NOTA: Acest desen nu constituie o obligatie de aplicare de către contractor.
El reprezintă doar un exemplu de circuit de cale utilizat la CFR si nu trebuie aplicat ca atare.

NOTE: It is not compulsory for the contractor to apply this drawing. It is only an example of track circuit in use at CFR and shall not be applied as such.

D					
C					
B					
A					
Indice Index	Data Date	Modificare Modification/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANŢAT DE UNIUNEA EUROPEANĂ
EUROPEAN UNION FINANCED PROJECT

CLIENT / CLIENT

C.N.C.F. "C.F.R." - S.A.

ITALFERR
GRUPPO FERROVIE DELLO STATO
Joint Venture leader

Scott Wilson

OBERMEYER
PLANEN + BERATEN GmbH

TECNIC
Consulting Engineers

CONSULTANT / CONSULTANT

			Data Date	Semnături Signature
Aprobat Approved	Şef proiect Project manager	R. Liuzza	12.12.2011	
Aprobat Approved	Coordonator Secţiune 1 Section 1 Coordinator	C. Gambelli	12.12.2011	
Verificat Checked	Expert Cheie Key Expert	P. Amodio	12.12.2011	

SUBCONTRACTANT / SUBCONTRACTOR

AREX COMPANY

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible	A. Stanciu - Dinulescu	12.12.2011	
Întocmit Elaborated	Proiectant Designer	Ing. Juganaru Adriana	12.12.2011	

Reabilitarea liniei de cale ferata Braşov - Simeria, parte componentă a coridorului IV Pan European, pentru circulaţia trenurilor cu viteza maximă de 160 km/h, Tronsonul : Braşov - Sighişoara
Rehabilitation of the railway line Braşov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h, Section : Braşov - Sighişoara

Proiect/Project
2004/RO/16/P/PA/003

Faza / Phase:
D.E. / D.D.

Denumire desen / Drawing Title :

Statia / Station ALBESTI TARNAVA
Fise de montaj rama aparataj receptie 1
Wiring diegrams for receiving equipment frame 1

Codificare / Codification System	Scara / Scale Fără / No scale	LOT / LOT	Nr. / No 01 / 09

E A 5 1 | 0 1 | E | 1 9 | B X | S E | 0 1 | 9 | 2 | 0 1 3 | 1

ESTE INTERZISA MODIFICAREA, INSTRAINAREA, COPIEREA SI MULTIPLICAREA ACESTOR SCHEME ELECTRICE SUB FORMA TIPARITA SAU ELECTRONICA, FARA APROBAREA SCRISA A ISPCF, CARE ARE DREPTUL DE PROPRIETATE INTELECTUALA ASUPRA ACESTORA
ISPCF ISI REZERVA DREPTUL DE A MODIFICA ACESTE SCHEME ELECTRICE ATUNCI CAND ESTE NECESAR.

RAMA APARAT

	1	2	3	4
8	II-CI	④ II-BDE	III-CI	③ III-BDE
7	(5-13)b-Sil	② (5-13)b-BDE	(5-13)c-Sil	② (5-13)c-BDE
6	3-Sil	③ 3-BDE	1-Sil	② 1-BDE
5	XF-1AD(b)-CI	③ XF-1AD(b)-BDE	X-1AD(b)-CI	① X-1AD(b)-BDE
	FI1 - FATA			
4	41 FC-B 3-Si	42 FC-B 1-Si	43 FC-B 025-C	44 FC-B (5-13)a-Si
3	31 FC-B XF-1AD(b)	32 FC-B X-1AD(b)	33 FC-B 033-C	34 FC-B 023-C
2	2x1A	22	23	PENT
1	11 IP-2 XF-1AD(b)/X-1AD(b)	12 IP-2 033/023	13 IP-2 3/1	14 IP-2 025/(5-13)a

01	02	03	04	05	06	07

Statia: Albesti

AJ RECEPTIE 1(FI1)

