SOCIETÁ PER L'ELETTRONICA s.r.l.

Via di Monte Verde 33 – 00152 Rome – Italy. Tel. (39-6) 58209429 Fax (39-6) 58209647
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Exhibit 11: Tuning Procedure and Part List

External Radio Frequency
Linear Amplifier
Model 2K-FA

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Tuning Procedure

TUNER (ATU)

The amplifier has an automatic tuner that handles load mismatches up to 3:1 VSWR (2.5:1 for 6 m).The amplifier contains a look-up table with all the permitted bands.
For tuner management, antenna data and other working data are stored.
Every band has a sub-band set, and for each of those, data related to the antenna and auto-ATU tuning is stored.
The CAT and the frequency counter detect the operating frequency and the correct sub-band. Thanks to the stored data, the tuner and the antenna are automatically set correctly.
For every input there is a different table. If two exciters are connected at the same time, each exciter can have different configurations.
It is possible to use the two different tables when the amplifier operates at two different locations. In fact it is possible to use the INPUT 1 at one and INPUT 2 on the other. In this way repeated reprogrammings are not needed
Furthermore, table driven management is useful to inhibit operation of the amplifier, for instance when an antenna for a particular band is not available.
All auto-tuner functions remain, on standby, whilst using the transceiver only.
Setting of the match data to write to the tables is performed automatically by pressing the [TUNE] key The system will then find the correct match for minimum SWR.
To achieve a better match than that achieved with the automatic tune routine (most unlikely) it is possible to set the tuning manually by using the keys [◄C], [C►], [◄L], [L►].
When manual tuning has been performed, it is possible to read the tuning value, the working frequency and the associated sub-band on the appropriate screen page.
Both the types of tuning are always effected in "STANDBY" state.
Before beginning the matching process, the tuner measures the SWR of the system cable / antenna. if it is greater than 3.5:1, the procedure does not begin and an alarm is given.
It is possible to bypass the tuner with a specific command, in order to use an external tuner.
NEVER USE THE INTERNAL TUNER WITH AN EXTERNAL ONE, it could seriously damage the linear.
IF YOU WANT USE AN EXTERNAL TUNER, BEFORE EXCLUDE THE INTERNAL ONE.
The internal tuner may be excluded:
- Totally.
- For single band.
- For single band only with a specific antenna.

It is always automatically excluded:
- With the only receiving antenna set
- With tuneable antenna set.

Note: the tuner, like all analog circuits, introduces a loss (0,8 dB max.) that may vary with tuning conditions.The power meter of the amplifier does not show this loss as the power is measured at the tuner input where the load resistance is always constant (50 ohm).

Exhibit 11

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Note: ATTENTION: When the amplifier is either in "STANDBY" or "OPERATE" mode, always disable the automatic tuner in your transceiver.

Note: ATTENTION: As two different tables are used for INPUT1 and INPUT2, it is necessary to make separate matching, for the same antenna, depending on the used input.
Ignoring this caution could make the amplifier work for a long period with a high SWR and this practice could seriously damage the amplifier even if the protection level is a bit lower than the threshold.

SET ANTENNA.

Press [SET] and open the "ANTENNA" menu page.
Assign an appropriate antenna for the band concerned. If you don't have an antenna for a band, input "N".
When all the antennas are programmed, exit and go back to STANDBY.

USE OF AUTOMATIC TUNER.

To complete the programming it is necessary to match the antennas to the amplifier by operating "TUNE".
We recommend you to select each band (with available antenna) and then program the tuner for the sub-bands within which you will operate.
Refer to the table in section 19 of this manual to select the appropriate sub-bands for your operating preferences.
You are strongly advised to proceed with the utmost accuracy, not just match the current frequency, but all the sub-bands you are likely to use.
Matching all the antennas on all bands available you will enjoy all the features of the automatic linear.

Progress as follows:
- Find the central frequency of the sub-band to tune in the table (refer to section 19 of this manual) and set the transceiver to that frequency.
- Set your transceiver to transmit a continuous tone in RTTY or CW.
- Press and hold the [TUNE] key for about one second. The procedure for automatic tuning will start (you will hear the ATU relays operate) and then it will stop when SWR is at a minimum. Sometimes it is possible to improve tuning by pressing the [TUNE] key again.
- Repeat the previous steps for all bands and sub-bands you want.
- Repeat the previous steps for other antennas the same band after having selected it using the [ANT] key.

