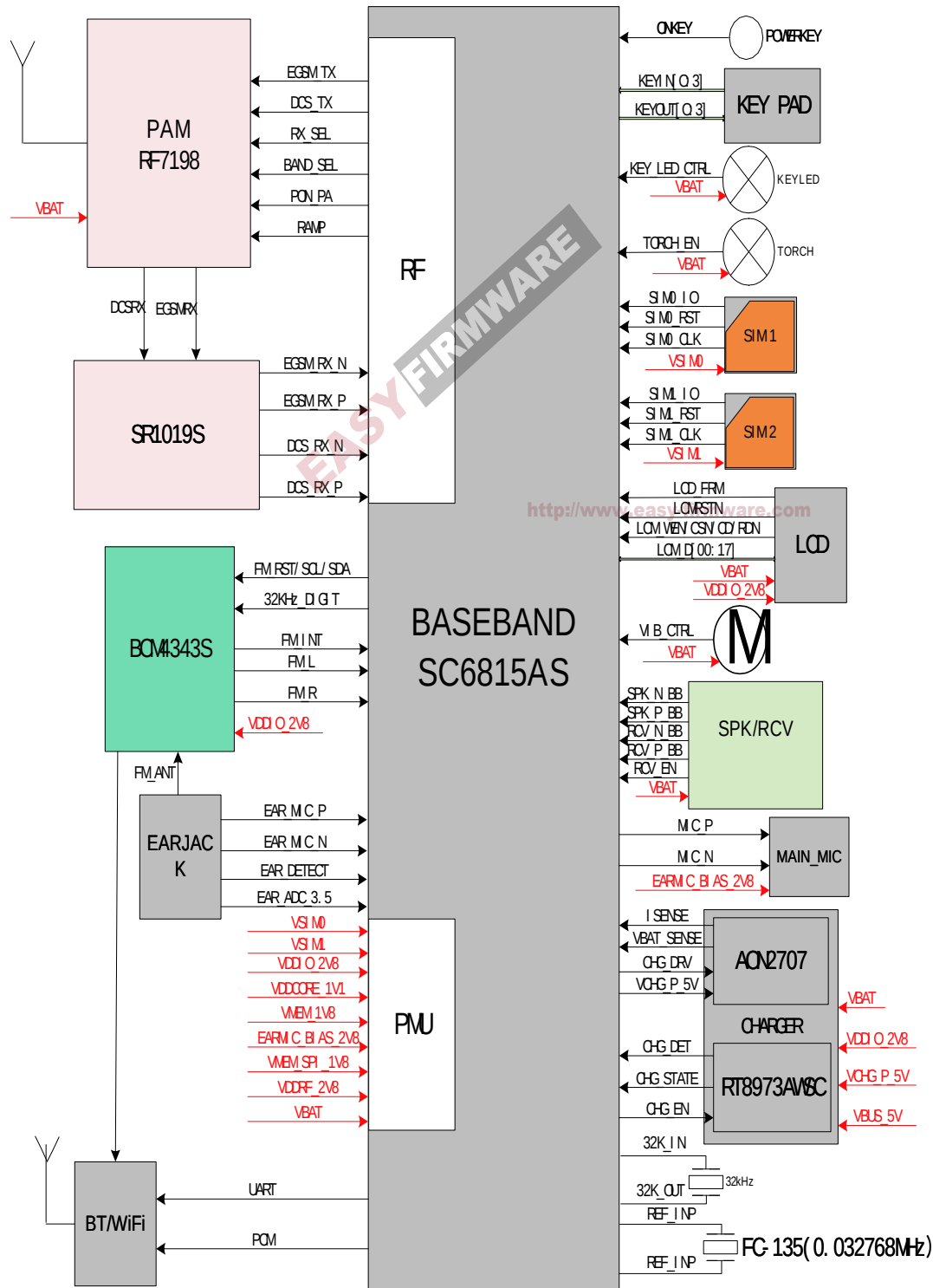


8. Level 3 Repair

8-1. Block Diagram

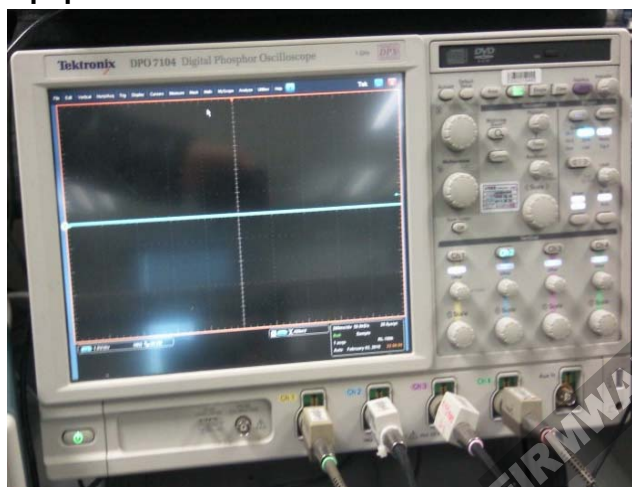
SM-G130E Block Diagram





8-3. Flow Chart of Troubleshooting

Equipments



Oscilloscope



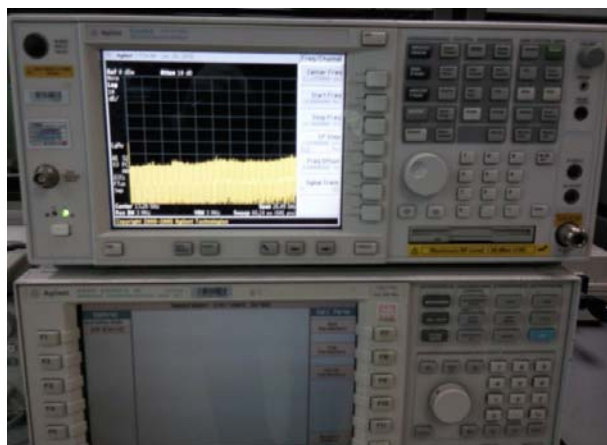
Digital Multimeter



Power Supply



'+' driver, ESD Safe Tweezer

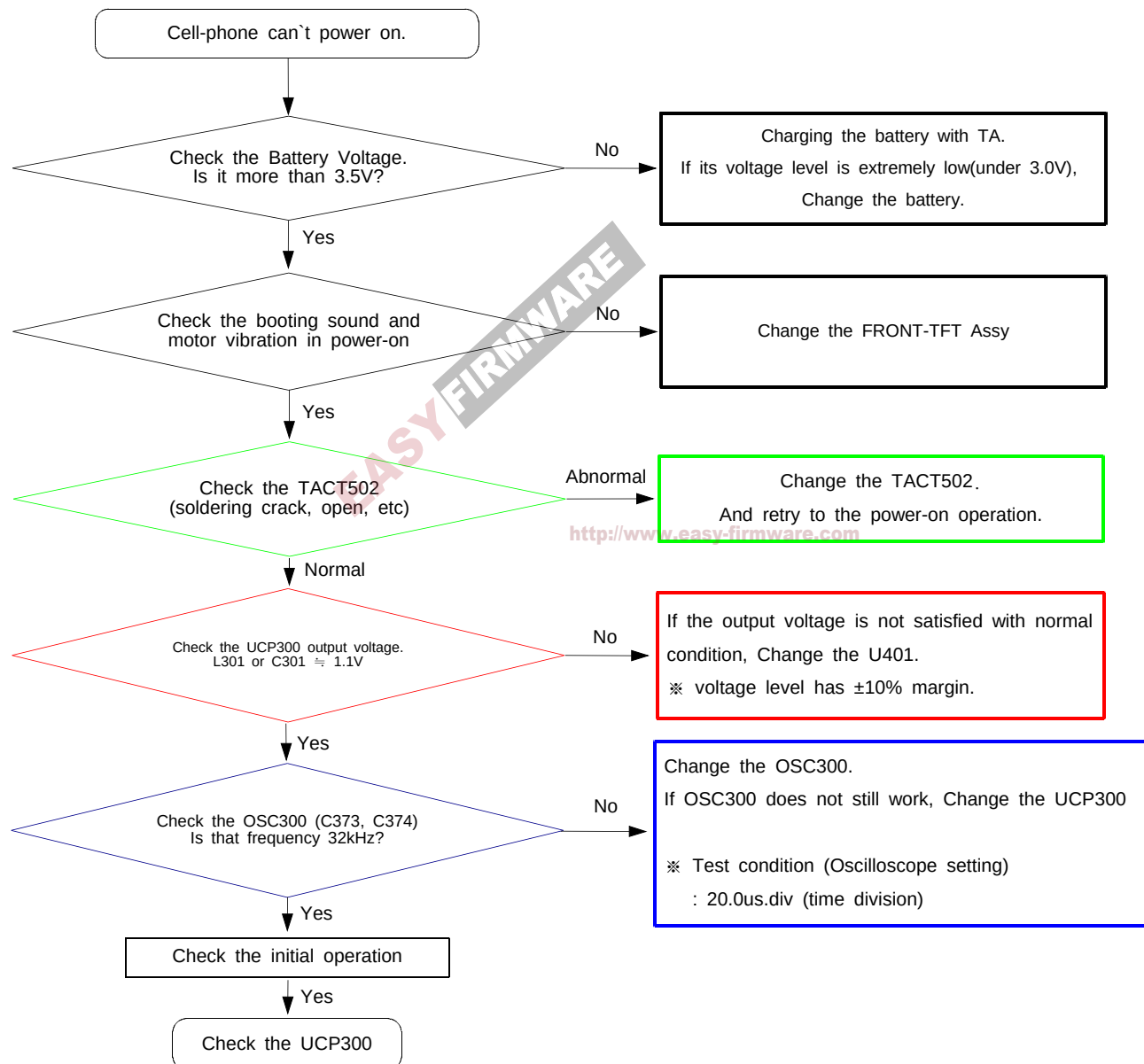


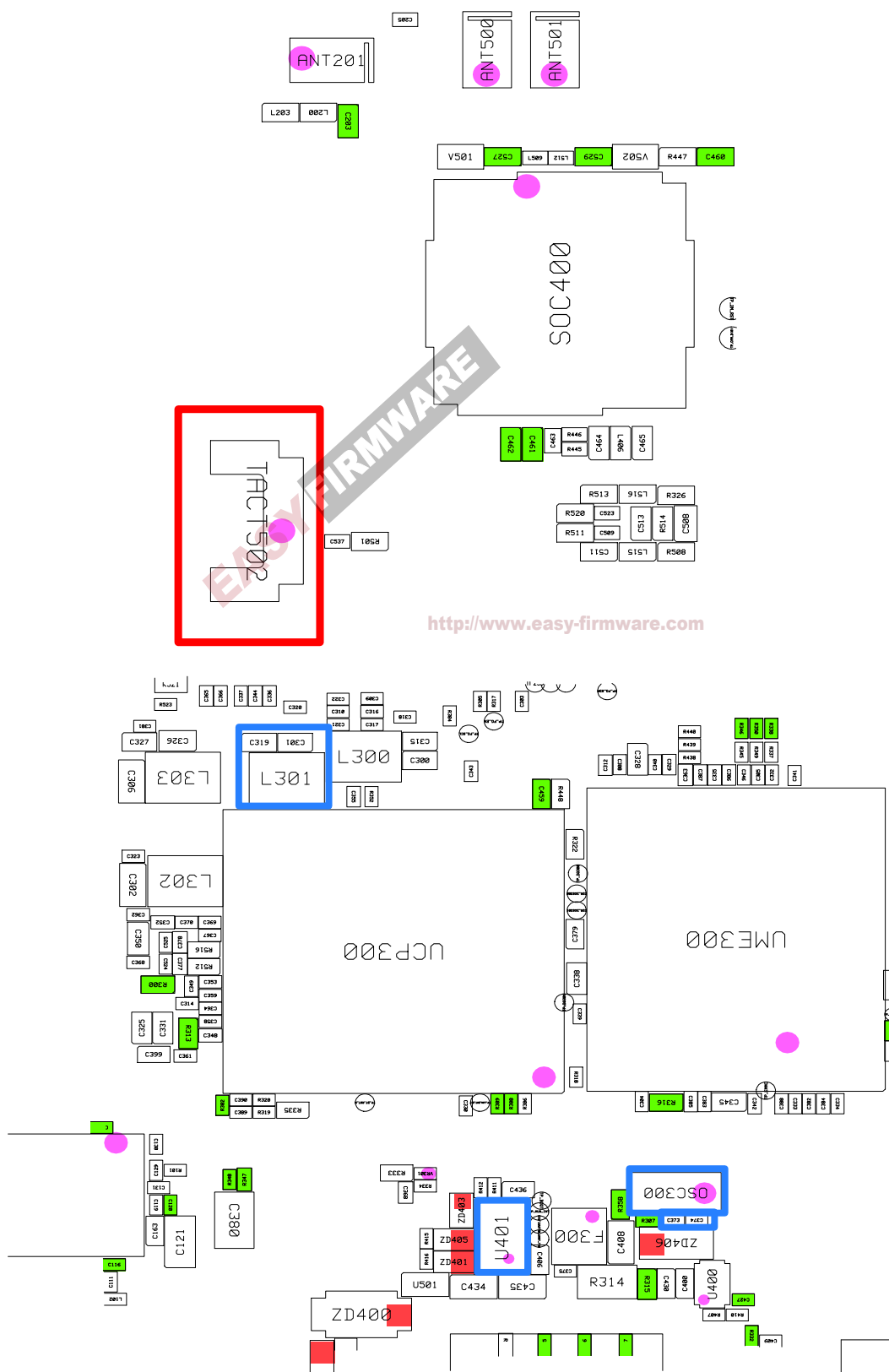
8960 & Spectrum Analyzer