5	6	7	8	9
4-CI	④ 4-BDE			
(7-9)a-Sil	③ (7-9)a-BDE	(7-9)b-Sil	③ (7-9)b-BDE	
025-CI	① 025-BDE	(5-13)a-Sil	② (5-13)a-BDE	
033-CI	① 033-BDE	023-CI	③ 023-BDE	
	FI1 - SPATE			
	44A	43A FC-B 4-C	42A FC-B III-C	41A FC-B II-C
	34A FC-B (7-9)b-Si	33A FC-B (7-9)a-Si	32A FC-B (5-13)c-Si	31A FC-B (5-13)b-Si

VOLTMETRU ELECTRONIC tip ICN-4
TRU MASURAREA CICLICA A CIRCUITELOR DE CALE

	16	17	18	19
	IP-2 (5-13)b/(5-13)c	IP-2 (7-9)a/(7-9)b	IP-2 II/III	IP-2 4

08	09	010	011	012	013	014	015	016
15x100Ω/0,3A								

FI1-RANDUL 2

24

INDICATOR CICLIC DE NIVEL ICN-4

CUPLA T1			CUPLA T2			CUPLA T3			CUPLA T4		
CANAL		ADRESA	CANAL		ADRESA	CANAL		ADRESA	CANAL		ADRESA
0-0	C3		2-0	C3	FI1-4-3	4-0	C3		6-0	C3	
0-1	B3	FI1-3-1	2-1	B3	FI1-4-5	4-1	B3		6-1	B3	
0-2	A4	FI1-3-3	2-2	A4	FI1-4-7	4-2	A4		6-2	A4	
0-3	C6	FI1-3-5	2-3	C6	FI1-4-9	4-3	C6		6-3	C6	
0-4	B5	FI1-3-7	2-4	B5	FI1-4-11	4-4	B5		6-4	B5	
0-5	A5	FI1-3-9	2-5	A5	FI1-4-13	4-5	A5		6-5	A5	
0-6	A6	FI1-3-11	2-6	A6	FI1-4-2	4-6	A6		6-6	A6	
0-7	B6	FI1-3-13	2-7	B6	FI1-4-4	4-7	B6		6-7	B6	
1-0	C7	FI1-3-2	3-0	C7	FI1-4-6	5-0	C7		7-0	C7	
1-1	B7	FI1-3-4	3-1	B7	FI1-4-8	5-1	B7		7-1	B7	
1-2	A8	FI1-3-6	3-2	A8	FI1-4-10	5-2	A8		7-2	A8	
1-3	A10	FI1-3-8	3-3	A10	FI1-4-12	5-3	A10		7-3	A10	
1-4	C9	FI1-3-10	3-4	C9	FI1-4-14	5-4	C9		7-4	C9	
1-5	B9	FI1-3-12	3-5	B9	FI1-5-1	5-5	B9		7-5	B9	
1-6	C10	FI1-3-14	3-6	C10	FI1-5-3	5-6	C10		7-6	C10	
1-7	B10	FI1-4-1	3-7	B10	FI1-5-5	5-7	B10		7-7	B10	
A1-B1-C1 A2-B2-C2 MASA CUPLA			A1-B1-C1 A2-B2-C2 MASA CUPLA			A1-B1-C1 A2-B2-C2 MASA CUPLA			A1-B1-C1 A2-B2-C2 MASA CUPLA		

23		22	
1		1	
2		2	
3		3	
4		4	
12		12	
11		11	
13		13	
22		22	
21		21	
23		23	
32		32	
31		31	
33		33	
42		42	
41		41	
43		43	
52		52	
51		51	
53		53	
62		62	
61		61	
63		63	
72		72	
71		71	
73		73	
82		82	
81		81	
83		83	

21	
2x1A	
S1 S2	**Ax220** FI1-1-1 TG-C1 FI1-1-2
S3 S4	**0x220** FI1-1-9 TG-B3 FI1-1-10

CUPLA TG		
ROL		ADRESA
Ax220	C1	1-S2
0x220	B3	1-S4
Protectie	A1	

FI1-2

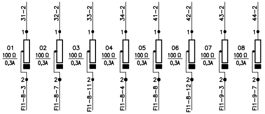
ESTE INTERZISA MODIFICAREA, INSTRAINAREA, COPIEREA SI MULTIPLICAREA ACESTOR SCHEME ELECTRICE SUB FORMA TIPARITA SAU ELECTRONICA, FARA APROBAREA SCRISA A ISPCF, CARE ARE DREPTUL DE PROPRIETATE INTELECTUALA ASUPRA ACESTORA
ISPCF ISI REZERVA DREPTUL DE A MODIFICA ACESTE SCHEME ELECTRICE ATUNCI CAND ESTE NECESAR.