Note: if the ALC link is not used, it is preferable to reduce the transceiver power to about 50 Watts during this operation.

Exhibit 11

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Part List

SCE-PE000075 A M1 **Revision: A**

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
5	C1,C2,C3,C4,C5	100NF	POL		50V
4	D1,D2,D3,D4	LL4148	D		
1	J1	fili a saldare			
1	J2	DF11/4			
1	J3	FLAT 14 POLI			
1	J4	DF11/4 M			
1	J5	FLAT 14 POLI			
1	J6	DF11/6			
4	J7,J8,J9,J10	CON2\FASTON			
3	K1,K2,K3	TQ2-12V			
1	K4	LCA-002 12			
1	R1	4K64	R	1%	
1	R2	2K87	R	1%	
1	R3	1K33	R	1%	
1	R4	8K66	R	1%	
1	R5	3K3	R	1%	
1	U1	ULN2003			

SCE-PE000075 B M0 **Revision: A**

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
5	C1,C2,C3,C4,C5	220NF	POL		50V
3	D1,D2,D3	1N4148	D		
1	J1	STRIP3X1-F-90			
2	J2,J3	CONN-FAN/3X1			
1	J4	DF11/4 (fili a saldare)			
1	K1	TQ2-12V			
1	Q1	BC547B			
3	R1,R4,R7	1K2	R	1%	
2	R2,R5	1M	R	1%	
2	R3,R6	1M5	R	1%	
1	U1	4011			

SCE-PE000075 C M1 **Revision: A**

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	J1	DF11/4			
1	J2	CON			
2	J4,J3	CON1			
2	J5,J6	INSERTO/M3			
1	R1	36K5	R	1%	
1	R2	1K62	R	1%	
1	R3	78K7	R	1%	
2	R4,R5	10M	R	1%	

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SCE-PE000076 M1 Revision: A

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
8	C1,C2,C14,C15,C19,C20, C22,C23	100nF	POL	5%	63V
1	C3	6.8NF	POLIP.	10%	1250V
1	C4	--------			
1	C5	56PF	CER	5%	3KV
2	C6,C7	68PF	CER	5%	3KV
5	C13,C16,C17,C18,C21	10nF	POL	5%	100V
1	C24	10uF	ELE		50V
3	D1,D2,D3	1N4148	D		
2	D5,D4	1N4007	D		
11	G1,G-J1,G2,G-J2,G3,G-J3, G4,G-J4,G-J5,G-J6,G7	PIAZZOLA			
1	JP5	DF11/6			
3	K1,K2,K3	M25-A001012	RELAY		
1	L1	AL0307-3R3K			
1	Q8	BC639	TO92		
1	R1	47	R	5%	2W
1	R9	3K3	R	5%	0.25W
10	S1,S-J1,S2,S-J2,S3,S-J3, S4,S-J4,S-J5,S-J6	PIAZZOLA			
1	TR1	TRF_FB77			
1	TR8	TR-LIN-017			
1	U1	ULN2004	DIP16-300		

SCE-PE000077 M1 Revision: A

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
2	C3,C1	10nF	CER	10%	50V
1	C2	1nF	CER	5%	50V
15	C4,C5,C9,C10,C11,C12,C13, C14,C15,C24,C27,C29,C30, C31,C32	47nF	CER	5%	500V
1	C6	4,7nF	CER	5%	250V
1	C7	18pF	CER	5%	500V
1	C8	150pF	CER	5%	500V
1	C16	56pF (N.C.)	CER	5%	500V
8	C17,C18,C19,C20,C21,C22, C25,C28	10nF	CER	5%	500V
1	C23	470nF	CER	20%	250V
1	C26	2200uF	ELE	20%	63V
4	D1,D2,D3,D4	LL4148	D		
4	FF1,FF2,FF3,FF4	FORO3.3/PIAZZOLA			
2	JP3,JP2	JUMPER3			
1	L1	NL322522T-101J			
1	L2	COKE-LIN-01			
2	L3,L4	NL322522T-R22J (CC)			
1	Q1	MRF151G			
3	R1,R9,R13	1K05	R	1%	
3	R2,R10,R11	4K75	R	1%	
1	R3	2K74	R	1%	
1	R4	NTC 10K 25°C	CR		
1	R5	68.1	R	1%	
2	R7,R6	3K92	R	1%	
2	R8,R12	5K	TRIMPOT		