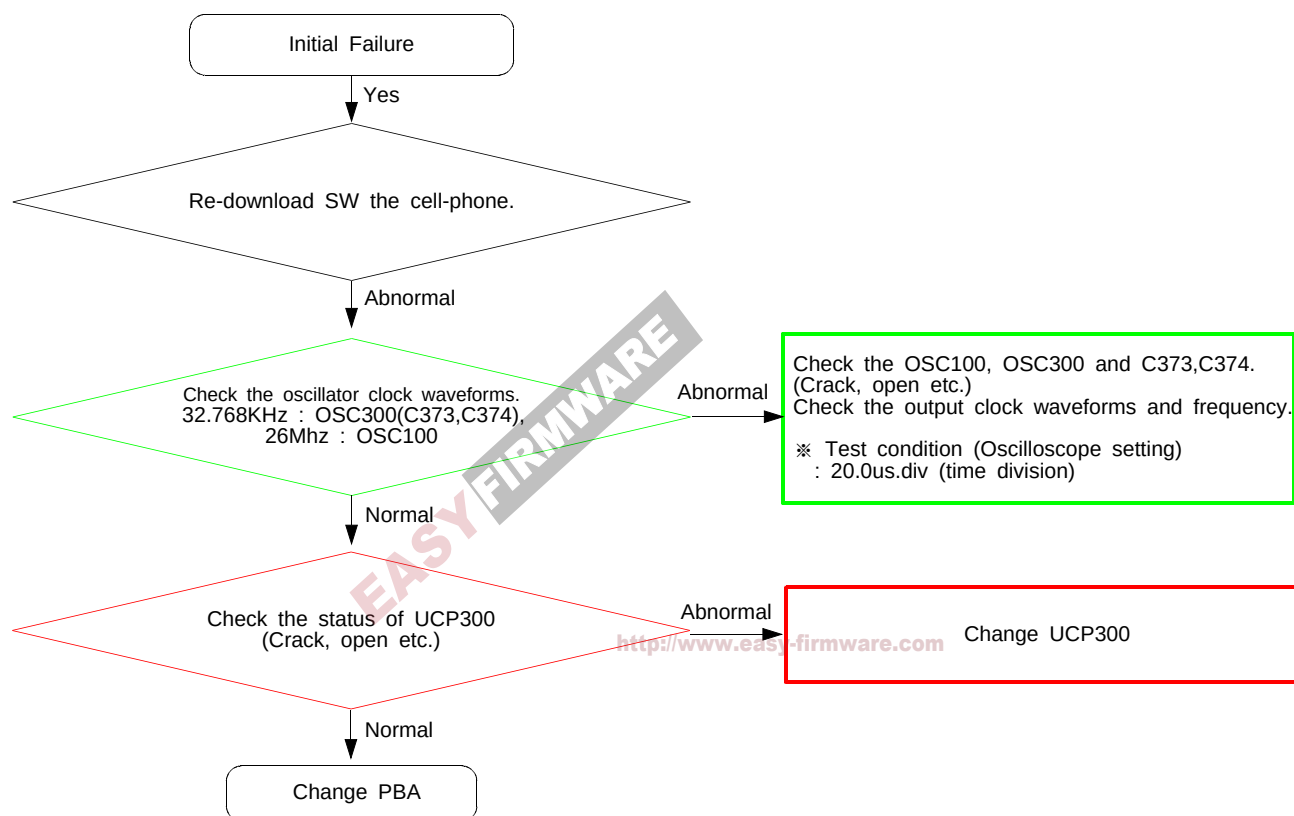
Soldering iron

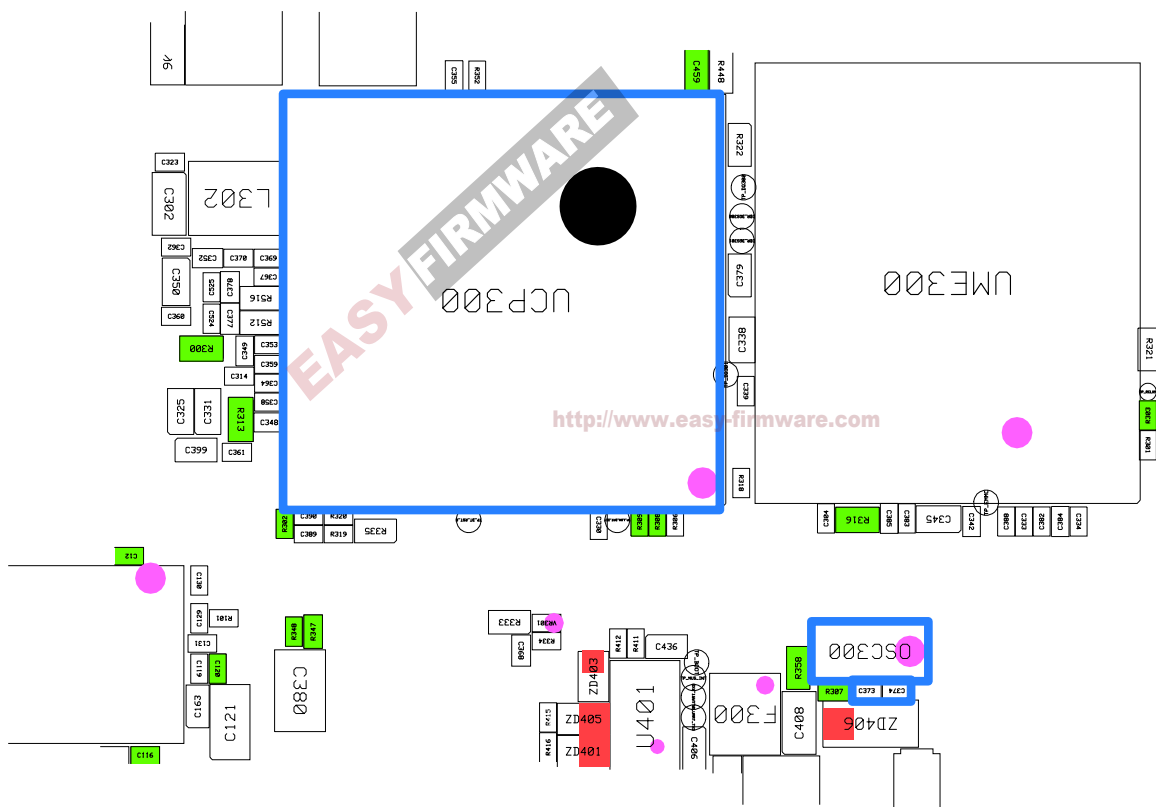
8-4-1. Power On



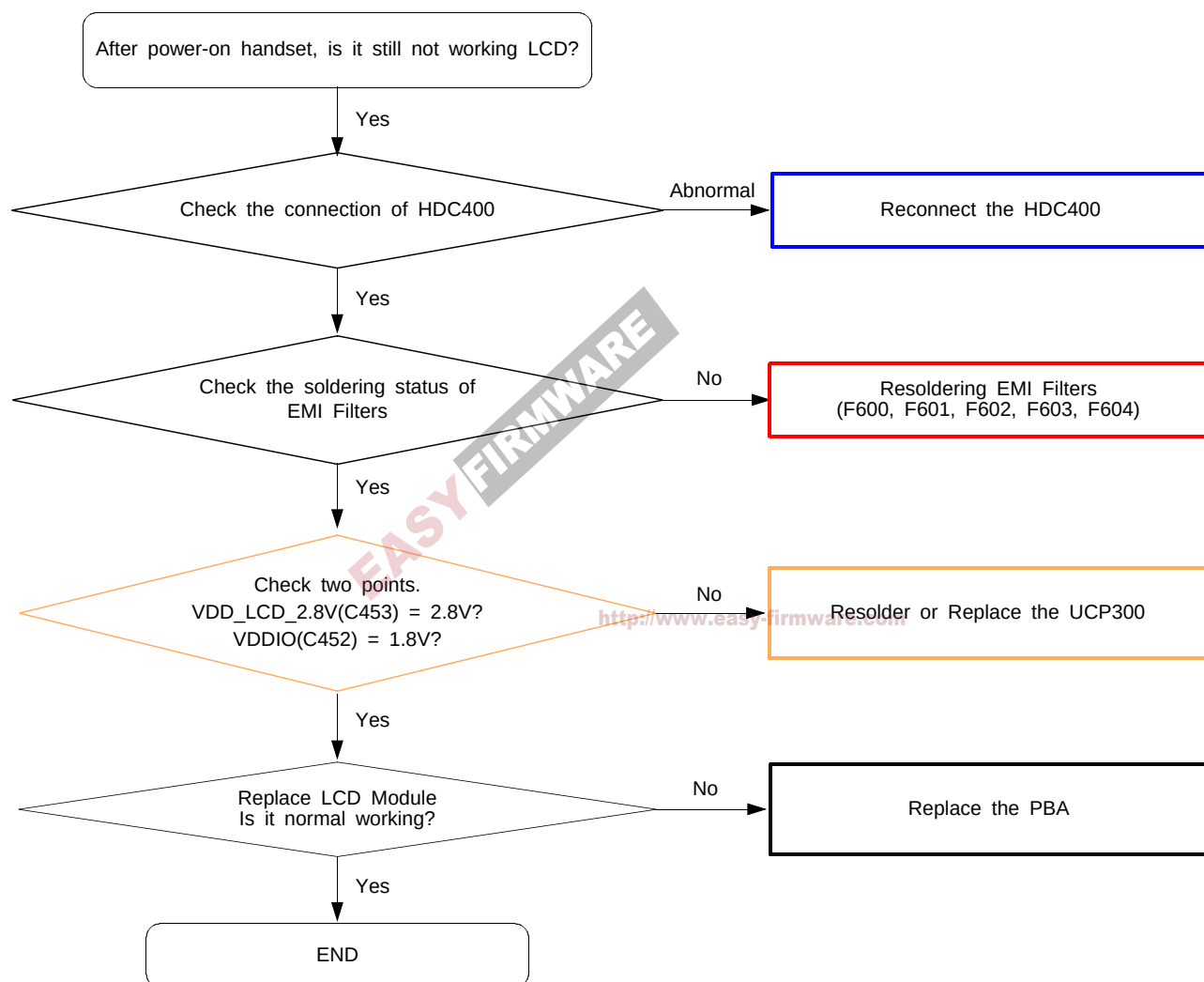


8-4-2. Initial

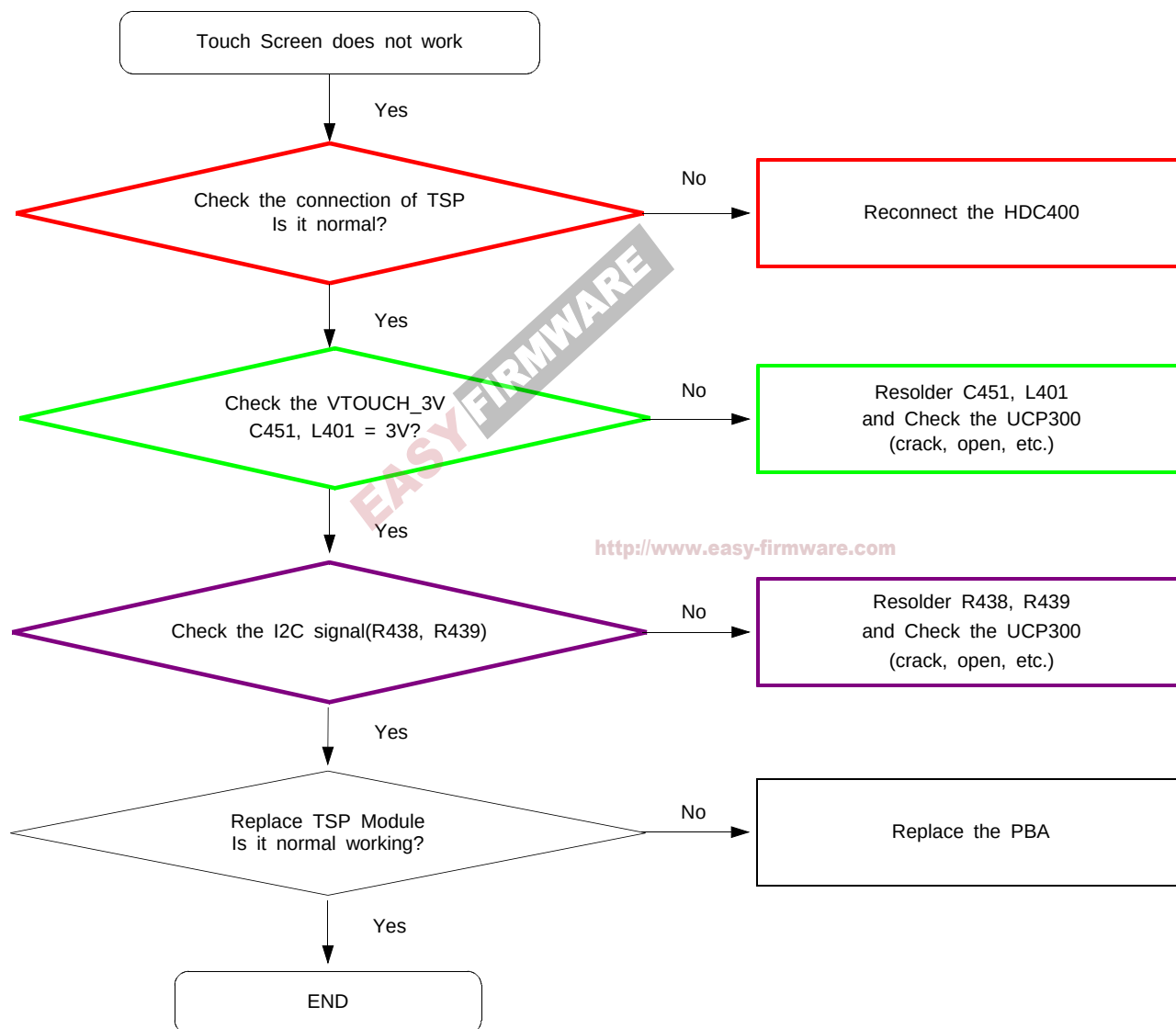


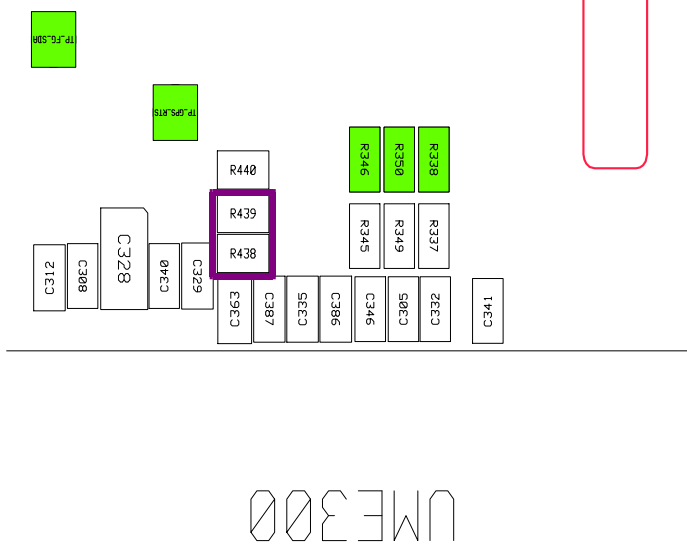
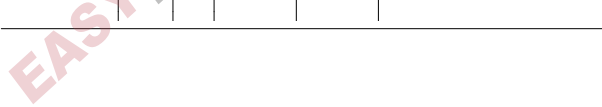


8-4-3. LCD



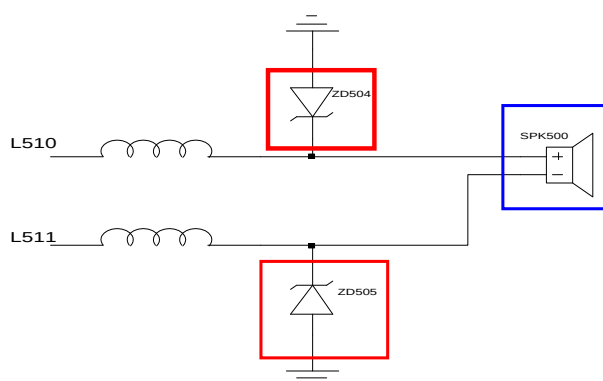
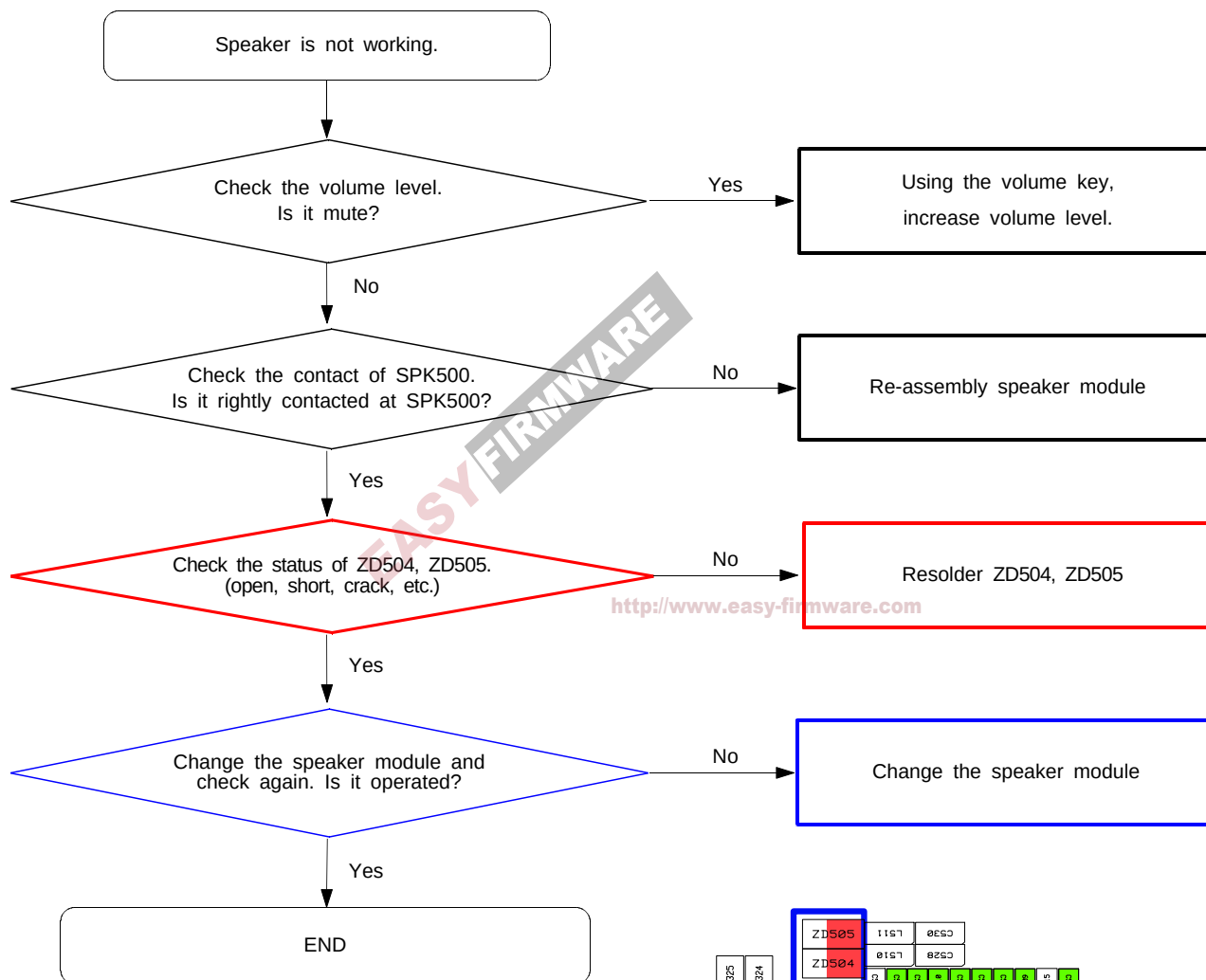
8-4-4. TSP



