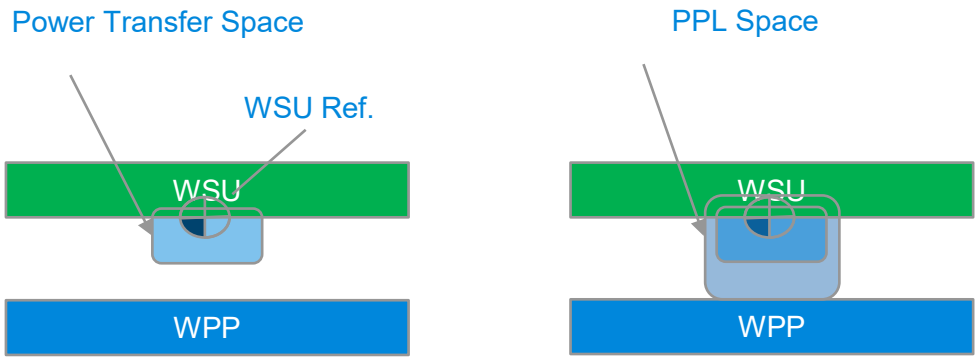
1. PPL Specification

Specifications are listed below:

Number	Content
PPL0000	Carrier frequency shall be 13,56 MHz (13,553 ...13,567 according to ETSI EN 300 330)
PPL0010	Physical layer uses 2-PSK encoding.
PPL0020	Communication mode shall be half-duplex.
PPL0030	Secondary side initiates data exchange to start, perform and end a charging cycle. Secondary Transmit Frame is called Communication Request. Secondary side is MASTER
PPL0040	Primary side answers data exchange to start, perform and end a charging cycle. Primary Transmit Frame is called Communication Answer. Primary side is SLAVE
OPTIONAL	Initiation of data exchange possible from primary side.
PPL0050	A loop of communication request and answer shall take less or equal 16.66 ms.
PPL0060	During each loop, at least 24 bytes of Data shall be transferred in total. Either From master to Slave or From slave to Master. For Example. 12 from Slave to Master and 12 from Master to slave.
PPL0070	Communication shall be robust against WPT frequency and noise caused by the WPB Inverter switching. 1 out of 60 loops may be corrupted. / (1 Fail per Second).
PPL0080	Higher-level user like WSU control or WPB control are expected to be failure tolerant to 2 loops in series to be corrupted. Corruption is either request corrupt or answer corrupt.
PPL0090	Communication on Master/Slave side consumes 200mW power respectively.

Number	Content
PPL0090	Communication shall be given in this geometrical displacement of the Pads. Distance in mm. Center Position: X = 0 Y = 100 Z = 0 Extreme Positions: X = +/- 55 Y =50… 200 Z = +/- 55  If reference of WSU is inside power transfer space than power transfer is possible and efficient. PPL Space is slightly bigger than power transfer space but smaller than pad size. Physical elimination of Com-conflicts. PPL communication cannot be established in the range of the following geometrical displacement due to low RX-energy. Distance in mm. Disconnect Position: $\|X\|$ > 100 or Y > 300 or $\|Z\|$ > 100

2. Antenna Specification

Location	Content
WPP	The creepage distances from Antenna to the Coils shall be 20mm.
WSU	The creepage distances from Antenna to the Coils shall be 5mm.
WPP	The dimension of WPP antenna is 150mmx150mm, 1-turn square coil with coil width 2mm.
WSU	The dimension of WSU antenna is 150mmx150mm, 2-turn square coil with coil width 2mm, spacing between tracks is 2mm.
WPP and WSU	Initial real impedance of antenna inside a potted pad shall not exceed 50Ω.
WPP and WSU	Antenna should be kept 30mm away from human body.