

FOUR-SQUARE TRANSMIT SYSTEMS SWITCH RELAY UNITS



**High Power, 8 direction Transmit system (PCB only, assembled, tested)
4 only vertical elements, K3LC design**

Part number: 4SQTX/8-PCB

General specifications:

Feedline impedance:	50Ω
Power rating:	7kW ICAS, (CW)
RF Connectors:	SO-239 (UHF) with PTFE Dielectric and Silver Plating
Bands available:	1.8÷2.0Mhz(160m); 3.5÷4.0(80m); 5.3÷5.4(60m); 7÷7.2(40m); 10÷10.15(30m); 14÷14.4Mhz(20m); 21÷21.45(15m); 28÷29.7(10m);
Input VSWR:	≤ 1,3:1
Operating power:	+24Vdc ÷ 27Vdc at 1.0A total, higher voltage can be re- quired at control consoles with long runs of control cables
Control cable:	7 conductors minimum, 0.35÷0.5mm ² (AWG#20 ÷ #24), wire size depends on a control cable length
Control cable connector:	8 pins Phoenix pluggable connector, included
Operating Temperature:	-40 to +65 degrees C
PCB Size:	20 x 20 x 7 cm / 7,87``x 7,87``x 2,75`` mounting standoffs (M4x20mm) provided
PCB Net weight:	≤ 1,7 kg / 2,2 lbs

Required parts:

Phasing cables	4 pcs, to each Vertical antenna, electrical 1/4λ, 75-ohm coax, Velocity factor ≥0.8 (foam dielectric)
Dummy load	DL-120W , non-inductive, high power dummy load

Suggested parts:

Remote Control gear suggested:	Software: LBS software Hardware required: LBS IP relay
Control consoles suggested:	- 4 SQUARE ARRAY, 8 direction controller "LBC8ARD" - 4 SQUARE ARRAY, 8 direction controller "SMART-8" - Universal, 8 direction controller "UCC-8"

Features:

Very robust, reliable, Inert gas filled high current relays, from Soviet Army era, (REN-33, 24÷27VDC coils) and K15V-1 high power RF capacitors. High current PCB design to ensure trouble free QRO operation. Integrated RF voltage detector to control DUMPED power on a load resistor. PCB varnished after assembly and adjustment procedures with UV resistant marine grade lacquer for long life in a harsh weather conditions.



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Control logic (Truth Table):

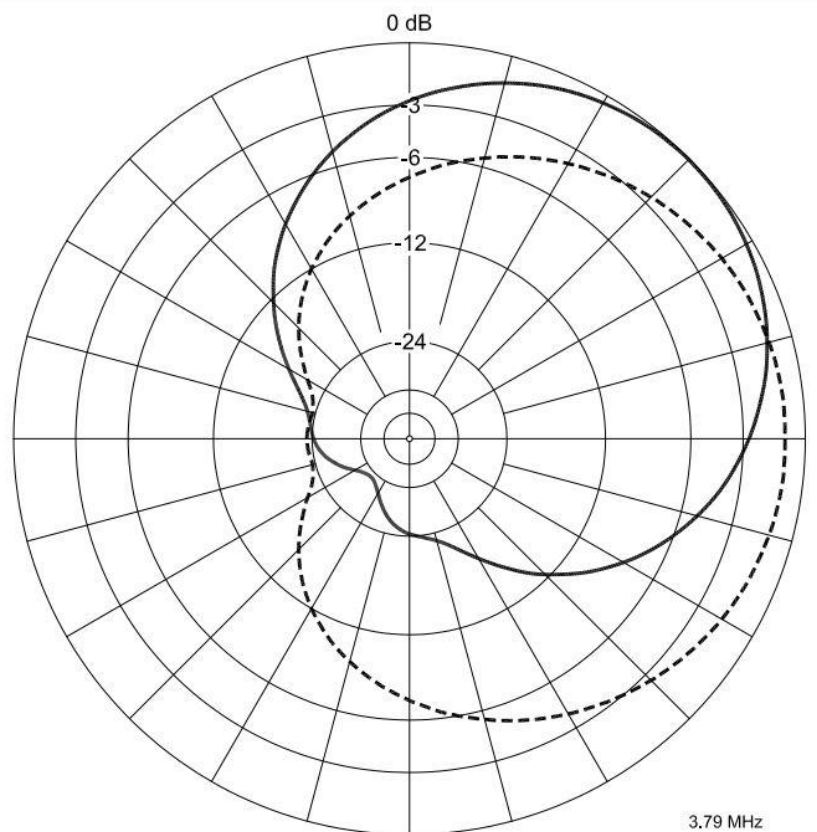
Direction, degrees \	Pin#1	Pin#2	Pin#3	Pin#4	Pin#5	Pin#6	Pin#7	Pin#8
315	1	1	1	1	0	0	nc	Com.
0	1	0	0	1	0	0	nc	Com.
45	0	0	0	0	0	0	nc	Com.
90	0	0	1	1	0	1	nc	Com.
135	1	1	1	1	1	1	nc	Com.
180	0	1	1	0	0	1	nc	Com.
225	0	0	0	0	1	1	nc	Com.
270	1	1	0	0	0	1	nc	Com.