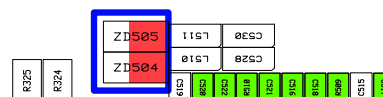


8-4-5. Audio Part

● Speaker Module

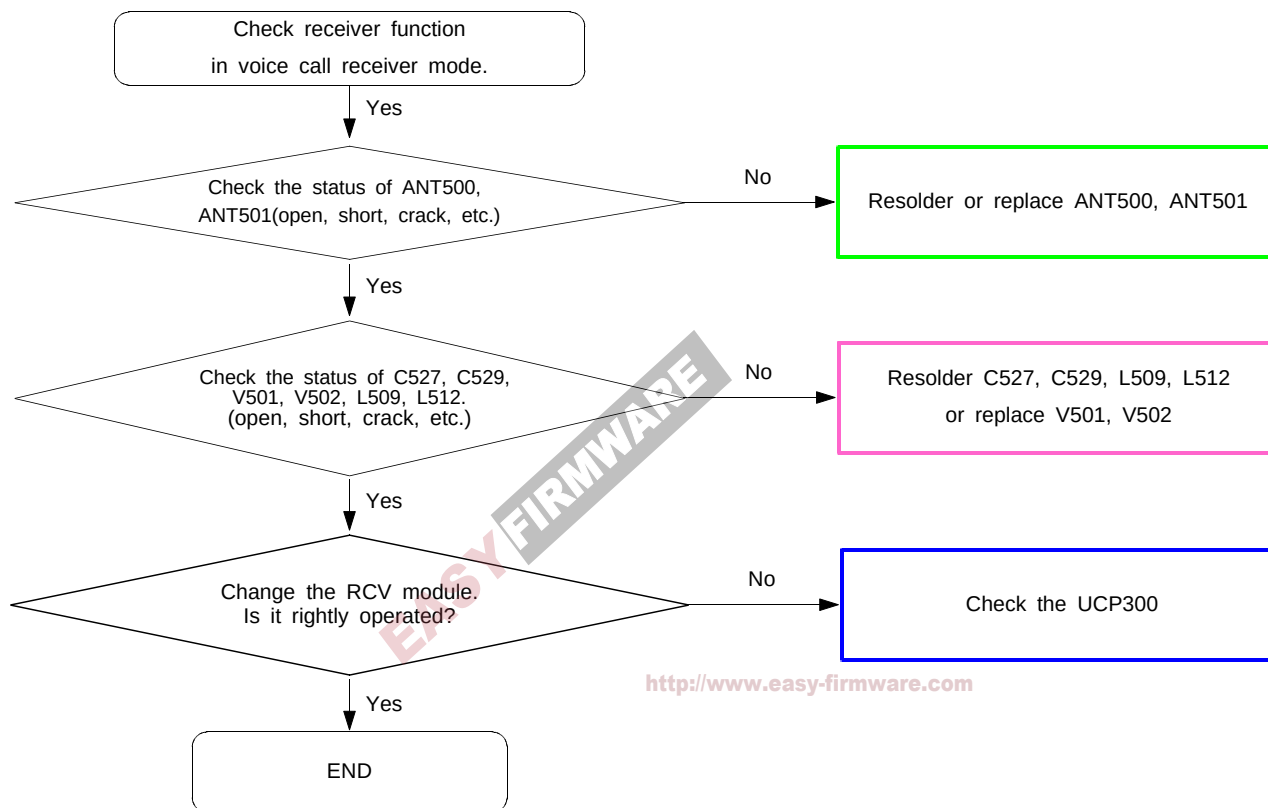


SPK

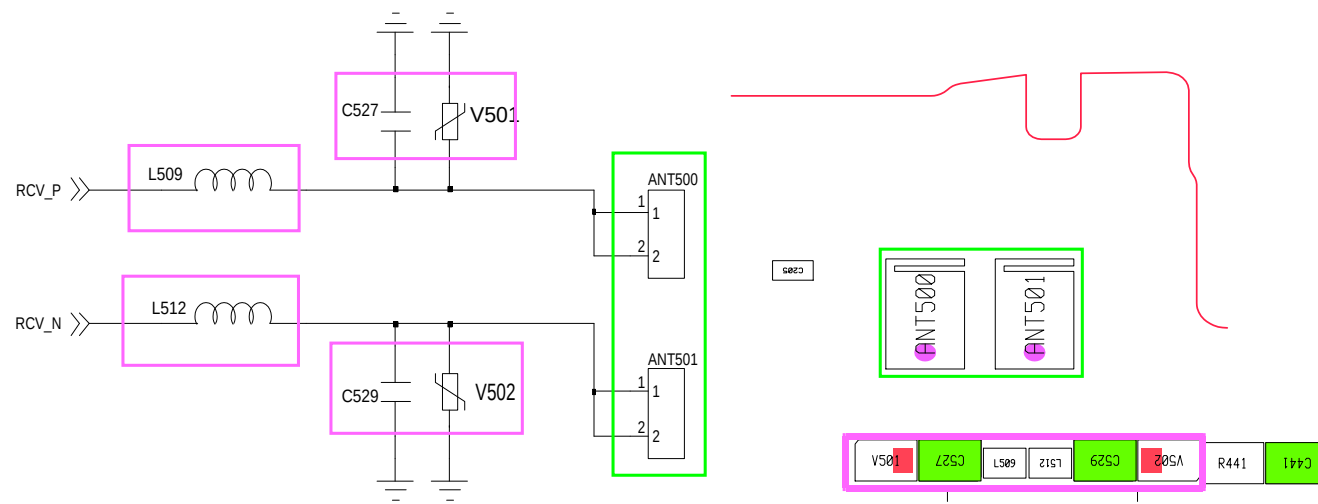


SIM501

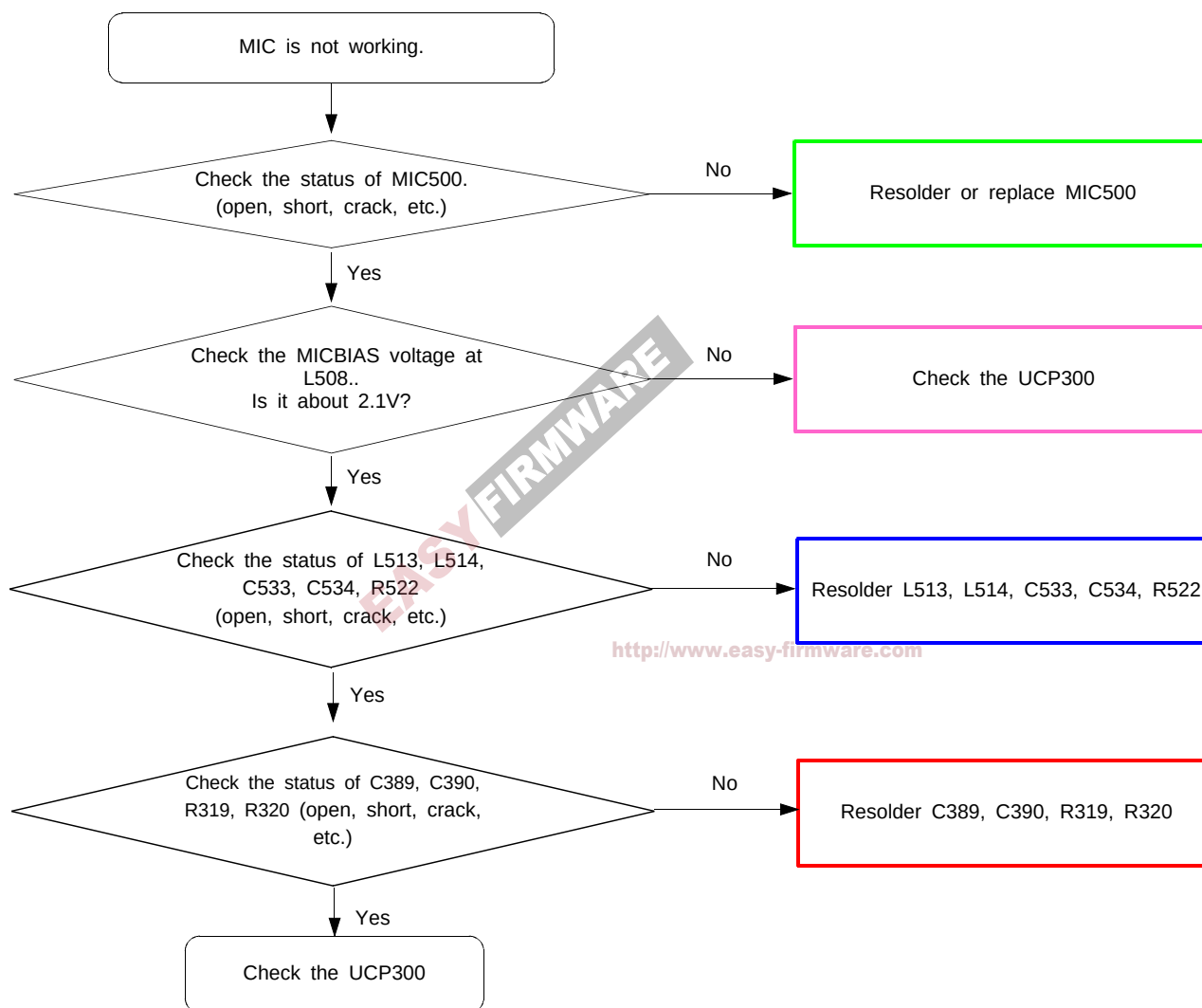
● Receiver Working



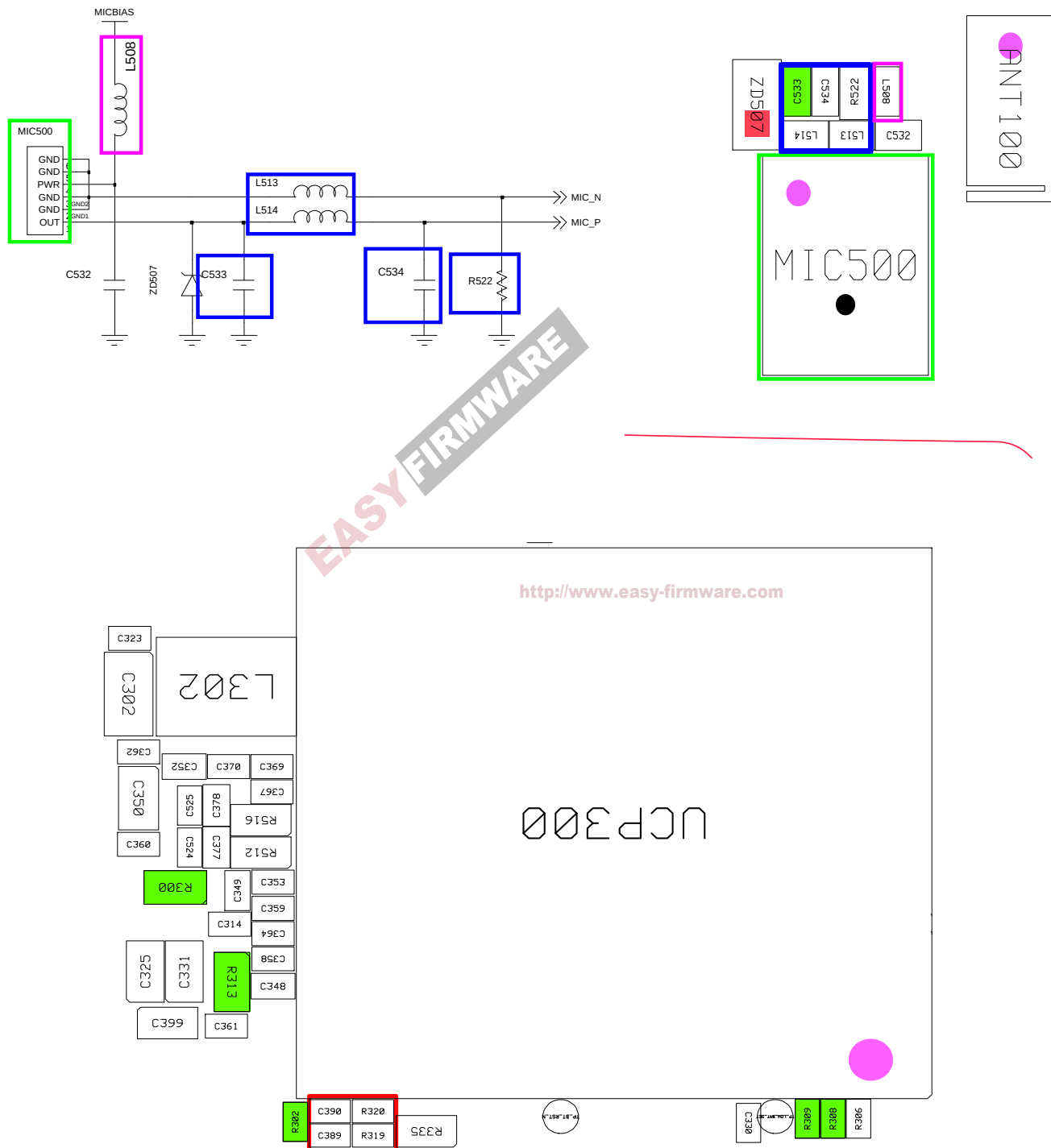
<http://www.easy-firmware.com>



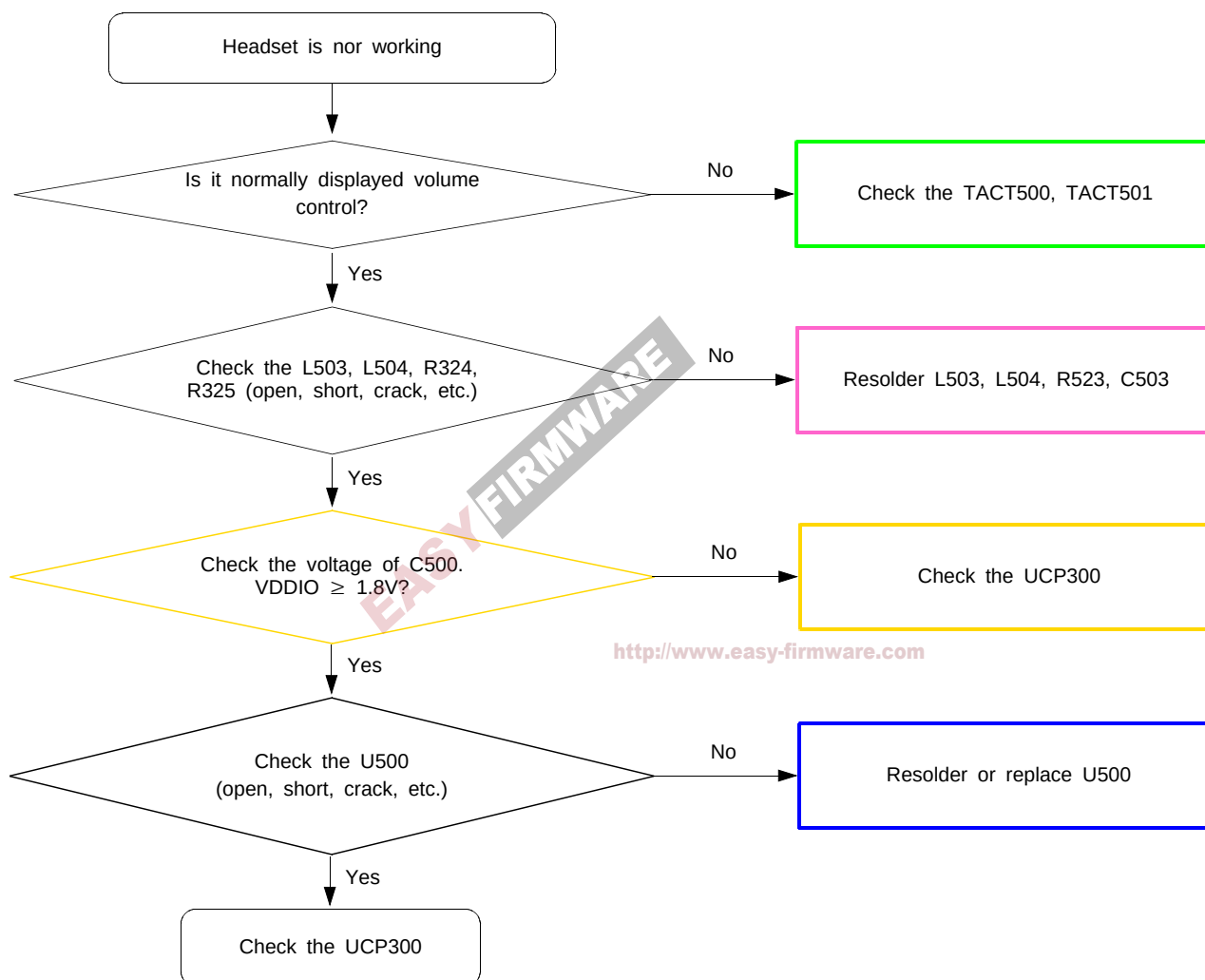
● MIC Working (Main MIC)



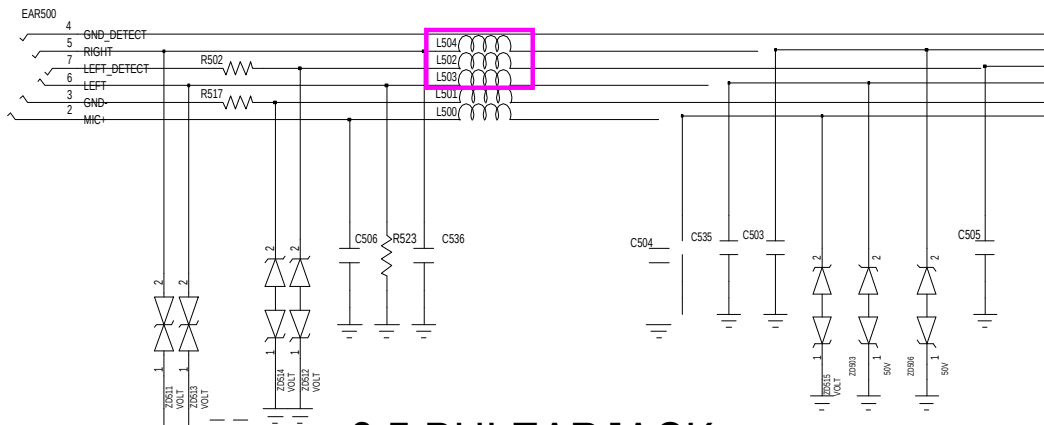
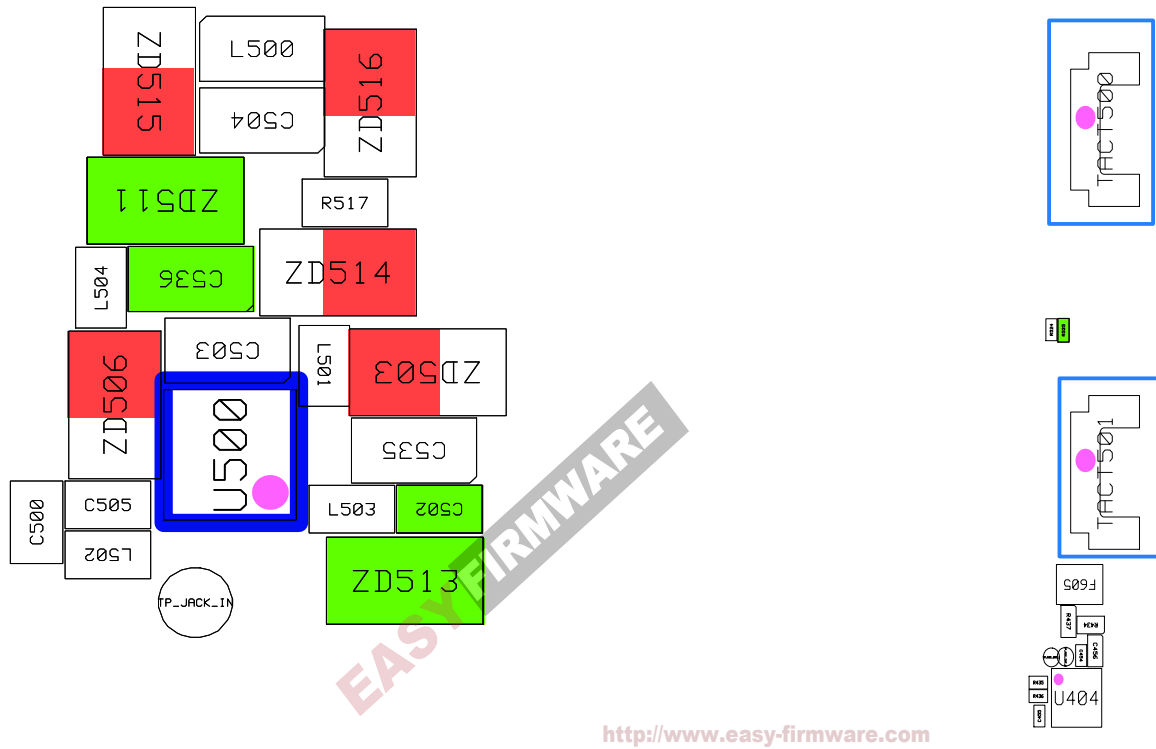
Level 3 Repair