Exhibit 11

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Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
8	R14,R15,R16,R18,R19,R20, R24,R27	15	R	1%	1W
2	R21,R17	10	R	5%	1W
4	R22,R23,R25,R26	15 (CC)	R	1%	1W
2	R28,R29	294	R	1%	
1	R30	18	R	1%	
2	S3,S1	PIAZZOLA SMD			
8	S2,S4,S5,S6,S7,S8,S9,S10	PIAZZOLA			
1	TR1	TR-LIN-14			
1	TR2	TR-LIN-15			
1	U1	LM723/SO	SOIC14-150		

SCE-PE000078 M0 Revision: A

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
6	C1,C2,C3,C4,C5,C6	10pF	CER	5%	
6	TR1,TR2,TR3,TR4,TR5,TR6	TR-LIN-20			
1	TR7	TRF_COMBINER_2K-FA			
6	R1,R2,R3,R4,R5,R6	35	R		3W

SCE-PE000079 M1 Revision: D

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
3	C1,C3,C4	100nF	CER	20%	50V
4	C2,C5,C6,C7	4.7uF	CER	20%	16V
2	D2,D1	LL4148	D		
2	FF1,FF2	FORO3.3/PIAZZOLA			
3	JP1,JP3,JP4	JUMPER			
1	JP2	FLAT 16			
5	R1,R2,R3,R4,R5	4K7	R	1%	
2	U1,U3	MCP23017			
1	U2	HCT238			

SCE-PE000080 M1 Revision: A

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
2	C1,C2	10nF	CER	20%	50V
25	C3,C4,C5,C6,C7,C8,C9,C10, C11,C12,C13,C14,C15,C16, C17,C18,C19,C20,C21,C22, C23,C24,C25,C26,C28	100nF	CER	20%	50V
1	C27	10uF	ELE		25V
20	C29,C30,C31,C32,C33,C34, C35,C36,C37,C38,C39,C40, C41,C42,C43,C44,C45,C46, C47,C48	10pF	CER	5%	3KV
8	C49,C50,C53,C54,C55,C56, C63,C85	22pF	CER	5%	3KV
11	C51,C52,C94,C98,C99,C100, C101,C106,C107,C108,C109	82pF	CER	5%	3KV
4	C57,C61,C62,C64	18pF	CER	5%	3KV
14	C58,C59,C60,C65,C66,C69, C70,C71,C76,C77,C78,C93, C110,C112	39pF	CER	5%	3KV
10	C67,C68,C79,C83,C87,C88, C89,C95,C111,C113	100pF	CER	5%	3KV
3	C72,C73,C74	56pF	CER	5%	3KV
3	C75,C80,C86	68pF	CER	5%	3KV

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Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
4	C81,C115,C124,C128	180pF	CER	5%	3KV
3	C82,C125,C127	220pF	CER	5%	3KV
5	C84,C90,C91,C92,C120	47pF	CER	5%	3KV
4	C96,C97,C114,C116	270pF	CER	5%	3KV
8	C102,C103,C104,C105,C121, C122,C123,C137	150pF	CER	5%	3KV
18	C117,C118,C119,C126,C129, C130,C131,C132,C133,C134, C135,C136,C138,C139,C140, C141,C142,C143	330pF	CER	5%	3KV
15	D1,D2,D3,D4,D5,D6,D7,D8, D9,D10,D11,D12,D13,D14, D15	LL4148	D		
2	D17,D16	SM4007	D		
4	FF1,FF2,FF3,FF4	FORO3.3/PIAZZOLA			
8	ISO1,ISO2,ISO3,ISO4,ISO5, ISO6,ISO7,ISO8	TLP127			
1	JP1	JUMPER CC			
3	JP2,JP3,JP4	spadini 90°			
1	J1	FLAT 16 - 90°			
6	J3,J4,J5,J6,J7,J8	CON1			
15	K1,K2,K3,K4,K5,K6,K7,K8, K9,K10,K11,K12,K13,K14, K15	M25-A001012	RELAY		
2	L6,L1	0.267uH			
1	L2	0.200uH			
1	L3	0.590uH			
1	L4	0.456uH			
2	L35,L5	0.290uH			
1	L7	0.663uH			
1	L9	0.594uH			
1	L10	1.27uH			
1	L11	0.924uH			
1	L12	1.98uH			
1	L13	1.54uH			
1	L14	3.62uH			
1	L15	3.09uH			
1	L31	NL322522T-100J			
2	L32,L33	NL322522T-101J			
1	L34	60.0nH			
1	L36	0.153uH			
1	L37	0.363uH			
1	L38	0.672uH			
1	L39	1.62uH			
1	Q1	BC807-25L			
8	R13,R14,R15,R16,R17,R18, R19,R20	1K	R	5%	0.1W
1	R21	3K3	R	5%	0.1W

