Bank unavailable !	La banque spécifiée de la cartouche n'est pas valide.
Illegal format !	Le format de la cartouche n'est pas correct.
Verify error !	Les données n'ont pas été correctement sauvegardées sur la cartouche.
3. Piles	
Change int battery !	La pile de sauvegarde interne de 50 V est vide.
Change card battery !	La pile de sauvegarde de la cartouche est vide.
4. Disquette	
Disk not ready !	La disquette n'est pas correctement mise en place.
Illegal changed !	Au cours de la copie de secours, l'ancienne disquette et la nouvelle disquette n'ont pas été introduites dans le bon ordre.
Illegal disk !	Les données de la disquettes sont mauvaises.
Bad disk!	La disquette est défectueuse.
Files not found !	Aucun fichier n'a été trouvé sur la disquette.
Write protected !	Le curseur de protection de la disquette est sur la position protection.
Disk full !	Il n'y a plus d'espace libre sur la disquette.
Directory full !	La zone de répertoire de la disquette est pleine et il est impossible de créer de nouveaux fichiers.
Media type error !	La disquette ne convient pas.
Illegal file !	Le fichier n'est pas pour le V50.
SEQ memory full !	La mémoire interne de séquence est pleine.
No data received !	Aucune donnée en bloc n'a été reçue en mode MDR.

V50 FEHLERMELDUNGSTABELLE

Display	Ursache
1. MIDI	
Midi buffer full !	MIDI-Pufferspeicher überlastet aufgrund zu hoher Datenmenge oder Übertragungsgeschwindigkeit. Übertragungsgeschwindigkeit oder Datenmenge reduzieren.
Midi data error !	MIDI-Datenempfangsstörung
Memory protected !	Blockdaten für mehr als 1 Stimme oder 1 Performance wurden empfangen, während der interne Speicherschutz aktiviert war.
Midi checksum err !	Fehler beim Empfang von Blockdaten.
Midi is off !	MIDI ON/OFF-Funktion ist auf OFF (aus), weshalb MIDI-Datenempfang oder -übertragung nicht möglich.
Data empty !	Übertragung von Sequenzdaten (Blockdaten) wurde versucht, obwohl solche Daten nicht vorhanden.
Bulk rejected; song exists !	Die gegenwärtige angewählte Songnr. enthält bereits andere Daten, weshalb Sequenzdaten (Blockdaten) nicht empfangen werden können. Eine unbelegte Songnummer wählen.
Song memory full	Eintreffende Sequenzdaten (Blockdaten) überfüllen den internen Speicher und können nicht komplett empfangen werden.
2. Speicherkarte	
Card not ready !	Speicherkarte falsch eingeführt.
Memory protected !	Interner Speicherschutz oder Speicherschutz der Karte aktiviert, weshalb Daten nicht geladen oder eingelesen werden können.
Card protected !	Der Speicherschutzschalter der Karte ist geschlossen, weshalb Daten nicht geladen oder gespeichert werden können.
Bank unavailable !	Die spezifizierte Speicherbank der Karte existiert nicht.
Illegal format !	Die Karte ist falsch formatiert.
Verify error !	Daten wurden nicht korrekt auf die Karte geschrieben.
3. Batterie	
Change int battery !	Die interne Batterie des V50 zum Speichererhalt ist erschöpft.
Change card battery !	Die Batterie zum Speichererhalt der Karte ist erschöpft.
4. Diskette	
Disk not ready !	Diskette inkorrekt eingeführt.
Illegal changed !	Während Dateisicherung wurden alte und neue Disketten in falscher Reihenfolge eingeführt.
Illegal disk !	Daten auf Diskette beschädigt.
Bad disk!	Diskette beschädigt.
Files not found !	Diskette enthält keine Dateien.
Write protected !	Löschschutzlasche der Diskette in Schutzstellung.
Disk full !	Kein Platz auf der Diskette.
Directory full !	Dateienindex der Diskette voll, es können keine neuen Dateien geschaffen werden.
Media type error !	Falscher Diskettentyp.
Illegal file !	Datei nicht auf V50 ausgelegt.
SEQ memory full !	Interner Speicher ist voll.
No data received !	Im MDR-Modus wurden keine Blockdaten empfangen.

Function ...		Transmitted	Recognized	Remarks
Basic Default		1 - 16	1 - 16	memorized
Channel Changed		1 - 16	1 - 16	
Mode Default		3	1, 2, 3, 4	memorized
Messages		POLY, MONO(M=1)	POLY, MONO(M=1)	sgl mode only
Altered		*****	x	
Note Number	True voice	36 - 96	0 - 127	
		*****	12 - 107	
Velocity Note ON		o 9nH,v=1-127	o v=1-127	
	Note OFF	x 9nH,v=0	x	
After Touch	Key's Ch's	x	x	
		o *3	o *3	
Pitch Bender		o *2	o 0-12 semi *2	7 bit resolution
Control Change	1	o *1	o *1	Modulation wheel
	2	o *1	o *1	Breath control
	4	o *1	o *1	Foot control
	5	x	o (sgl only)*1	Portamento time
	6	o *1	x	Data entry knob
	7	o *1	o *1	Volume
	10	x	o (pfm only)*1	Pan(L,L+R,R)
	64	o	o	Sustain
	65	o *1	o *1	Portamento
	96	o *1	x	Data entry +1
	97	o *1	x	Data entry -1
	0 - 31	o *1		D. entry (play)
Reset All Cntrlr		x	o	
Prog Change	True #	o 0 - 127 *4	o 0 - 127	if pgm cng sw is on.(assignable)
		*****	0 - 599	
System Exclusive		o *5	o *5	Voice parameters
System	Song Pos	x	o	
	Song Sel	x	x	
Common	Tune	x	x	
System	Clock	o	o	
Real Time	Commands	o	o	
Aux	Local ON/OFF	x	x	
	All Notes OFF	x	o (123,126,127)	126,127 sgl only
Mes-	Active Sense	o	o	
sages:	Reset	x	x	
Notes: *1 = transmit/receive if control change sw is on.				
*2 = transmit/receive if pitch bend sw is on.				
*3 = transmit/receive if after touch sw is on.				
*4 = transmit if pgm change sw is on and device No is off.				
*5 = transmit/receive if device No is not off.				
Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO o : Yes				
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO x : No				

Function ...		Transmitted	Recognized	Remarks
Basic Default		: 1 - 16	: 1 - 16	: memorized
Channel Changed		: 1 - 16	: 1 - 16	:
Mode Default		: x	: x	:
Mode Messages		: x	: x	:
Mode Altered		: *****	: x	:
Note		: 0 - 111	: 0 - 111	:
Number : True voice:		: *****	:	:
Velocity Note ON		: o 9nH,v=1-127	: o v=1-127 *1	:
Note OFF		: x 9nH,v=0	: x	:
After Key's		: o	: o *2	:
Touch Ch's		: o	: o *2	:
Pitch Bender		: o	: o	:
0 - 120		: o	: o	:
Control		:	:	:
Change		:	:	:
Prog		: o 0 - 127	: o 0 - 127	:
Change : True #		: *****	:	:
System Exclusive		: o	: o *3	: Song data
System : Song Pos		: x	: o *4	:
: Song Sel		: x	: x	:
Common : Tune		: x	: x	:
System :Clock		: o	: o *5	:
Real Time :Commands:		: o	: o	:
Aux :Local ON/OFF		: x	: x	:
:All Notes OFF:		: x	: x	:
Mes- :Active Sense		: o	: x	:
sages:Reset		: x	: x	:
Notes: *1 = receive if velocity switch is on.				
*2 = receive if after touch switch is on.				
*3 = receive if current song has no data.				
*4 = not receive at recording mode.				
*5 = receive in MIDI sync mode.				
Mode 1 : OMNI ON, POLY	Mode 2 : OMNI ON, MONO	o : Yes		
Mode 3 : OMNI OFF, POLY	Mode 4 : OMNI OFF, MONO	x : No		

Function ...		Transmitted	Recognized	Remarks
Basic Default		1 - 16 *1	1 - 16	memorized
Channel Changed		1 - 16	1 - 16	
Mode	Default	x	x	
	Messages	x	x	
	Altered	*****	x	
Note		0 - 127	0 - 127	
Number : True voice		*****		
Velocity Note ON		o 9nH, v=1-127	o v=1-127 *2	
Note OFF		x 9nH, v=0	x	
After Key's		x	x	
Touch Ch's		x	x	
Pitch Bender		x	x	
Control Change		x	x	
Prog		x	x	
Change : True #		*****		
System Exclusive		o *3	o *3	Song data etc.
System : Song Pos		x	o *4	
: Song Sel		x	x	
Common : Tune		x	x	
System : Clock		o	o *5	
Real Time : Commands		o	o	
Aux : Local ON/OFF		x	x	
: All Notes OFF		x	x	
Mes- : Active Sense		o	x	
sages: Reset		x	x	
Notes: *1 = transmit under playing.				
*2 = receive if velocity switch is on.				
*3 = transmit/receive if device No is not off.				
*4 = not receive at recording mode.				
*5 = receive in MIDI sync mode.				
Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO o : Yes				
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO x : No				

Performance data blank chart

You may copy the following chart as a memo sheet for your performance settings.

Vous pouvez copier le tableau suivant et y portez vos réglages de performance afin de vous en souvenir.

Kopieren Sie diese Übersicht und notieren Sie jeweils Ihre neu programmierten Performance-Werte.

YAMAHA V50 PERFORMANCE DATA						DATE / /		
NAME								
INST NUMBER	1	2	3	4	5	6	7	8
ASSIGN MODE								
NOTES								
VOICE NUMBER								
MIDI RECEIVE CH								
LIMIT / LOW								
LIMIT / HIGH								
INST DETUNE								
NOTE SHIFT								
VOLUME								
OUTPUT ASSIGN								
LFO SELECT								
MICRO TUNING								
SELECT								
KEY								
P. EFFECT								
EFFECT								
SELECT								
BALANCE								
OUT LEVEL								
STEREO MIX								
PARAM 1								
PARAM 2								
PARAM 3								

Voice data blank chart

You may copy the following chart as a memo sheet for your voice settings.

Vous pouvez copier le tableau suivant et y portez vos réglages de voix afin de vous en souvenir.

Kopieren Sie diese Übersicht und notieren Sie jeweils Ihre neu programmierten Voice-Werte.

YAMAHA V50 VOICE DATA		DATE / /				VOICE NAME		
OPERATOR		1	2	3	4	POLY / MONO MODE		
ALGORITHM						PITCH BEND RANGE		
FEEDBACK LEVEL						FOOT SW		
LFO	WAVE					PORTAMENTO	MODE	
	SPEED						TIME	
	DELAY					FOOT CONTROL	VOLUME	
	SYNC						PITCH	
	PMD						AMPLITUDE	
	AMD						MODULATION	PITCH
SENSITIVITY	PMS					WHEEL	AMPLITUDE	
	AMS					BREATH CONTROL	PITCH	
	AME						AMPLITUDE	
	EBS						PITCH BIAS	
	KVS						EG BIAS	
OSCILLATOR	MODE					AFTER TOUCH	PITCH	
	FIX SHIFT						AMPLITUDE	
	FIX RANGE						PITCH BIAS	
	FREQUENCY						EG BIAS	
	WAVE					REVERB	RATE	
	DETUNE					EFFECT	SELECT	
ENVELOPE GENERATOR	AR						BALANCE	
	D1R						OUT LEVEL	
	D1L						STEREO MIX	
	D2R						PARAM 1	
	RR						PARAM 2	
	SHIFT						PARAM 3	
PITCH ENVELOPE GENERATOR	PR1							
	PL1							
	PR2							
	PL2							
	PR3							
	PL3							
OUTPUT LEVEL								
KEYBOARD SCALING	RATE							
	LEVEL							
TRANPOSE								