● Stereo Headset

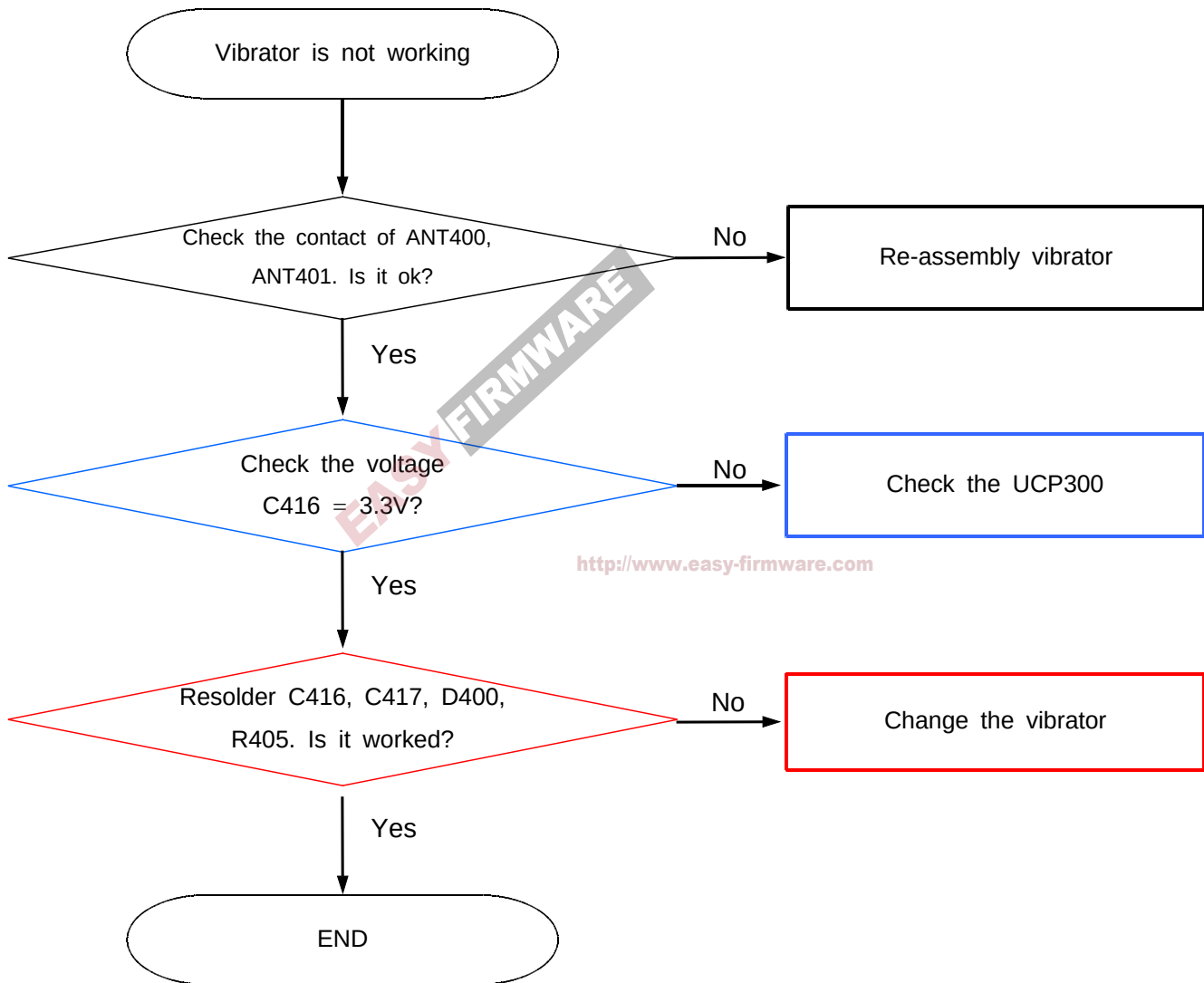


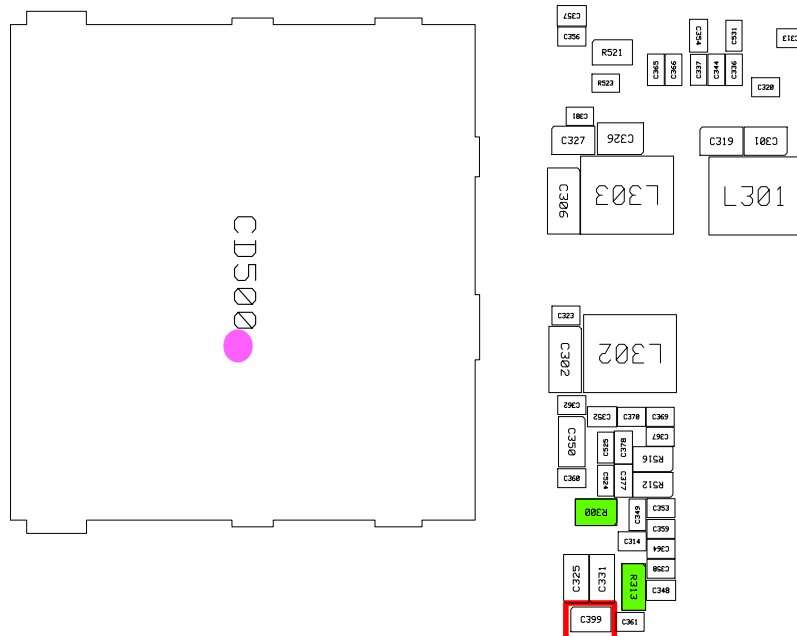
Level 3 Repair



3.5 PHI EARJACK

8-4-6. Vibrator Working

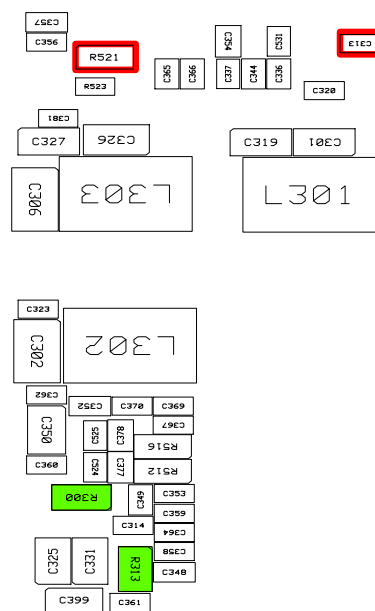
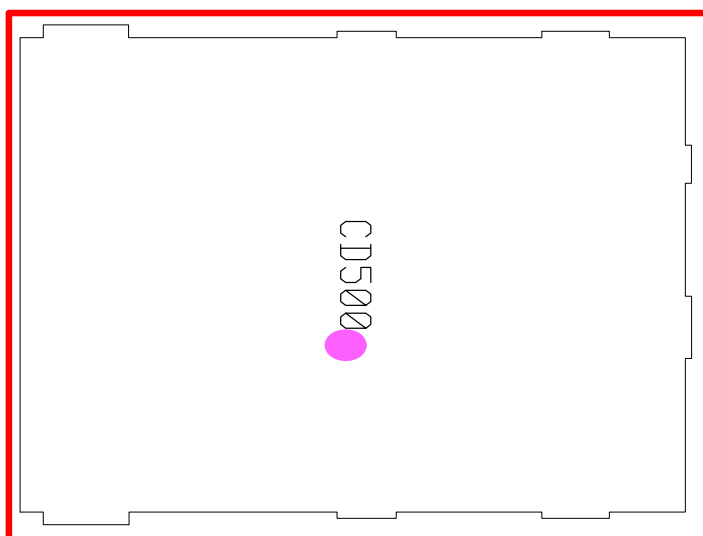