1 – Active, + 24 ÷ 27 VDC

0 – NON Active, 0VDC

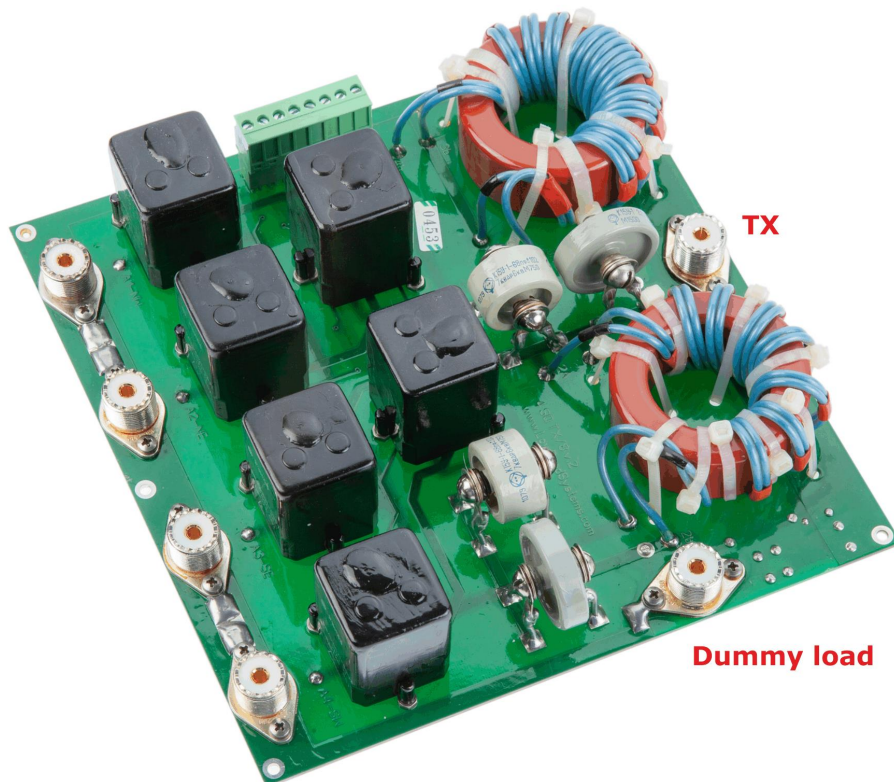
Com. - common

Radiation pattern comparation:



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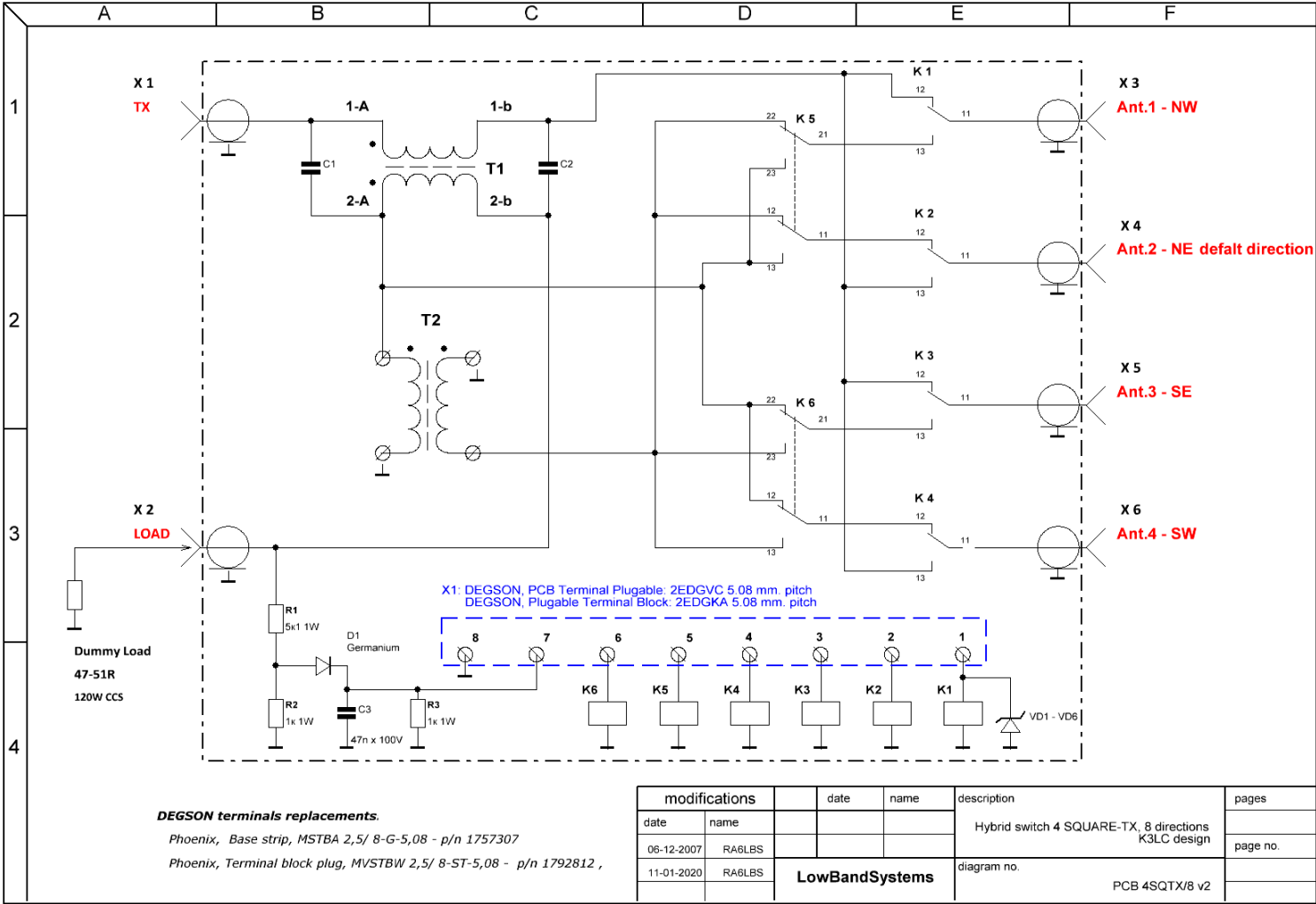
PCB :