Rhythm instrument key assignments

	Note No. Voice name	PRESET 1	PRESET 2	PRESET 3	USER1 initial value
		USER2 initial value			
C1	C1	H. BD	BD 2	SD 1	BD 1
C#1	C # 1	GateBD	Cowbell	Ride	BD 2
D1	D1	E. BD	BD 3	H. SD 2	BD 3
D#1	D # 1	BD3	HH1/4o	Rim 2	H. BD
E1	E1	E. Tom 4	H. BD	BD 3	GateBD
F1	F1	E. Tom 3	GateBD	BD 1	E. BD
F#1	F # 1	E. Tom 2	Claps	Rim 1	SD 1
G1	G1	E. Tom 1	E. BD	H. SD 1	SD 2
G#1	G # 1	BD 2	Tambrn	E. SD	PiclSD
A1	A1	BD 1	BellTr	SD 2	H. SD 1
A#1	A # 1	Rim 2	GlsCsh	HHpdl	H. SD 2
B1	B1	Tom 4	Claves	GateSD	GateSD
C2	C2	Tom 3	SD 2	Tom 4	E. SD
C#2	C # 2	SD 2	TimblL	HHclos	Rim 1
D2	D2	Tom 2	PiclSD	Tom 3	Rim 2
D#2	D # 2	Rim 1	TimblH	HHopen	Tom 1
E2	E2	SD 1	H. SD 1	Tom 2	Tom 2
F2	F2	Tom 1	H. SD 2	Tom 1	Tom 3
F#2	F # 2	Claps	Cga LO	Edge	Tom 4
G2	G2	Cowbell	GateSD	E. Tom4	F. Tom1
G#2	G # 2	Shaker	CgaHOP	Crash	F. Tom2
A2	A2	HHclos	E. SD	E. Tom3	F. Tom3
A#2	A # 2	Tambrn	CgaHMT	H. BD	F. Tom4
B2	B2	HHopen	Cstnt	E. Tom2	E. Tom1
C3	C3	Crash	BD 1	CgaLO	E. Tom2
C#3	C # 3	E. SD	Shaker	Shaker	E. Tom3
D3	D3	Ride	Tom 4	CgaHOP	E. Tom4
D#3	D # 3	Edge	Tom 3	CgaHMT	HHclos
E3	E3	Cga LO	Tom 2	Bgo HI	HHopen
F3	F3	CgaHOP	Tom 1	TimblL	HH1/4o
F#3	F # 3	CgaHMT	HHpdl	Claves	HHpdl
G3	G3	Bgo LO	HHclos	TimblH	Ride
G#3	G # 3	Bgo HI	HHopen	Cstnt	Edge
A3	A3	TimblL	SD 1	CuicaL	Crash
A#3	A # 3	TimblH	Ride	Cowbell	FMprcl
B3	B3	CuicaL	Crash	CuicaH	FMprc2
C4	C4	CuicaH	F. Tom4	Claps	FMprc3
C#4	C # 4	Claves	Edge	Ago LO	GlsCsh
D4	D4	Ago LO	F. Tom3	PiclSD	BellTr
D#4	D # 4	Ago HI	Bgo LO	Ago HI	TimpnH
E4	E4	TimpnL	F. Tom2	Bgo LO	TimpnL
F4	F4	WhstlL	F. Tom1	E. BD	Claps
F#4	F # 4	WhstlS	Bgo HI	Tambrn	Shaker
G4	G4	Cstnt	E. Tom4	E. Tom1	Cowbell
G#4	G # 4	BellTr	CuicaLO	WhstlL	TimblH
A4	A4	VbrSlp	E. Tom3	GateBD	TimblL
A#4	A # 4	TimpnH	CuicaHI	WhstlS	WhstlS
B4	B4	GlsCsh	E. Tom2	BD 2	WhstlL
C5	C5	GateSD	E. Tom1	BellTr	CgaHMT
C#5	C # 5	H. SD 2	Ago LO	VbrSlp	CgaHOP
D5	D5	H. SD 1	FMprcl	F. Tom4	Cga LO
D#5	D # 5	PiclSD	Ago HI	TimpnL	Bgo HI
E5	E5	HHpdl	FMprc2	F. Tom3	Bgo LO
F5	F5	HH1/4o	FMprc3	F. Tom2	CuicaH
F#5	F # 5	F. Tom 4	TimpnL	TimpnH	CuicaL
G5	G5	F. Tom 3	VbrSlp	F. Tom1	AgoHI
G#5	G # 5	F. Tom 2	TimpnH	HH1/4o	Ago LO
A5	A5	F. Tom 1	Rim 1	FMprc3	Tambrn
A#5	A # 5	FMprcl	Rim 2	GlsCsh	Claves
B5	B5	FMprc2	WhstlL	FMprc2	Cstnt
C6	C6	Fmprc3	WhstlS	FMprcl	VbrSlp
C#6	C # 6				

YAMAHA

Litiumbatteri!
Bör endast bytas av servicepersonal.
Explosionsfara vid felaktig hantering.

VAROITUS!
Lithiumparisto, Räjähdyksvaara.
Pariston saa vaihtaa ainoastaan alan
ammattimies.

ADVARSEL!
Lithiumbatteri!
Eksplosionsfare. Udskiftning må kun foretages
af en sagkyndig, — og som beskrevet i
servicemanualen.

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