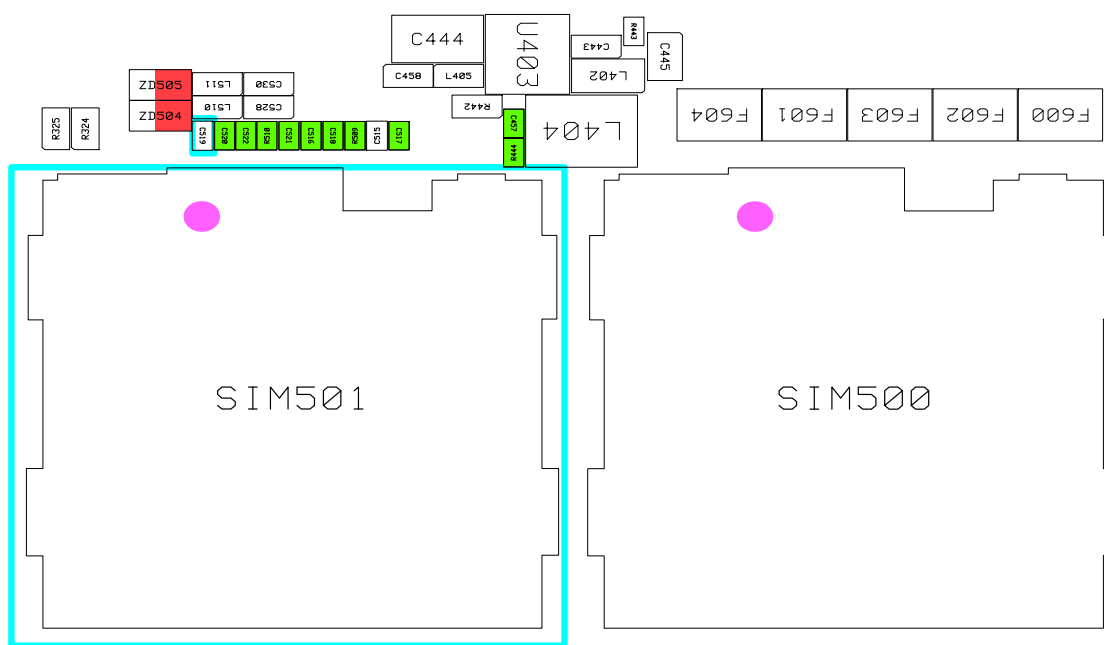


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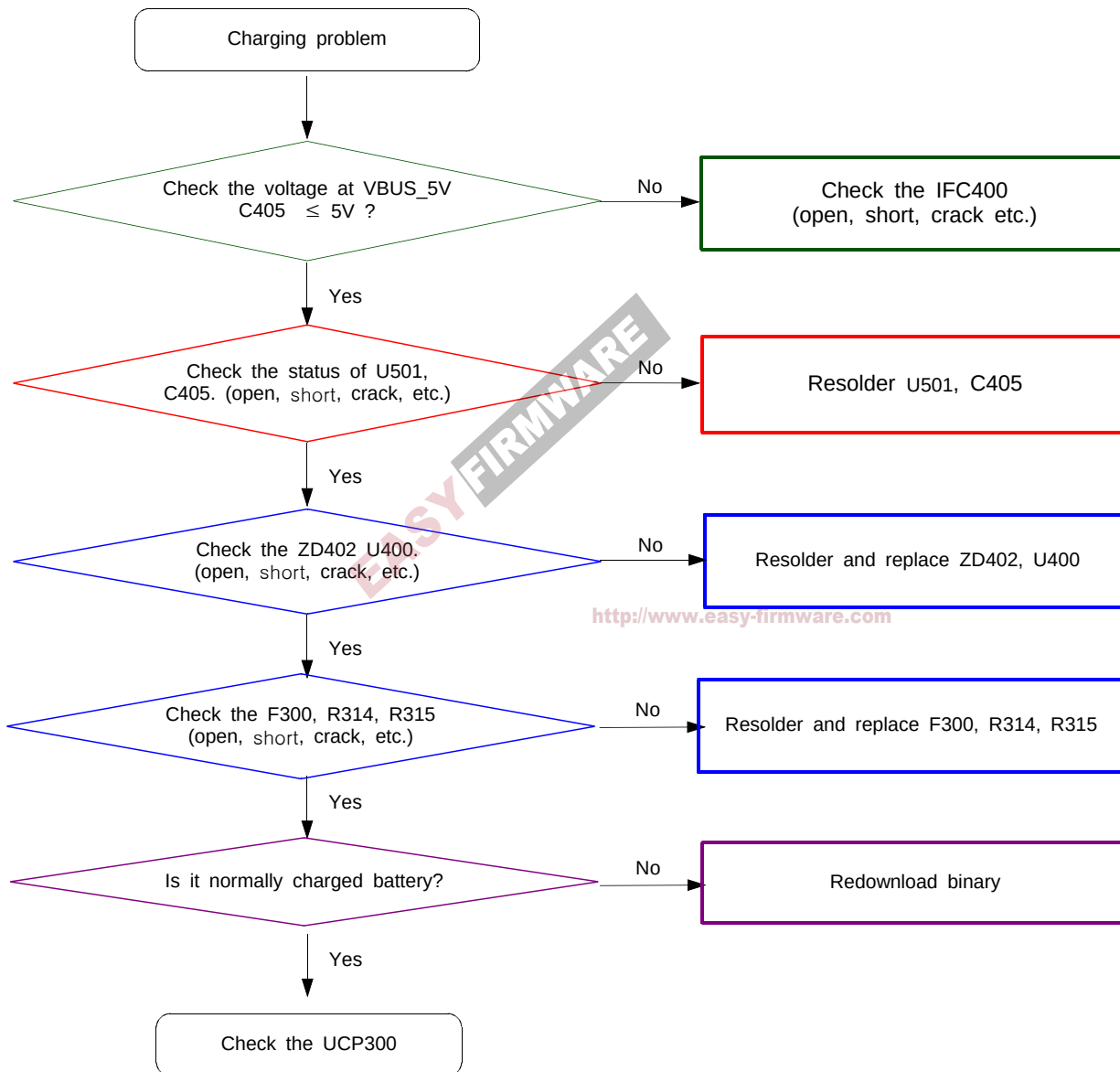
graph TD
    Start([T-Flash is not working]) --> D1{Check the status CD500.}
    D1 -- No --> R1[Resolder or replace CD500]
    D1 -- Yes --> D2{Check the voltage.  
VDDIO (@R521) ≤ 1.8V  
VDDSD0(@C531) ≤ 3.0V?}
    D2 -- No --> R2[Resoldering R521, C531  
Check the UCP300.]
    D2 -- Yes --> D3{Change the new SD card.  
Is it normally working?}
    D3 -- No --> R3[Check the UCP300]
    D3 -- Yes --> End([end])

```

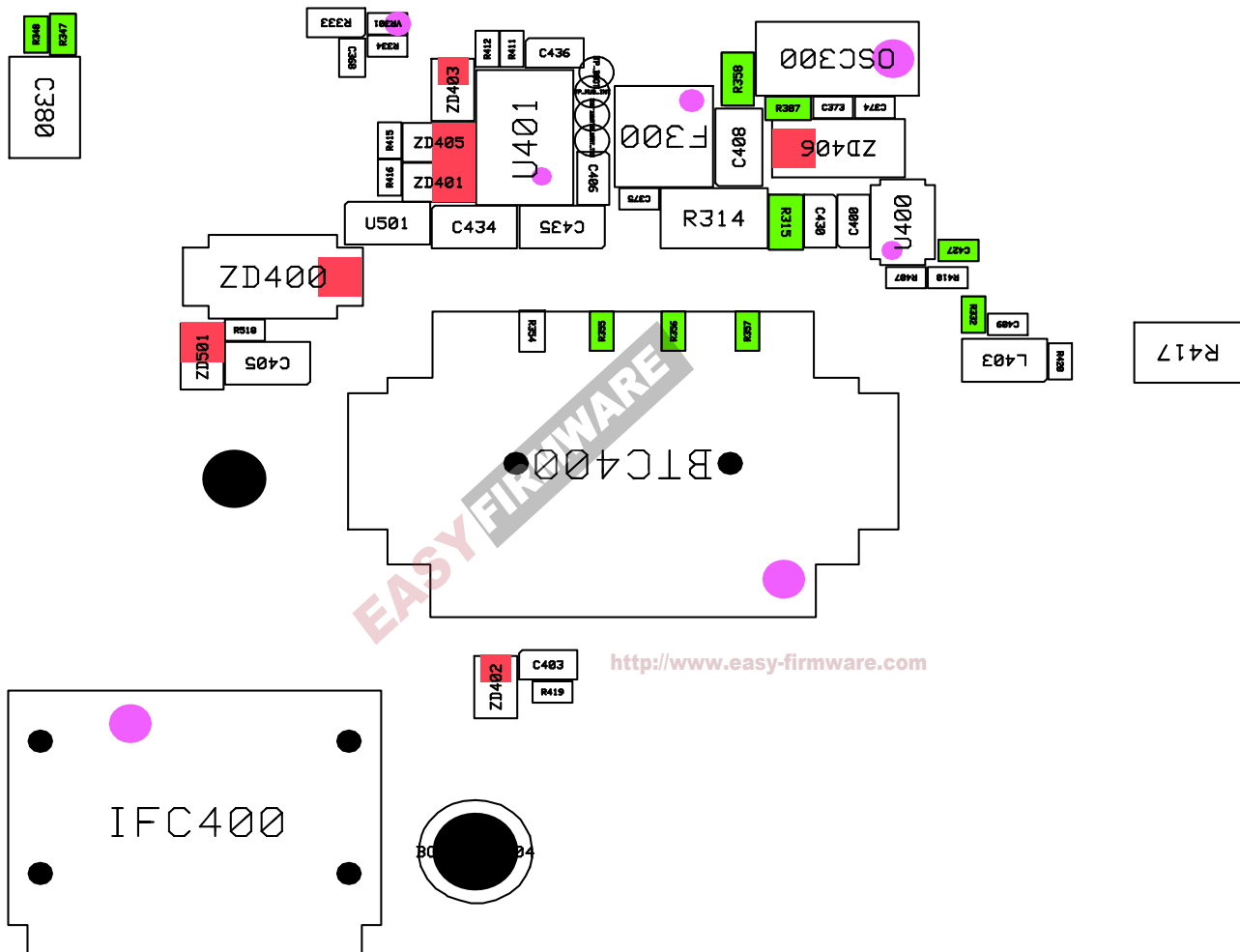




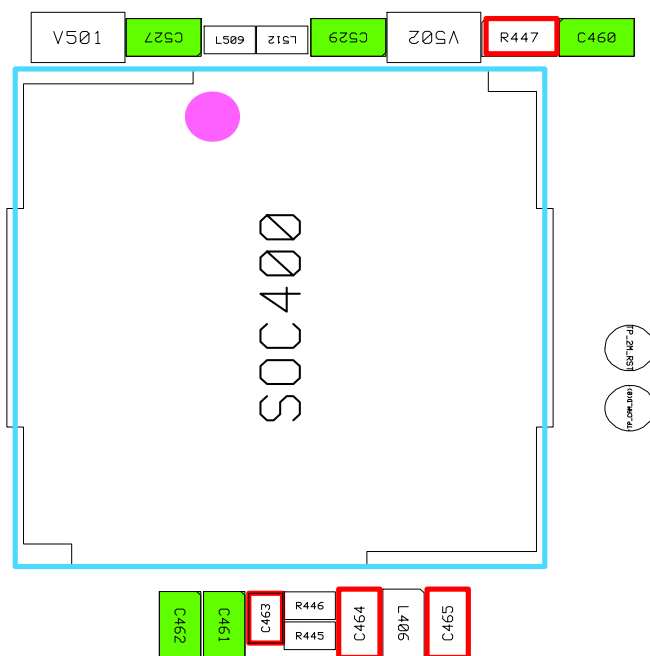
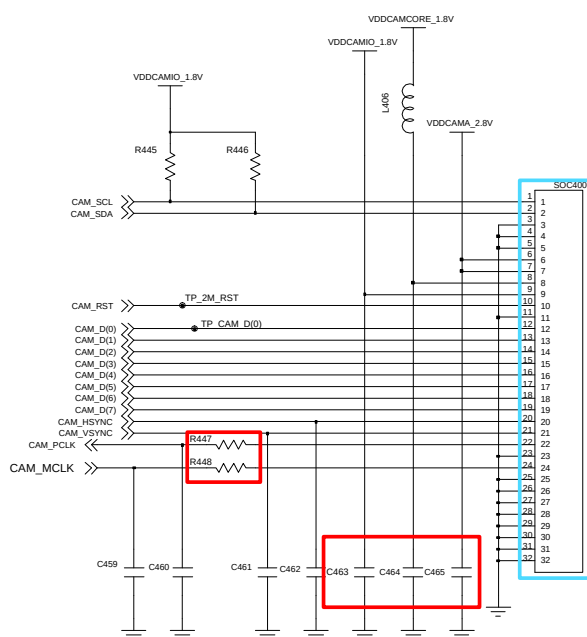
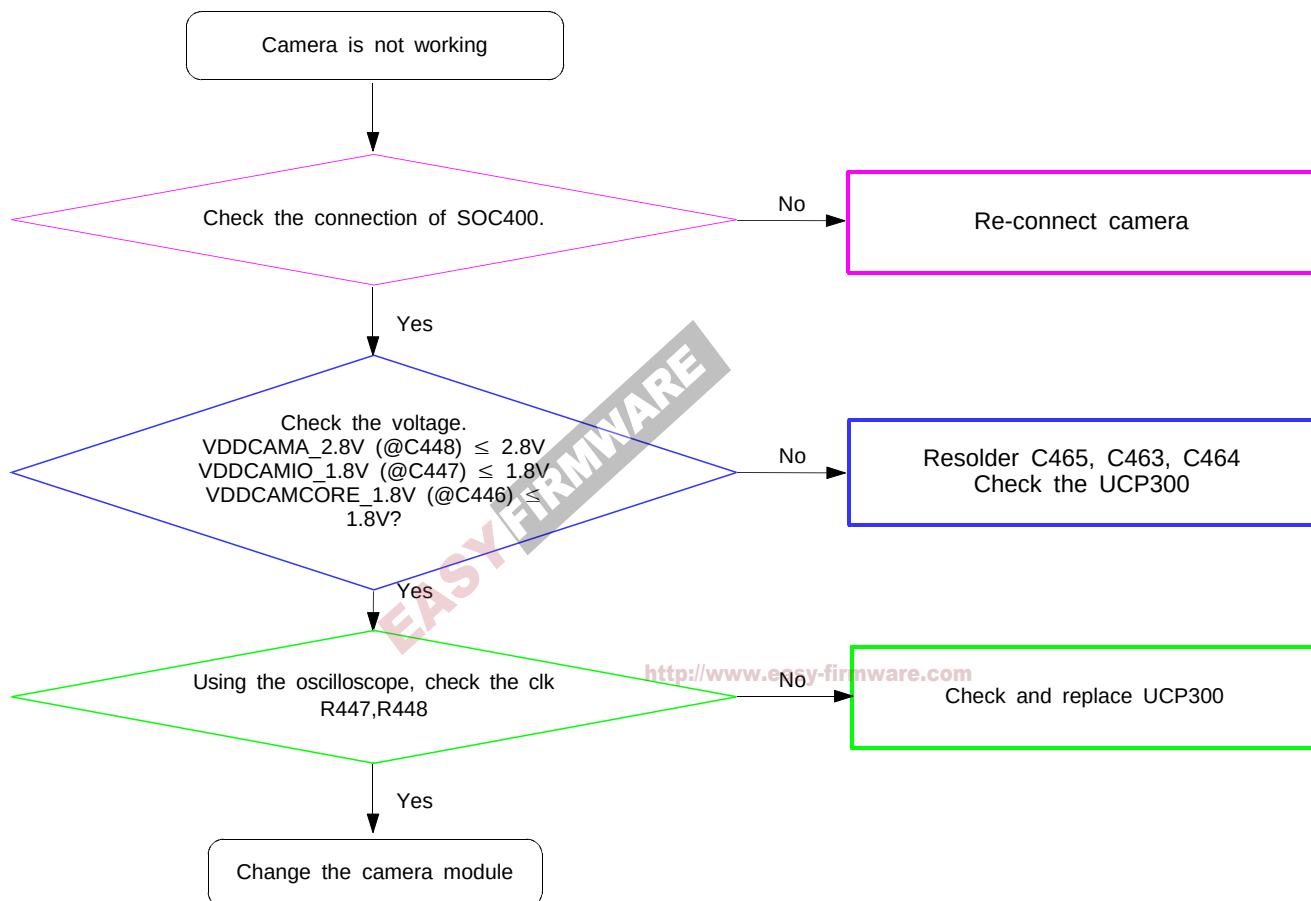
8-4-9. Charging



Level 3 Repair



8-4-10 CAMERA



※ presetting 8960

Call Setup Screen		
Control	Call Setup	Call Params
Operating Mode	OUT Information	BCH Parameters
Active Cell	IMSI: Multislot Class (GPRS): Called Num: Multislot Class (EGPRS):	
Connection Type	Traffic Channel Downlink Power	TCH Parameters
Auto	Burst 1, 2, 3, 4: dBm Unused Bursts: dBm	
Originate Call	Counters	POTCH Parameters
Paging IMSI	Page: 0 OUT IP Tx, Packets: RACH: 0 Bytes: PACH: 0 OUT IP Rx, Packets: Missing Burst: 0 Bytes: Corrupt Burst: 0 Bytes: Decode Error: 0 Bytes:	
Handover Setup	Error Reports	Receiver Control
Cell Info	Burst Timing Error: T BLER (Block Error Rate): % over blocks USF BLER: % over blocks	
1 of 2	Active Cell: Idle Idle Intrfer Offset	Sys Type: GPRS

< 8960장비 초기화면 >

(Rx setting)

1. Active Cell : select GSM or GPRS
2. Connection Type : select Auto(GSM), BLER(GPRS)
3. BCH Parameter : select measuring band (DCS or EGSM)
4. Cell power : -60dBm

<http://www.easy-firmware.com>

Call Setup Screen		
Control	Call Setup	Call Params
Operating Mode	OUT Information for IMEI 010465000000640	BCH Parameters
Active Cell	IMSI: 001010123456789 Multislot Class (GPRS): Called Num: 112 Multislot Class (EGPRS):	
Connection Type	Traffic Channel Downlink Power	TCH Parameters
Auto	Burst 1, 2, 3, 4: -60.00, dBm Unused Bursts: dBm	
End Call	Counters	POTCH Parameters
Paging IMSI	Page: 2 OUT IP Tx, Packets: RACH: 1 Bytes: PACH: 0 OUT IP Rx, Packets: Missing Burst: 0 Bytes: Corrupt Burst: 0 Bytes: Decode Error: 0 Bytes:	
Handover Setup	Error Reports	Receiver Control
Cell Info	Burst Timing Error: 0.50 T BLER (Block Error Rate): % over blocks USF BLER: % over blocks	
1 of 2	Active Cell: Connected Connected Intrfer Offset	Sys Type: GSM

< Call이 연결된 화면 >

(Tx setting)

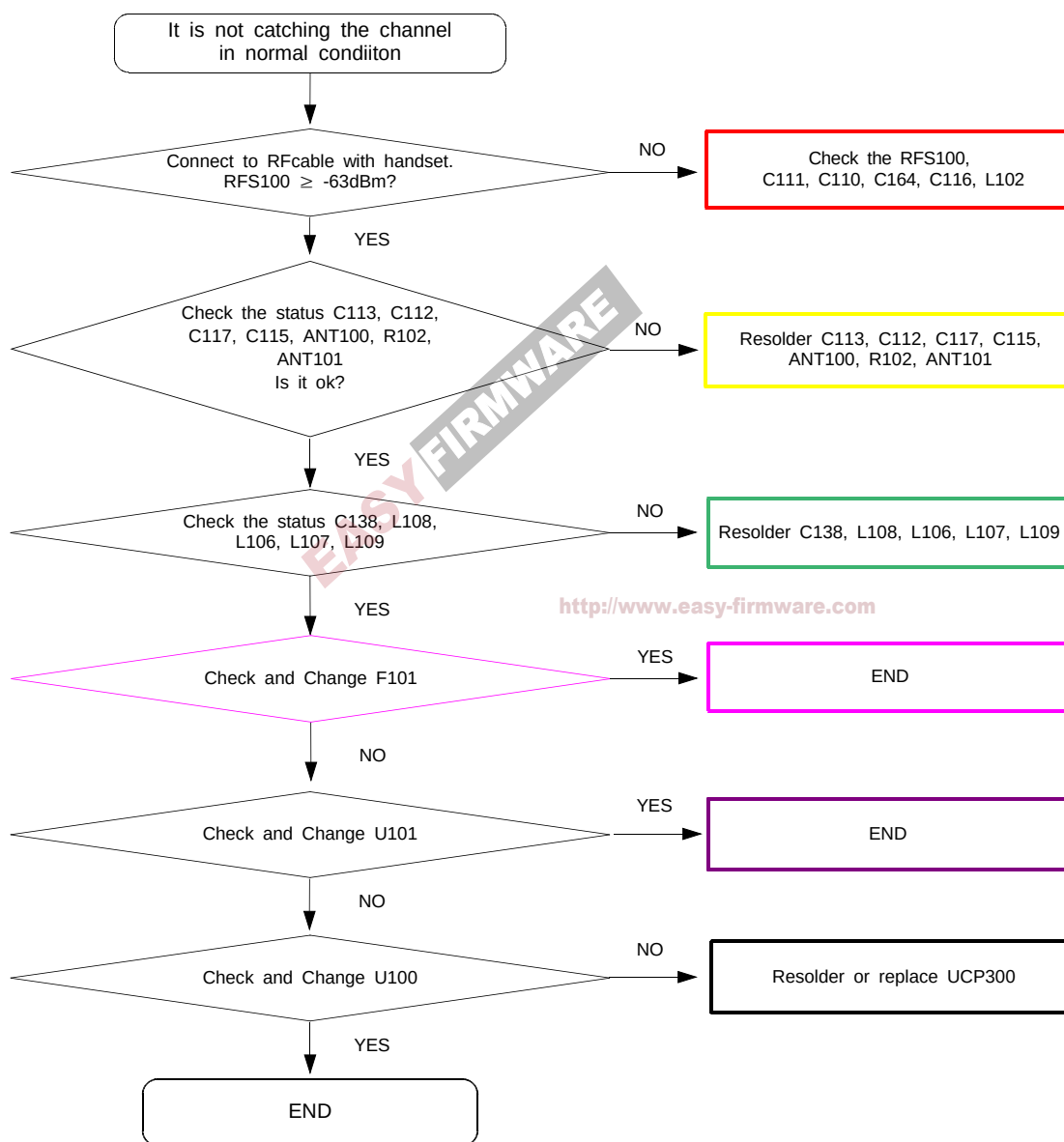
※ After setting 8960 (EGSM / DCS)

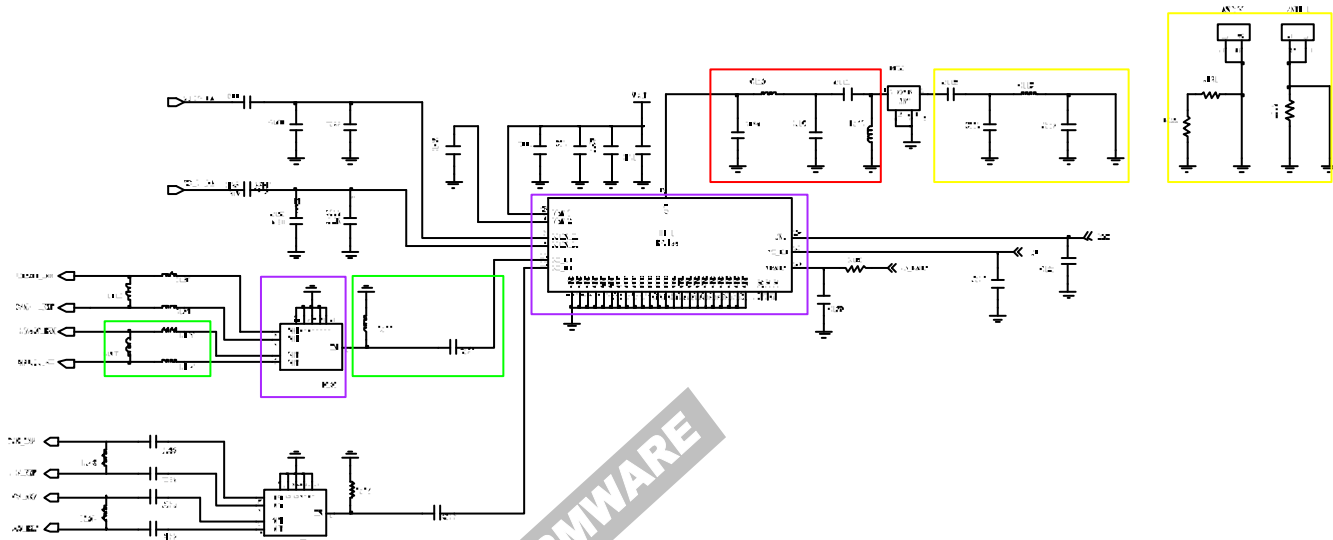
1. After setting, prepare the call setup Display