FI1-FATA

41	3-Si	42	1-Si	43	025-C	44	(5-13)a-Si
1	FI1-8-6	1	FI1-8-10	1	FI1-9-1	1	FI1-9-5
2	05-1	2	06-1	2	07-1	2	08-1
3	13-1 61-11	3	13-5 63-11	3	14-1 65-11	3	14-5 67-11
4	13-2 61-71	4	13-6 63-71	4	14-2 65-71	4	14-6 67-71

31	XF-1AD(b)-C	32	X-1AD(b)-C	33	033-C	34	023-C
1	FI1-8-1	1	FI1-8-5	1	FI1-8-9	1	FI1-8-2
2	01-1	2	02-1	2	03-1	2	04-1
3	11-1 51-11	3	11-5 53-11	3	12-1 55-11	3	12-5 57-11
4	11-2 51-71	4	11-6 53-71	4	12-2 55-71	4	12-6 57-71

11	XF-1AD(b)/X-1AD(b)	12	033/023	13	3/1	14	025/(5-13)a
1	31-3	1	33-3	1	41-3	1	43-3
2	31-4	2	33-4	2	41-4	2	43-4
3	FI1-3-1	3	FI1-3-5	3	FI1-3-9	3	FI1-3-13
4	8 24-comun	4	8 11-8	4	8 12-8	4	8 13-8
5	32-3	5	34-3	5	42-3	5	44-3
6	32-4	6	34-4	6	42-4	6	44-4
7	FI1-3-3	7	FI1-3-7	7	FI1-3-11	7	FI1-3-2
8	4 12-4	8	4 13-4	8	4 14-4	8	4 16-4


31-2
32-2
33-2
34-2
41-2
42-2
43-2
44-2
1
2
01 100 Ω 0,3A
02 100 Ω 0,3A
03 100 Ω 0,3A
04 100 Ω 0,3A
05 100 Ω 0,3A
06 100 Ω 0,3A
07 100 Ω 0,3A
08 100 Ω 0,3A
FI1-8-3
FI1-8-7
FI1-8-11
FI1-8-4
FI1-8-8
FI1-8-12
FI1-9-3
FI1-9-7

ESTE INTERZISA MODIFICAREA, INSTRAINAREA, COPIEREA SI MULTIPLICAREA ACESTOR SCHEME ELECTRICE SUB FORMA TIPARITA SAU ELECTRONICA, FARA APROBAREA SCRISA A ISPCF, CARE ARE DREPTUL DE PROPRIETATE INTELECTUALA ASUPRA ACESTORA
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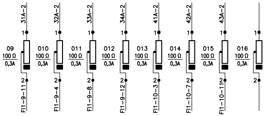
FI1-SPATE

44A		43A	4-C	42A	III-C	41A	II-C
1		1	FI1-10-9	1	FI1-10-5	1	FI1-10-1
2		2	015-1	2	014-1	2	013-1
3		3	19-1 85-11	3	18-5 83-11	3	18-1 81-11
4		4	19-2 85-71	4	18-6 83-71	4	18-2 81-71

34A	(7-9)b-Si	33A	(7-9)a-Si	32A	(5-13)c-Si	31A	(5-13)b-Si
1	FI1-9-10	1	FI1-9-6	1	FI1-9-2	1	FI1-9-9
2	012-1	2	011-1	2	010-1	2	09-1
3	17-5 77-11	3	17-1 75-11	3	16-5 73-11	3	16-1 71-11
4	17-6 77-71	4	17-2 75-71	4	16-6 73-71	4	16-2 71-71

16	(5-13)b/(5-13)c	17	(7-9)a/(7-9)b	18	II/III	19	4
1	31A-3	1	33A-3	1	41A-3	1	43A-3
2	31A-4	2	33A-4	2	41A-4	2	43A-4
3	FI1-3-4	3	FI1-3-8	3	FI1-3-12	3	FI1-4-1
4	8 14-8	4	8 16-8	4	8 17-8	4	8 18-8
5	32A-3	5	34A-3	5	42A-3	5	
6	32A-4	6	34A-4	6	42A-4	6	
7	FI1-3-6	7	FI1-3-10	7	FI1-3-14	7	FI1-4-3
8	4 17-4	8	4 18-4	8	4 19-4	8	4 FI1-5-2


31A-2
32A-2
33A-2
34A-2
41A-2
42A-2
43A-2
1
2
09 100 Ω 0,3A
010 100 Ω 0,3A
011 100 Ω 0,3A
012 100 Ω 0,3A
013 100 Ω 0,3A
014 100 Ω 0,3A
015 100 Ω 0,3A
016 100 Ω 0,3A
FI1-9-11
FI1-9-4
FI1-9-8
FI1-9-12
FI1-10-3
FI1-10-7
FI1-10-11

ESTE INTERZISA MODIFICAREA, INSTRAINAREA, COPIEREA SI MULTIPLICAREA ACESTOR SCHEME ELECTRICE SUB FORMA TIPARITA SAU ELECTRONICA, FARA APROBAREA SCRISA A ISPCF, CARE ARE DREPTUL DE PROPRIETATE INTELECTUALA ASUPRA ACESTORA
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FI1-RANDUL 6

69		68		67		66		65		64		63		62		61	
			(5-13)a BDE		(5-13)a Sil		025-BDE		025-CI		1-BDE		1-Sil		3-BDE		3-Sil
		12	0X220			12	0X220			12	0X220			12	0X220		
		11	FI1-7-1	11	44-3	11	FI1-6-13	11	43-3	11	FI1-6-11	11	42-3	11	FI1-6-9	11	41-3
				13	OS			13	OS			13	OS			13	OS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S2			52	+24S1			52	+24S2			52	+24S3		
		51	AX220			51	AX220			51	AX220			51	AX220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OS			72	OS			72	OS			72	OS		
		71	FI1-7-2	71	44-4	71	FI1-6-14	71	43-4	71	FI1-6-12	71	42-4	71	FI1-6-10	71	41-4

FI1-RANDUL 5

59		58		57		56		55		54		53		52		51	
			023-BDE		023-CI		033-BDE		033-CI		X-1AD(b) BDE		X-1AD(b) CI		X-1AD(b) BDE		X-1AD(b) CI
		12	0X220			12	0X220			12	0X220			12	0X220		
		11	FI1-6-7	11	34-3	11	FI1-6-5	11	33-3	11	FI1-6-3	11	32-3	11	FI1-6-1	11	31-3
				13	OS			13	OS			13	OS			13	OS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S3			52	+24S1			52	+24S1			52	+24S3		
		51	AX220			51	AX220			51	AX220			51	AX220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OS			72	OS			72	OS			72	OS		
		71	FI1-6-8	71	34-4	71	FI1-6-6	71	33-4	71	FI1-6-4	71	32-4	71	FI1-6-2	71	31-4

ESTE INTERZISA MODIFICAREA, INSTRAINAREA, COPIEREA SI MULTIPLICAREA ACESTOR SCHEME ELECTRICE SUB FORMA TIPARITA SAU ELECTRONICA, FARA APROBAREA SCRISA A ISPCF, CARE ARE DREPTUL DE PROPRIETATE INTELECTUALA ASUPRA ACESTORA
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FI1-RANDUL 8

89		88		87		86		85		84		83		82		81	
							4-BDE		4-CI		III-BDE		III-CI		II-BDE		II-CI
		12				12	0X220			12	0X220			12	0X220		
		11		11		11	FI1-5-13	11	43A-3	11	FI1-7-13	11	42A-3	11	FI1-7-11	11	41A-3
				13				13	OS			13	OS			13	OS
		32				32	5-33			32	3-33			32	1-33		
		31				31	5-53			31	3-53			31	1-53		
				33				33	6-32			33	4-32			33	2-32
		52				52	+24S4			52	+24S3			52	+24S4		
		51				51	AX220			51	AX220			51	AX220		
				53				53	6-31			53	4-31			53	2-31
		72				72	OS			72	OS			72	OS		
		71		71		71	FI1-5-14	71	43A-4	71	FI1-7-14	71	42A-4	71	FI1-7-12	71	41A-4