SCE-PE000081 M1 Revision: A

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
3	C1,C2,C17	2,5pF	-	+-0.5PF	
10	C3,C4,C5,C6,C7,C8,C18, C19,C20,C21	10pF	CER	5%	3KV
3	C9,C10,C11	39pF	CER	5%	3KV

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Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	C12	47pF	CER	5%	3KV
2	C13,C14	150pF	CER	5%	3KV
2	C15,C16	180pF	CER	5%	3KV
2	C23,C22	22pF	CER	5%	3KV
2	C25,C24	18pF	CER	5%	3KV
4	C26,C27,C28,C29	82pF	CER	5%	3KV
4	C30,C31,C32,C33	330pF	CER	5%	3KV
29	C41,C42,C43,C44,C45,C46, C47,C59,C60,C61,C62,C63, C64,C65,C67,C68,C69,C76, C77,C78,C79,C80,C81,C84, C85,C86,C87,C113,C114	100nF	CER	20%	50V
25	D1,D2,D3,D4,D5,D6,D7,D8, D9,D10,D11,D12,D13,D14, D15,D16,D17,D18,D19,D20, D21,D22,D23,D24,D25	LL4148	D		
5	FF1,FF2,FF3,FF4,FF5	FORO3.3/PIAZZOLA			
18	S1,G1,S2,G2,S3,G3,S4,G4, S5,G5,S6,G6,S7,G7,S8,S9, S10,S11	PIAZZOLA			
25	ISO1,ISO2,ISO3,ISO4,ISO5, ISO6,ISO7,ISO8,ISO9, ISO10,ISO11,ISO12,ISO13, ISO14,ISO15,ISO16,ISO17, ISO18,ISO19,ISO20,ISO21, ISO22,ISO23,ISO24,ISO25	TLP127			
2	JP1,JP2	FLAT 16P 90°			
3	J3,J4,J5	JUMPER 90°			
25	K1,K2,K3,K4,K5,K6,K7,K8, K9,K10,K11,K12,K13,K14, K15,K16,K17,K18,K19,K20, K21,K22,K23,K24,K25	M25-A001012	RELAY		
1	L1	6.4uH			
1	L2	0.2uH			
1	L3	0.4uH			
1	L4	0.8uH			
1	L5	1.6uH			
1	L6	3.2uH			
1	L7	0.1uH			
2	L33,L34	NL322522T-100J			
25	R1,R2,R3,R4,R5,R6,R7,R8, R9,R10,R11,R12,R13,R14, R15,R16,R17,R18,R19,R20, R21,R22,R23,R24,R25	1K	R	5%	0.1W

SCE-PE000082 M1 Revision: A

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	D1	LED Red			
1	D2	LED Yellow			
1	D3	LED Green			
3	FF1,FF2,FF3	FORO3.3/PIAZZOLA			
1	JP1	DF11/6			
1	JP3	FLAT 14 P M			
2	JP4,JP6	DF11/4			
1	JP7	FLAT 26 poli			

Exhibit 11

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Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	JP9	CONN-FAN			
1	JP10	FLAT 16P M			
3	R1,R2,R3	510	R	1%	