2. Using an Originate Call, make a call.
3. Confirm the display "connected"
4. start the measuring

※ 8960 & spectrum analyzer (down & up at picture)

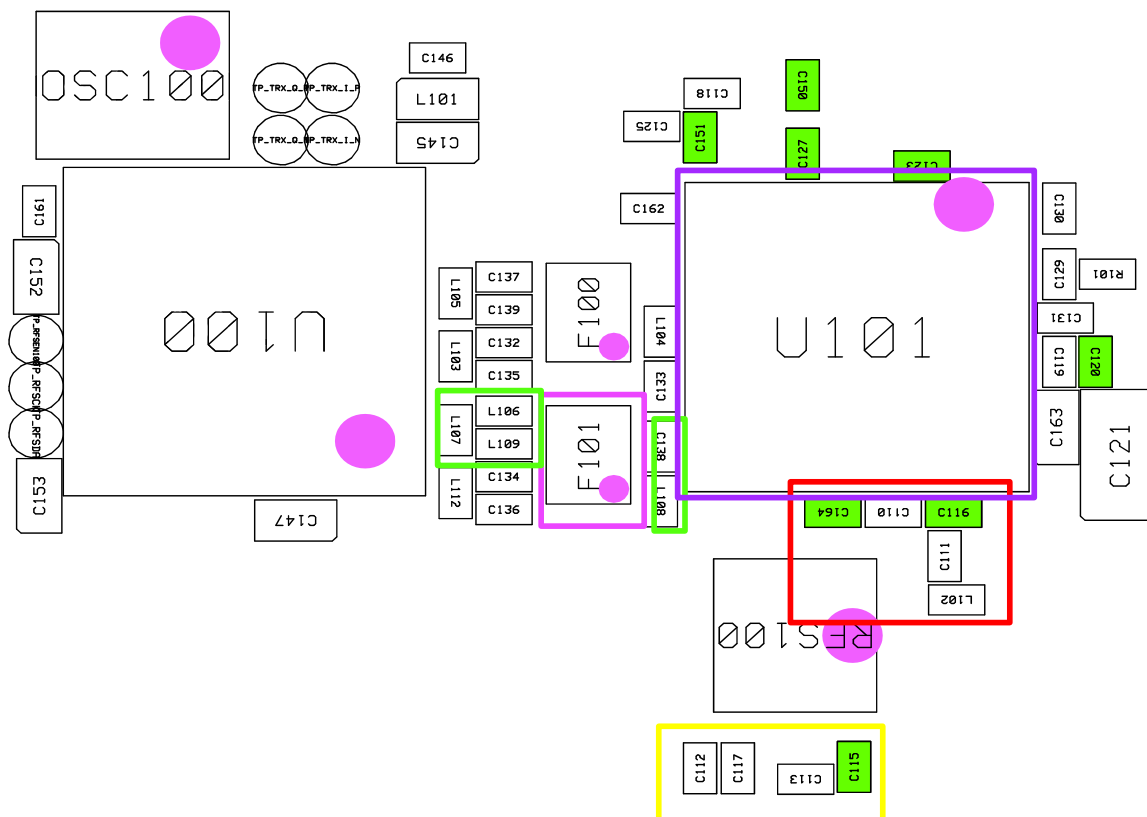
- spectrum analyzer : testing method = the way using an Oscilloscope
- 8960 : connect using RF Cable between 8960 & RF Connector in board.

8-5-1. GSM 850 Rx

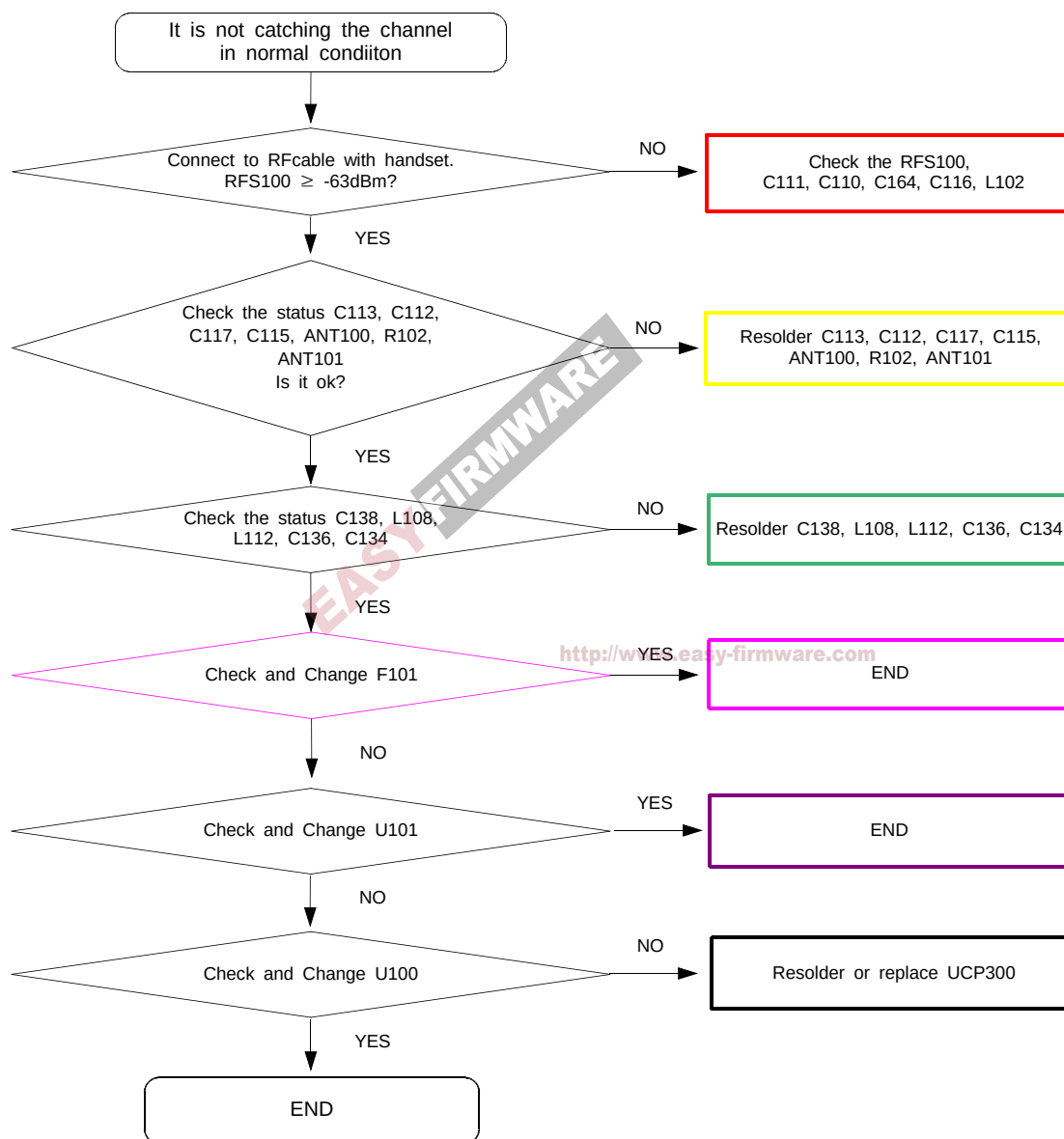




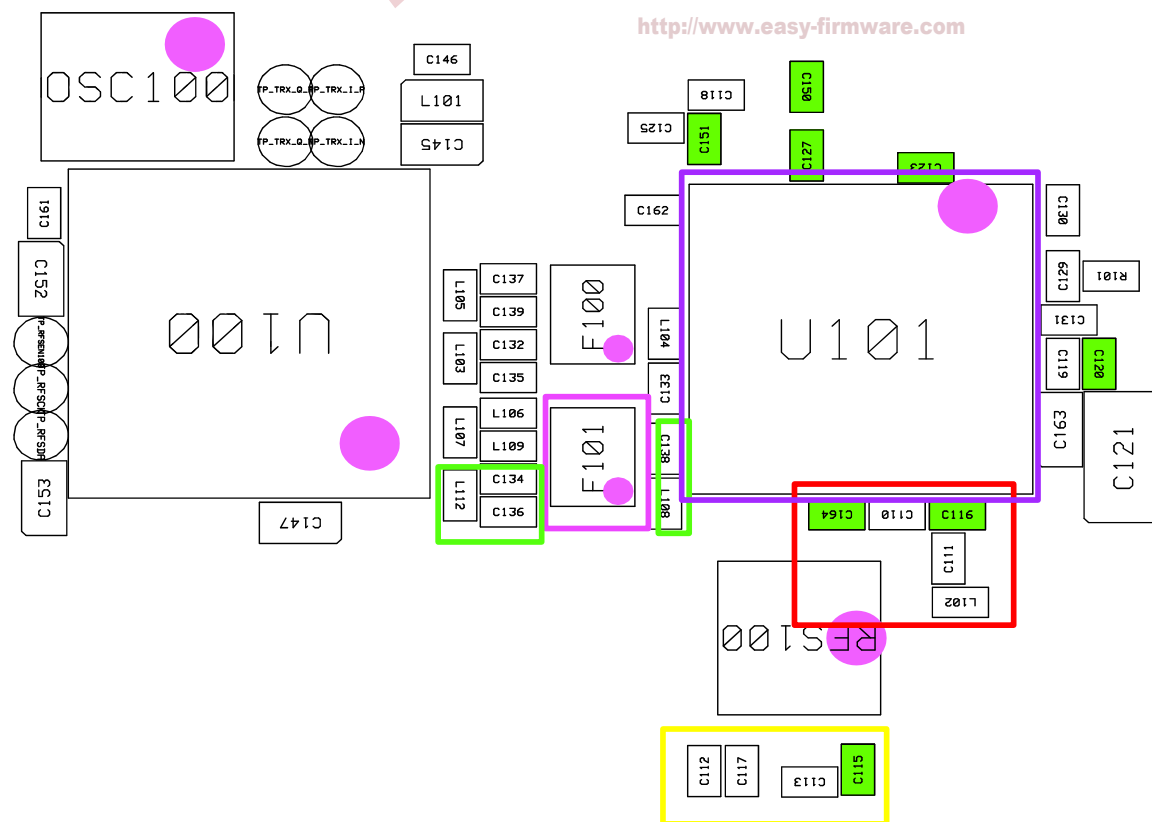
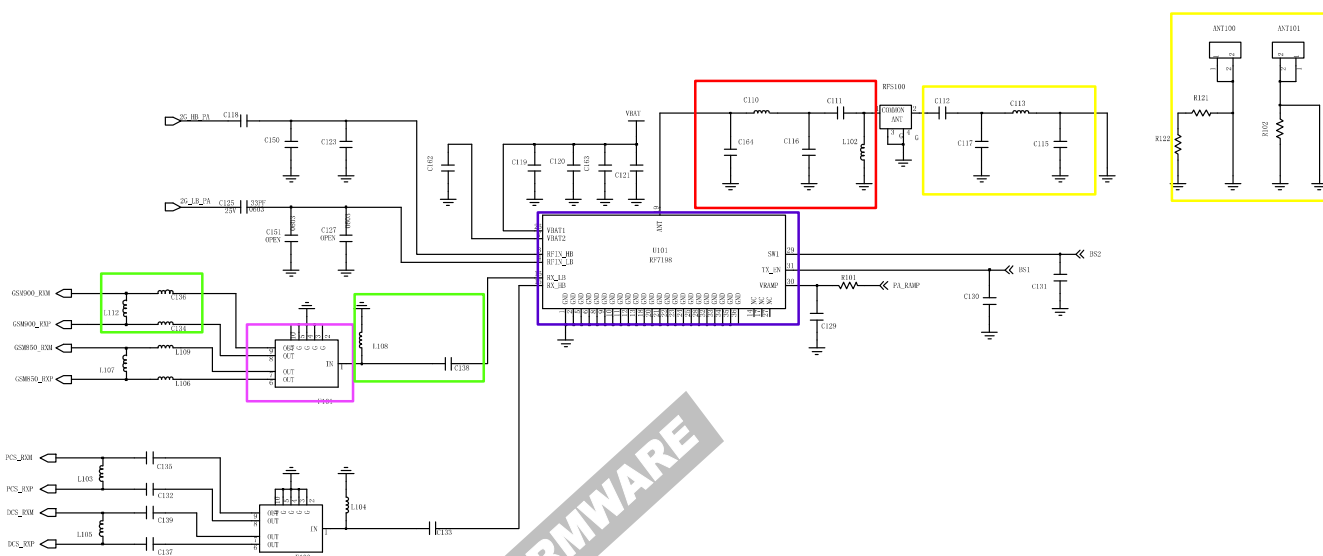
<http://www.easy-firmware.com>



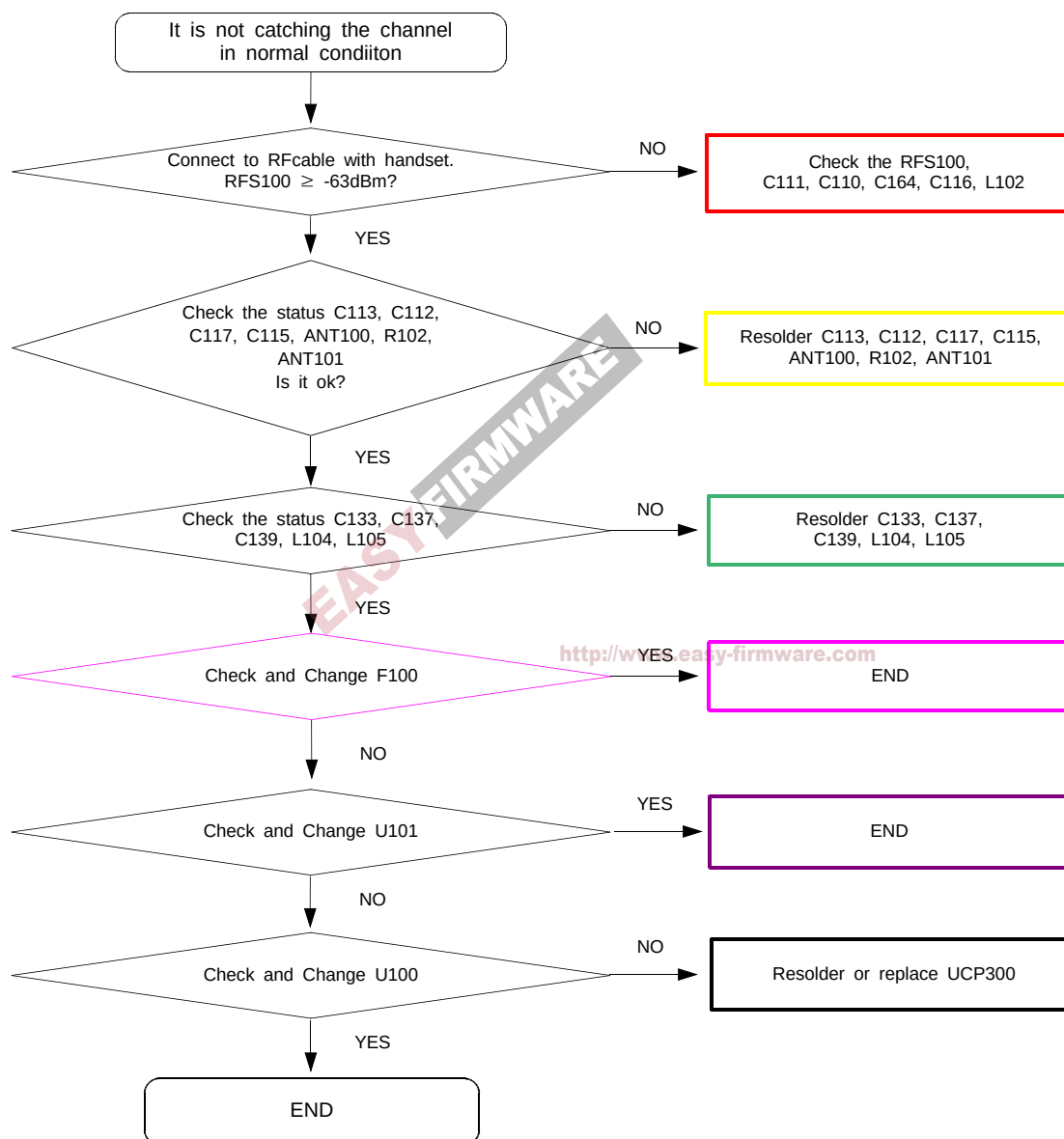
8-5-2. GSM 900 Rx



Level 3 Repair



8-5-3. DCS1800 Rx



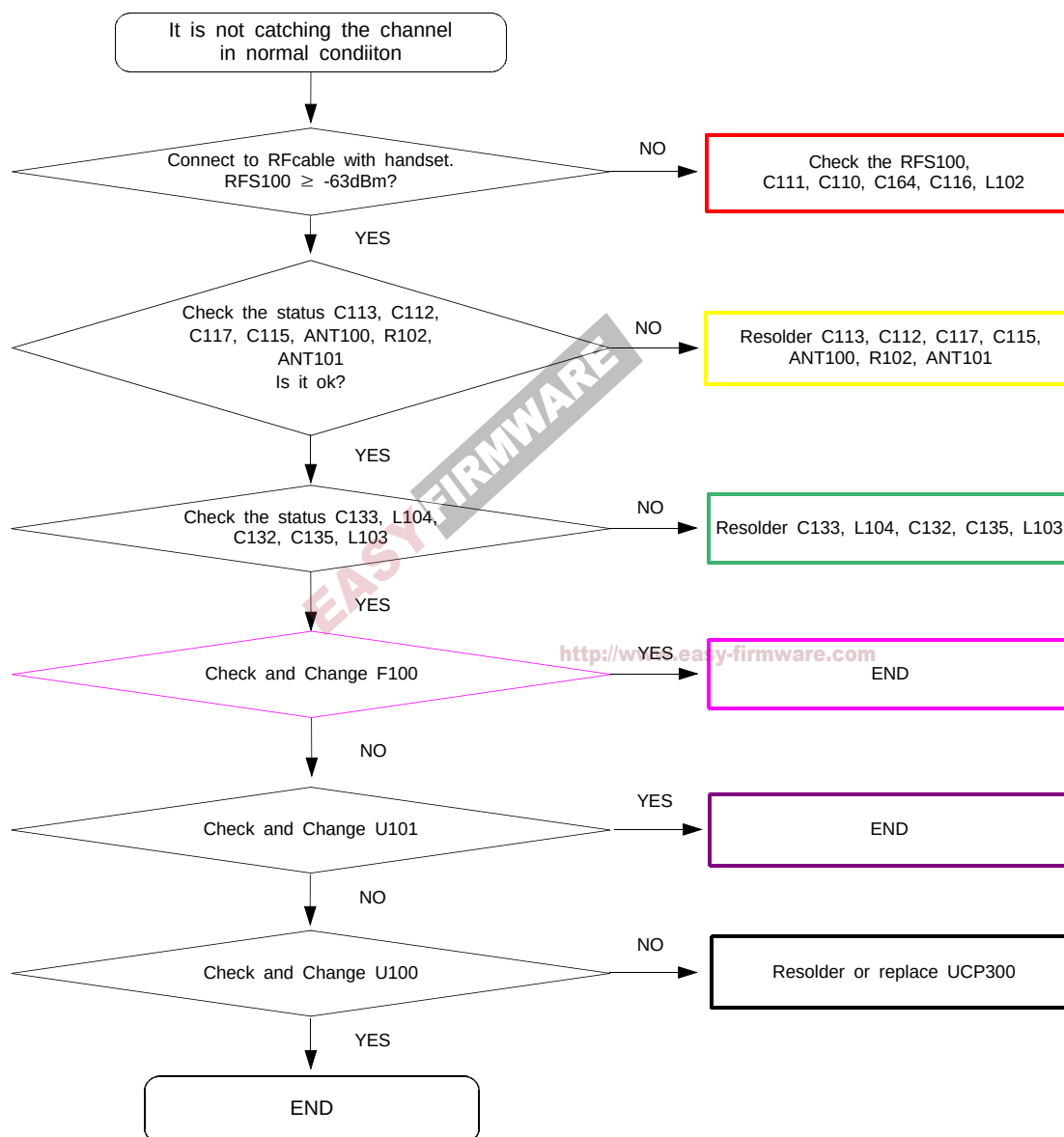
The image shows a detailed PCB layout for the EasyFirmware module. The central component is the ESP8266 module, which is connected to various peripheral components. The layout includes:

- Power Regulation:** A DC-DC converter (F401) is used to step down the input voltage (V_{IN}) to the operating voltage (V_{DD}). The input is connected to the V_{IN} pin of the converter, and the output is connected to the V_{DD} pin. The converter is also connected to the GND pin.
- Power Distribution:** The V_{DD} pin is connected to the V_{DD} pin of the ESP8266 module. The GND pin is connected to the GND pin of the module.
- Antennas:** Two antennas are present: ANT100 and ANT101. They are connected to the ANT pin of the ESP8266 module.
- Resistors:** Several resistors are used for pull-up and pull-down purposes. For example, R101 is a pull-up resistor for the TX pin, and R102 is a pull-down resistor for the RX pin.
- Capacitors:** Various capacitors are used for decoupling and filtering. For example, C101 and C102 are used for decoupling the V_{DD} and GND pins.
- Inductors:** Inductors are used for filtering the input voltage. For example, L101 and L102 are used for filtering the V_{IN} and GND pins.
- Other Components:** The layout also includes a temperature sensor (F402), a status LED (F403), and a reset button (F404).

The PCB layout is designed to be compact and efficient, with all components placed close to the ESP8266 module. The layout is also designed to be easy to assemble, with clear labels and a simple wiring scheme.

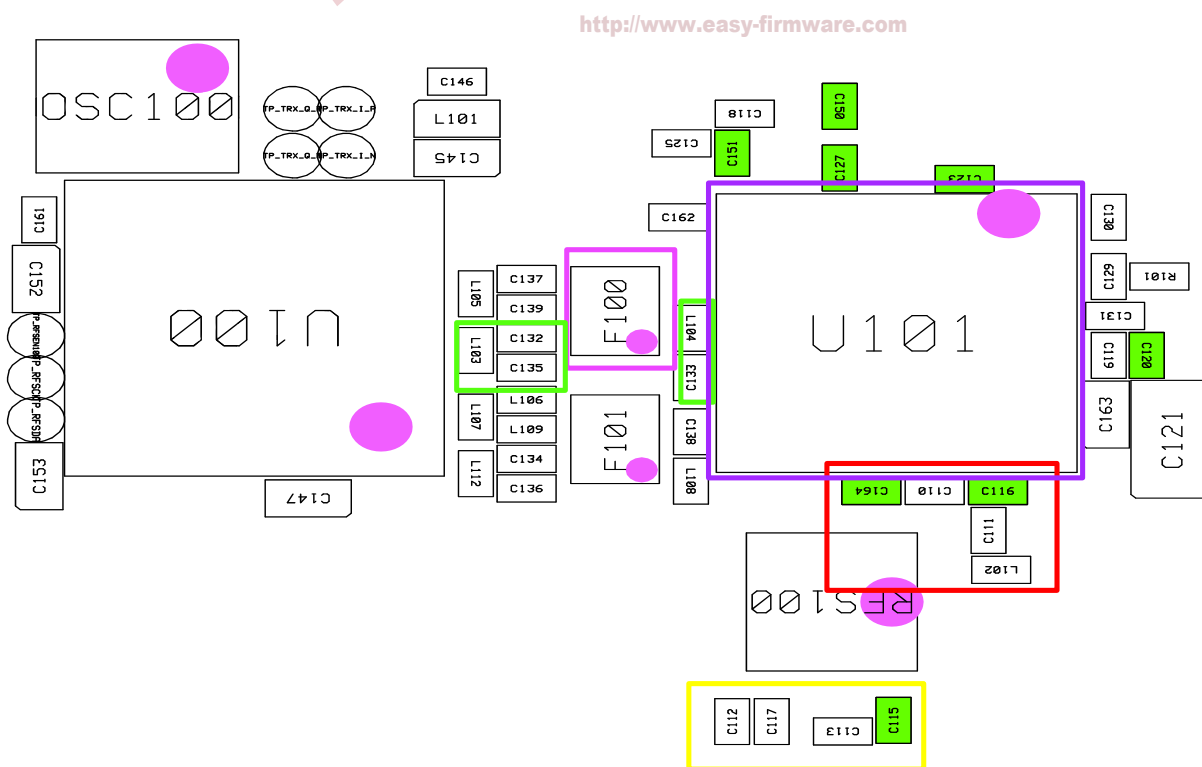
[illegible]

8-5-4. PCS1900 Rx

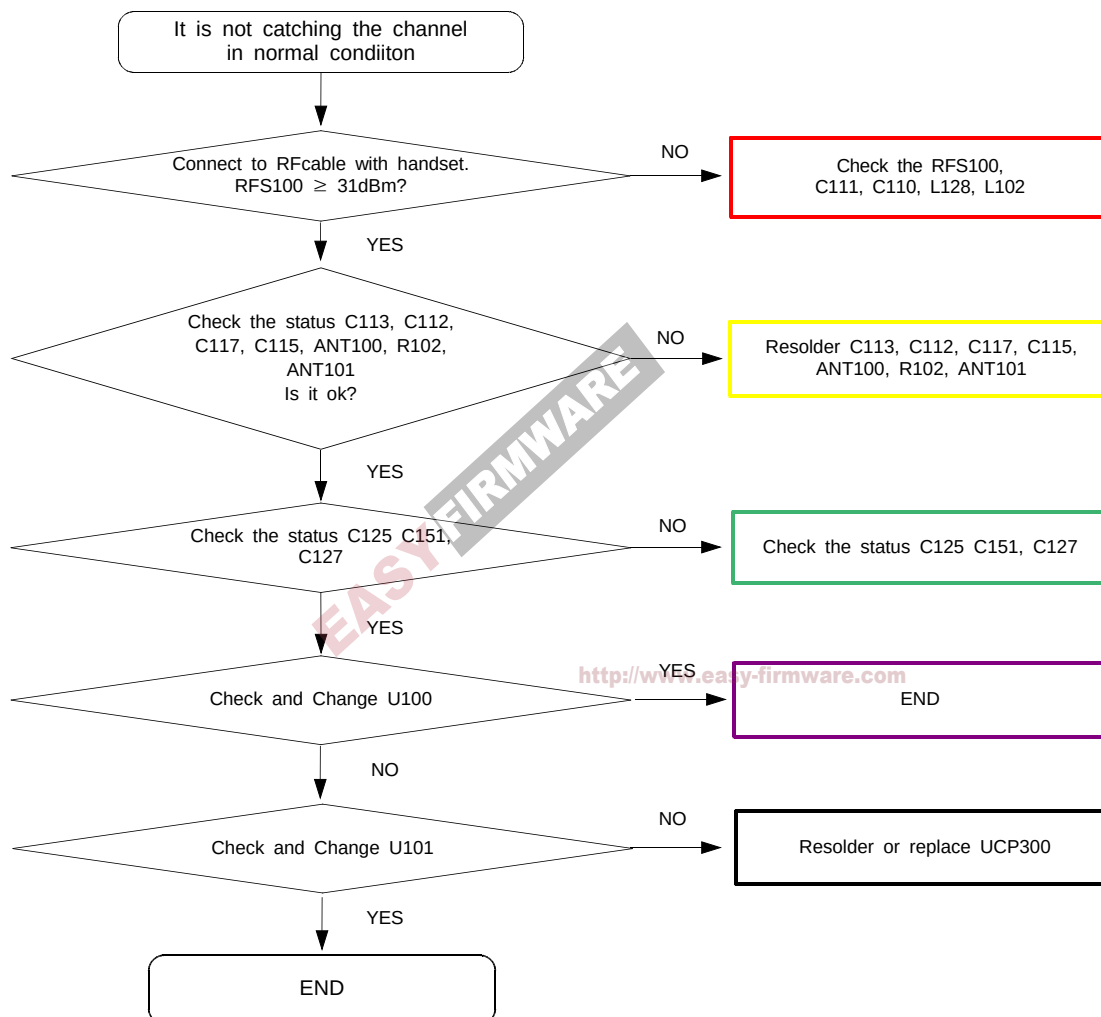


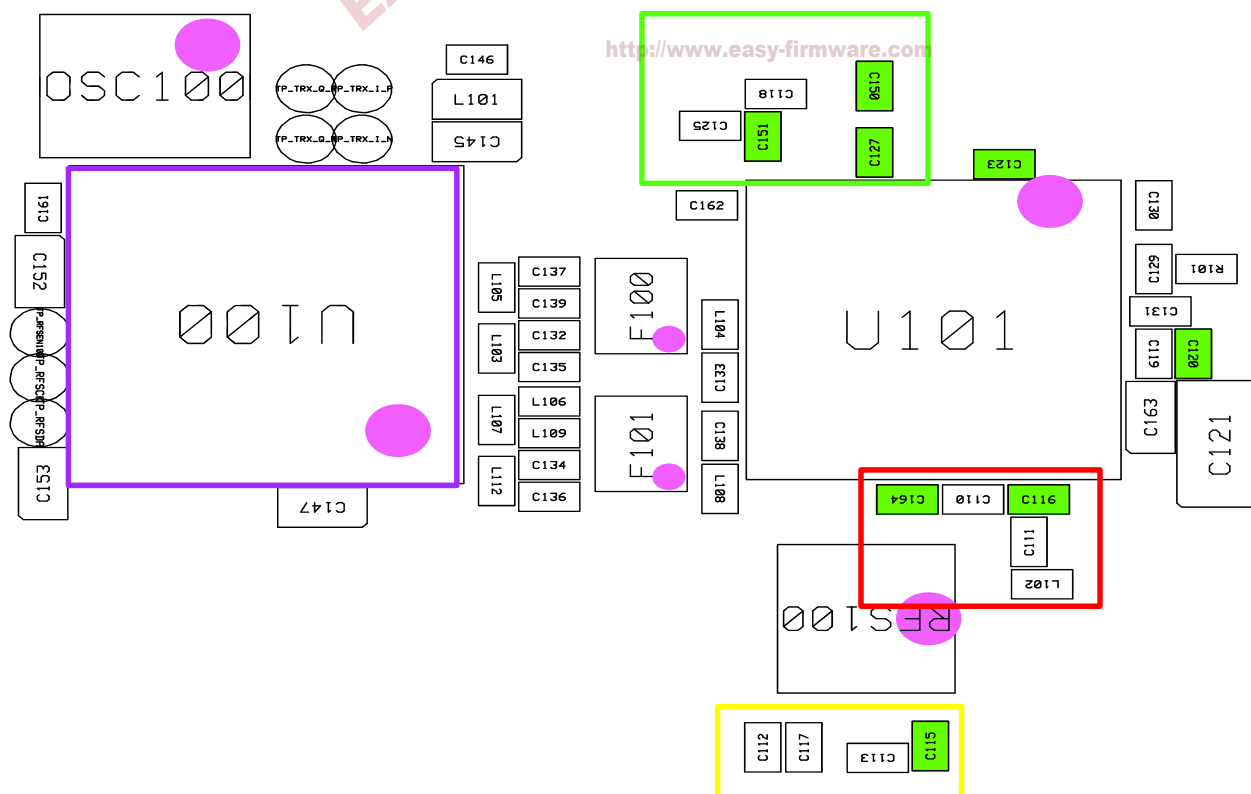
The schematic diagram illustrates the internal components and connections of the K77108 module. Key elements include:

- Connectors:**
 - GPS:** GPS_RX, GPS_TX, GPS_RX, GPS_TX, GPS_RX, GPS_TX.
 - PCB:** PCB_RX, PCB_TX, PCB_RX, PCB_TX.
 - ANT:** ANT100, ANT101.
- Components:**
