

Errata

Publication I

On page 3, V_s should be

$$V_s = 4V_A/\pi. \quad (2.1)$$

In Equation (6), Variable A should be

$$A = \frac{1}{2L_p^2} \left[\frac{m^2(R_{eq} + R_s)^2 - n}{1 - k^2} \right]. \quad (2.2)$$

Publication III

In Equation (17), Variable \mathbf{V}_s should be \mathbf{V}_{in} .

Publication IV

Equation (11) should be

$$\mathbf{i}_p = \frac{\mathbf{V}_p \left[R_s^2 + \left(\omega_0 L_s - \frac{1}{\omega_0 C_s} \right)^2 \right] + \mathbf{V}_s \omega_0 M \left[jR_s + \left(\omega_0 L_s - \frac{1}{\omega_0 C_s} \right) \right]}{R_p \left[R_s^2 + \left(\omega_0 L_s - \frac{1}{\omega_0 C_s} \right)^2 \right] + R_s \omega_0^2 M^2}. \quad (2.3)$$

Equation (12) should be

$$P = \text{Re}\{\mathbf{V}_p \mathbf{i}_p^*\} = \frac{\mathbf{V}_p^2 \left[R_s^2 + \left(\omega_0 L_s - \frac{1}{\omega_0 C_s} \right)^2 \right] + \mathbf{V}_p \mathbf{V}_s \omega_0 M \left[jR_s + \left(\omega_0 L_s - \frac{1}{\omega_0 C_s} \right) \right]}{R_p \left[R_s^2 + \left(\omega_0 L_s - \frac{1}{\omega_0 C_s} \right)^2 \right] + R_s \omega_0^2 M^2}. \quad (2.4)$$

PTS power transfer:

Variable V_s should be

$$V_s = \frac{2\sqrt{2}}{\pi} V_o \angle -90^\circ, \quad (2.5)$$

therefore, Equation (13) is incorrect. The expression comes from an equivalent AC voltage over the secondary LC circuit.

STP power transfer:

Variable V_s should be

$$V_s = \frac{2\sqrt{2}}{\pi} V_o \angle -193.5^\circ, \quad (2.6)$$

where the phase angle was obtained from the computer simulation.

Results:

The resonant frequency and average power of theoretical and simulation results are shown in Table 2.1. As can be seen in the table, the corrected values are closer to the simulation results than the original values. The difference of f_o between PTS and STP cases indicates the existence of the frequency split phenomenon.

Table 2.1. A comparison table between theoretical and simulation results ($k = 0.1$ and $V_o = 388.261V$)

	PTS power transfer		STP power transfer	
	f_o (kHz)	P (W)	f_o (kHz)	P (W)
Original	25.165	$15.329 \cdot 10^3$	26.52	$49.084 \cdot 10^3$
Corrected	25.165	$15.899 \cdot 10^3$	26.52	$-48.017 \cdot 10^3$
Simulation	25.192	$15.897 \cdot 10^3$	26.5	$-48.946 \cdot 10^3$

Publication V

Table 2 should be

	V_s (V _{rms})	I_p (A _{rms})	I_s (A _{rms})	P_{out} (W)
NIM	39.036	7.29	2.622	284.541
SIM	63.458	11.849	4.263	751.922