FI1-RANDUL 7

79		78		77		76		75		74		73		72		71	
			(7-9)b BDE		(7-9)b Sil		(7-9)a BDE		(7-9)a Sil		(5-13)c BDE		(5-13)c Sil		(5-13)b BDE		(5-13)b Sil
		12	0X220			12	0X220			12	0X220			12	0X220		
		11	FI1-7-9	11	34A-3	11	FI1-7-7	11	33A-3	11	FI1-7-5	11	32A-3	11	FI1-7-3	11	31A-3
				13	OS			13	OS			13	OS			13	OS
		32	7-33			32	5-33			32	3-33			32	1-33		
		31	7-53			31	5-53			31	3-53			31	1-53		
				33	8-32			33	6-32			33	4-32			33	2-32
		52	+24S3			52	+24S3			52	+24S2			52	+24S2		
		51	AX220			51	AX220			51	AX220			51	AX220		
				53	8-31			53	6-31			53	4-31			53	2-31
		72	OS			72	OS			72	OS			72	OS		
		71	FI1-7-10	71	34A-4	71	FI1-7-8	71	33A-4	71	FI1-7-6	71	32A-4	71	FI1-7-4	71	31A-4

ESTE INTERZISA MODIFICAREA, INSTRAINAREA, COPIEREA SI MULTIPLICAREA ACESTOR SCHEME ELECTRICE SUB FORMA TIPARITA SAU ELECTRONICA, FARA APROBAREA SCRISA A ISPCF, CARE ARE DREPTUL DE PROPRIETATE INTELECTUALA ASUPRA ACESTORA
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BUCLE TENSIUNI

+24S1	+24S2	+24S3	+24S4	Ax220	0x220	0S
Fl1-2-2	Fl1-2-4	Fl1-2-6	Fl1-2-8	Fl1-1-4	Fl1-1-12	Fl1-2-12
54-52	64-52	52-52	82-52	52-51	52-12	51-13
56-52	68-52	58-52	86-52	54-51	54-12	52-72
66-52	72-52	62-52		56-51	56-12	53-13
	74-52	76-52		58-51	58-12	54-72
		78-52		Fl1-1-4	Fl1-1-12	55-13
		84-52		Fl1-1-6	Fl1-1-14	56-72
				62-51	62-12	57-13
				64-51	64-12	58-72
				66-51	66-12	68-72
				68-51	68-12	67-13
				Fl1-1-6	Fl1-1-14	66-72
				Fl1-1-5	Fl1-1-13	65-13
				72-51	72-12	64-72
				74-51	74-12	63-13
				76-51	76-12	62-72
				78-51	78-12	61-13
				Fl1-1-5	Fl1-1-13	71-13
				Fl1-1-3	Fl1-1-11	72-72
				82-51	82-12	73-13
				84-51	84-12	74-72
				86-51	86-12	75-13
						76-72
				Fl1-1-3	Fl1-1-11	77-13
						78-72
						86-72
						85-13
						84-72
						83-13
						82-72
						81-13
Fl1-2-2	Fl1-2-4	Fl1-2-6				Fl1-2-12