 - Capacitors:** C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C126, C127, C128, C129, C130, C131, C132, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C152, C153, C154, C155, C156, C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C190, C191, C192, C193, C194, C195, C196, C197, C198, C199, C200, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C248, C249, C250, C251, C252, C253, C254, C255, C256, C257, C258, C259, C260, C261, C262, C263, C264, C265, C266, C267, C268, C269, C270, C271, C272, C273, C274, C275, C276, C277, C278, C279, C280, C281, C282, C283, C284, C285, C286, C287, C288, C289, C290, C291, C292, C293, C294, C295, C296, C297, C298, C299, C300, C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C312, C313, C314, C315, C316, C317, C318, C319, C320, C321, C322, C323, C324, C325, C326, C327, C328, C329, C330, C331, C332, C333, C334, C335, C336, C337, C338, C339, C340, C341, C342, C343, C344, C345, C346, C347, C348, C349, C350, C351, C352, C353, C354, C355, C356, C357, C358, C359, C360, C361, C362, C363, C364, C365, C366, C367, C368, C369, C370, C371, C372, C373, C374, C375, C376, C377, C378, C379, C380, C381, C382, C383, C384, C385, C386, C387, C388, C389, C390, C391, C392, C393, C394, C395, C396, C397, C398, C399, C400, C401, C402, C403, C404, C405, C406, C407, C408, C409, C410, C411, C412, C413, C414, C415, C416, C417, C418, C419, C420, C421, C422, C423, C424, C425, C426, C427, C428, C429, C430, C431, C432, C433, C434, C435, C436, C437, C438, C439, C440, C441, C442, C443, C444, C445, C446, C447, C448, C449, C450, C451, C452, C453, C454, C455, C456, C457, C458, C459, C460, C461, C462, C463, C464, C465, C466, C467, C468, C469, C470, C471, C472, C473, C474, C475, C476, C477, C478, C479, C480, C481, C482, C483, C484, C485, C486, C487, C488, C489, C490, C491, C492, C493, C494, C495, C496, C497, C498, C499, C500, C501, C502, C503, C504, C505, C506, C507, C508, C509, C510, C511, C512, C513, C514, C515, C516, C517, C518, C519, C520, C521, C522, C523, C524, C525, C526, C527, C528, C529, C530, C531, C532, C533, C534, C535, C536, C537, C538, C539, C540, C541, C542, C543, C544, C545, C546, C547, C548, C549, C550, C551, C552, C553, C554, C555, C556, C557, C558, C559, C560, C561, C562, C563, C564, C565, C566, C567, C568, C569, C570, C571, C572, C573, C574, C575, C576, C577, C578, C579, C580, C581, C582, C583, C584, C585, C586, C587, C588, C589, C590, C591, C592, C593, C594, C595, C596, C597, C598, C599, C600, C601, C602, C603, C604, C605, C606, C607, C608, C609, C610, C611, C612, C613, C614, C615, C616, C617, C618, C619, C620, C621, C622, C623, C624, C625, C626, C627, C628, C629, C630, C631, C632, C633, C634, C635, C636, C