SCE-PE000083 M1 Revision: A

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	BZ1	BUZZER			
5	C1,C5,C14,C64,C66	470nF	CER	10%	50V
42	C2,C4,C11,C13,C15,C16, C17,C18,C19,C20,C21,C22, C23,C24,C25,C26,C28,C31, C34,C35,C36,C37,C38,C39, C40,C41,C42,C44,C45,C51, C52,C53,C54,C55,C56,C57, C58,C59,C60,C61,C62,C63	100nF	CER	20%	50V
6	C3,C6,C7,C9,C29,C43	10nF	CER	10%	50V
1	C8	47uF	ELE		16V
1	C10	C			
1	C12	1nF	CER	10%	50V
5	C27,C47,C48,C49,C50	1uF	CER	10%	50V
1	C30	10uF	ELE		16V
2	C33,C32	22pF	CER	10%	50V
1	C46	4.7uF	CER	10%	50V
7	C65,C67,C68,C69,C70,C71, C72	10nF	CER	10%	50V
16	D1,D3,D4,D6,D7,D8,D9,D10, D12,D13,D14,D15,D20,D21, D22,D23	LL4148	D		
2	D2,D5	5V1	D		
3	D11,D17,D18	1N34A	D		
2	D19,D16	ZMM7V5	D		
4	FF1,FF2,FF3,FF4	FORO3.3/PIAZZOLA			
2	ISO1,ISO2	TLP127			
1	JP1	JUMPER_SMD			
1	JP2	STRIP10X2_F_300			
1	JP3	AMP-2P-V			
1	JP4	ZIFLEX 11 POLI			
5	JP5,JP6,JP8,JP9,JP10	DF11/6			
1	JP7	FLAT 26			
1	L1	MI0805K400R-10			
5	Q1,Q2,Q4,Q5,Q8	BC847B			
1	Q3	BC857B			
1	Q6	BSP129			
1	Q7	LM1117-3V3/SO			
9	R1,R3,R15,R19,R22,R24, R51,R75,R78	1K	R	1%	
12	R2,R6,R53,R56,R57,R58, R59,R60,R61,R62,R68,R76	4K7	R	1%	
3	R4,R16,R29	10K	R	1%	
2	R30,R5	2M2	R	1%	
1	R7	3K3	R	1%	
4	R8,R14,R33,R37	1M	R	1%	
1	R9	2K2	R	1%	
1	R10	7K5	R	1%	
1	R11	9M09	R	1%	

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Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	R12	1K27	R	1%	
1	R13	3K3	R	1%	
2	R17,R21	2K15	R	1%	
1	R18	4K02	R	1%	
1	R20	3K83	R	1%	
1	R23	R			
6	R25,R67,R69,R70,R71,R72	100K	R	1%	
1	R26	22K1	R	1%	
1	R27	90K9	R	1%	
1	R28	33K	R	1%	
2	R39,R31	39K	R	5%	
2	R36,R32	180	R	5%	1W
2	R48,R34	1K5	R	5%	
1	R35	180K	R	5%	
4	R38,R41,R44,R52	510	R	5%	
1	R40	12K	R	5%	
5	R42,R63,R64,R65,R66	2K7	R	5%	
2	R43,R50	196	R	1%	1W
1	R45	2K49	R	1%	
2	R47,R46	100	R	5%	
1	R49	2K21	R	1%	
1	R73	3K48	R	1%	
1	R74	3K32	R	1%	
1	R77	270	R	5%	
2	R79,R80	100	R	5%	
1	R81	1K78	R	1%	
1	R82	3K32	R	1%	
1	R83	0	R	5%	
18	TP1,TP2,TP3,TP4,TP5,TP6, TP7,TP8,TP9,TP10,TP11, TP12,TP13,TP14,TP15,TP16, TP17,TP18	TEST POINT			
1	U1	PIC32MX360F512L-80			
4	U2,U3,U4,U5	24LC256			
14	U6,U7,U8,U25,U26,U27,U28, U29,U30,U31,U32,U33,U34, U35	TLV271/SOT23			
1	U9	74HCT373SO			
1	U10	74HCT245SO			
1	U11	OP27/SO			
1	U12	MCP42010			
1	U13	74HCT244			
1	U14	FT232RL			
1	U15	MAX202E			
1	U16	NE592/SO			
1	U17	74HC4040/SO			
1	U22	OP470SO			
1	U23	74HCT14			
1	U24	DG201A			
1	U36	DS1302			
1	U37	HCTS04 SO non montare			
1	Y1	8MHz 30ppm			
1	Y2	32.768KHZ			

Exhibit 11

SOCIETÁ PER L'ELETTRONICA s.r.l.

Via di Monte Verde 33 – 00152 Rome – Italy. Tel. (39-6) 58209429 Fax (39-6) 58209647
Website www.linear-amplifier.com e_mail info@linear-amplifier.com

SCE-PE000084 M1 **Revision: A**

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	C1	100nF	CER	20%	50V
1	C2	2.2uF	ELE		25V
5	C3,C4,C5,C6,C29	1uF	CER	20%	50V
17	C7,C8,C9,C10,C11,C12,C13, C14,C15,C16,C18,C19,C20, C22,C27,C28,C30	100nF	CER	20%	50V
1	C17	470nF	CER	20%	50V
1	C21	10uF	ELE		25V
2	C24,C23	22pF	CER	5%	50V
3	C25,C26,C31	10nF	CER	10%	50V
2	C33,C32	470uF	ELE		25V
4	C34,C35,C36,C37	4.7nF	CER	10%	50V
3	C38,C39,C40	470nF	CER	20%	50V
1	D1	LL4148	D		
8	D2,D3,D4,D5,D6,D8,D9,D10	LL4148	D		
1	D7	5V1	D		
1	D11	BYV95C	D		
5	JP1,JP4,JP9,JP17,JP19	DF11/6			
3	JP2,JP5,JP11	DB15 F			
1	JP3	FLAT 14 POLI			
4	JP6,JP7,JP8,JP10	DF11/4			
4	JP12,JP13,JP14,JP15	CON3			
1	JP16	DB9 F			
1	JP18	USB_B			
4	J1,J2,J3,J4	CON1			
1	L1	TSL807 33uH			
1	L2	TSL807 100uH			
9	Q1,Q2,Q3,Q5,Q6,Q7,Q9,Q10, Q13	BC847B			
2	Q4,Q8	BC857B			
1	Q11	LM1117-3V3/SO			
1	Q12	IRF9530			
6	RT1,RT2,RT3,RT4,RT5,RT6	PTC C990			
2	R1,R63	10K	R	5%	
30	R2,R3,R4,R5,R6,R7,R8,R10, R15,R16,R17,R18,R19,R21, R26,R27,R28,R29,R30,R31, R32,R33,R53,R55,R56,R57, R58,R59,R60,R61	4K7	R	5%	
11	R9,R11,R12,R20,R22,R23,	1K21 R64,R66,R67,R68,R79	R	1%	
4	R13,R14,R24,R25	1K	R	1%	1W
4	R34,R37,R39,R43	100K	R	5%	
2	R35,R41	15K	R	5%	
3	R38,R45,R48	4K99	R	1%	
4	R40,R42,R44,R46	39K	R	5%	
1	R47	3K32	R	1%	
1	R49	38K3	R	1%	
1	R51	100K (non montare)	R	5%	
1	R52	4K64	R	1%	
4	R54,R62,R77,R78	2K7	R	5%	
1	R65	1K5	R	5%	
4	R70,R72,R74,R76	0	R	5%	
1	R80	4K64	R	1%	

Exhibit 11

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Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	R81	38K3	R	1%	
2	U3,U1	ULN2004			
1	U2	MCP23017			
2	U6,U4	74HC86/SO			
1	U5	MAX202E/SO			
1	U7	74HCT244/SO			
7	U8,U9,U10,U11,U13,U14,U16	TLV271/SOT23			
2	U15,U12	OP27/SO			
1	U17	PIC32MX360F512L-80			
1	U18	74HCT244			
1	Y1	8MHz 30ppm			

SCE-PE000086 M0 **Revision: A**

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	BT1	3V3 LITIO			
1	D1	LED Yellow			
1	D2	LED Green			
1	D3	LED Red			
2	FF1,FF2	FORO3.3/PIAZZOLA			
1	JP1	DF11/6			
3	R1,R2,R3	270	R	5%	

SCE-PE000087 M0 **Revision:**

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
1	C1	100nF	CER	20%	50V
3	D1,D2,D3	LL4148	D		
8	S1,G1,S2,G2,S3,S4,S5,S6	PIAZZOLA			
2	K2,K1	M25-A001012	RELAY		
2	L2,L1	NL322522T-101J			

SCE-PE000085 M0 **Revision: A**

Qty	*Reference*	*Part*	*Type*	*%*	*VDC*
2	C1,C2	4.7pF	CER	+/-0.5	1KV
2	C3,C4	9.8/68pF	TRIMMER		100V
2	C6,C5	220pF	POL	2.5%	100V
2	C7,C8	10nF	POL	5%	100V
2	C10,C9	1nF	CER	5%	63V
2	D1,D2	1N34	D		
2	J2,J1	spadini 90°			
1	J3	CON6			
1	L1	L-SWR			
2	R2,R1	22	R	5%	
2	R4,R3	27	R	5%	
2	R6,R5	1K87	R	1%	
1	R7	30K1	R	1%	
1	R8	14K7	R	1%	
2	R11,R9	5K	TRIMMER		
2	R12,R10	7K5	R	1%	

Exhibit 11