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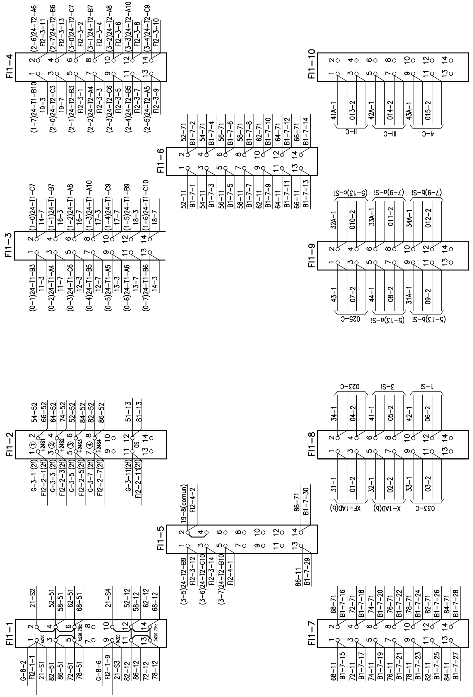
Fl1-4
(2-6)24-T2-A6 Fl2-3-11 (2-7)24-T2-B6 Fl2-3-13 (3-0)24-T2-C7 Fl2-3-2 (3-1)24-T2-B7 Fl2-3-4 (3-2)24-T2-A8 Fl2-3-6 (3-3)24-T2-A10 Fl2-3-8 (3-4)24-T2-C9 Fl2-3-10
(1-7)24-T1-B10 19-3 (2-0)24-T2-C3 19-7 (2-1)24-T2-B3 Fl2-3-1 (2-2)24-T2-A4 Fl2-3-3 (2-3)24-T2-C6 Fl2-3-5 (2-4)24-T2-B5 Fl2-3-7 (2-5)24-T2-A5 Fl2-3-9
Fl1-3
(1-0)24-T1-C7 14-7 (1-1)24-T1-B7 16-3 (1-2)24-T1-A8 16-7 (1-3)24-T1-A10 17-3 (1-4)24-T1-C9 17-7 (1-5)24-T1-B9 18-3 (1-6)24-T1-C10 18-7
(0-1)24-T1-B3 11-3 (0-2)24-T1-A4 11-7 (0-3)24-T1-C6 12-3 (0-4)24-T1-B5 12-7 (0-5)24-T1-A5 13-3 (0-6)24-T1-A6 13-7 (0-7)24-T1-B6 14-3
Fl1-6
52-71 B1-7-2 54-71 B1-7-4 56-71 B1-7-6 58-71 B1-7-8 62-71 B1-7-10 64-71 B1-7-12 66-71 B1-7-14
52-11 B1-7-1 54-11 B1-7-3 56-11 B1-7-5 58-11 B1-7-7 62-11 B1-7-9 64-11 B1-7-11 66-11 B1-7-13
Fl1-10
41A-1 013-2 42A-1 014-2 43A-1 015-2
II-C III-C 4-C
Fl1-9
(5-13)c-Si (7-9)a-Si (7-9)b-Si
32A-1 010-2 33A-1 011-2 34A-1 012-2
43-1 07-2 44-1 08-2 31A-1 09-2
025-C (5-13)a-Si (5-13)b-Si
Fl1-2
54-52 66-52 64-52 74-52 52-52 84-52 82-52 86-52 51-13 81-13
① +24S1 ② +24S2 ③ +24S3 ④ +24S4 0S
G-3-1 (2f) Fl2-2-1(2f) G-3-3 (2f) Fl2-2-3(2f) G-3-5 (2f) Fl2-2-5(2f) G-3-7 (2f) Fl2-2-7(2f) G-3-11(2f) Fl2-2-11(2f)
Fl1-8
023-C 3-Si 1-Si
34-1 04-2 41-1 05-2 42-1 06-2
31-1 01-2 32-1 02-2 33-1 03-2
XF-1AD(b) X-1AD(b) 033-C
Fl1-5
19-8(comun) Fl2-4-2 86-71 B1-7-30
(3-5)24-T2-B9 Fl2-3-12 (3-6)24-T2-C10 Fl2-3-14 (3-7)24-T2-B10 Fl2-4-1 86-11 B1-7-29
Fl1-1
21-S2 52-51 58-51 62-51 68-51 21-S4 52-12 58-12 62-12 68-12
Ax220 Ax220 75Hz 0x220 0x220 75Hz
G-8-2 Fl2-1-1 21-S1 82-51 86-51 72-51 78-51 G-8-6 Fl2-1-9 21-S3 82-12 86-12 72-12 78-12
Fl1-7
68-71 B1-7-16 72-71 B1-7-18 74-71 B1-7-20 76-71 B1-7-22 78-71 B1-7-24 82-71 B1-7-26 84-71 B1-7-28
68-11 B1-7-15 72-11 B1-7-17 74-11 B1-7-19 76-11 B1-7-21 78-11 B1-7-23 82-11 B1-7-25 84-11 B1-7-27