637, C638, C639, C640, C641, C642, C643, C644, C645, C646, C647, C648, C649, C650, C651, C652, C653, C654, C655, C656, C657, C658, C659, C660, C661, C662, C663, C664, C665, C666, C667, C668, C669, C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, C680, C681, C682, C683, C684, C685, C686, C687, C688, C689, C690, C691, C692, C693, C694, C695, C696, C697, C698, C699, C700, C701, C702, C703, C704, C705, C706, C707, C708, C709, C710, C711, C712, C713, C714, C715, C716, C717, C718, C719, C720, C721, C722, C723, C724, C725, C726, C727, C728, C729, C730, C731, C732, C733, C734, C735, C736, C737, C738, C739, C740, C741, C742, C743, C744, C745, C746, C747, C748, C749, C750, C751, C752, C753, C754, C755, C756, C757, C758, C759, C760, C761, C762, C763, C764, C765, C766, C767, C768, C769, C770, C771, C772, C773, C774, C775, C776, C777, C778, C779, C780, C781, C782, C783, C784, C785, C786, C787, C788, C789, C790, C791, C792, C793, C794, C795, C796, C797, C798, C799, C800, C801, C802, C803, C804, C805, C806, C807, C808, C809, C810, C811, C812, C813, C814, C815, C816, C817, C818, C819, C820, C821, C822, C823, C824, C825, C826, C827, C828, C829, C830, C831, C832, C833, C834, C835, C836, C837, C838, C839, C840, C841, C842, C843, C844, C845, C846, C847, C848, C849, C850, C851, C852, C853, C854, C855, C856, C857, C858, C859, C860, C861, C862, C863, C864, C865, C866, C867, C868, C869, C870, C871, C872, C873, C874, C875, C876, C877, C878, C879, C880, C881, C882, C8

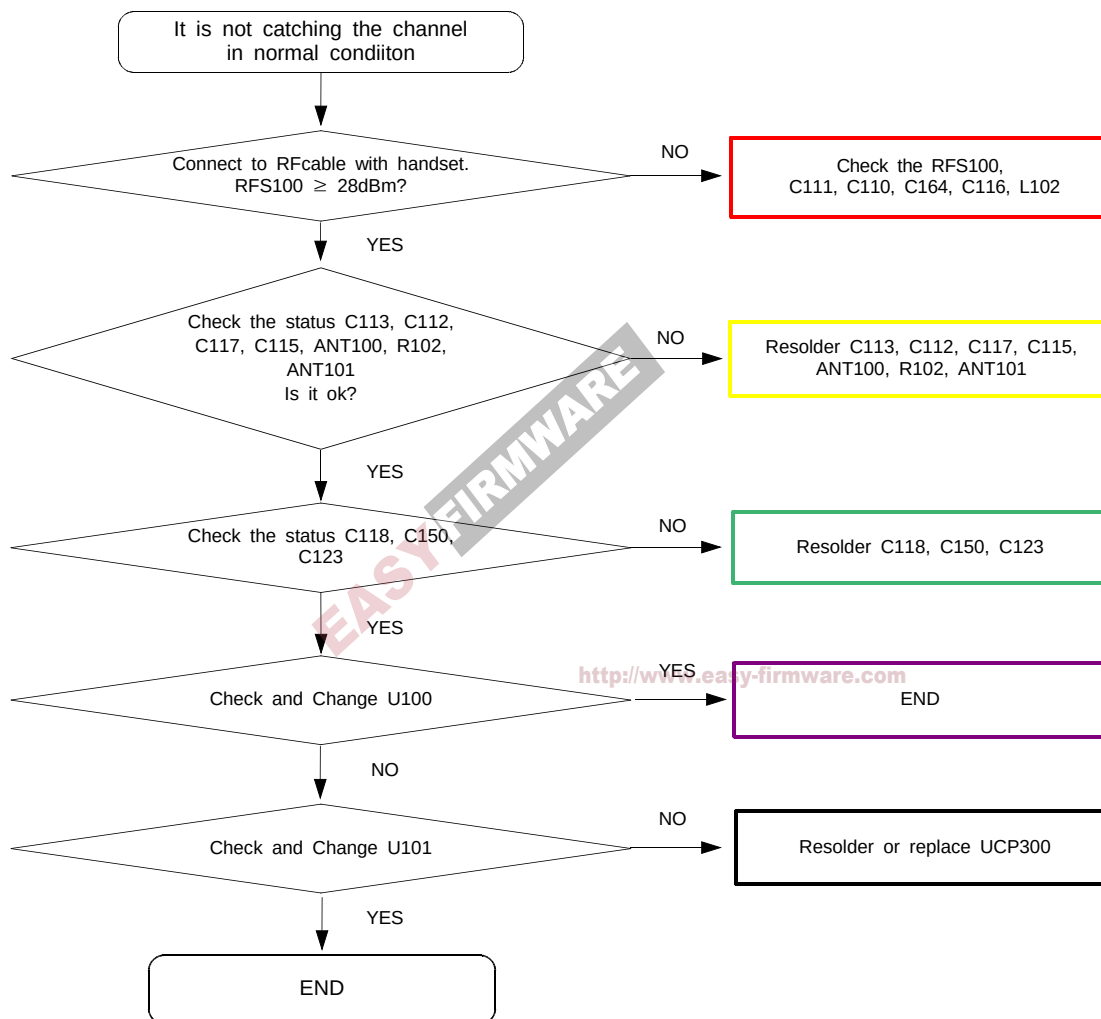


8-5-5. GSM 850 / 900 Tx

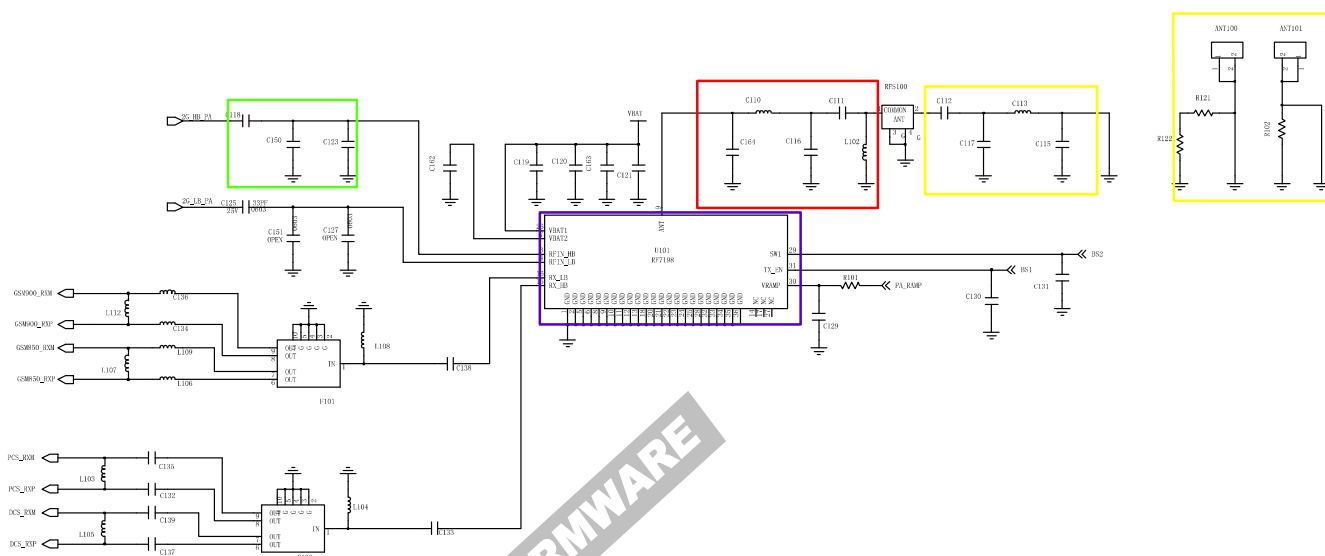




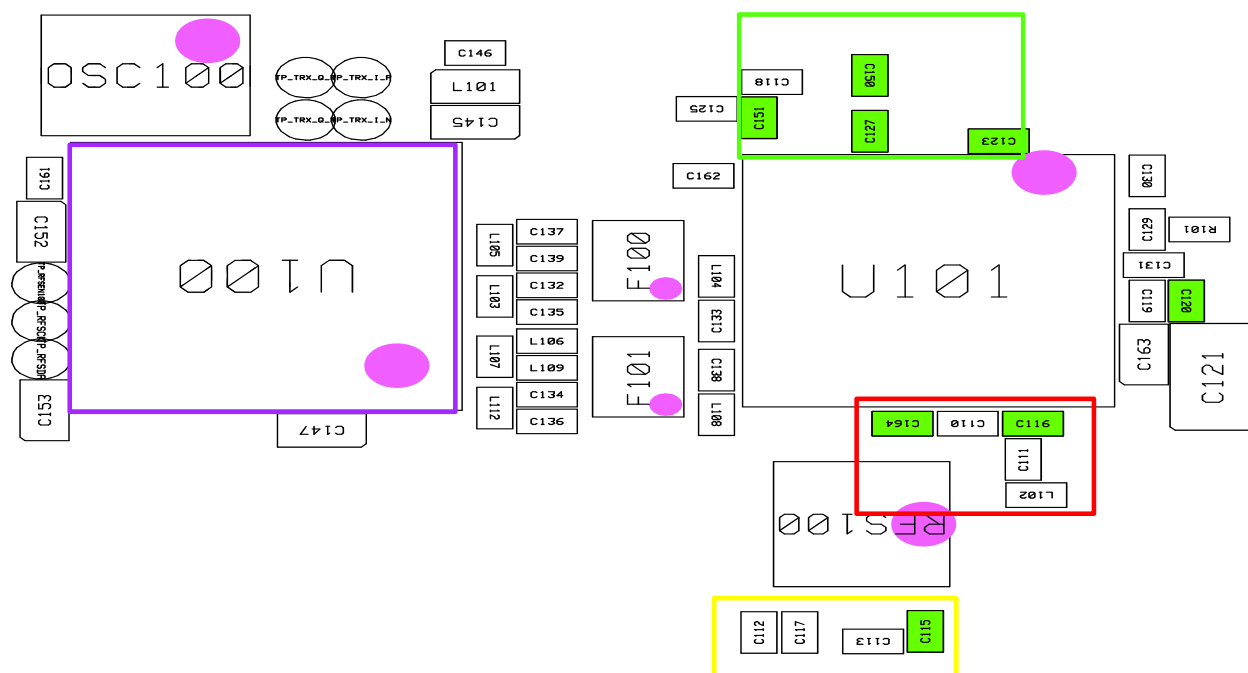
8-5-6. GSM 1800 / 1900 Tx



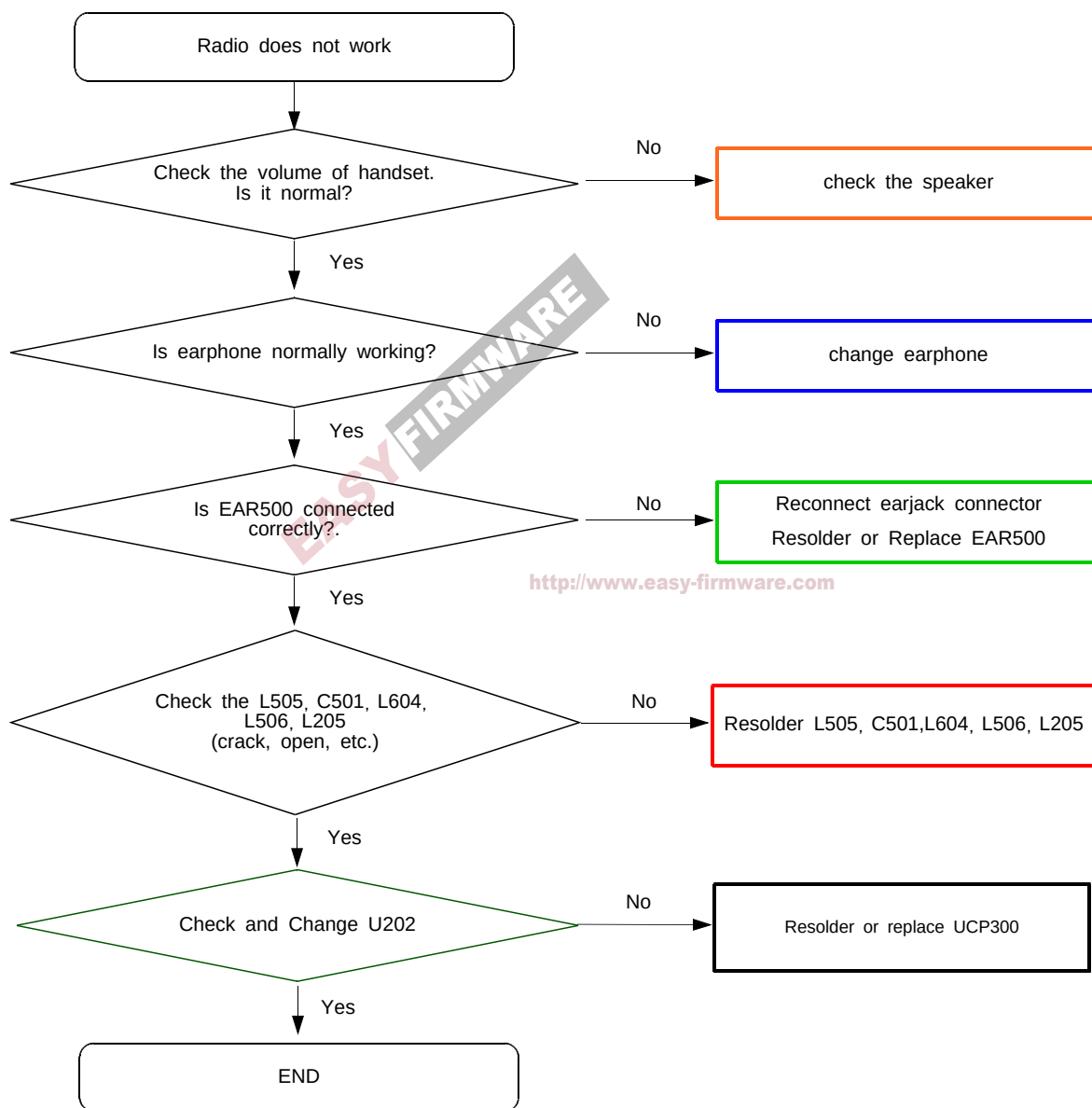
Level 3 Repair

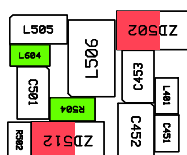
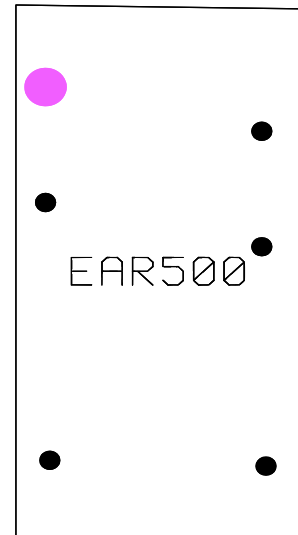


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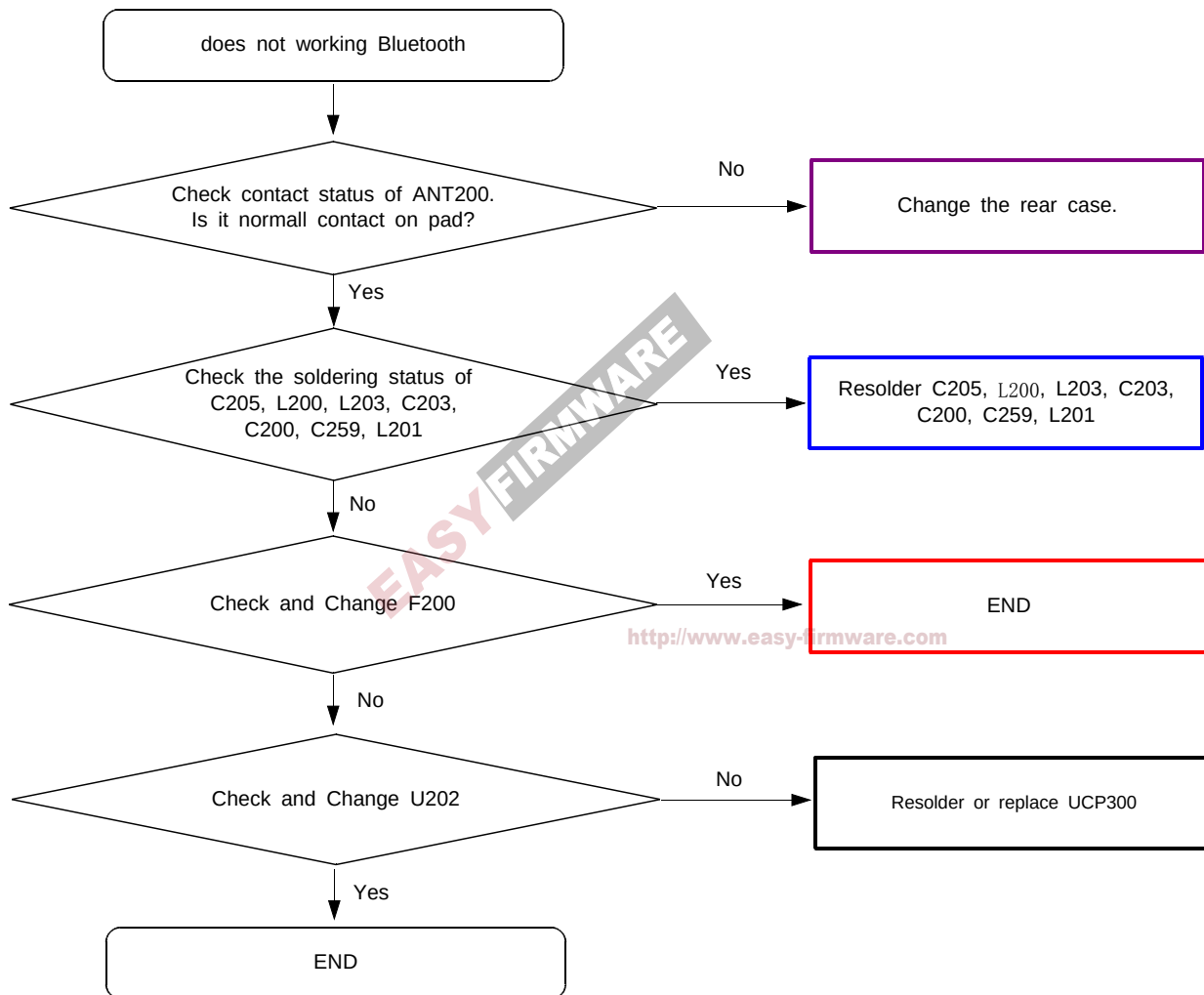


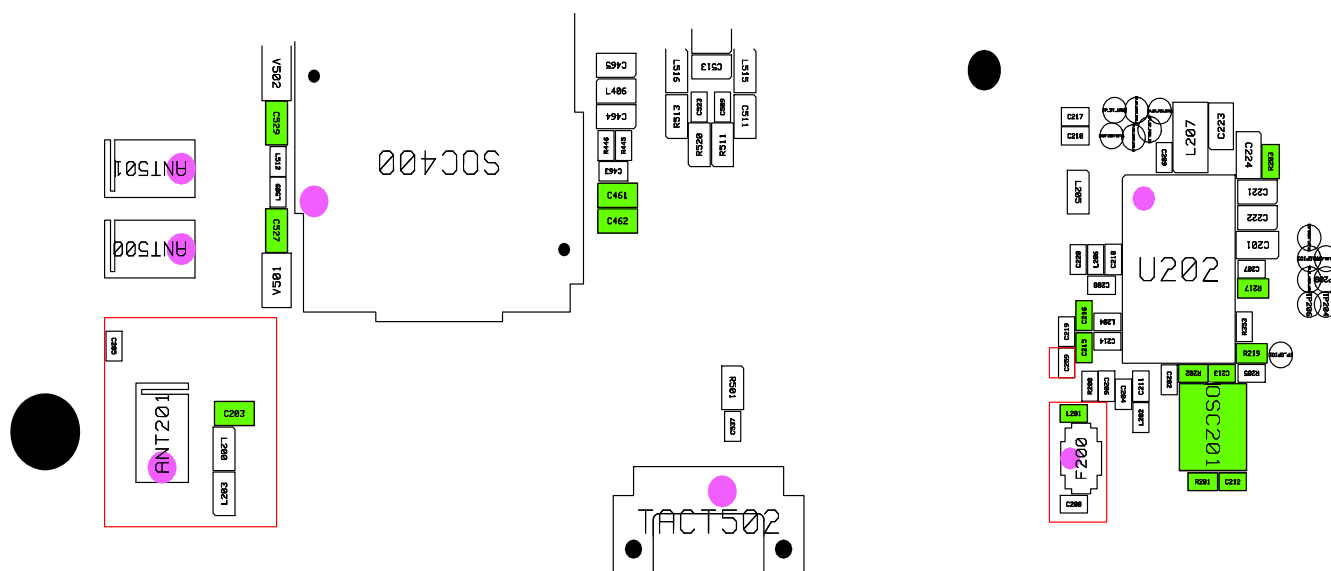
8-5-7. FM RADIO



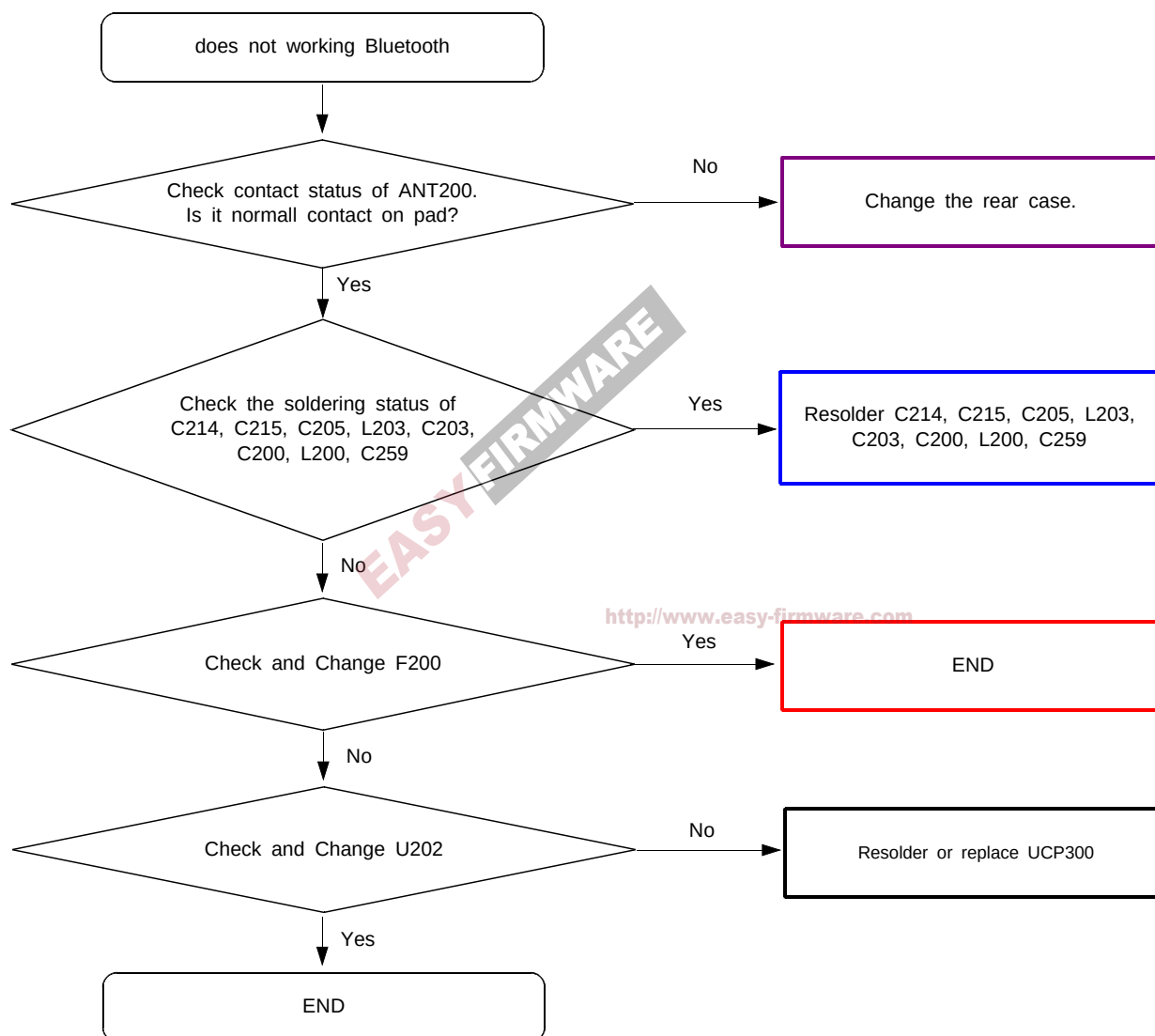


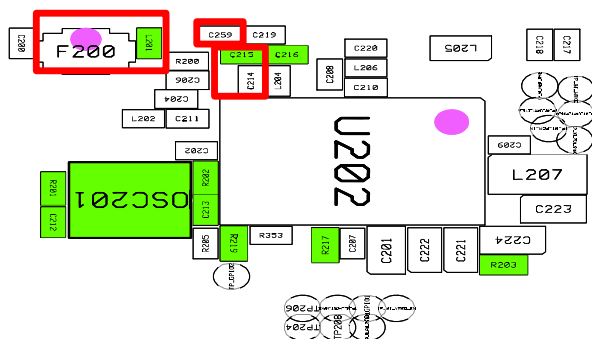
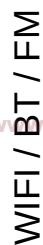
8-5-8. Bluetooth





8-5-9. WiFi





8-6. Service Schematics

- NC Point(Top View)

● : NC

UME300

	1	2	3	4	5	6	7	8	9	10
A	○	○	○	○	○	○	○	○	○	○
B	○	○	○	○	○	○	○	○	○	○
C	○	○	○	○	○	○				
D	●	●	●	●	●	●				
E	○	●	●		○	○	○	○	○	○
F	○	○	●		○	○	○	○	○	○
G	○	○	○		○	○	○	○	○	○
H	○	○	○		○	○	○	○	○	○
J	○	○	○		○	○	○	○	○	○
K	○	○	○		○	○	○	○	○	○
L	○	○	○		○	○				
M	○	●	○		○	○	○	○	○	
N	○	●	●		○	○				
P	○	●	●		○	○	○	○	○	○
R	○	○	○		○	○	○	○	○	○
T	○	○	○		○	○	○	○	○	○
U	○	○	○		○	○	○	○	○	○
V	○	○	●		○	○	○	○	○	○
W	○	●	●		○	○	○	○	○	○
Y	○	○							○	○

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