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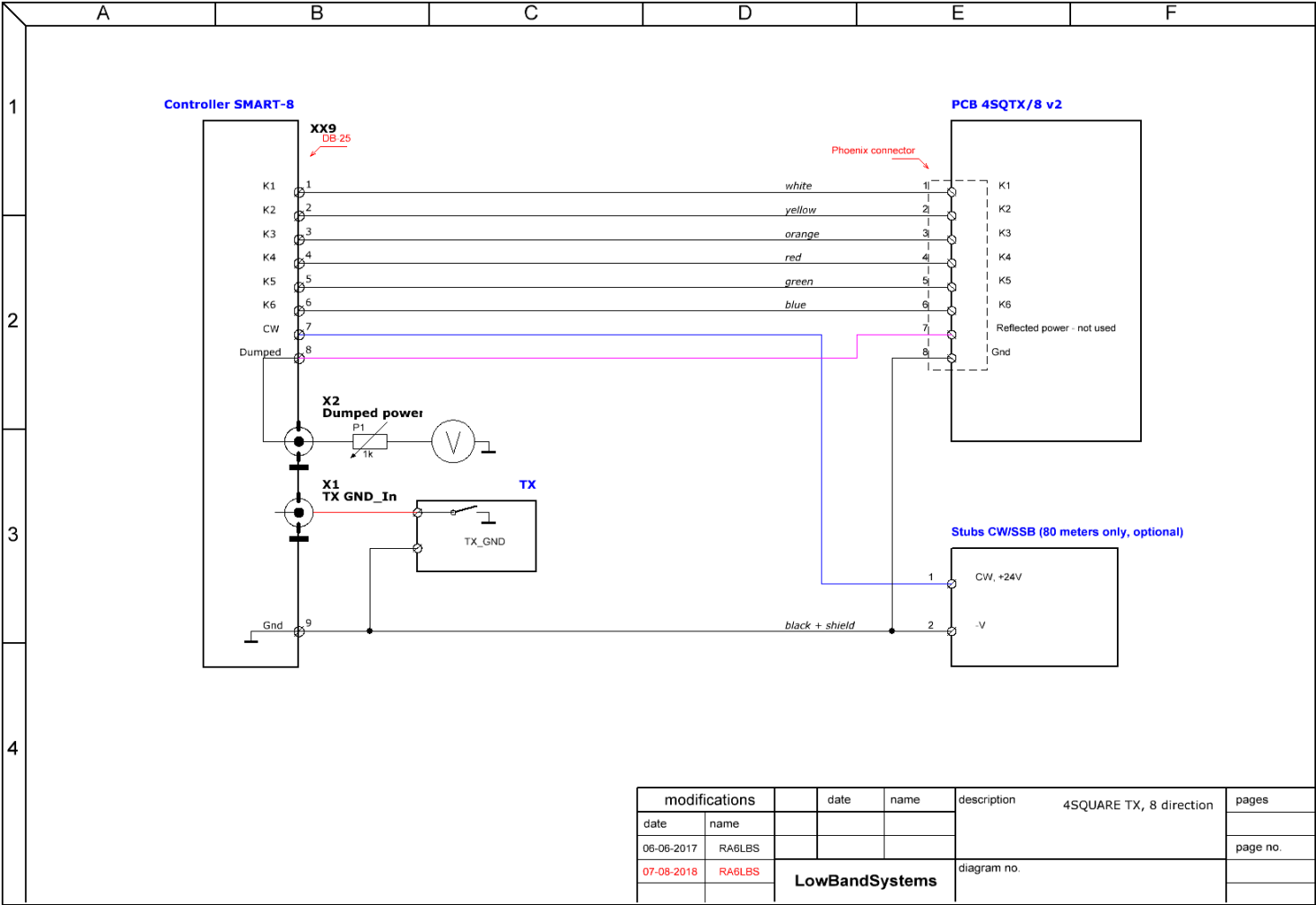
PCB Schematic:



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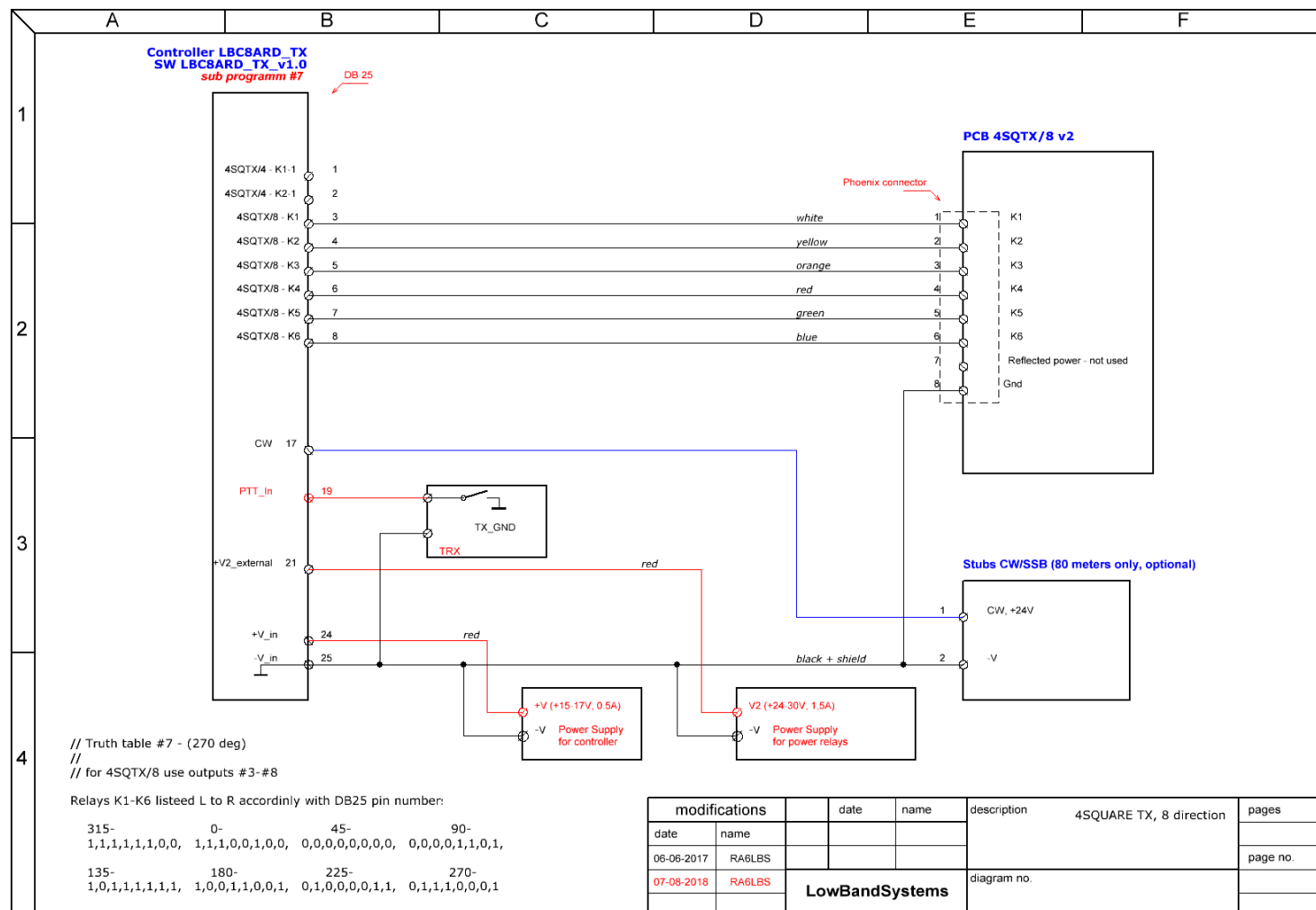


Control console SMART-8:



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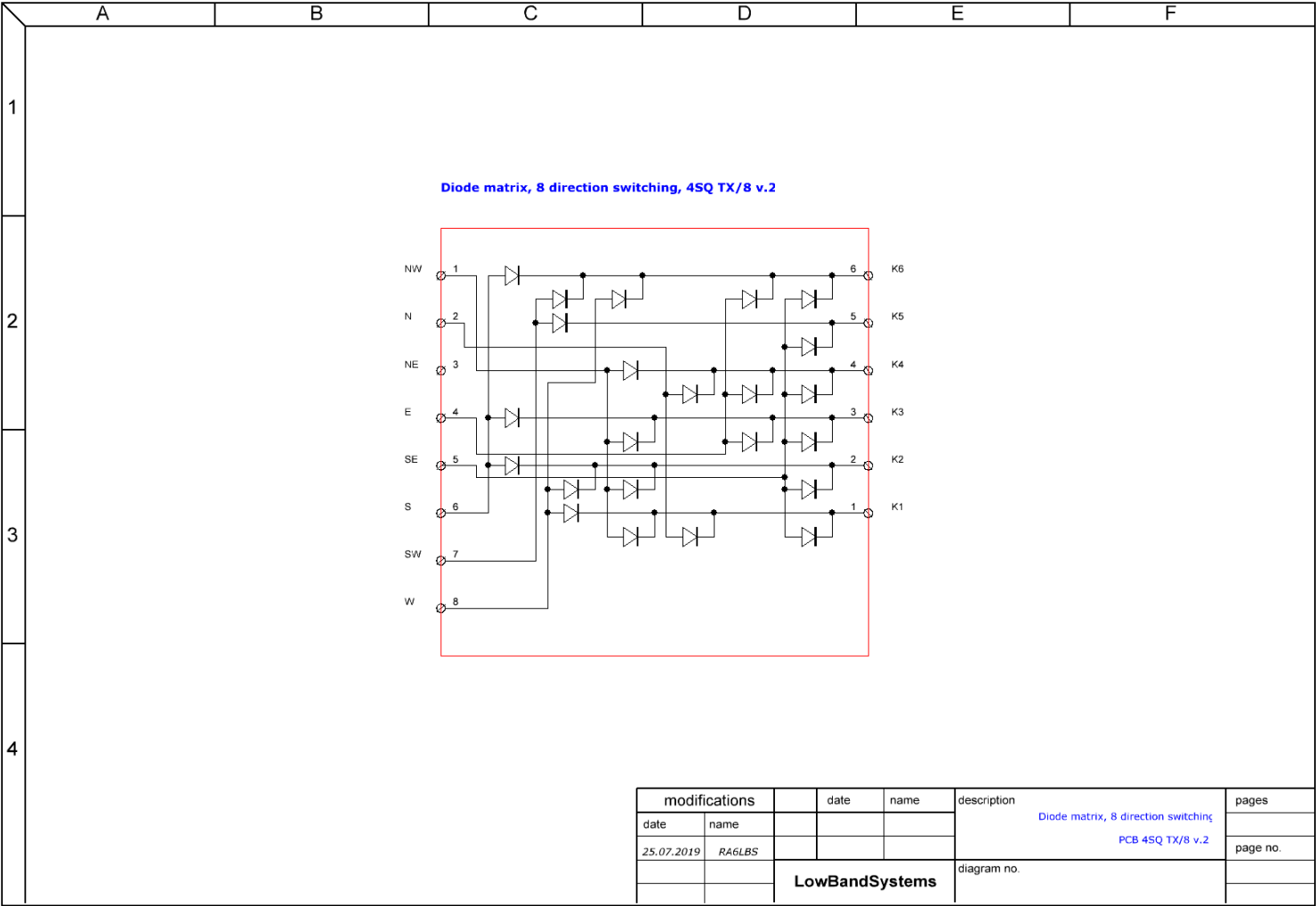
Control console LBC8ARD, UCC-8:



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Diode matrix
to control 4SQ TX/8 PCB:



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PCB drawing:

