

SUPERHELDEN STUDENTENPROJEKT

DIE ENTWICKLUNG EINES BEHEIZTEN FAHRRADHELDENHANDSCHUHS
- AUFBAU EINES PROTOTYPEN -



AUFGABEN:

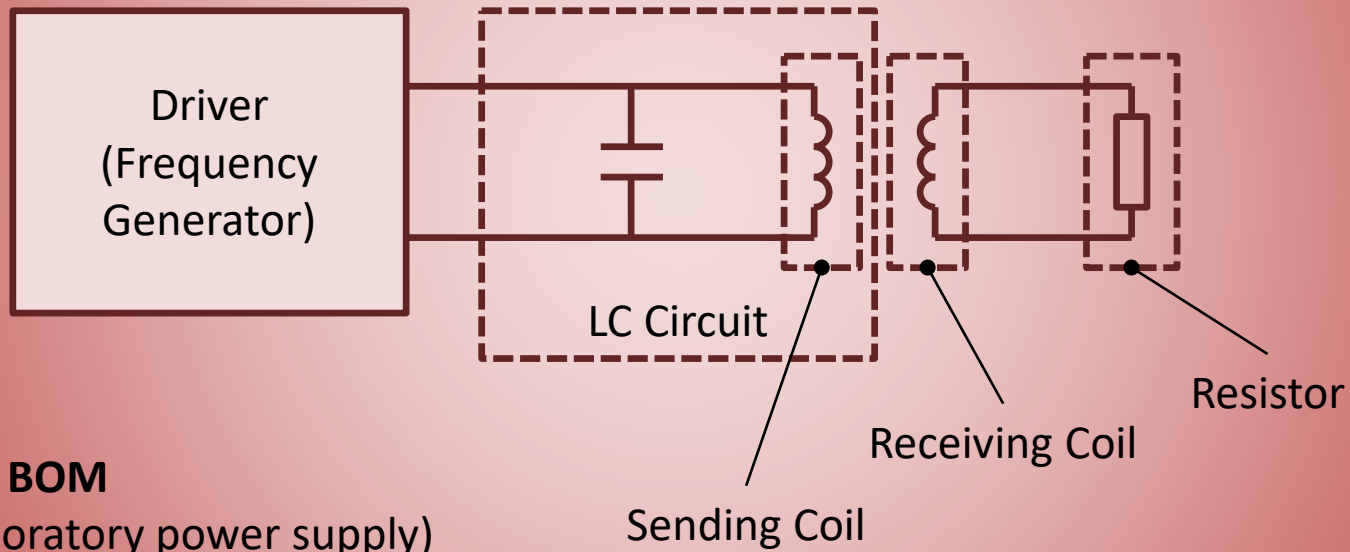
1. AUFBAU EINER PROTOTYPENSPULE
2. VERIFIKATIONSTESTS DURCHFÜHREN
3. DESIGN VORSCHLAGEN

DEIN PROFIL:

1. INNOVATIVER
2. ELEKTROMAGNETISCH- INDUKTIVER
3. ELEKTROINGENIEUR(IN)

SCOPE:

WORKING PROTOTYPE



Prototype BOM

Driver (laboratory power supply)

Capacitor

Sending Coil prototype (insulated wire, mounting plate, iron core)

Receiving Coil prototype (insulated wire, mounting plate, iron core)

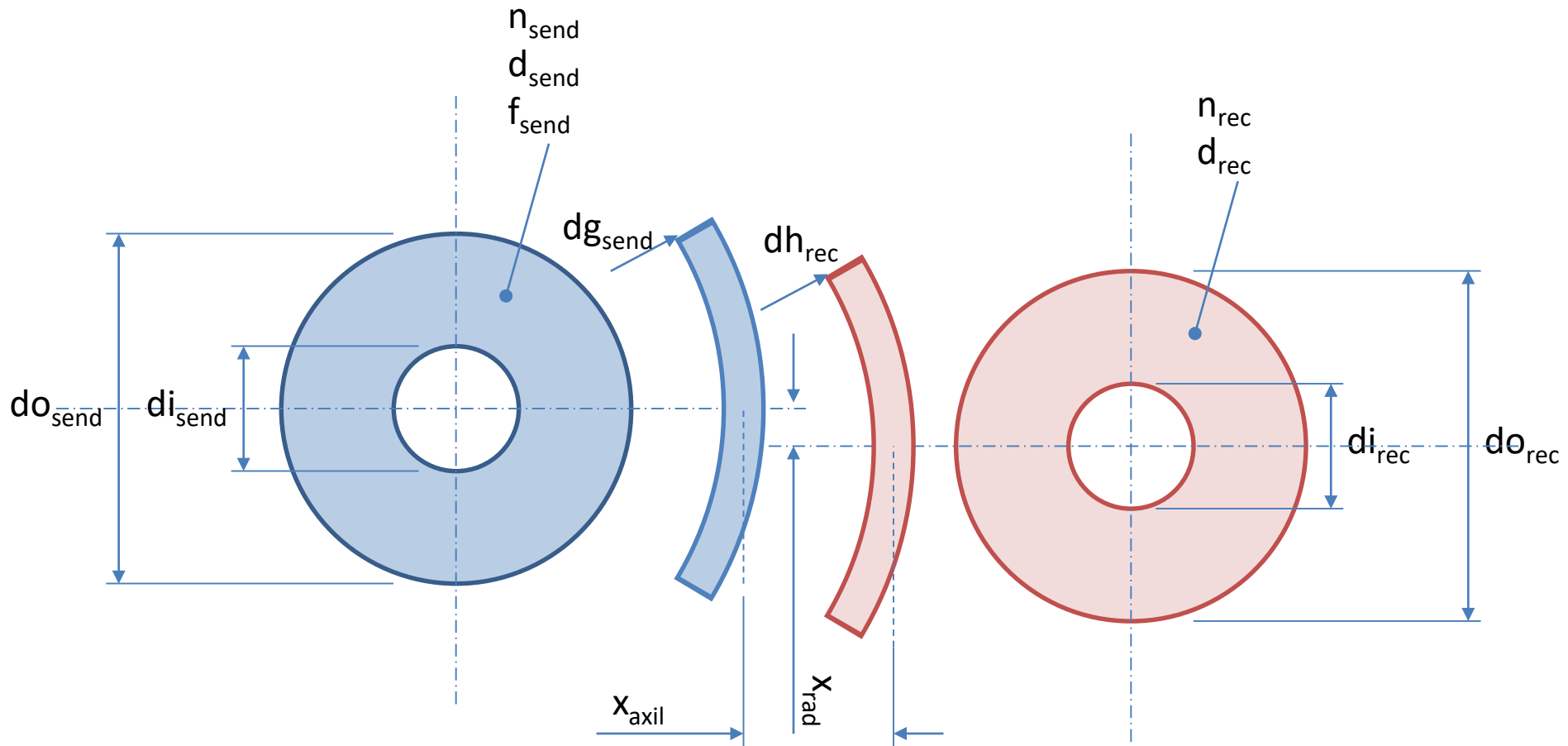
Load resistor

Wiring

PROJEKT PLAN

1. Confirm prototype scope
2. Research and define coil prototype manufacturing
3. Manufacture coil prototype
4. Manufacture balance of plant
5. Define and execute verification plan
6. Write report

Design 2 Model



Design Parameter		Value		
d_{o_send}	Send coil outer dia.	80 mm		
d_{i_send}	Send coil inner dia.	15 mm		
n_{send}	Send coil number of turns	max. possible		
d_{send}	Send coil wire diameter	0,5 mm		
$n_{sendcoil}$	Number of sending coils	1		
f_{send}	Frequency	5 MHz		
d_{g_send}	Grip diameter	60 mm		
d_{o_rec}	Receive coil outer dia.	80 mm		
d_{i_rec}	Receive coil inner dia.	15 mm		
n_{rec}	Receive coil nr. turns	max. possible		
d_{rec}	Receive coil wire dia,	0,5 mm		

Signal		5 W Low Power	10 W High Power
x_{axil}	Axil hand miss-alignment	1 mm	5 mm
x_{rad}	Radial hand miss-alignment	0 mm	30 mm
dh_{rec}	Hand diameter	d_{g_send}	$d_{g_send} + 30$ mm
-	Finger on brake		
-	Ring on finger		